Preface (2015)

This document on grammatical agency is the incomplete draft of a doctoral dissertation in formal linguistics which was discontinued in the early 1980s. The reason for publishing it is that even though unfinished it contains a significant amount of discussion in a specialist area which might (or might not) be of interest to researchers who have some involvement with grammatical agency, a topic with a very long history.

Why was the dissertation discontinued? My answer may be of minor interest to anyone working with concepts of grammatical agency. The document was researched within the frameworks of generative grammar prevalent at that time. Generative grammars were coherent enough to capture many interesting regularities in natural languages, so that analysis conducted in that way can still be a source and checklist of significant problems to be solved (hence this publication).

On the other hand it eventually seemed evident to me that generative grammars, those within the original Chomskyan tradition as well as many derivatives, could not in principle account for the acquisition, development and observed usage of natural languages. At bottom they depended upon principles of logic which were only a relatively small part of the resources which human brains bring to bear on language. It seemed to me that natural language was an emergent phenomenon, and eventually I came to understand it as a outcome of systemic complexity, the mathematics of which are non linear, unlike Chomsky's original generative conception. The many loosely patterned regularities I kept encountering in samples of real language seemed the product of a parallel universe to the neatly constrained model I had set out to demonstrate.
Of course there had always been linguists who had a sense of the whimsical harmonies found in nature as opposed to model purity. People like Dwight Bolinger, William Chafe, William Labov and Charles Fillmore seemed more open to unexpected language variation. Much later I was to realize that the kind of conceptual associations identified by Eleanor Rosch in her prototype theory, and developed by George Lakoff in his work on metaphor pointed the way to extremely productive insights into the human mind. This strand of research has continued, for example, in the studies by R.M.W. Dixon and his followers into the conceptual patterning which they have argued underlies categories in Australian Aboriginal languages.

I have no personal intention of revisiting grammatical agency, though its permutations have much to reveal about human cognition. In the 1980s, the institutional context within which I worked was not particularly hospitable to academic apostasy, and lacking the self-certainty to fight it then, I simply walked away from the whole deal (a kind of career suicide, as it turned out).

Two rather long papers closely related to the thinking in this study of Grammatical Agency were later published in the Australian Journal of Linguistics:

May, Thor (1990) "Purposive Constructions in English"; *The Australian Journal of Linguistics*, Vol.10, No.1, 1990: pp.1-40  Also available online @ [http://independent.academia.edu/ThorMay/Papers/1601377/Purposive_Constructions_in_English](http://independent.academia.edu/ThorMay/Papers/1601377/Purposive_Constructions_in_English)


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GRAMMATICAL AGENCY

INTRODUCTION

Agent has an explicit history very nearly as long as the study of English grammar itself. Its conceptual use reaches back to the classical grammars and logics of the ancient world.

The roles of which agent have been cast clearly reflect the analytic stages of distinguishing language from that to which it refers, of classifying the constituents of language, of finding the limits of formal logic in language, of separating syntactic categories from semantic functions, and finally in attempting to draw all the analytic strands together again.

Ian Michael (1970:481) offers a brief but informative description of agent vying with terms like subject and object in the grammatical vocabulary of eighteenth century England:

Lane (1700; in Michael:481) identified one distinctive and enduring characteristic of agency: There can be no Action without an Agent, nor Passion without a Patient. "Here [says Michael] agent and patient are material categories; the agent is the initiator of the action and the patient is the recipient. Such unambiguous references are not common."

More often there is uncertainty as to "...how far the terms refer to things and to material relations; how far to words and to grammatical relations:

[The active verb] expresses an Action, and therefore supposes an Agent, and an Object acted upon... [the passive verb] expresses a Passion, or a Suffering, or the receiving of an Action, and necessarily implies an Object acted upon, and an Agent by which it is acted upon; (Carter, 1797; in Michael:481)."
Although form and function may have been confused, clear notions of grammatical category were emerging. Carter's statement (above) reflects an awareness of what some later grammarians would term the "passive transformation", and that awareness stems directly from observing the behaviour of the agent. Indeed, constituent analyses of active and passive sentences had been attempted even earlier by Francis Lodowycx (1652; in Michael:482), as the following shows:

1. Thomas is loved much of Father his

Noun Patient verb manner the Agent

Throughout this period agent is often used interchangeably with subject or nominative since these, too, often had a functional rather than structural determination. Similarly, object could be defined as "the person acted upon" (Story, 1778; in Michael:482), and in the sentence:

2. Her gown is torn by a nail...

"nail is the agent, and gown the object of that agent;" (Mayne, 1799; in Michael:482). Note in this last example that agent incorporates no notion of volitional action. In short, it was being used in a variety of functional and structural capacities.

Perhaps it was the inherent vagueness of agent that led to its relative demise in the systematic grammars of later times. By comparison subject was amenable to structural definition, for it was a recognised borrowing from the formalism of Logic:

The word SUBJECT I use, as the Logicians do, for all that which goes before the Copula; which [i.e. the subject] if it consists of only one word, then it is the same which the Grammarians call the Nominative case; (Wilkins, 1668; in Michael:484)

However, no grammar has ever been able to dispense entirely with reference to the functions of language. We find agent persists as a more or less assumed and unanalysed category for use in those awkward
moments when the mention of meaning can't be avoided. In some cases it is "the thing chiefly spoken of" (Lowth, 1762; in Michael:484), (i.e. topic), although in later times it is felt to incorporate certain features like, volition, sentence, initiative, cause ... and so on.

Those linguists working with inflected languages, notably Europeans and some anthropological linguists, have always been more attracted to the functional aspects of language than their structuralist contemporaries in America. Recent instances of this bias occur among Australianists like R.M.W. Dixon (1979a), who, in attempting to explain the "ergative" case marking systems of Aboriginal languages turn to a rationale of agentive and non-agentive sentences. That is, the subject of a transitive sentence in these languages is often uniquely inflected in contradistinction to the object of transitive sentences and the subject of intransitive sentences. The point of a functional rationale is that in most analyses the subject of a transitive sentence, alone, has a potential for agency. This equation of agency with ergative case marking is unlikely to withstand close analysis, but it does illustrate the temptation to generalize a partial coincidence between the intuitive semantic properties of agency and the categorical formalism of morphological marking or syntactic structure. The link, as we know from the decodability of language, exists at some level, but it cannot be captured by the unanalysed generality of a term like Agent.

Well, what are the options for uniquely defining the notion of agency? Two, usually overlapping, approaches have been adopted by those who have consciously persisted with the notion at all.

The first approach is to incorporate agent into a case system. The case system may be morphologically bound, as we saw with the
Grammatical Agency – (c) Thorold May 1984

Australianists, or it may be a purely conceptual model of semantic relationships (sometimes called "deep case", e.g. in Fillmore, 1968). The core of such analyses is always that a certain set of case forms, or in more sophisticated models, a combination of case relationships, serve to delineate a sentence. Since the focus is functional, case relationships are normally not explicitly structure-dependent in any recursive or otherwise generative sense, but it is recognized that each verb, for example, governs a limited set of cases. It follows that an agent may be contrastively defined and located relative to other cases in the string. The contrastive definition is sometimes simplified by global rules; for example a rule to the effect that there may be only "one case per simple sentence"; (cf. Starosta, 1978). Perhaps the most common contrastive devices are hierarchies of case co-occurrence linked, in the first instance, to some structural feature. An Object Marking
Hierarchy offered by Nilsen (1973:139) is typical:

\[
\text{OBJECT} \rightarrow \text{LOCATIVE} \rightarrow \text{EXPERIENCER} \rightarrow \text{GOAL} \rightarrow \text{INSTRUMENT} \rightarrow \text{AGENT}
\]

In this model, once the "case" of the object NP is established, the determination of the subject NP (which also has its own selective hierarchy) is contrastively delimited.

While case contrast may highlight the scope of language functions to be apportioned overall, it is often too blunt a device for the selection of cases in specific instances.\(^1\) Moreover, cases so roughly defined have little more than taxonomic interest. This explanatory weakness of case models has never really been overcome. There are, however, various ways to refine the definitions of cases, and this process embodies the second general approach to the notion of agent.

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\(^1\) As Roberts (1978:5) complains: "...Fillmore's articles on case grammar do not provide a principled means of identifying cases. They merely allow for the differentiation of cases."
A case, like any other object of reference, must be seen to incorporate certain constant properties. The defining property might be a single morphological marker, or it might be recognized as a residuum of semantic properties that do not occur elsewhere in the sentence (e.g. ...an Agent is whatever a Patient, an Instrument...etc. is not...). This is not productive in an open-ended system.

Or a case, say an agent, may be seen to be a concatenation of features, and thus a complex rather than primitive concept. It may be that certain of these features will occur in other cases, but the particular mix pertaining to agency will be unique. The features, moreover, may be inherent to all referents of the NP case-marked AGENT – say [+dynamic], [+sentient] – or they may be relational within the argument structure of some matrix verb – say, [+initiator], [+causative] etc.

Some linguists remain content to identify these defining constituents discursively. Thus Fillmore’s (1968) celebrated definition:

Agent is the case of the typically animate perceived instigator of the action identified by the verb.

...or Gruber’s more structurally precise:

An Agentive Verb is one whose subject refers to an animate object and which is thought of as the wilful source or agent [sic!] of the activity described in the sentence; (Gruber, 1970).

Even more indirectly, the feature constituency of a case may be defined by the circumstantial evidence of various syntactic "tests". The tests range from lexical collocation to various paraphrase substitutions. It has been argued that such syntactic tests have explanatory power and natural constraints which make them superior to any model which depends upon the free inclusion of more or less arbitrary sets of features. I am less sanguine about syntactic tests as a defining medium and won’t
be considering them in any detail in this paper. Gruber (as quoted by Cruse, 1973) suggests the following set of "tests" for Agentive Verbs:

An agentive verb is... (a) substitutable in all circumstances by "do something"; (b) modifiable by manner adverbs such as /carefully/; (c) modifiable by a purpose-phrase beginning "in order to...".

Cruse makes the rather telling point that Gruber's categories don't identify identical sets.

The detailed constituent analysis of agent has also been attempted of course. At some time combinations of some or all of the following have been proposed:

{+[Human], [Animat], [Sentient], [Intent], [Force], [Volition], [Initiative], [Cause, [Remote Cause]], [Perceived Cause], [Concrete], [Physical], [Affected], [Subject], [Instigator], ...

+[Performer], [Active], [Control], [Source], [Tensed Context]...}

...The list is not exhaustive. Nor can it be. The inclusion of any combination of features seems to be constrained only by mutual exclusion (i.e. [Active] ≠ [Stative]) and the contingent relevance of some feature to a particular sentence. It is this unprincipled decomposability of agent conceived of as a bundle of features, (... in common with all other semantic categories), which has doubtless encouraged many linguists to opt for intuition, and look for the syntactic consequences of, say, agentive as opposed to stative verbs (..."whatever an

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2 Lee (1970), whose interests are in transformational rather than case grammar, also identifies "pro-agentive contexts" for verbs. His tests are more exhaustive than Gruber's (there are six), but subject to the same kind of criticism.
AGENTIVE MIGHT BE...). Since the argument is from particular sentences it remains open to critique and at least the illusion of principled analysis. Many of the examples developed in such contexts (e.g. arguments relating to causatives) can be of analytic value even though the assumptions about case underlying their original analysis may be discounted.

In view of the inherent indeterminacy of Agent and other so-called semantic case-labels, it may seem surprising that some linguists have persisted in the attempt to use them as analytic tools, and even to attribute to them a veneer of precision. It might seem more sensible to study combinations of their more primitive constituents directly, as possible determinants of grammatical consequence. It is difficult to interpret this failure as anything more notable than a lack of interest and a fixation with the structural characteristics of syntactic strings to the exclusion of systematic models of the interpretative process.

It is true that the constituent features referred to here are not always self-evidently "primitive" themselves when applied to a variety of linguistic contexts. Even something so apparently clear as sentence or awareness becomes semantically clouded in an age of self-correcting machinery and computers. Notions like control are sometimes both subtle and complex. The practice, however, of looking objectively for that feature or combination of features which best captures the generality of some grammatical behaviour is still far preferable to assuming an historic and uncertain meta-form like agent. For that matter, there is no principled reason to assume that a feature label can only be attached to an individual lexical item as opposed to constituent complexes of linguistic strings.

This paper pertains to a study of GRAMMATICAL AGENTS, and it will certainly examine some arguments that have been associated with that
notion. But in the analysis finally adopted, agent describes no precise feature or relationship, for any narrow definition would be quite arbitrary. It is taken as a general reference to those combinations of features in constituents which signal the initiation of action with actual or potential effect, which exert control (e.g. over instruments), which are "causers" ... and so on. The successful analysis of this general province, agency, turns upon the detailed interpretation of feature sets, each set essentially centering on a verb or preposition which defines possible feature assignments. It is the working out of such feature sets, and the constraints upon them, which offers promise of a real contribution to any theory of grammar.

Feature sets, taken individually, have much in common with statements of subcategorical and selectional restrictions found in many existing grammars. They differ:

(i) in specifying features in greater detail; and

(ii) in referring at times to features which characterize units larger than individual lexical items (e.g., complex NP's, VP's, etc.).

Furthermore, feature sets have the potential to interlock in ways that interpret well-formed strings of the language and exclude ungrammatical strings.

One consequence of such generative analysis is, of course, a claim to much greater explanatory power than the largely taxonomic exercise of assigning case labels. With an extended role in the grammar comes the need for more rigorous and explicit proofs of explanatory adequacy.

Because interpretative feature analysis tends to supplant the syntactic derivations of, say, transformational-generative grammar, much of the syntactic superstructure (e.g. various tree-structure conventions)
developed for such grammars may be superfluous in this approach.

Very extensive possibilities have been suggested here, well beyond the scope of a single paper. What follows is concerned with laying a groundwork by examining some assumptions underlying feature analysis.

FEATURES

Noam Chomsky once made the interesting proposal that the verb look, the adjective noisy and the noun hero, as they are found respectively in:

3. Look at the picture.
4. Don’t be noisy!
5. He’s being a hero.

...all incorporate some notion or feature of activity, in a way that, say, the verb know, the adjective tall and the noun person do not.

"It is quite possible [he went on] that the categories of noun, verb and adjective are the reflection of deeper feature structure, each being a combination of features of a more abstract sort...[although] to share this property does not imply that they belong to a super-category; (Chomsky, 1970:199).

Superficial criticism of his suggestion is not difficult. It is not self-evident, for example, that the activity-feature applying in each case is really comparable to those occurring in the other word classes. For that matter, has activity got anything to do with word classes at all? Where, for example, does the verb feel, the adjective stubborn and the noun Fred fit into this feature paradigm?

It seems likely that features of various kinds do indeed have a great deal to do with the notion of word-class, and as a direct consequence of this some new word classes might well be suggested.
However, those linguists who have dealt with features at any length have generally not asked the kinds of questions proposed here by Chomsky. They have been mostly concerned with those semantic abstractions holding within word classes, known as *case forms*, or between word classes, known as *case relationships*. The analysis of case has led inevitably to various kinds of feature analyses. It is a process that has often had little regard to criteria of explanatory adequacy in the sense adopted by generative grammars.³

In this section we will look at some of the ways in which features have been applied to *AGENT* (normally taken to be a case) and similar categories. The ultimate value of these proliferating feature labels will not be questioned too closely initially. However, competing interpretations of the labels will be considered.

A workable concept must have minimal defining features. It may also have dependent features whose presence implies the definitive core. The definitive core of *agent* has always been a noun which possesses certain inherent properties, such as *count*, *concrete*, *animate*, *sentient*, ...

But these alone remain insufficient to identify the noun as *agent*. The noun must also enter into a relationship with the verb and its complement. Most of these relational features are appended to the candidate-noun, although some are used to describe the agentive potential of the verb⁴ (e.g. *causative* or *active*).

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³ e.g. see N. Chomsky, “Descriptive and Explanatory Theories”, in *Syntactic Structures* (1965), p.30. (Note: This paper does not necessarily adopt Chomsky’s criteria for descriptive and explanatory adequacy.)

⁴ Sometimes called *Semantic Features*; see F. Chafe, 1970. Nilsen, however, takes these verb-based features to be inherent; i.e. 'lexical'.
Inherent Features

These play some part in distinguishing between Process and Instrument and Agent. In addition, relational features normally assume a particular cast of inherent feature-referents.

The Feature [+ human]

For the purposes of defining case, [+ human] is almost always subsumed into the broader class of animacy. While it can be safely assumed that the vast majority of agentive-type sentences in any natural language will involve human agents, case-grammarians have not felt justified in creating a case of human-agent. In some ways this is surprising since all natural languages are exceedingly anthropocentric, and many verbs - for example so-called psych-verbs, but also those entailing intent of any kind (e.g. murder) - are normally subcategorized to take a [+ human] subject exclusively. Anyhow, whatever it is that is central to agency, it is not the sole property of humans.

Most people would want to say that sentences 6. and 7. involve an agent.

6. a. I carried the child.
   b. I chastised the child.

   ACT PAT

7. a. The elephant carried the child.
   b. The elephant chastised the child.

   ACT PAT

The unacceptability of 7b. stems, probably, from its [- human] subject.

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5 Sometimes called Lexical Features; see D. Nilsen, 1972, p.19.
6 Sometimes called Case Features; see D. Nilsen, 1972.
7 It has been suggested though that all other uses of agency derive from an anthropomorphic extension of the human situation. See T. Givon, 1979, Chapter 8.
Whatever the case-label agent is supposed to explain about these sentences, the deviance of 7b. is evidently not included. The grammar, it seems, must take account of the feature [-human] independently of the case framework. If inherent features, and presumably other kinds of features also, are needed separately from case, it may become pertinent to question the value of more abstract super-categories, unless these are more than a mere collection of features.

The Feature [+animate]

Animacy is used extensively in the definition of agency and other cases. Fillmore (1968) refers to agents as "typically animate", and Nilson (1973:106) marks agents as [+animate] without question. Cruse (1973:16) quotes Lyons (1968) as asserting that the agent/non-agent distinction is relevant only for animate nouns. Cruse himself is more cautious. In a sentence such as:

8. What the wind did was blow the tree down.

he considers that /wind/ is "grammatically animate" and should be assigned "temporary agency"; (what is 'permanent' agency?).

Huddleston (1970:506) complains that animateness as a marker cuts across all sorts of other categories. He might have said the same about most inherent features; they find their origins, after all, in a perceptual rather than directly linguistic universe.

For Gruber (1970) an agentive verb is one whose subject refers to an animate object. This is a constraint which hardly anyone else considers, and it is difficult to see its value to the grammar.

A close look at animacy in the grammatical context suggests that it is a rather general referent for a more specific cluster of features,
the most significant of which would appear to be:

(i) dynamic\(^1\) (self-energizing) capacity,
(not unique to animacy);

(ii) stochastic (self-correcting) process,
(not unique to animacy);

(iii) volition (self-will); and

(iv) sentience (self-awareness).

Dynamic capacity is broadly implied by the notion of force, which is generally attributed a separate case status, yet it is clearly central as a feature to any discussion of agency. Stochastic process is not mentioned in the literature at all; volition and sentience are referred to but rarely discussed.

A linguistic difficulty with the cluster of animate features is that any or all of them may remain latent for the purposes of a particular interpretation, giving rise to ambiguity or vagueness. Thus an agent may or may not exercise, say, volition, but only an agent has the potential to exercise volition.\(^5\)

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\(^1\) Sometimes called potent; see W. Chafe (1970:109). As Chafe points out (p.118) the relevance of potency (and most other nominal attributes) turns on the verb with which it is associated. For Chafe, nouns marked by the verb as agents must be potent, other animate nominals may be. In any case, it remains pertinent that a folk-interpretative distinction is drawn between the potency which is indubitably part of consciousness itself, and the organism’s power to act on its external environment.

Cruse (1973) uses the term agentive itself as a relational feature, and adopts as its sole defining characteristic a self-energizing realization (as opposed to mere potential): "The feature [Agentive] is present in any sentence referring to an action performed by an object which is regarded as using its own energy in carrying out the action."

\(^5\) Cruse’s use of the feature agentive to denote dynamic realization rather than potential (footnote 8) only apparently evades this problem. What it gains in expressive clarity, it loses in generality in the grammar as a whole. Cruse’s approach implies that where an agentive relationship is lexically modified (e.g. by an adverb like almost) then it will cease to apply. If this is so then the whole exercise is of little more than taxonomic interest. There seems to be no allowance for the possibility that even an unrealized potential may have syntactic significance. Cruse himself (1973:13) uses the argument of lexical modification against Gruber.
In the sentence:

there is a degree of interpretative vagueness. Where the absence of
volition is explicit it can have structural consequences:

10. John cut himself (accidentally) and so did Bill (*deliberately).
A non-animate force can't be assigned even the potential for volition:

The reference to volition here - an attribute of some entity - implies,
of course, the exercise of intent which is kind of relationship between
the entity and some consequence, i.e. an anticipated act; (intent will be
discussed later).

All the potentials of animacy are neutralized in the complex
sentence:

12. The man was hurled through the plate glass window, breaking it.
For purposes of verb subcategorization /man/ is no more animate
here than a lump of rock. Why then should animacy be assigned as a case
feature in such instances? If the case implies some potential for
animacy it may be justified.

13. The frightened man was hurled...
PAT
[+ sentient]
but perhaps the more primitive marker [+ sentient] says everything that
is grammatically useful; (the relational properties of PATIENT are not
being discussed here).

In a sentence like:

14. The object swerved and flattened Timothy.
every constituent of "animacy" is, in some sense, assignable to /object/
although none may be appropriate for a given interpretation.
The object may have fallen off a hill-top or it may be *dynamic* (self-energizing); it may be unresponsive to its environment, or flattening Timothy may be a matter of optimal performance; (a *stochastic* operation, just as an automatic choke adjusts its fuel mixture); it may or may not have exercised disgresponse (*volition*) relative to Timothy; it may or may not have been possessed of that ineffable attribute we refer to as *sentience*. To assign a feature [+ animate] to /object/ in these circumstances will do little to clarify the interpretative possibilities. To deny it animacy and hence, by most definitions agency, will do nothing but create awkward exceptions to the case frame. Yet the presence or absence or latency of detailed semantic features will constrain modifiers, adjuncts and the discourse context of sentence 14; (or, to put it in another way, they will influence the so-called syntactic tests for agency). Sentence 12, in fact, illustrates that it is essential for any adequate grammar to have scope for not specifying certain kinds of features where vagueness is functional, as it is here. Again it seems necessary to ask if generalized grammatical patterns might not be extrapolated more precisely from detailed feature clusters than rather vague markings for case.

The properties just discussed are often felt to have more than a purely contingent relationship. Feature hierarchies of the kind:

*animate > human > sentient > volitional*

are fairly common and have a certain rough validity.10

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10 Note that this analysis is not directly concerned with the possible philosophical ordering of such concepts, or their genesis. Such a discussion might find firmer ground for some kind of hierarchy. The concern here is with the application of some analytic tools, as clearly delineated as possible, to the interpretation of a system of language. This is not to deny that the unconscious ordering of semantic categories by speakers often seems to betray a common folk-philosophy.
As the preceding examples show, however, they are not always a reliable guide to the interpretation of sentences and should be treated circumspectly by any grammar which claims to be rigorous.

If Agents are supposed to be animate in some sense, other cases like Instrument, Force and Material have been defined in terms of the feature [− animate]. Fillmore (1968:24), for example, states that Instrument must be inanimate. Nilsen (1973:46) is inconsistent but finally suggests that in the sentence:

15. Nixon used Agnew to promote his Vietnam policy.
Agnew is instrumental, and therefore that Instrument may be [± animate]. Nilsen’s difficulty stems partly from the fragmented nature of animacy which has just been discussed, and partly from the ambivalent role of the case label itself.

Force tends to be an even more eclectic notion than most case markers; sometimes it is subsumed grammatically as Instrument, (Starosta, 1978:491). But whatever its mutation, Force is marked as inanimate. Since Force clearly incorporates kinetic energy, its inanimacy must embrace some level of organization also implied by [+ animate]. Nilsen (1973:106) (but not Starosta) also sees Force as [- concrete], and this feature will now be analysed.

The Feature [+ concrete]

Concreteness seems to imply existential certainty, an object which is socially verifiable by more than one sensory system, a discrete and immutable thing. While it is easy to accept that features like [+ human] or [+ animate] may remain latent in a given interpretation, concreteness is supposed to divide the ‘real’ world from the abstract, the illogicality
of dreams from the remorseless cause and effect of 'actual' time-space.

Case grammarians are almost unanimous in assigning the feature [+ concrete]
to agency. For Nilsen (1973:127) at least, the relational phenomenon of
intent is not conceivable without a concrete agent.

It is therefore necessary to ask what kind of feature assignments
are appropriate in sentences like the following:

   ?INS/?ACT [- concrete]

17. Great ideas make history.
   ?ACT [- concrete]

18. God punishes evil-doers.
   ?ACT [- concrete]

To challenge the necessity of concreteness as a defining feature of
agency is to court an accusation of dabbling in metaphor. So what?
Metaphor of a certain kind may be the application of abstract tokens to
categories of “concrete” cause and effect. But the practice is so
pervasive that it fails to exert reliable constraints on the interpre-
tation of language, and that is what feature analysis (or case analysis)
should be about.

Concreteness as a feature of agency may at least have the virtue
of normalcy: most sentences with agentive-type verbs certainly have
congrate Subjects. Equally, the non-human Objects of verbs are unlikely
to be affected by other than concrete Instruments. But human Objects
with their abstract properties of mind are another matter. It is
difficult to deny the instrumentality of vanity in:

19. She used his vanity to destroy him.
   INS [- concrete]

Nevertheless, it has been customary to mark Instrument as [+ concrete],
frequently to distinguish it from a Manner case. An exception to this
practice was Gregory Lee (1967) who recognized four classes of phrasal abstract instrumentals:

Subject : 20. John amazed Mary by being tall.
Enabling : 22. John assassinated the president by being first in line.
Method : 23. John assassinated the president by stabbing him with a knife.

The value of Lee’s categories is not important here. What is evident is that anything which promotes an effect, whether ‘abstract’ or ‘concrete’, can be considered instrumental.

Force has also been considered distinct from Agent by virtue of concreteness. Nilsen (1973:106) offers the following contrastive set:

AGENT : [+ Intent] [+ Animate] [+ Concrete] [+ Count]
FORCE : [- Intent] [- Animate] [- Concrete] [- Count]

However notions of Force vary considerably and it is fairly clear that part of the confusion stems from assuming that some expression of concreteness is or is not germane to the case at all. For Huddleston (1970:503) in sentence 24:

24. The wind opened the door.

FORCE

The wind is almost certainly regarded as a concrete manifestation;
Nilsen would seem to regard it as the abstract (?) source of some event.

Since concreteness has proved quite as slippery as the other inherent features of nouns, great caution must be exercised in extrapolating from feature hierarchies of the kind:

CONCRETE > COUNT > ANIMATE (c.f. Nilsen, 1972:27)

Although popular, this hierarchy seems particularly unreliable. It embraces widely divergent concepts. To select a few common counterexamples: plankton is animate in many senses but a mass rather than count
noun in other senses. Mind is emphatically animate but, at least in
the folk philosophy of normal language use, it is not concrete. Ideas
and dreams are [+ count] but [- concrete]...

The Feature [+ Count]

The mass/count feature distinction is a good examples of a
semantic concept with an unusually reliable syntactic concordance:
namely the collocation of count nouns with the indefinite article.
Even this shows some indeterminancy at the semantic perimeter (...show
feeling/have a feeling; see a fire/fear fire).

Although [+ count] is typically included in any feature specification
of Agent (...or Instrument) its relevance certainly turns on the
inclusion or exclusion of other features: the various constituents
of animacy, concreteness, and so on. It is normal for agentive verbs
to take subjects that are [+ count], but there seems no principled
reason why this need be so. Elements like wind, water or fire which
are generally [- count] (...always for water), are assigned linguistically
causative roles that are largely indistinguishable from "typically animate
instigators of action...".

Mention has been made here of a few inherent features that are
almost always attributed to noun-agents as their most uncontroversial
constituents. A little probing has shown that their mutual interdependence
in hierarchies cannot be assumed, and that the categories of experience or
perception which they represent can often be fragmented even further,
sometimes with syntactic consequences. No compelling reason has emerged
to collect them under a single rubric of Agent except perhaps an
intuitive feeling that they cluster with a frequency that is statistically
informative.

There are, of course, countless groups of nouns (and other word
classes) sharing a feature or cluster of features that makes them approp-
riate or obligatory for some interpretative role. Nouns like day, month, year, hour, Christmas... to take a random example - share some inherent TIME-feature that renders them appropriate in certain phrases in a way that dog, idea and society are not. We are not concerned here with such inherent features unless they prove germane to the general province of agentive behaviour.

Before examining some of the more relevant relational features assigned to nouns it will be appropriate to consider (briefly at this stage) the linguistic 'operators' by means of which relationships are mediated.

Properties of Verbs

Verbs are pre-eminently, though by no means exclusively, the devices employed to delineate relationships in natural languages. Since these lexical tokens attempt to capture the dazzling complexity of human experience and cognition they are bound to be intricate, elusive and even contradictory in their application. At the same time they are known to generate patterns which are sufficiently stable to have both syntactic predictability and interpretative clarity for large numbers of users.

The sorting of verbs into classes depends very much on the purpose of the classification. Thus, it is common to classify verbs according to a model of syntactic behaviour: whether they take simplex or complex complements, whether they will passivize, and so on. A semantic rationale (e.g. stativity, causation, temporality...) may be adduced to account for the syntactic behaviour, sometimes without examining the constraints on the semantic classification itself.

This study is concerned with a general class of interpretative features, roughly called agentive, rather than a general class of syntactic
constructions. Just as certain syntactic constructions are more likely to be evident in the environment of these features, so certain verbs or types of verbs have much greater pertinence to the application of agentive-type features than others.

With this in mind some very general properties of verbs will be suggested. In many cases these properties are not mutually exclusive, but rather express possible foci of interpretation. Some verbs are primarily concerned with communicating action, others with location, others with emotion, and so on. That primary focus need not exclude secondary overtones or implications which can have an effect on possible collocations.

**Verbal Relationships and Properties Expressed Relative to Non-Linguistic Reality:**

**TABLE 'A': EXPERIENTIAL PROPERTIES**

<table>
<thead>
<tr>
<th>1. Emotion</th>
<th>2. Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Cognition (Passive/volitional anticipatory etc.)</td>
<td>4. Experience</td>
</tr>
</tbody>
</table>

**TABLE 'B': SPACE/TIME RELATIONSHIPS**

<table>
<thead>
<tr>
<th>5. Location - Change of...</th>
<th>6. a) Relative temporality of utterance to speaker; (i.e. tense and aspect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Transfer...</td>
<td>b) Relative temporality of subject-referent to predicate-referent</td>
</tr>
<tr>
<td></td>
<td>7. Cause and Effect - degrees of... - entailment of...</td>
</tr>
<tr>
<td></td>
<td>8. State or change of state</td>
</tr>
</tbody>
</table>
Experiential Properties (1, 2, 3, 4)

Of these categories, verbs of emotion will be of least interest to us. Although they are subcategorized to take subjects which have potentially agentive features (e.g. sentence), other germane features like intent and control are normally missing in the noun phrase. Furthermore, most emotional verbs either express a state (e.g. love) or an experience whose consequences are strictly private (e.g. enjoy).

Emotive verbs, like verbs of perception and many verbs of cognition are obviously experiential in some sense. It may still seem useful to have a general category for more neutral lexical items like feel (in its non-sensory meaning). What these verbs of experience all tend to have in common are matrix subjects which are patients, i.e. the recipients of some effect or consequence or sensation, even if this is generated within their own mind/body. Inevitably there are exceptions, even here:

25. He snarled at the tiger.

The ambience of snarl is distinctly emotional, but the subject NP is subcategorized for many agentive-type features. A whole subclass of "communicative verbs" are similarly emotive.

Patient-type features are the antithesis of what is implied by agency. Interestingly, most of these experiential verbs can participate in passive by-phrase structures (...often taken to be a hallmark of agentive verbs).

There is however a property of verbs of experience that can make them of interest to a study of agency. That is their explicit or implicit dependence on the sentient processes of their subject referent, which in turn can make them the matrices for embedding a vicarious statement about events or actions. In formal syntactic terms, they often take sentential complements. These embedded complements may be quite overtly agentive.
26. Fred {felt
thought} {Harry hit him in the chest}

AGT

[Ø note that feel is ambiguous here, but either meaning
serves our example.]

It then becomes pertinent to ask what kind of constraints, interpretative
and syntactic, the matrix verb exerts on the lower construction.

The other properties of verbal relationship (5,6,7,8) are not
delimited, as a class, to any environment involving a sentient being
(excepting, of course, the speaker). Paradoxically, they are also the
properties most inextricably linked to traditional notions of agency.

LOCATION

Location as a concept has received both very wide and very narrow
definitions for the purposes of individual models. Strictly locative
markers (in/at) are sometimes contrasted with directional markers (to/
from) as part of a more general characterization of static and dynamic
aspects respectively. For Anderson (1977) location is basic to a whole
system of case grammar. Jackendoff (1972) takes a much more restrictive
view, defining location in terms of another semantic function, BE, which
takes an individual (THEME) and a state (LOCATION). The discussion here
assumes a broader interpretation than that.

Location is normally associated with prepositions in English. It
is my view that while prepositions share certain formal syntactic properties
with verbs (notably a disposition to generate structure to the right), they
can only be interpreted consistently as relational operators within the
+ constraints of a matrix verb. (That is, a preposition like of, for example,
has different interpretative properties within the respective ambits of
approve and expect). While the locative interpretation of a verb may be
lexically generated by a preposition (the relationship is often symbiotic),

+ In a few instances, such as the head in a possess construction, or the def of
an abstract phrase, prepositions are purely syntactic items, wholly comparable
to the morphological affixes of inflected languages, and invariant in value.
it is sometimes incorporated directly into the verb itself; (e.g. compare reach/arrive at...). The interpretative dependencies of prepositions is a fascinating topic, but too extensive to tackle seriously here.

Location is relevant to agentive notions insofar as it establishes reference points for some change of state. It has to be said that arguments for agentive case forms or relationships often come unstuck when dealing with verbs whose essential focus is locative:

27. McGill picked up the rifle.
28. He went into the shop.
29. He reached the counter.

By most traditional accounts the subject NP in (25) would have to be an agent. The issue is a bit less clear in 28. (polition yes, but cause and effect?). With sentences like 29. even enthusiasts for case grammar are apt to argue.

So-called double-object verbs also have a locative focus: in this case the transfer of an object or concept from one owner to another. Where this act is consummated the normal conditions of agency are met:

30. J.B. gave Miriam a car.

Other anticipatory verbs in the same general class raise problems of relative temporality (see below) that make the assumption of "agency" much less certain:

31. J.B. promised/offered a car to Miriam.

The nature of the transfer-entity itself, and the transfer-goal, can have odd effects on the syntax:

32. a. Mayando gave Kym a kiss.
   b. *Mayando gave a kiss to Kym.
33. a. *Scrooge gave charity money.
    b. Scrooge gave money to charity.

I would expect a sophisticated analysis to attribute this behaviour to feature constraints that are manifestly not captured by case labels.

TEMPORALITY

Every verb must be interpreted with reference to one or several temporal dimensions, even if that interpretation is one of pan-temporality. This bears on analyses of agency where Agent implies an actor who has consummated some act rather than merely anticipated it; i.e. where some element of factivity is entailed or asserted.

Case grammars are generally vague about temporality. It is notable that most examples are couched in the simple past tense. Yet, in the threat:

34. I should break his face.

neither initiation of action nor an effect is manifest in a way comparable to the historical statement:

35. I broke his face.

A way out of this may be to talk of "formal potentials"; "formal" because it may be that in a sentence like 34 no intention of realizing the potential was ever contemplated. The value of such an exercise would turn on what it bought, linguistically, for the particular model in question.

Simple tense or aspect essentially expresses the temporal relationship of the sentence to the speaker. The relevance of this to agency may be a matter of definition. More central to the interpretability of the string itself (and that is our real interest) is the temporal perspective of the subject of the matrix verb relative to its (sentential) complement.
An agent (in any accepted sense) may act co-temporally to a consummated effect.

36. *Bogart slew the robin.*
   ACT (Co-T) PAT (+ af)

...or pre-temporally to a consummated effect.

37. *Bogart caused the robin to die.*
   ACT (Pre-T) PAT (+ at)

...but as a matter of cause and effect in this universe the agent cannot act post-temporally.

38. *Bogart will cause [the robin died]*
   (Po-T) (+ af)

This universal constraint on interpretation will prove to be significant in integrated feature analyses. It means, for example, that certain matrix-verbs with factive complements cannot have agentive-type subjects, although those subjects may be coreferential with an agentive subject NP in the lower sentence. Compare:

39. a. *I* (know
   realized) the door opened.
      (Po-T) (+ af) FACT

b. *You* (know
   I realized) I opened the door.
   (possibly co-ref with ACT) ACT (+ af) FACT

with:

40. *I* (forced
    made) the door open.
   ACT (Co-T) PAT (af) "FACT"

(Note that the presumption of FACT is objectively established where the matrix subject is not agent but only contingent where the matrix subject is agent.)
CAUSATION

This is a large topic which will be dealt with only in a preliminary manner here. As Shibanti (1975) has pointed out, there are ways of expressing causation in every natural language; it is a concept whose representation in language may reveal much about the processes of human cognition. There would seem, therefore, to be good reasons for distinguishing verbs which have causative properties from those which do not. Nor is it surprising that almost every extant definition of agency contains some reference to causation.

Like all other semantic categories, however, *cause* fragments in a dozen directions when fitted to the template of actual lexical interpretations. It is used in many different ways for different purposes by linguists, who, superficially, appear to be talking about the same thing. The more careful of them delimit the application of *cause* with apparent precision. Shibanti (1975:2) is worth quoting at length in this respect:

"The term *causative form/verb* refers to a form that expresses a situation with the following characteristics. The situation consists of two phases, the causing and the caused phase, that are brought into a causal relation. The causing phase usually involves an activity, and the caused phase either another activity or a change of state. What is considered the causing phase and what is considered the caused phase are in causal relation if the following two conditions exist. First, the realization of the latter is assumed by the speaker to have taken place; and second, the occurrence of the latter is wholly dependent upon the occurrence of the former, and therefore the
situation allows one to entertain the counterfactual inference that if the former had failed to take place, the latter would not have taken place. The sentence I told John to go does not express a causative situation, since the sentence does not commit me to the assumption that John's going has taken place. Similarly, the sentence I regret that John went is not a causative sentence because, though the sentence commits me to the assumption that John's going took place, the occurrence of the event expressed by John went is not dependent in any way on my regretting that John went.

I use the term phase rather than event because the latter term will be used to refer to a linguistically incarnated entity. The terms causing phase and caused phase refer to abstract semantic entities, while causing event and caused event refer to what is associated with real linguistic forms. For example, in the sentence John's giving them poison caused the rats to die, both the causing and caused phase are associated with linguistic forms, namely John's giving them poison and the rats to die. In this case, we can talk about the expression in terms of the causing and the caused phase as well as the causing and the caused event. However, with respect to the sentence John killed the rats, we can only talk about the expression in terms of the causing and the caused event, since the expression does not have independent linguistic forms for the causing and the caused phase.

It is the intention of Shibanti to show that the kinds of verbs he has described behave as a class in ways that are syntactically distinctive. His argument goes on to identify two classes of causatives, "lexical" and "productive", whose various complements show regular interpretative
differences. *Stand (up)* would be a lexical causative; make *stand* a productive causative:

41. John made Mary stand up with a cane.

42. John stood Mary up with a cane. (c.f. Shibatani, 1975:14)

The ambiguity of adverbial interpretation in 41 is said to be a direct and unique consequence of productive causation. A difficulty with this sort of argument (which Shibanti fails to detect) is that non-causative matrix verbs can generate a similar kind of ambiguity.

43. John saw Mary stand up with the binoculars.

44. John saw Mary stand up with difficulty.

The ambiguities of 41 and 43 may be accounted for in an integrated feature analysis. The important point for us here is that in spite of an apparently careful definition, Shibanti has failed to show that the class of verbs described has any distinctive syntactic or interpretative properties.

A closer look at Shibanti’s definition shows that he has made many loose or unsupported assumptions about detailed properties of causative verbs. There is, for example, the problem of temporality. The counterfactual inference that if the causing phase had failed to take place, then the caused phase would not have occurred, depends upon the tensing and aspectual modification of the matrix verb. In sentence 41, the entailment that Mary stood up cannot be sustained with a modified matrix verb:

44. (John will make) Mary stand up with a cane.

Is it to be taken that make is a causative verb only in the simple-past form with no modal modification? If this is the case then

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11 This is not a personal criticism of Shibanti, whose analyses are unusually lucid and helpful. The intention is to show the limitations of a certain kind of methodology.
no special syntactic argument can be developed for the "causative" form: sentence 44 is as ambiguous as sentence 41.

Whereas verbs like take and forces are unequivocal (in a suitable temporal context) about the absolute dependence of the "caused" phase on the "causing" phase, there are other verbs that denote only a partial contribution to some outcome: help, let, contribute (crucially?) to... In fact some verbs may indicate a very small or ambivalent contribution by a "causing" phase: influence, affect, taint, impinge... and so on. At what point does a verb cease to be "causative"?

It begins to look as if marking a verb causative is not much more informative than marking a noun agentive. Yet all of these verbs share some class-uniform property of establishing a contributory effect, or potential effect, by the subject referent on the complement referent. In this they differ from verbs like see, hear or think. And this effect-relationship has always been central to notions of agency. Does this mean that all verbs predicing an effect are causative? No, not in technical usage. In the sentence:

48. Shirley fears the dark.
Shirley's experience or feeling of fear is "caused" by the dark, but conventionally verbs like fear are not said to be causative. Causative verbs develop a linear relationship of [causer + Verb + caused]. That relationship is often "agentive", but when the caused element is some animate-based event it may be precipitated by almost anything:

46. The blue of her eyes made him remember that afternoon twenty years before.
or 47. The sight of the mushroom cloud caused him to dive frenetically for cover.

Agentive verbs, then, are conventionally a sub-class of causative
verbs\(^{12}\): that sub-class whose causes are, say, volitional and whose caused effect is verifiable in some objective way, rather than merely psychological.

Finally, the suggestion that there is "a class of causative verbs" (or "agentive verbs") as such must itself be examined. Perhaps more than any other kind of word class, verbs are creatures of the environments in which they are emerged. A typical linguistic solution to interpretative variability is to postulate homonyms.

48. She made a cake.

49. He made a good servant.

In sentence 48 /made/ is said to be a causative verb, but the /made/ in sentence 49 is recognised as a different lexical item altogether. The decision to postulate a homonym is not always easy, and may be swayed by the analytic emphasis of a particular model. At some point the increment of features subcategorized for collocable items may diverge sufficiently to suggest that two verbs are being surveyed. This is the ultimate consequence of metaphor.

An alternative to completely relabelling the verb is to reinterp\- et certain of its constituent properties on the basis of some predict- able variation. This latter approach has motivated the suggestion that there is a class of ergative verbs in English - (c.f. Lyons, 1968:359).

50. Lou panicked.

PAT

51. Lou panicked the buffaloes.

ACT    PAT

\(^{12}\) Some linguists (e.g. Nilsen 1972) see causative verbs themselves as a sub-class of the class of verbs which have a source and a goal. On this basis they are able to establish feature hierarchies.
52. The stone moved.
   PAT

53. Helen moved the stone.
   ACT   PAT

If patient is roughly taken to denote the item undergoing the action or influence of the verb it can be seen that its assignment varies regularly with transitivity. Furthermore the transitive permutation always appears to have a causative meaning, broadly interpreted. The inference of agency is more problematic: almost anything could have "panicked the buffaloes", including an imitation of mortality.\(^{13}\) Lyons' (1968) argument that "transitivity is bound up with the distinction between animate and inanimate nominals..." can't really be sustained in this context. But there is a rationale here for recognizing a limited class of verbs that are causative in a defined environment.

There is scope for recognizing other sets of verbs that have causative properties. One frequently mentioned type (c.f. Lyons, 1968:360) are those morphologically related to intransitive "adjectival" verbs: enrich (rich), soften (soft), strengthen (strong), actualize (actual), etc. This morphological process is much more productive in some other languages (e.g. Turkish) than English.

All these sets of causative verbs – whether they are analyzed as invariently causative or only contingently so – will be interesting as a group if and when it can be established that they, or the sub-set of agentive verbs, have properties which are grammatically unique and important. Shibanti attempted, and we have suggested, failed, to find

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\(^{13}\) There are other problems with this kind of "ergative" analysis. In languages where ergativity is a formally recognized element of the syntax, its application has been observed to differ markedly with the salience of certain semantic features (e.g. tense/aspect). Thus Comrie and Nedjalkov noticed a decrease in ergativity in the Chukchee past tense/perfective aspect. [For list of examples see F. Flank (ed), 1979, Ergativity, p.26]. We have already noted in this study that notions of causation and agency are similarly sensitive to shifts in tense/aspect.
interesting correlations with the syntax. But there is a lot more to be said on the topic yet.

STATE

Scientific philosophies, like religions, tend to be working hypotheses about a larger order of things, and linguists (along with the rest of humanity) are apt to pick an off-the-shelf model which seems reasonable so they can get on with the finer details of living with a minimum of fuss. A difficulty with unexamined assumptions however (unlike factory made clothes) is that they assume a form which is idiosyncratic to their user: the concept-labels may have wide currency but their substance fluctuates wildly. Nowhere is this more evident than in the notions of STATE and CHANGE of STATE. This study is not able to offer a definitive definition of state (I'm as idiosyncratic as everyone else) but no survey of agency can avoid coming to terms with interpretations of stativity in the literature.

The term STATE in linguistics has been used:

- as an existential concept with linguistic consequences,
- as a label for various semantic and/or syntactic functions,
- as a condition identified by certain syntactic forms,

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14 Givon's (1979) arguments from perception (outline below, p.34) are a good example of state justified as an existential concept.

15 Chafe (1970) uses state as a "selectional unit" to control the collocability of "patient-nouns"; (see p.37 below).

16 Givon (1974:4) talks about "Stative Predicates" like Mary lose her balance. The defining feature in this particular instance seems to be that "the subject...has no control over the process in which he/she is involved". For me some change of state is implicit in Givon's example, but he uses the stative label in that article consistently within his definition.
grammatical agency

(c) thorold may 1984

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-as a condition descriptive of certain lexical forms,
or even word classes.\footnote{17}

Accordingly, the descriptive label, change of state, which has
a defining status in all discussions of agency and causation, is
hopelessly inexplicit about what might actually be "changing".

Givon (1979:346) makes an attempt to anchor language to the
perceptual dependencies of the universe we construct. Perceptual
discrimination is a time-based phenomenon: "...A recurring experience
eventually loses its perceptual saliency, while a new, surprising
experience has a higher perceptual saliency... Thus the sense data
confronting the organism in its new ("moved-ward") environment as
it moves onward are judged to be more frequent [than in the 'old'
location] only because they have a higher perceptual saliency".

Since the movement which generates changes in perceptual salience
is typically caused by a volitional agent, agency is seen by Givon to
have deeply affected the structure of language, or at least its logical
form, through the coding of 'new' and 'old' information (perceptions).

If our synchronic perceptual discriminations are structured in
the three spatial dimensions, then discriminations centred on the time
axis must take account of a prior spatial condition (state) and a
subsequent condition, or the stability of that initial state. It is
fairly common to ascribe word classes various roles in forms of this
equation.

\footnote{17} 'Know' is said to be a stative verb. Adjectives are often considered
to be stative in the sense that they (usually) describe a condition
rather than delineate a process. See also the characterization by
Quirk (quoted p.36, below) of nouns and adjectives as 'stative'.
"The noun universe of languages", suggests Givon (1979:321), "at its core, codes 'more concrete' entities, that is, those which exist in space and time." Givon recognizes though that "...the number of points in time that must elapse before an entity may be judged 'stable'...may vary enormously from one context to another."

"On the other side of the lexical continuum, we find verbs, which most commonly map actions or events. That is, they most commonly map entities that are 'less concrete' than nouns, that have most typically only existence in time."

"...Adjectives have a reduced or aborted tense-aspect morphology, as compared to verbs...Dixon (1972) has noted that the most likely qualities to be lexicalized as adjectives are the more stable, permanent qualities, such as length, width, gender, colour, texture, etc. ...Less durable qualities such as hot-cold, broken, angry, happy, sad, undressed, etc. [may] be expressed as verbs."

Other scholars have also assumed the role assignment of word classes into stative-types, although usually without Givon's ontological argument. Thus Quirk and Greenbaum (1973:21) propose the following paradigm:

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18 This discussion, in fact, reaches back to medieval grammarians and beyond. In the 14th Century the Modistae borrowed from the metaphysics of their time, conceiving of the world as comprising two primary elements, that of permanence and that of becoming (habitus and fieri). The partes orationis which express permanence and stability are the nomin and pronomen, while the verbum and participium express the concept of becoming. However, Bursill-Hall warns that for the Modistae this was largely a terminological distinction (...just as modern linguists borrow their metaphors from contemporary science) and not to be confused with reality. I suspect that such metaphors are our reality, in every age. (See Bursill-Hall, G.L. Speculative Grammars of the Middle Ages, p.39, 1971).
There are (at least) two kinds of evaluation, that can be applied to the labelling of word classes in this manner:

(a) How usefully or comprehensively does it delineate all of the items in the lexicon?

(b) What does it finally explain about the interpretation or structuring of grammatical strings and constraints thereof?

A brief response to those questions might be not very well and not very much, but we will be in a better position to judge this after more detailed analysis. What can be said immediately is that perceptual discrimination (that pertaining to space and time), although it permeates language, has long been supplemented in the lexicon by a galaxy of cognitive and experential distinctions that are linked to 'state' or 'change of state' (if at all) only by analogy, custom, or contingent association. The language in which this paper is written, for example, has little intrinsic relationship to space-time, hence 'state'.

One of the difficulties with the concept of STATE lies in establishing its level of abstraction in a particular analysis. Given used concreteness as a measure of stativity, yet I have not seen it suggested that the feature [+ concrete] may be substituted by the feature [+ stative] : [stative], as we know, is a feature attached to verbs (or adjectives) characterizing their effect on the behaviour of a noun. Nor does a change of state (normally) imply a change in concreteness (although this is a complex notion itself). There is severe conceptual confusion here (of the order of dividing apples by
bananas). An attempt could be made to resolve these difficulties by assigning state, event, action, etc. the status of meta-features which characterize not individual lexical items but interpretative strings in the grammar. However this is the subject for a subsequent, more analytic article.

Menzel (1975:57) seemed to sense some of the confusion surrounding state when he contrasted it with the notion of property. A state, he suggested, is not part of an entity, is of short or uncertain duration, and need not have an entity reference (e.g. It's hot). A property, on the other hand, is necessarily part of an entity, is a-temporal, and is expressed by adjectives and generic sentences.

Chafe (1970) made extensive use of state as a "selectional unit", along with process, action and ambient. The role of a selectional unit in Chafe's model is to characterize the collocability of nouns (as agents, patients, etc.) with their matrix verbs (which carry the selectional unit). States and processes are accompanied by patients, actions by agents. A verb can simultaneously be marked, say, process selecting a patient-noun, and action, selecting an agent-noun (e.g. 54. Michael dried the wood). The unit state, however, restricts a verb to selecting a patient-noun (e.g. 55. The wood is dry), or expressing an ambient state (e.g. 56. It's hot). (Examples from Chafe 1970:104).

Note that adjectives for Chafe are "root verbs" for which the copula merely carries tense and aspect.

The kind of analysis proposed by Chafe has a certain descriptive appeal with fairly concrete and uncomplicated language. The idea of semantic (i.e. interpretative) selectional units is probably sound. But the difficulty, as always, comes with the analyzability of the categories themselves. Chafe is only explicit in this regard to the
extent of "paraphrase tests". States are distinguished from non-states by the fact that the latter answer the questions "what happened?", "what is happening?"...etc. Process involves a relation between patient-noun and a state by expressing "what happened to N". But action (i.e. involving an agent) has "...nothing to do with state or change of state"; action expresses "what N did". Apart from the pertinent question of what such test-labelling buys for a model of grammar, we run into immediate difficulty when it is applied to language that is a little abstract:

57. The unit, state, restricts a verb.

58. The term incorporates a notion of change.

59. The concept is confused.

60. Linguists confuse this concept.

Chafe's paraphrase questions may only be applied to sentences of this kind by a process of metaphor or analogy with a success that
is sometimes more, sometimes less tenuous. Our ability to recognize
the metaphor is scarcely a matter of linguistic universals; rather
it relates to cultural conditioning. The content of sentences 57, 58,
59, 60 is essentially a-temporal (though it can be given a temporal
context). Although we map this world of cognitive abstractions with
familiar names, the incontrovertible logic of space/time and "causation"
is likely to betray us. In sentence 60, for example, it is not
(necessarily) the concept which is confused, but the linguists who use
it.

The particular limits of models constructed by Chafe, Givon
and others are not terribly important. What is significant is that
their categories all make some claim to universality by exploiting a
uniformity of biological process (notably perception) and space-time
constructs. It is certainly easy to exemplify such universal categories.
My reservation is that, although they may be adapted by analogy to even abstract
situations, they go nowhere near determining (in any useful generative
sense) the interpretive-grammatical range of all languages, or of a
single language. The limits of category interpretation cannot be
dissolved, of course, by even the most detailed feature analysis. We
can only hope to render the generalizations less gross, and the model
more adaptable.

Notions of state have been discussed in some detail because
they represent the base-line for what volitional, or otherwise agentive
behaviour, is supposed change. The actual number of verbs which preclude
a modality of change, which are resolutely 'stative', turns out to be
very small. Stative verbs have been restrictively defined as those
verbs not taking the progressive aspect; (see Quirk, 1973:15; Lakoff,
1970, et al.). The verb invariably quoted in this respect is know, and
the list usually stops there. In any case the avoidance of progressives is not limited to state verbs, but is also characteristic of "achievement" verbs like find (J. Anderson, 1977:28, who cites Mellema, 1974 and Vendler, 1957).

61. Judy found a gem and Horace did so too.
62. Judy is finding a gem.

Another test of stative verbs has been their supposed inability to collocate with manner adjuncts (e.g. Quirk, 1973:220). Unfortunately manner itself is not a unified concept. To the extent that it ascribes overt action to its referent, stativity is denied. Such adjuncts may best be seen as clarifying the status of sentences in particular instances rather than controlling the subcategorization of any useful class of verbs.

63. He owns it ("skillfully").

Quirk uses skillfully to illustrate the stativity of own, yet the manner adverb reluctantly is a possible (if awkward) adjunct which gives a less stative caste to the verb. Even know shifts its meaning subtly in the company of adverbials like consciously or indifferently.

Perhaps the most useful thing to establish is that state is a meta-concept independent of any lexical set. The evidence so far suggests this, and all other examples of "stative verbs" in the literature seem to confirm it. Thus the set, weigh, cost, measure (Chafe 1970:157) may be stative in one context,

64. The loaf weighed 340 grams.

but active\textsuperscript{19} in another.

\textsuperscript{19} This 'active' characterization depends upon the model however. Thus Nilsen suggests that the object-noun with these verbs undergoes "no change of state"; (see Nilsen, D., 1973:149).
63. Janice weighed the loaf.
The same is true of like, know, understand, etc., especially as they are modified in complex verb phrases (...getting to like, ...coming to know). If, as Chafe suggests, adjectives and prepositions are "root verbs" whose tense and aspect are carried by BE, then surely BE plus COME can modify their stative condition. Note also that the subjective nature of these adjectival "states" is acknowledged by a whole range of sensory verbs:

\[
\begin{align*}
& \text{look} \\
& \text{feel} \ \{\text{hot...etc.} \}\\
& \text{taste} \\
& \text{seem}
\end{align*}
\]

Finally, it is informative to assemble the various kinds of verbs and "quasi-verbs" that have been marked stative in some context, just to see what they have in common semantically (See Table 'C', p.42). It is a motley collection. A little reflection should also show that there is not much evidence to sustain these items as a syntactic class. It seems that state, far from being a precise defining primitive in the grammar, is a rather generalized descriptive label used in the struggle to distinguish past from present, red from blue, here from there, and A from B.

Those meta-concepts, action and event, which mark a transition of states (and are therefore important to a study of agency) have most complex syntactic consequences and will be reserved for another analysis. The next step in laying the groundwork for our interpretative grammar is to make explicit the relational features, the interpretative links, between verb-tokens and referents which they bind.
**TABLE 'C'**

<table>
<thead>
<tr>
<th></th>
<th>Ambient</th>
<th>Specific</th>
<th>Subjective</th>
<th>Objective</th>
<th>Durative</th>
<th>Sentient Patient</th>
<th>Volitional Source</th>
<th>Potent Source</th>
<th>Locative Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE + hot</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>?</td>
<td>?</td>
<td>-</td>
</tr>
<tr>
<td>BE + on</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>?</td>
<td>?</td>
<td>+</td>
</tr>
<tr>
<td>like</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>know</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>1</td>
<td>+</td>
<td>(-)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(?) remain</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>+/-</td>
</tr>
<tr>
<td>feel</td>
<td>-</td>
<td>+</td>
<td>(+)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>weigh</td>
<td>-</td>
<td>+</td>
<td>(-)</td>
<td>+</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>own</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>-</td>
<td>+/-</td>
<td>-</td>
</tr>
</tbody>
</table>

**ENTITIES AND RELATIONSHIPS**

It has just been argued that *state* in natural languages, is not easily designated by a consistent set of other labels ("..."duration" perhaps, but duration of what in what universe?...). Rather it is a sort of holding category, a foothold in the mind sometimes as arbitrary as an X in algebra.

With a little use these footholds are apt to acquire names and become "entities"? Our brains have quite definite predispositions in this respect. We take cognizance of adjacent perceived angles to construct
three-dimensional sets. On the other hand we do not associate
temperature differentials in any continuous and coherent manner.
Certain types of film are able to do this, translating into "visible"
contours a dimension which is only crudely visible to our senses.
For other creatures "entities" might well be defined by temperature
differentials: it would be a universe with very different constants,
signifiers and relationships.

Entities are assumed by the conventions and signs of natural
languages, just as they are assumed by the rules and institutions
of human societies. Anthropologists, like Claude Levi-Strauss (draw-
ing inspiration from the semiotist, Barthès) have sought universal
patterns by violating the unity of labelled cultural entities (with
their implicit antitheses) and proposing that they are ultimately
defined (i.e. 'explained') as bundles of relationships - relationships
with internal combinatorial possibilities and a predictable scope of
signification. [The reader is referred particularly to the analyses
by Levi-Strauss and his disciples of various myth cycles]²⁸.

In this conceptual merry-go-round of entities and relationships
man himself is the final arbiter, the measure of all things. Thus
"relationships" are not arbitrary, but are statements of conceptual
and perceptual salience, and are characterized by certain selective
patterns. Such patterns are pre-eminently the business of semiotics,
but they have a strong bearing on the epistemology of linguistics.
When a linguistic model uses relational features, it makes sense to
ask what the favoured relational concepts themselves have in common.

²⁸ A large body of literature exists on this topic. A starting point
"Agents" in English are most typically represented by certain nouns in the subject position of transitive sentences; ("by-passive agents" are also recognized, but 90% of all passive sentences lack a by-phrase, and most of the rest have an indefinite by-phrase (refer: Givon, 1979). These subject NPs can be characterized by a variety of relationships. A few such relationships will be used here to illustrate some underlying general properties of the class of relational features.

Optionality

In the string:

66. \( N^1 \) exploited \( N^2 \)

\( N^1 \) must have those inherent properties normally associated with humans (sentience, volition, potency, etc.), either directly or via the analogy of a social abstraction (e.g. a company, a 'system', a group.). \( N^1 \) must also exhibit certain relational behaviour (features) in the specific environment of the predicate, \( VN^2 \). It is possible to make this behaviour explicit in the sentence:

67. \( N^1 \) exploited \( N^2 \) *but I think he did nothing.*

Sentence 67 shows that \( N^1 \) actively engaged \( N^2 \). \( N^1 \) is [+active].

68. \( N^1 \) exploited \( N^2 \) *accidentally.*

Sentence 68 shows that the action of \( N^1 \) is [+intent].

69. \( N^1 \) exploited \( N^2 \) *without effect of any kind (on \( N^2 \)).*

Sentence 69 shows that \( N^1 \)’s action must be effective. \( N^1 \) is [+effective].

\(^{21}\) Not to be confused with Cruse’s use of this term; (Cruse, 1973:19). Effective for Cruse refers to something which is not self-energizing but exerts a force by virtue of its position, motion etc. For this I employ the term Force itself.
70. \( N^1 \) exploited \( N^2 \) through a hired agent.
Sentence 70 shows that \( N^1 \) may be remote from the action of the verb. \( N^1 \) is \([\text{immediate}]\).

71. \( N^1 \) exploited \( N^2 \) at \( Y \)'s behest.

72. \( Y \) made \( N^1 \) exploit \( N^2 \).
Sentence 71 shows that the ultimate instigation of, or initiative for the action may not rest with \( N^1 \). Sentence 72 shows that \( N^1 \) may surrender at least some measure of control over his action. Elements of instigation, initiative and control can always be attributed to a secondary source. The problem is then to decide if this source is the true "agent", but that question may turn out to be grammatically irrelevant anyway. Certainly these features play no part in differentiating the verbs to be discussed now.

Three of the relational features identified are obligatorily associated with exploit, and all three are recognized constituents of agency. But the mix of the optional, as opposed to the obligatory realization of features may vary substantially among "agentive" verbs, and has a strong bearing on their interpretation.

\* TABLE 'D'

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline
FEATURE on \( N^1 \) & exploit & murder & break & cause & vilify & enrage & INTRANSITIVE \\
\hline
+active & + & + & + & + & + & + & + \\
+intent & + & + & + & + & + & + & + \\
+effective & + & + & + & + & + & + & + \\
+immediate & + & + & + & + & + & + & + \\
+absolute control & + & + & + & + & + & + & + \\
\hline
\end{tabular}

shave | shout
\hline
+ | + \\
+ | + \\
+ | + \\
+ | + \\
+ | + \\
\hline
The [+] marking signals an ambiguity of interpretation which is generally resolved by some adjunctive phrase or the non-linguistic context. *Murder* exhibits very little ambiguity in this respect; the other verbs show a variety of optional combinations. [+active] is the most characteristic feature, but fails of course to distinguish these verbs from others identifying N₁ as a mere "force" - a distinction with a variety of grammatical consequences. It may be, in fact, that even the small differences in relational feature patterning observed here will have a bearing on the way the verbs behave in nominalized structures, embed, accept complex complements and so on.

A general comment on the actual choice of features may be pertinent here. Most analyses of Agency that take cognizance of features propose that certain features be excluded from any definition of the notion in a fairly prescriptive manner. This is somewhat different from merely disregarding a feature because it appears to contribute nothing to the analysis; rather, the offending feature is felt to violate the regularity of some putative model. Thus Starosta (1978:476) cites such a proscription with approval: "...Pleines (1976) ...has demonstrated very clearly that intention cannot be part of the definition of agent in a case grammar." Starosta himself excludes *immediacy* (his "agent" being a "non-immediate perceived causer of the action"), although his concept of immediacy is not very explicit. This practice of excluding elements of interpretation to suit the conventions of some abstraction seems counterexplanatory. Where certain features are set aside in this study it will be purely for the reason (one hopes) that they have nothing obvious to contribute to a particular set of problems.
Objective and Subjective Evaluation

The relational feature [+effective] identifies an association of N¹ with its predicate which is publicly verifiable, and which might colloquially be called "causative" (since ordinary speakers don't debate the philosophical niceties of causation). This immediately limits the number of verbs with which [+effective] may collocate. For example, N¹ cannot carry this feature in the environments of understand, think, want, etc.

Superficially, [+active] might seem to be limited to a similar objective evaluation. The sentence:

73. The moon rose.

is likely to be understood purely as a matter of public observation. Whatever its origins, however, contemporary culture accepts that "activity" may also be organism-internal:

74. What did he do?
   He thought hard.

Thus any verb which implies the activation of a volitional potential may be [+active]. Think can be [+active]; understand cannot.

The feature [+active] then has two possible sources: (i) an objectively verified change in N¹'s condition (a "change of state"), or (ii) a subjectively assumed actuation of N¹'s volitional potential.

The codified nature of analogous interpretation in English (and probably in all languages) means that many verbs can freely classify N¹ for both sense (i) or sense (ii) of "active". Note, however, that the nouns, act, action and actor are still generally restricted to sense (i).
The potential for "subjective activity" can lead to ambiguity or vagueness of interpretation. In

75. Alouette wished for better luck.

we are left unsure whether the wish is something actively prayed for, or merely a vague emotional condition. This can be clarified in actual speech if it is important of course, but it may emerge that there are also more formal and interesting linguistic consequences in complex structures.

[+Intent] is a feature whose presence really expresses a private conclusion of the speaker about some state of affairs, i.e., it is subjective. Perhaps because private and public realities are a perpetual source of contention in our culture, the presence of intent is a rich source of lexical differentiation in English. A large set of verbs implicitly convey unequivocal intent, while an almost parallel set merely assigns a probability or leaves the question open:

**TABLE 'E'**

<table>
<thead>
<tr>
<th>+ intent</th>
<th>exploit</th>
<th>murder</th>
<th>vandalize</th>
<th>?smash</th>
<th>force</th>
<th>etc.</th>
<th>vilify</th>
<th>bait</th>
<th>shave</th>
<th>shout</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ intent</td>
<td>use</td>
<td>kill</td>
<td>break</td>
<td>cause</td>
<td>?criticize</td>
<td>enrage</td>
<td>cut</td>
<td>temp</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The inference of intent is predicated upon the inherent capacity of N to exercise volition (will). As with [active] in its subjective sense, this excludes collocation with certain psych-verbs (understand, know) and leads to some ambivalence in the interpretation of others; e.g.:

76. **Think damn you!**

There is also a small class of sensory verbs which is differentiated purely on the basis of [intent] and "subjective action": 

---

52
TABLE 'F'

<table>
<thead>
<tr>
<th>+intent</th>
<th>look, watch</th>
<th>listen</th>
</tr>
</thead>
<tbody>
<tr>
<td>-intent</td>
<td>see</td>
<td>hear</td>
</tr>
</tbody>
</table>

It is worth emphasizing that the features [intent] and [active] are not coextensive. Although [intent] presupposes a volitional potential in $N^1$ it is not co-temporal with the activation of that potential. Rather, action may presuppose intent, and this is what is meant when the feature [+intent] is assigned to $N^1$ in the environment of murder. Similarly [intent] anticipates the "subjective action" in look or listen. [Intent] is often found in compound verbs, qualifying the likelihood of action:

TABLE 'G'

<table>
<thead>
<tr>
<th>plan to</th>
<th>leave</th>
</tr>
</thead>
<tbody>
<tr>
<td>expect to</td>
<td>leave</td>
</tr>
<tr>
<td>anticipate</td>
<td>leaving</td>
</tr>
<tr>
<td>[+ intent]</td>
<td>[+ intent]</td>
</tr>
<tr>
<td>[- active]</td>
<td>[+ active]</td>
</tr>
</tbody>
</table>

[Control], like [intent], is a feature whose evaluation is ultimately subjective, but unlike [intent] it does not generate a significant lexicon of minimally differentiated verbs. Also like intent, it is predicated upon $N^1$'s inherent capacity for volition. The neutralization of volition by a verb (sometimes a higher verb in
complex sentences) which deprives N¹ (or N²) of control in certain situations becomes important in so-called causative constructions. The sometimes elusive behaviour of these causative constructions can often be traced to the subjective nature of control.

\[ N^1 \xrightarrow{V} N^2 \xrightarrow{N^3} \]

77. I introduced Martha to Juan.
78. I endeared Martha to Juan. by (accidentally)
79. I estranged Martha from Juan. revealing her love
80. I infuriated Martha with Juan. of porcupines.

Thus it is our uncertainty about assigning the shifting balance of control in "causative" sentences 77 - 80 that makes them progressively more difficult to interpret.

[Initiator] and [Instigator] are feature labels often found in the literature, but it seems likely that those elements of their meaning which are linguistically useful are captured by other features. Designating something as an ultimate "source" of some action is either an arbitrary or a subjective decision (which is why the Law is an art and not a science), and although it may be possible to achieve some consistency within the conventions of linguistic strings, this has not yet been shown to have useful consequences for the grammar.

**Transitivity**

The subjective/objective evaluation typology contained [+effective] as an objective measure and [+intent] as a subjective measure; [+active] was shown to operate with a degree of overlap in both classifications.

Objectivity does not seem to be linguistically germane to the relational feature [+immediate] at all. [+Immediate] is shorthand for a
convention which says that the relationship between referent A (say, \(N^1\)) and referent B (say, \(N^2\)) may not be mediated by any other referent of the same status. Thus it cannot be said that \(N^1\) murders \(N^2\) through the agency of \(N^3\), although the murder may be committed with the instrument, \(N^4\) (a referent of different status).

What is inseparable from [+immediate] is a second referent, \(N^2\), in the string (although reflexive verbs might be said to leave \(N^2\) "understood"). The appropriate relationship largely corresponds to syntactic transitivity, but not absolutely. Thus a number of verb + preposition compounds carry a strong inference of immediacy.

81. \(N^1\) spoke to \(N^2\) ... is [+immediate].
82. \(N^1\) communicated with \(N^2\) ... is [+immediate].

In general, transitive contact verbs (hit, run, break, kiss, kill) are all [+immediate]. There is always scope for denying the immediacy of a selected referent by qualifying such actions in an embedded structure:

83. \(N^1\) had \(N^2\) kill \(N^5\).

Transitive verbs of a psychological or emotive character also normally have the property of immediate relationship with \(N^2\). Thus:

84. \(N^2\) believes/likes/fears/knows \(N^2\).

There are other verbs in the language, however, which very usefully admit the possibility of mediating actors or circumstances in an event:

85. \(N^1\) caused/persecuted/precipitated \(N^2\) (...through \(N^3\)).

Of the other features discussed, [+effective] can only operate in a "transitive" environment (although the transitivity may not be conventionally "syntactic" at times). [+Active] can occur in intransitive structure, as can [+intent]:

86. \(N^2\) shouted. [+active], [+intent]
Context Sensitivity

Since relational features express particular perspectives on the context of a proposition they are, by definition, "context sensitive". In this they differ from many devices of formal syntax, both in degree and type. Although any given verb (or preposition) in isolation will generate a characteristic set of features expressed on, say, N^1, an embedded verb and a matrix verb together will generate a quite different set of features on N^1. (It may at times become a problem in existing models of syntax to find a representative node to which the new feature set may be formally appended.) This new set is a selective collection from the two isolate sets. The process of selection is by no means random or idiosyncratic. A breakdown of combinatorial patterns will help to explain why (to take a simple example):

87. I attempted to murder him.

is interpretable, but:

88. *I happened to murder him.

is not.

The breakdown of some infinitival constructions (V^1 to V^2) which follows is a very elementary attempt to find a pattern in the final feature selections on N^1 by the complex verb phrase. As can be seen from Table 'M' following, it seems likely that feature outcomes in complex verb phrases are a product of underlying properties of the feature themselves.
[+Active] is an obligatory feature of attempt, of break and of murder, so it will certainly be an obligatory outcome of their amalgamation. Like as an isolate on the other hand does not involve the activation of any volitional potential. For that reason it is traditionally referred to as "stative", but the label is not descriptive if it is considered that people habitually endeavour to modify their emotions. Our culture is quite ambivalent about the amount of control that may be exerted — the question is subjective — but the possibility is admitted linguistically: hence the α-dominance in Table 'H'.

Like differs in this respect from know, which may be unique in the language. Thus 'attempt to know. If we take "mind" to be a descriptive label for the total "software" programme in the brain\textsuperscript{22}, then know is a label to indicate that some item is 100% certainly in that programme. The phrase "*attempt to know" appears to overlook that certainty, which is semantic nonsense.

\textsuperscript{22} See Hofstadfer & Dennett (1982) for an exposition of this suggestion.
[+Effective] is a wholly objective evaluation which in the case of attempt may or may not apply. Where break or murder are precipitated, [+effective] is obligatory, but the certainty of their precipitation is precisely what attempt modifies. Hence the amalgam may be [+ effective]. But like, as an emotion, cannot be effective (in this technical sense). Although an "attempt to like" may well be successful, this evaluation remains something "subjective" and cannot be assigned the feature [+effective].

It has already been observed that [+immediate] is notionally quite different from [active], [effective] or [intent]. It expresses an association between N¹ and the complement of the verb, such that the association cannot be attributed to a third referent of equal status. The conceptual difficulty is that a relationship of this kind generated by one verb is not miscible with similar relationships generated by other verbs.

Take the sentence:

89. Fred liked to cheat Mary.

What Fred liked was "to cheat Mary"; that is, the action as a whole, the complement of the verb like. He could not delegate this liking, it was necessarily [+immediate].

On the other hand, the cheating itself could be delegated through any number of agents, although this entails some change in the meaning of "what is liked", e.g.:

90. Fred liked Harry to blackmail Louise into cheating Mary.

Thus the relationship Fred/cheat/Mary remains [+immediate]. The phrase "like to cheat" cannot amalgamate these two conditions of immediacy; they must remain separately represented in the structure of the grammar; (a fact which imposes so far unexplored constraints on formal structures).
[Intent] responds in essentially the same way as [active] to an amalgamation of features, since it too is concerned with the activation of volitional potential. The outcomes for both feature types in Table 'A' are identical. The only point to note is that break marks N₁ for [+intent]. Attempt, which obligatorily takes [+intent], selects the positive option in a synthesis with break, so the feature outcome is obligatorily [+intent].

TABLE 'I'

<table>
<thead>
<tr>
<th>FEATURE ON N₁</th>
<th>a V</th>
<th>b V</th>
<th>v₁ to v²</th>
<th>b V</th>
<th>v₁ to v²</th>
<th>b V</th>
<th>v₁ to v²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Dominance)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>α or β</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ active</td>
<td>-</td>
<td>+</td>
<td>- α</td>
<td>+</td>
<td>- α</td>
<td>-</td>
<td>-(α)</td>
</tr>
<tr>
<td>+ effective</td>
<td>-</td>
<td>+</td>
<td>- α</td>
<td>+</td>
<td>- α</td>
<td>-</td>
<td>-(α)</td>
</tr>
<tr>
<td>+ immediate</td>
<td>+</td>
<td>+</td>
<td>α/β</td>
<td>+</td>
<td>α/β</td>
<td>+</td>
<td>α/β</td>
</tr>
<tr>
<td>+ intent</td>
<td>+</td>
<td>-</td>
<td>+ α</td>
<td>+</td>
<td>+(α)</td>
<td>-</td>
<td>+ α</td>
</tr>
</tbody>
</table>

With the exception of [+immediate], which is outside of the dominance paradigm, a pattern of α-dominance clearly emerges. Recall that the only exception to this in Table 'H', was β-dominance of the [+effective] feature in attempt to like. The constraint there was the impossibility of establishing objectively an effect on N², but the phrase remained interpretable because of a cultural ambivalence about the manipulation of emotions. There is no such problem with want to like, both verbs taking a normal marking of [-effective].
### TABLE 'J'

<table>
<thead>
<tr>
<th>FEATURE ON n^1</th>
<th>α V</th>
<th>β V</th>
<th>α or β</th>
<th>murder</th>
<th>α or β</th>
<th>like</th>
<th>α or β</th>
<th>Dominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ active</td>
<td>+</td>
<td>+</td>
<td>+ β</td>
<td>+</td>
<td>+ β</td>
<td>-</td>
<td>-</td>
<td>- β</td>
</tr>
<tr>
<td>+ effective</td>
<td>+</td>
<td>+</td>
<td>+ β</td>
<td>+</td>
<td>+ + * β</td>
<td>-</td>
<td>-</td>
<td>- β</td>
</tr>
<tr>
<td>+ immediate</td>
<td>+</td>
<td>+</td>
<td>α/β</td>
<td>+</td>
<td>+ α/β</td>
<td>+</td>
<td>α/β</td>
<td></td>
</tr>
<tr>
<td>+ intent</td>
<td>-</td>
<td>+</td>
<td>- α</td>
<td>-</td>
<td>- α</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Note first of all that the lexical item, *happen*, being used here is that which has the meaning, "by chance", "without premeditation". Clearly it is in a different category from verbs like *attempt* or *want*, which are anticipatory. *Happen* is excluded from any predictive role, except in an ironic interpretation:

91. *Freddy will happen to break/like...*

Where the subordinate verb assigns [+intent] obligatorily it is simply unable to collocate with "happen": *happen to murder.*

At first glance Table 'J' seems to have reversed the α-dominance of complex feature outcomes. This is more apparent than real (see below), but it does reveal some limitations in the kind of binary analysis being used.

*Happen to V* seems to be an assertion to the effect that "...this circumstance exists. I imply nothing about its source." That is, it is even more neutral than the "by chance" paraphrase (a colloquial synonym) suggested above. Its only emphatic claim, in terms of the features being discussed, is in fact a disclaimer of all intent. With regard to [+active], [+effective], [+immediate] it is absolutely neutral, and the subordinate verb easily colours the phrase with its own characteristic features.
It will be recalled that attempt (Table 'H') was ambivalent (+) about the feature [effective], and imparted vagueness to the otherwise [+effective] verbs, break and murder. An important part of the meaning of attempt is to highlight this ambivalence of outcome; it is not neutral. There may therefore be some interpretative value in supplementing the binary marking with some kind of feature-neutral indicator (say $\emptyset$) where appropriate.

If a feature-neutral indicator occurred it could be expected that dominance would accrue to any other competing feature. This would account for the outcomes in Table 'C'.

**TABLE 'K'**

<table>
<thead>
<tr>
<th>FEATURE ON N¹</th>
<th>$\alpha$ V</th>
<th>$\beta$ V</th>
<th>$\alpha$ or $\beta$</th>
<th>MURDER</th>
<th>$\alpha$ or $\beta$</th>
<th>LIKE</th>
<th>$\alpha$ or $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$+$ active</td>
<td>+</td>
<td>+</td>
<td>$+$ $\alpha$</td>
<td>$+$ $\alpha$</td>
<td>$-$</td>
<td>$*$ $\alpha$</td>
<td></td>
</tr>
<tr>
<td>$+$ effective</td>
<td>+</td>
<td>$+$</td>
<td>$+$ $\alpha$</td>
<td>$+$ $\alpha$</td>
<td>$-$</td>
<td>$*$ $\alpha$</td>
<td></td>
</tr>
<tr>
<td>$+$ immediate</td>
<td>$+$</td>
<td>$+$</td>
<td>$+$ $\alpha/\beta$</td>
<td>$+$ $\alpha/\beta$</td>
<td>$+$</td>
<td>$+$ $\alpha/\beta$</td>
<td></td>
</tr>
<tr>
<td>$+$ intent</td>
<td>$+$</td>
<td>$+$</td>
<td>$+$ $\alpha/\beta$</td>
<td>$+$ $\alpha$</td>
<td>$-$</td>
<td>$*$ $\alpha$</td>
<td></td>
</tr>
</tbody>
</table>

The verb "force" raises problems of a new kind for feature analysis. The problems are general enough for "force" itself to have been accorded semantic case status comparable to "agent" in many models. But if agent is most typically characterized by the properties and relationships of N¹, force is most constrained in regard to N². A force can act upon an N² which is concrete; it cannot have direct reference to abstractions such as events (or in syntactic terms, sentential complements, clauses, and so on). On the other hand a force always acts with effect, and that effect is
normally made explicit in the sentence. If N² has no potential for ‘volition’, or at least for independent action, then the effect is generally confined to N² itself:

92. The wind forced the door to open.

or to the engagement of N² as some kind of instrument:

93. Mao forced his knife into the crack.

Where N² has potential for volition, the effect of force is to require that N² act with intent (behave like an "agent"). Even the brief analysis of inherent features so far undertaken has suggested a degree of indeterminacy in their meaning and attribution. This is reflected in the type of complements accepted by force:

94. The embankment forced the river to change its course.

95. The wind forced the dinghy into the pier.

96. The wind forced the dinghy to hit the pier.

97. The wind forced the door to catch Halina’s skirt.

Table ‘K’ captures the α-dominance pattern of competing feature outcomes in its most extreme form. Recall that with happen this pattern was so weak that a feature-neutral indicator had to be introduced. By contrast, force absolutely requires that the N¹ pattern of V² conform to the N¹ pattern of V¹, even where the respective subject nouns are not coreferential; (that is, where the N¹ of V² is the N² of V¹).

Since like takes a different pattern of N¹ features to force, the two verbs are unable to enter into any direct syntactic association when force is the matrix of the pair. An interpretative compromise of the kind that occurred in attempt to like is not possible.

A number of other verbs which take sentential complements exhibit the same kind of uncompromising α-feature dominance as force although their actual feature mix may not be identical to the mix in that verb. Examples
are encourage, order, compel, inspire, advise... To the extent that verbs like this categorize N\(^1\) for agentive-type features, they require subordinate verbs to be equally agentive, and are therefore of particular interest to us in this study.

CONCLUSION

The kind of elementary feature analysis just undertaken has raised many questions and possibilities, and left most of them unresolved. Obviously verbs associate in a variety of ways that are likely to have (feature) consequences rather different from that typical of a so-called to-complementizer. The role of the complementizer itself in feature outcomes has not been seriously posed, nor the effect of prepositions and other possible operators. The four relational features which have been chosen to illustrate the analysis may or may not turn out to be the most useful set for characterizing interpretative outcomes in the grammar. The purpose here was merely to show that the interpretation of linguistic strings may be viewed as a complex interactive process from which general patterns and constraints can be abstracted.

It is suggested that semantic features can be usefully employed in the analysis. This is in spite of the fact that such features have an inherent indeterminacy. So-called case labels like agent are felt to be excessively vague for useful analysis. The level of abstraction at which features are precise enough to be useable but general enough to be interesting has yet to be established firmly, but some provisional feature labels have been nominated as working tools. I would hope to show, in a more advanced analysis, that these features, through constraints on their context sensitivity, can strongly influence the grammaticality of complex embeddings in English.
FEATURE DOMINANCE IN COMPLEX SENTENCES

One of the "tests" sometimes applied to agency is the so-called "do-so" test. It has been shown often enough to be unreliable on that score; (e.g. see Nilsen, 1973):

98. Mary went to sleep and {Ray did so too.}
   ??Agt.

However do-so itself is a complex pro-form of considerable syntactic interest. The scope and penetration into complex sentences of its reference may reveal much about constraints and rules operating in the syntax. Two phenomena will be of particular concern here: ambiguity and coreference blocking. Many abstract and ingenious explanations have been proposed for the manifestations of both. It will be shown here that, at least as far as the behaviour of do-so is concerned, referential scope may be accounted for in a fairly simple feature-sensitive analysis.

Firstly it must be said that do so and so did are pro-forms with quite different properties; (they have frequently been confused in the literature). So did is reduplicative marker (like also) in the sense that it always takes on the feature properties of a tensed verb in a complex sentence. Do so on the other hand incorporates feature properties of [+active, +effective] and may only refer into a verb context for which this is appropriate; (hence its popularity as a test for agency. The acceptability of sentence 1 will be explained presently).
Consider:

99. Fay wanted to stop and so did Sue.
\[
\begin{align*}
\alpha & \rightarrow \beta \\
\alpha & \rightarrow \beta
\end{align*}
\]

[ \alpha / \beta ] \rightarrow \alpha \text{ Dom } [-ef] \\
\frac{-ac}{+ac} \cdot \frac{+ef}{-ac}

Recall that these relational features accrete to the subject NP.
We take it that so did signals the reduplication of the top sentence save for the subject NP (i.e. Sue)

It is the clash of interpretation in sentence 100 which makes it unacceptable. As to Sentence 98, if it is considered in the same terms, there is really no problem of interpretation. Sentence 98 is ambiguous:

Going to sleep may be a deliberate act, or it may be regarded as a process. A process, by definition incorporates activity and effectiveness, although it may not be intentional. In this sense sleep is a process (rather than a "state"); so is dying, but not death. Thus it is possible to say:

101 Mary slept and (Fay did so too.)

Because so did only imposes a requirement of tensed verb coreference it may collocate with a wide variety of matrix verb types.

23. [ef] = effective 
[ac] = active.
102. Fay \{ \\
\begin{array}{l}
\text{made} \\
\text{let} \\
\end{array}
\} \quad \text{Mary kiss her} \\
\begin{array}{l}
\text{wanted} \\
\text{hoped} \\
\end{array}
\} \quad \text{Mary to kiss her} \quad \text{and so did Sue.}

There is, moreover, never any doubt that Sue is coreferential with Fay rather than Mary. That is, it signals a complete reduplication.

In similar sentences do so may give rise to ambiguity.

103. Fay\(i\) made Mary\(j\) stop and Sue\(i,j\) did so too.
\[
\begin{array}{c}
\text{[}+ac\text{]} & \text{[}+ac\text{]} & \alpha/\beta \rightarrow \text{[}+ac\text{]} \\
\text{[}+ef\text{]} & \text{[}+ef\text{]} & \\
\end{array}
\]
\[
[ \alpha / \beta ] \rightarrow \alpha \text{ Dom, but } \alpha = \beta
\]

It seems that where the \(\alpha\) and \(\beta\) verbs have an identity of certain crucial features, then an ambiguity of reference arises. The "leakage" of reference into the lower verb is not direct, but stems from a gap (let's call it an \text{identity filter}) in the \(\alpha\)-blocking process. This may be demonstrated by considering some other matrix verbs with slightly different properties.

104. Fay\(i\) encouraged Mary\(j\) to stop and Sue\(i,j\) did so too.
\[
\begin{array}{c}
\text{[}+\text{effective}\text{]} & \text{[}+\text{ef}\text{]} & \alpha \rightarrow \text{[}+ac\text{]} \\
\text{[}+\text{active}\text{]} & \text{[}+ac\text{]} & \\
\end{array}
\]
\[
[ \alpha / \beta ] \rightarrow \alpha \text{ Dom}
\]

Sentence 104 cannot be ambiguous. Since there is successful coreference of do so and the \(\alpha\)-verb, it would seem that \ [+\text{active} \] is a \text{necessary} property of the pro-form, whereas \ [+\text{effective} \] is merely a \text{contingent} property, that is, it may be marked \(+\) (but not \(\emptyset\)). The really interesting
thing, however, is that α-reference blocking operates since there is no perfect matching of properties between the α and β verbs. This blocking occurs even though there is a potential feature identity between do so and the β-verb. It suggests conclusively that the identity filter is a functional loophole in the grammar.

A COMMENT ON THE FORMAL POWER OF GRAMMATICAL MODELS.

One is accustomed in grammatical models to evaluating rules and constraints. The idea of a functional loophole bears some relation perhaps to the widely used term 'filter'; (for example, Laurie Karttunen (1973) with his "plugs, holes and filters"). However, a perspective is being assumed in this study that diverges radically from the explanatory norms of most 20th century models of syntax. Since the issue will continue to arise it might be useful to digress briefly from our argument to discuss what is at stake. The use of indeterminacy as a basic functional principle has not been common.

Since Saussure made his distinction of langue and parole, it has been recognized that what people say in a particular utterance and what they consider, on reflection, to be an adequate expression of their grammatical ability or understanding are not always identical.

This division has led, on the one hand, to the search for some platonic (i.e., "ideal") grammar that is supposed to underpin each language and, perhaps, at an even deeper level, a universal human grammar. Rather more latterly there has been a search for patterning in the "linguistic variation" of actual utterance.
The assumption of an ideal grammar has greatly enhanced the perception of syntactic patterning where none had been observed before. Unfortunately this pursuit of absolute coherence in the system has led at times (in this writer's view) to a good deal of rather dubious abstraction. It has also tended to obscure a property of natural languages that tends to distinguish them sharply from the completely explicit languages of propositional logic, computer programs, arithmetic and so on: that is, their relatively high level of interpretative indeterminacy.

The controlled indeterminacy of natural languages is very clear at the lexical level. Nor is it excluded in structurally well-formed strings of language. Every linguistic string is potentially ambiguous, and ambiguity or vagueness may be found at every level of organization in the grammar. It has been an objective of generative grammars to "account for" structural ambiguities, as well as various kinds of paraphrase, by derivation from a putative source or sources through a series of model-consistent abstractions. The complexity of these systems testifies to the ingenuity of their creators.

However, it seems important to recognize that the adaptability of natural languages stems not merely from their recursive properties. Much of the creative power of language, and thought, is sourced in controlled indeterminacy, in the possibility of ever shifting permutations of interpretation in the same set of constituents.

It is contended that this power must be recognized as an integral property of the grammar, just as recursiveness is, and that syntactic
ambiguity, for example, is most usefully formalized not as evidence of competing "deep structures" (or whatever), but rather as a "gap" or "filter" in the system of constraints on the interpretation of linguistic strings. It should be recognized that such "gaps" are as functionally productive in the syntax as the categorial rules and constraints themselves.

The kind of feature analysis adopted in this study is not tenable without an explicit recognition of indeterminacy in all interpretation. It has already been found useful to mark potential feature applications as 1, and to distinguish this from an exclusion of feature relevance, ø (as for intent vis à vis happen).

The choice of features themselves reflects a pragmatic decision to operate at a certain level of precision - one which it is hoped is sufficiently precise to capture the outlines of a grammar through interesting generalization. This is important; it is what science is about. But in the end the "total explanation" of a system can only be the system itself. In principle we cannot finally master any such ultimate explanation in a natural language: it would then be a dead language.

The ø feature marker, indicating abdication of feature influence to the point of neutrality, has a distinct effect on ø-verb reference blocking.

105. ?Fay let Mary use her umbrella and Sue did so too.

\[ \begin{bmatrix} \text{øac} \\ +ef \end{bmatrix} \quad \begin{bmatrix} +ac \\ +ef \end{bmatrix} \quad ? a/b \rightarrow \begin{bmatrix} +ac \\ +ef \end{bmatrix} \]

\[ [a / b] \rightarrow \{ \begin{align*} \beta \text{ Dom for } [ac] \\ \alpha \text{ Dom for } [ef] \text{ but } \alpha = \beta \text{ [ef]} \end{align*} \]
106. (? ) Fay let Mary come and Sue did so too.

These are somewhat marginal sentences. *Do so* does not coreference comfortably with *let* which is a verb whose essential quality on abdication of active intervention, while implying the effective power to do so. There is the possibility, again a little shaky, of coreference between *do so* and the β-verb. To see how an identity filter may be constructed through the α-block, it may be useful to look at a verb that abdicates all essential feature control:

107. Fay happened to stop and Sue did so too.

From 107 we can say that an identity filter holds where, feature-wise, α = β or where α = ∅. Expand discussion.

The kinds of sentences analysed above have often been considered in the context of causative theory; (see, for example, Lee 1970, Lakoff 1970, Shibatani 1973, Roberts 1978, Aissen 1979 and many others). Since these studies are in general concerned with "causative" matrix verbs like *make*, they tend to overlook the possibility that so-called causatives fit into a pattern of behaviour that is consistent, according to feature characteristics, with a much wider range of matrix verbs.

Thus I have not seen an analysis of causatives that usefully reconciles...
their behaviour with patently non- causative verbs like happen. This is in spite of the fact that the arguments range from causatives as supporting evidence for a variety of syntactic deep structure derivations (including lexical decomposition, but also in that circular logic peculiar to abstract models, for various procedures of the model type, like raising) to a shifting mixture of classical T.G. and case functions by people like Shibatani, Roberts, and Ono (1981).

Using Japanese examples (after Shibatani), Roberts (1978, 161) argues that multiple agents in a complex, do-so type sentence may cause ambiguity.

108. Taroo ga Ziroo o tomar - are - ru to Hanaka mo
   [Agt<sub>1</sub>]<sup>i</sup> [Agt<sub>2</sub>/Pat]<sup>j</sup> stop - make [Agt/Pat]<sup>i,j</sup> also soo - si - ta
did
When Taroo made Ziroo stop, Hanako did so too.

109. Taroo ga Ziroo o tome - ru to Hanako mo soo-si - ta
   [Agt]<sup>i</sup> [Pat]<sup>j</sup> stop [Agt]<sup>i,j</sup> also did

When Taroo stopped Ziroo, Hanako did so too.

Sentence 108, says Roberts, has two agentive verbs, hence two Agents. This means two possible controllers of a do-so transformation. Thus ambiguity arises in the cyclical raising process. Sentence 109, by contrast, has no Agent in the embedded S and thus no controller for a do-so transformation. Raising may apply without ambiguity. Shibatani uses the same
sentences to argue against embedded structures in lexical causatives (as proposed by McCawley, 1968). Not recognizing the role played by Agents in the raising transformation, he argues that any embedded structure would be available as a do-so transformation controller.

It is possible to circumvent the whole arcane procedure of raising transformations by analysing sentences like 108 and 109 in terms of feature coreference. To the extent that Agent is a relevant feature complex, Roberts was half-way to a satisfactory solution.

108. Taro\(^{1}\) ga Ziroo\(^{4}\) o tomar - are - ru Hanako\(^{1}\)\(^{j}\) mo soo - si - ta
\[ \begin{array}{c}
+ef \\
+ac \\
\end{array} \begin{array}{c}
+ef \\
+ac \\
\end{array} \]
\[ \alpha / \beta + \begin{array}{c}
+ef \\
+ac \\
\end{array} \]
\[ \alpha / \beta \]
\[ \beta \]
\[ \alpha = \beta \]

The feature identity filter is a clear source of ambiguity in 108.

109. Taro ga Ziroo o tome - ru to Hanako mo soo-si-ta
\[ \begin{array}{c}
+ef \\
+ac \\
\end{array} \]
\[ \alpha + \begin{array}{c}
+ef \\
+ac \\
\end{array} \]
\[ \alpha \]

No question of ambiguity arises in 109. The relational features accrete to the subject NP (marked by ga). The feature set of soo-si-ta matches with the \(\alpha\)-verb and assigns Hanako subject features accordingly. The analysis agrees with Shibatani’s insofar as no underlying causative sentence is posited. It is not necessary.

A couple of extrinsic points may need clarification for the Japanese analysis:
a) `soo-si-ta` is more or less equivalent to the English *do-so*, and like the latter entails a feature content of \([+\text{ac}]\)

The Japanese equivalent of *so-did*, being purely reduplicative and carrying no feature entailment, is *so-datta*. *So-datta* is normally used with "non-agentive" verbs, *soo-si-ta* with "agentive" verbs, so the distribution of the two pro-forms is somewhat more complementary in Japanese than in English.

b) The object marker *O* is often said to imply a Patient-type role for its antecedent NP. Thus it is implied in 108 that although Ziroo must exert volition to stop (act agentively), he is also affected to the point of initiating action at Taroo's behest: he is not exercising full "control". Were Ziroo to be exercising full control (he can't in 108), the appropriate post-particle would be *nô* rather than *O*. It is important to understand that these post-position control signals do not directly affect the ambiguity arising from identity-filter feature coreference is a *soo-si-ta* paradigm.

c) The word order of Japanese is such that the linear *a, b* ordering of verbs is reversed.

Now consider a Japanese sentence with a non-causative matrix verb:
110 *?Taroo wa Ziroo ni tomatte-moraita-katta Hanako mo soo-si-ta

\[ +ac \] \[ -ac \]
\[ +ef \] \[ -ef \]
\[ \alpha \] \[ \alpha \] \[ +ac \]

\[ \beta \] \[ \alpha \] \[ +ef \] \[ -ef \] \[ \alpha \] \[ \alpha \] \[ \alpha \] Dom

*When Taroo wanted Ziroo to stop Hanako did so too.

My Japanese informants assure me that sentence 110 is pretty sick. The reason is precisely that which applies in English: soo-si-ta cannot form a feature match with the \( \alpha \)-verb and \( \alpha \)-blocking applies to prevent coreference with the feature set of the lower verb.

With a so-datta pro-form however, the sentence becomes perfectly acceptable:

111. Taroo\(^1\) wa Ziroo\(^1\) ni tomatte-moraita-katta Hanaka\(^1\) mo so-datta

\[ +ac \] \[ -ac \]
\[ +ef \] \[ -ef \]
\[ \beta \] \[ \alpha \] \[ +ac \]

\[ \beta \] \[ \alpha \] \[ +ef \] \[ -ef \] \[ \alpha \] \[ \alpha \] \[ \alpha \] Dom

When Taroo wanted Ziroo to stop, so did Hanako.

Sentence 111 is not ambiguous. So-datta here can only accept the feature set of the \( \alpha \)-verb and no identity filter exists to permit coreference leakage to the \( \beta \)-verb. Even if there was an identity filter, however, so-datta would not be ambiguous. Like so-did (see sentence 102 at the beginning of this analysis), it signals a complete reduplication of the higher complex sentence, so that its subject NP (c.f. Hanako) always has exclusive feature

24. \( Kw \) is used here because \( ga \), I am told, would imply a contrastive reference to some entity exophoric to the sentence.
coreference with the subject of the matrix verb.

THE INTERPRETATION OF PASSIVE

The ambiguity of sentences like 112 have been accounted for by identity filtering in feature sets:

112. Sue made Mary dance and Wendy did so too.

or 113. Sue made Mary kiss her and Wendy did so too.

Passive constructions, however, must be interpreted rather differently.

114. Mary was made to dance by Sue and *

$$\begin{bmatrix}
\alpha \uparrow [ac, ef] \\
\alpha \uparrow [af] \\
\alpha \uparrow [+af] / \beta \rightarrow \alpha \text{ Dom}
\end{bmatrix}$$

Sentence 114, even when it takes an acceptable pro-conjunct, is not ambiguous.

In the analysis so far the specification of verbs has been abbreviated to a couple of relational features which accrete to the subject NP in normal, active sentences. For an analysis of passives it is necessary to consider one relational feature which accretes to the object NP in active sentences; (c.f. affected, or [af]).
A Feature-marking convention will be adopted here for showing the relationship between active and passive sentences. There are many models for syntactic phrase structures on the market now, and nearly all take passive as a prime illustrative permutation for their own ingenious abstractions. It is not the purpose of this study to invent a new phrase structure model, or even to adapt an old one. I have some fairly firm ideas about syntactic formats, but they are beyond the scope of this enterprise. Instead, the simplest possible bracketing, indexing or labelling conventions will be adopted in each instance to mark the particular clauses, sentences or other linguistic constituents which are to be discussed.

For immediate purposes, then, BE + Past Participle will be taken to signal a reversal of feature assignments for the verb in question. That is, $N_1$ will accept those features normally accreting to $N_2$ and vice versa. The convention will be abbreviated [+y] by diagram or turn by label.

In sentence 114 turn means that the $\alpha$-dominant feature emerges as [+af]. Such a passive may never co-refer with the [ac, ef] set of do so. It may corefer with NP BE too or so BE NP. These turn out to be reduplicative formulae identical in behaviour to so do. That is, they adopt the feature colouration of $N_1$ on the $\alpha$-verb exclusively. Like so do they may never refer into the $\beta$-verb even where there is identity filtering between $\alpha$ and $\beta$: 
115. Mary was made to take abuse from Sue and so was Wendy, *

\[ \begin{align*}
&[\uparrow^*] \left[ \begin{array}{c}
N_1 - N_2 \\
N_1 : ac, ef \\
N_2 : af \\
N_2 : tf
\end{array} \right] \alpha \rightarrow [af] \\
&[.] \alpha \rightarrow af / \beta \rightarrow af \rightarrow \alpha \ Dom, but \alpha = \beta
\end{align*} \]

Thus, even though the \( \alpha \) feature on \( N_1 \) is identical to the \( \beta \) feature on \( N_1 \), sentence 115 is not ambiguous.

**The Modification of Verbs**

Notional, case-type definitions of agent, causer, force etc. suffer from the major disadvantage of having their status undermined by modal, temporal, adverbial, negative, interrogative and other kinds of qualification.

That is, it is difficult to assign an intuitive case like agent to the subject NP in a sentence like:

116. Kilkenny may kill a cat tomorrow, or even more so in

117. Kilkenny didn't kill a cat.

By atomising the intuitive content of agency or causation to inherent and relational features, the cumulative effects of lexical modification can be fully accounted for without prejudging the final status of a particular NP in its linguistic string.

Arguments for \( \alpha \)-dominance in complex verb sets which have been developed here really amount to no more than the observation that (in English)
verbs to the left (matrix verbs) modify those to the right. That is
scarcely a revelation. The significant point is that with detailed feature
analysis this can be exploited as a constraint on interpretation just as
readily as it has been exploited by syntacticians to hypothesize a hierarchy
of clauses or sentences in constituent structures. The Primacy Principle of
C-command (e.g. see Koster, 1981) may be the syntactic analogy of what is
being done here with interpretation.

Any modification of a sentence, except that occurring by virtue of
a subordinate verb, must be reflected in a do-so conjunct:

118. *Fay could make Mary stop and Sue do so too.
119. *Perhaps Fay made Mary stop and Sue did so too.
120. *Fay didn't make Mary stop and Sue did so too.
121. *Why did Fay make Mary stop and Sue did so too.

On the other hand these modifications operate outside of the α-
dominance paradigm for the verb set. That is, the scope of the modifier
embraces both matrix and subordinate verbs for interpretation. This may
seem particularly surprising in the case of modal verbs, but the evidence
is clear. If modals entered into the α-dominance paradigm of verb sets
it could be expected that an ambiguous sentence like

122. Fay\(^i\) made Mary\(^j\) stop and Sue\(^i,j\) did so too.

would lose its ambiguity where modified by a modal.

123. Fay\(^i\) may make Mary\(^j\) stop and Sue\(^i,j\) may do so too

\[
\begin{align*}
\begin{array}{c}
+ac \\
+ac \\
+ef \\
+ef \\
\end{array} & \begin{array}{c}
+ac \\
+ef \\
+ef \\
+ef \\
\end{array} \\
\begin{array}{c}
[ \pi [ \alpha / \beta ] + \alpha \text{ Dom} ] + \pi \text{ Dom} \\
[ \pi / \alpha ] + \pi \text{ Dom}
\end{array}
\end{align*}
\]
In sentence 122 π Dominance by the modal modifier does not block identity filtering in the α sets. The sentence remains ambiguous even though the π feature characteristics do not match those of the matrix or subordinate verbs.

Ambiguity is similarly retained with negatives, interrogatives and adverbial modifiers. Note that these operators also carry relational feature sets, although these may be distinct from those on the verb. The features, however, relate the subject NP to (in syntactic terms) the whole complex VP of the sentence rather than to a simple object NP. That is what has just been established with the ambiguity of sentences like 123. Again it is an interpretative confirmation of well known syntactic hierarchies.

CONFIGURATIONAL ANALOGIES

In his discussion of configurational grammar, Jan Koster (1981) observes that "...since the classical papers of Lees and Klima (1963) and Langacker (1969), the theory of anaphora can be seen as being characterized by two dimensions, 'primacy' and 'locality'. Primacy notions are conceptions like 'precede', 'command' and 'superiority'. Locality principles come in two varieties, 'domain principles' and "minimal distance principles'.' If the notion of feature dominance developed here is an interpretative equivalent of primacy, then feature coreference and identity filtering bear some analogy to a locality principle.

A specific comparison may help. Consider a subjacency condition like the complex NP constraint. This excludes sentences of the type:
124. *What do they believe the claim that Bill failed?

but not

125. What do they believe that Bill failed?

One way of viewing the exclusion of 124 is as a special instance of feature-coreference blocking. Suppose there is a condition on WH reference such that it must refer to the first feature matching relationship in a verb to its right, and that where the relationship is already lexically defined then WH feature coreference is blocked.

The appropriate feature statements on WH and the verbs will be partly manifested at a different level of generality from those applying to the *do-so configuration, but the patterning will be identical.

The following feature statements will suffice:

<table>
<thead>
<tr>
<th>WHAT</th>
<th>BELIEVE</th>
<th>FALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP S</td>
<td>N¹ —— NP² S²</td>
<td>N¹ + + sentient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N² + + data source</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(as)</td>
</tr>
<tr>
<td></td>
<td>S² + any lexically</td>
<td></td>
</tr>
<tr>
<td></td>
<td>defined S</td>
<td></td>
</tr>
</tbody>
</table>

The relevant realization of these feature sets in 125 could be:

26. Data Source = a) Producer (e.g. Human, Computer, etc.)

or b) Medium (claim, idea, document, etc.)
125. What\footnote{7}{\[\text{do they believe \{that Bill failed e\}$_{S_2}$]}
\[\{NP \ll S \mid -lx.df\} \ll S_1 \ll \alpha / \beta \mid \alpha \text{ Dom}\]
\[\text{\ldots but } \alpha = \beta \text{ for full lexical definition of } S_2 \text{ where } V^2 \text{ is transitive.}\]

Thus identity filtering permits the feature coreference of e with WH. In this instance there is no ambiguity since $S_2$ is a complex constituent and the appropriate lexical realization is coextensive with e.

Now consider 126:

126 \footnote{8}{\[\text{what do they believe the claim}\]$_{S_1}$ \[\{that Bill failed e\}$_{S_2}$]}
\[\{NP \ll S \mid +lx.df\} \ll \text{\ldots question} \ll S_1 \ll \alpha / \beta \mid \alpha \text{ Dom}\]

In 124 WH feature coreference is blocked by the un congenial $\alpha$-dominance of the matrix verb.

Nothing has been said about DO-Q (the $\pi$ feature set). Recall that a modifier such as this can have scope across the whole sentence structure, but does not normally block feature coreference into the $\alpha$-set. However there is a property that DO-Q has in common with sentential complementizers: it will not allow WH to corefer with a null element, or be blocked by a NP, in the subject position of its sentential complement:

\footnote{9}{Let e = empty node. Use of this symbol here does not imply an endorsement of all the assumptions of trace theory (c.f. Chomsky (1978)).}
126. *Who do e believe that Bill failed e.

(Not to be confused with 127. Who $e_1$ does believe that Bill failed $e$.)

128. *Who do they believe that $e$ failed $e$.

The effect of this rule in a sentence like 124 is that WH coreference bridges the subject NPs in both the matrix and subordinate sentences. There is no possibility of a block. Removing DO-Q changes this immediately of course:

129. *Who $i$ they $i$ believed that Bill failed $e$.

\[
\begin{align*}
\begin{bmatrix}
N_1^1 & N_1^1 - S_2 & -S & N_1^1 - NP_2^2 \\
-lx.df. & N_1^1 + +lx.df. & N_1^1 - S & N_1^1 + +lx.df. \\
\end{bmatrix}
\end{align*}
\]

\[
\begin{align*}
\begin{bmatrix}
\alpha / \\
\pi / \\
\beta = N_1^1 \phi \\
N_2^2 -lx.df. \\
\end{bmatrix}
\end{align*}
\alpha \text{ Dom}
\]

WH feature coreference is blocked by the uncongenial $\alpha$-set. The complementizer bridging rule for subject NPs is formalized by saying that $\pi$ neutralizes the feature definitions of $NP_1^1$ in the environment of WH.

There is no complementizer bridging rule neutralizing feature definitions of subject NPs in the environment of some other coreferring devices in the grammar, such as so did NP. This is not contradictory. It simply means that the set of features pertinent to their coreference differs from that operating on WH.

Thus in the following sentence the reduplicative marker so did may have Henry coreferring with the sentential subject of the complementizer THAT:

130. [Fred\textsuperscript{1} believed] [that Bill\textsuperscript{1} hit Tom]\textsubscript{s2} and so did Henry\textsuperscript{1},

\[
\begin{align*}
\left[ N^1 - S^2 \right] & \quad \left[ N^1 - N^2 \right] \\
+ \text{tense} & \quad + \text{tense} \\
\end{align*}
\]

\(\alpha / \beta \) \alpha \text{ Dom, but } \beta = \beta \text{ for tense}

An identity filter for tense is all that is required to make

130 ambiguous.
In other words, if *cause* is incorporated in the temporal reference of the first adjunct, then its concomitant *effect* (the action of the subordinate verb) must be incorporated in that reference too. This is really further evidence for *a* dominance (or perhaps special evidence since it has not been established that temporal specification normally has the same kind of binding properties as feature sets on the verb).

131. John caused Mary to die on Tuesday.

\[
\begin{align*}
[+ef, +ac] & & [+ef] \\
[\emptyset \text{ Time df}] & & [\emptyset \text{ Time df}] \quad \text{[--- Time]} \\
[\alpha (+\gamma+ef) / \beta] & & \alpha \text{ Dom } \gamma
\end{align*}
\]

It seems to be the linking of *effective* to a time frame which imposes that time frame on the lower verb. This shows (as common sense suggests) that a time frame can only be a property of some other feature characteristic. If there is no *effect*, as with *want*, then the time-binding doesn’t hold.

More informally, *certain effect* seems to be something inferred in retrospect. The future always has an element of uncertainty and it is risky (though possible in explicit locution) to say your action X on Tuesday will have the certain effect Y on Wednesday. The difficulty of predicting such a sequence seems to be reflected in the non-occurrence of sentences like 134, 135, and 136. The only possible differentiation of perspective seems to occur when one time-frame embraces another:

138. In February John hit Mary on Saturday.

Temporal adjuncts are only one of many adjunct types which can cause ambiguity in periphrastic constructions. Each type of adjunct
has its own inherent and relational properties which impose constraints on its relationship with various kinds of verbs.

LOCATIVES

Wojcik (1973, 35) cites the ambiguity of Locative adjuncts as being comparable to the temporal type. Actually there are important differences, although there is certainly scope for ambiguity.

Locatives embrace a much wider range of specification than temporal adjuncts. This is a reflection of their ultimate reference to three-dimensional interces rather than a one-dimensional continuum. That is, locatives are able to specify entities:

132. Theresa is [in the park] LOC.

133. *Theresa is [on Saturday] TEMP.

In order to understand the relationship between Locatives and periphrastic sentences it will be necessary to digress a little to examine some locative properties of a more general nature.

A locative may define:

- An entity: 134. ...[the tree] in my garden.

135. ...[the colonel] on the porch.

- A process: 136. ...[sleep] on the porch.

- An action or event:
  137. [Leila kissed the colonel] on the porch.
  138. [The butterfly brushed against Leila] on the porch.
  139. [The tyre burst] in the desert.
A locative may not define:

. An incidental experience or condition:
  140. *[Leila unintentionally amused the colonel] on the porch.

. An event or process or experience predicated of a static (i.e. 'known')
locale:
  142. *[The tree burned/died/was chopped down] in my garden.
  143. *[The rock cracked with frost] in my garden.
  144. *[The machine broke down] in the factory.
  145. *[The dark terrified Robin] in the woods.

Particular locative prepositions may carry other feature requirements.
For example, *from requires some actual or conceptual transmission from a
sender to another locale:

  146. *?She coughed from the balcony.

It is not difficult to feel intuitive justification for a redundancy
rule which excludes localistic specification of an assumed locale. Where
necessary the locale may be topicalized, although without some special
contrastive context it still sounds very odd:

  147. (?)It was in my garden that the tree burned.

The exclusion of incidental conditions - those excluding [intent] - is
harder to take on board, although it seems likely that some sort of
contrastive redundancy principle is operating again: contrast of an
unplanned/unintentional event with another such event may be inherently
unlikely in terms of locale. Where a contrast does develop, the structure
becomes more or less acceptable:
148. Leila was unintentionally amusing the colonel on the porch while his men were ransacking the cottage for provisions.

Note, however, that there is a suggestion in this sentence of intent on the part of the colonel.

An incidental periphrastic construction may easily embrace a locative in the subordinate sentence:

149. Freda expected [Fred to misinform [the manager\textsuperscript{1}]]\textsuperscript{3} in the bank\textsuperscript{1}.\textsuperscript{3}

Although the locative in 149 is ambiguous in its scope between the manager and the action of Fred’s misinforming him, it cannot embrace Freda’s expectation unless she happens to be in the bank with Fred.

A periphrastic sentence violating what I have termed ‘redundancy conditions’ in both the matrix and subordinate sentences is unacceptable:

150. *Fred happened to like Wendy on the verandah.

(That is, 150 can only be understood in the rather odd contrastive sense of liking Wendy on the verandah but not elsewhere.)

On the other hand, in a sentence with an active matrix verb and a non-volitional subordinate verb, the locative phrase may only refer to the action:

151. Wendy encouraged\textsuperscript{1} [Fred to like\textsuperscript{1} Sue] in the kitchen\textsuperscript{1}.\textsuperscript{4}

Even this interpretation is uncomfortable. (Note that sentence 151 is quite different from sentences like:

152. Wendy encouraged Fred to like [the girl]\textsuperscript{1} in the kitchen\textsuperscript{1}.)

The interesting question arises as to whether there is a dominance
principle operating in the interpretation of locative adjuncts. The answer must be that on the evidence examined so far there does not seem to be. In some ways this is surprising since it was argued that in the case of temporality there was at least some evidence for the influence of a dominance principle. This difference may have something to do with the fact that aspects of temporality appear to be built into verbal relationships and morphology (hence the syntax) in ways that locality is not. If there is a global principle operating in the interpretation of locatives it appears to be one of proximity. The unmarked interpretation of a locative appears in most cases to relate it to the nearest acceptable constituent, whether that be a simple NP or a more complex structure. However, nothing like a complex NP or other subadjacency constraint appears to have much potential for blocking interpretation. Sentence 151, for example, is perfectly interpretable, if not particularly felicitous.

The proximate interpretation may be overcome in a locative form like *from* which incorporates other properties (see sentence 146). In:

153. John\(^1\) killed Mary\(^1\) from Idaho\(^1\)\(^3\),\(^4\) (*by long distance phone call*)

the preferred interpretation probably relates the locative most readily to John. In a periphrastic construction where the lower verb incorporates no possibility of transmission, the association of the locative with the matrix sentence becomes obligatory:

154. John caused Mary to die\(^1\) from Idaho\(^1\),\(^*\)\(^4\) (*by a long distance phone call*)

It was noted in the behaviour of temporal adjuncts that a time frame linked to effective action obligatorily carried its temporal reference into the lower verb (sentence 131). This justified a dominance paradigm.
Co-location, however, is conceptually quite different from co-temporality. A particular locative reference (e.g. Idaho) may be general enough to embrace the actors in an event. On the other hand, the independent existence of each entity normally precludes absolute co-location, so that separation becomes a matter of degree or perspective. This makes possible sentences of the following kind (which cannot occur with temporal adjuncts; c.f. sentence 121.):

155. From Idaho John killed Mary in Alaska.

156. From Idaho John caused Mary to die in Alaska.

It is true that prepositions like from carry some relational implications which can create difficulties:

157. From Idaho John forced Mary to hit Fred in Alaska.

158. ?? From Idaho John wanted Mary to hit Fred/to die in Alaska.

Perhaps it is not wise to be dogmatic about sentences like 158. They seem to be on the wrong side of the borderline between contingent pragmatic judgment and useful generalization in the grammar.

More informative for the analysis of interpretation in periphrastic constructions is the ambiguity and exclusion of ambiguity in the following:

159. John ordered [his car to be kept/washed] in the garage.

160. John wanted [his car to be kept/washed] in the garage.

In sentence 159 both the matrix and subordinate verbs meet the condition for locative reference and the interpretation is accordingly ambiguous. This is in spite of a further difference in interpretation
between 'inner' and 'outer' locatives relative to the lower verb; (refer to Fillmore, 1968).

161. [Fred washed the car] in the garage.

162. Fred [kept the car] in the garage.

However, the absence of an active feature in the matrix verb of 160 appears to preclude (for any but the most strained interpretation) locative reference to that matrix by a non-proximate adjunct. Topicalization (a form of proximate reference here) is possible where the locale of the matrix subject is important:

163. When Fred was in the garage he wanted his car to be washed.

Note that in 163 the locative has been given further prominence by a statement of temporal relativity.

The feature characteristics of want relative to locatives have something in common with the type of incidental experience or condition which precludes locative reference; (c.f. sentences 140, 141). In both cases there is no manifest activity, nothing which could be characterized as an action or event, nothing which case grammarians in all their variety would want to say was predicated of an agent.

The kinds of constraints on interpretation being encountered here do not have the categorical properties found in some more general syntactic constraints. Proximity affects the markedness of interpretation; features on the constituent like specificity, mobility, an activity quotient or intent seem to affect the likelihood of locative reference. A combination of unlikely properties broaches some threshold at which locative reference...
becomes unlikely, opaque or even 'ungrammatical'. Such thresholds of interpretation are likely to show a degree of contextual and user variation. It is an instance of the inherent indeterminacy of natural languages cited earlier, and it would be surprising if many further constraints on interpretation didn’t exhibit the threshold effect.

INSTRUMENTALS

Instrumental clauses co-occur very commonly with causative and other agentive-type constructions. To this point I have avoided characterizing instrumentals in any way, but it will be useful now to consider a couple of their more salient properties.

As with other familiar case forms, instrument turns out to embrace a fairly catholic range of phenomena:

164. Arnold walks with crutches. (Starosta, 1978, 483)

165. The rats were killed with fire. (Nilsen, 1973, 108)

166. John belaboured the fence with his cane. (Starosta, 1978, 510)

167. Mother cooked the potatoes in her new oven.

168. Fred succeeded through hard work.

169. Filipe succeeded by sheer rat cunning.

170. Seymour used a knife to slice the salami. (Lakoff, 1968, )

171. The car’s fender broke the window. (Fillmore, 1968, 23)

Obviously not all of these ‘instrumentals’ are interchangeable without
some rather odd effects: they have been assigned a variety of case frames.

172 ??Arnold walks by sheer rat cunning.

Nevertheless they do all appear to have the common property of being transfer mediums through which some effect is promoted. It may therefore be worthwhile to assign them the working features of [+ef] (effective), [+tf] (transfer medium). Immediacy – direct, immediate contact with the affected element in an action – is also a feature commonly associated with instrumentality, and is sometimes said to distinguish Instrument from Agent cases (e.g. see Starosta, 1978, 481). However, the feature [+immediate] doesn’t make a lot of sense in sentences like 164, 168 and 169, and will not be a primary tool in this analysis.

One of the problems of assigning feature sets to prepositional phrases is that prepositions themselves are such chameleon creatures. They change their properties according to the particular verb with which they are associated. The range of colouration is not infinite (although diachronically there may be quite dramatic shifts) and it is common enough for a particular preposition to favour one or two environments. Thus the largest number of with-phrases are probably instrumental. But this is not secure enough to constitute a firm rule in the grammar.

The best interpretative solution to such diversity may be a dominance concept in which proximate or otherwise unconstrained verbs read elements of their feature sets into the defined feature potentials of a preposition. Prepositional feature potentials realized in the environment of a given verb would then have to collocate sensibly with the rest of the prepositional phrase.
173. John squashed the eggs with his boots.

\[ N^1 \rightarrow [+ef] \rightarrow [+tf] \rightarrow [tf] \quad \text{"Instrumental"} \]

with relish.

\[ [+ac] \rightarrow [ma] \quad \text{"Manner"} \]

(totally) with the tomatoes.

\[ ([cor]) \rightarrow [+cor] \rightarrow [cor] \quad \text{"Correspondent"} \]

Feature Lexical potentials realizations

174. Fred came with his boots. (...where boots are thought of as instruments rather than correspondents)

\[ N^1 \rightarrow [-ef] \rightarrow [+tf] \rightarrow [tf] \]

([cor])

with pleasure.

\[ [+ac] \rightarrow [ma] \]

with his wife.

\[ [+cor] \rightarrow [cor] \]

There will be times when a particular set of feature realizations in the prepositional phrase will still leave scope for alternative interpretations. Such a possibility arises in sentence 167 (...Mother cooked the potatoes in her new oven). From the linguistic string alone it is not possible to determine whether the prepositional phrase in 167 has locative or instrumental significance, or both. Only the context of situation may fully disambiguates such strings: a further instance of the distinction
between natural and artificial languages.

It is not necessary here to buy into a philosophical argument about the ultimate limits of instrumentality. Just in passing it may be noted that the determination is often a cultural one. 'Waving with one's arms' is normal enough, but to speak of 'walking with one's legs' is rather odd. Thus inalienable possession constrains expression, but not absolutely. This must mean that the feature specification on verbs is not always definitive. Walk, which normally does not take an instrumental phrase may do so in an atypical circumstance: 164 Arnold walks with crutches.

As with temporal and locative phrases, instrumental type phrases (and prepositional phrases in general) do not seem to be subject to subjacency constraints for reference. They are sensitive to proximity in some degree as a constraint on markedness. This freedom of reference suggests considerable scope for ambiguity in periphrastic constructions:

175. Octavius\textsuperscript{i} forced Tiberius\textsuperscript{j} to make the slave\textsuperscript{k} beat the horse [with a whip]\textsuperscript{i,j,k}.

Since the conditions for all three verbs may be realized in the instrumental phrase, interpretation remains three ways ambiguous.

The point of instrumentals as a 'test' for agentive and causative constructions is that a verb which promotes no effect is unable to collocate with them. In a complex construction this may serve to disambiguate the reference of the prepositional phrase.

176. Tiberius\textsuperscript{i} wanted the slave\textsuperscript{j} to beat the horse [with a whip]\textsuperscript{i,j}.

Equally however, the 'case' of a prepositional phrase may remain in doubt where its feature potentials can be differentially realized in
the alternative verbs of a complex construction:

177. Tiberius\(^1\) made the slave\(^i\) kneel [with a whip]\(^j\).
   \(i \rightarrow \) instrument / \(j \rightarrow \) correspondent

Lakoff’s celebrated salami sentence (170) illustrates an instrumental incorporated into the verb itself. At one time this was used by generative grammarians as justification for a common deep structure derivation of the instrumental verb, *use*, and the prepositional instrumental phrase, *with a knife*. This argument has been attacked from a variety standpoints, many of them model-specific. A feature analysis (which makes no use of deep structure at all) can immediately show the points of similarity and difference between the verb and the prepositional phrase. It also emerges in this analysis that the instrumental verb constrains prepositional adjuncts in a predictable manner, although it becomes necessary to refine the dominance principle:

170. Seymour used a knife to slice the salami (with).

\[
N^1 \rightarrow [+ \text{intent}] \quad N^1 \rightarrow [+ k] \quad \alpha \rightarrow [+ tf]
\]
\[
[+ ac] \quad [+ ac] \quad [+ ef]
\]
\[
[+ ef] \quad [+ ef]
\]
\[
N^2 \rightarrow [+ tf] \quad N^2 \rightarrow [+ tf] \quad \alpha \rightarrow [+ ac]
\]
\[
[+ ef] \quad [+ ef] \quad [+ ma]
\]
\[
N^3 \rightarrow [+ af] \quad \alpha \rightarrow [cr]
\]
\[
[ \alpha \quad / \quad \beta ]
\]

\(\alpha\) is dominant when \(N^1\) is identical for both verbs. Sentence 164 can take an orphan preposition at the end. The fact that this preposition must receive instrumental interpretation is easily illustrated by considering the possible lexical realization of the adjunct. (Without buying into an argument on deletion lexical rules here, some form of equi-deletion rule or its equivalent is assumed).

170b. Seymour used a knife to slice the salami with [a knife]\(^{\text{instrument}}\)

170c. *Seymour used a knife to slice the salami with [gusto]\(^{\text{manner}}\)

170d. *Seymour used a knife to slice the salami with [Liberace]\(^{\text{correspondent}}\)

A further long recognized difference between *use* and *with* as instrumentals is, of course, that only the verb carries a feature \([+ \text{intent}]\).

It may also be worth noting that an instrumental need not always be effective in promoting an ultimate effect:
177. Seymour used a knife to threaten Liberace (with).

\[
\begin{align*}
N^1 \rightarrow [+\text{ intent}] & \quad N^1 \rightarrow [+\text{ intent}] \\
[+\text{ ac}] & \quad [+\text{ ac}] \\
[+\text{ ef}] & \quad [+/-\text{ ef}] \\
N^2 \rightarrow [+\text{ tf}] & \quad N^2 \rightarrow [+\text{ tf}] \\
[+\text{ k}] & \quad [+\text{ k}] \\
N^3 \rightarrow [+\text{ af}] &
\end{align*}
\]

\[\alpha / \beta\]

The [k] feature signals a kinetic force, differentiated from [ac] which requires a volitional source.

At this point a difficulty arises for an interpretation based on feature dominance. Although use is effective in promoting the kinetic exercise of knife, the effect of that kinetic transfer medium [instrument] on the goal remains uncertain.

\[\text{Note that an instrumental cannot be characterized by the notion of a transfer medium alone. So-called double-object verbs also involve a transfer medium which is, however, not instrumental:}\]

178. Jeff gave Wendy a kiss.

\[
\begin{align*}
N^1[+\text{ ef}] & \quad N^2[+\text{ af}] & \quad N^3[+\text{ tf}]
\end{align*}
\]

END: ANALYSIS DISCONTINUED AT THIS POINT
REFERENCES


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Professional bio: Thor May has a core professional interest in cognitive linguistics, at which he has rarely succeeded in making a living. He has also, perhaps fatally in a career sense, cultivated an interest in how things work – people, brains, systems, countries, machines, whatever… In the world of daily employment he has mostly taught English as a foreign language, a stimulating activity though rarely regarded as a profession by the world at large.

Thor’s eventually awarded PhD dissertation, Language Tangle, dealt with language teaching productivity. Language Tangle (2010) is aimed at professional educators and their institutional keepers, and accordingly adopts a generally more discursive style than the Grammatical Agency analysis. Also in cyberspace (representing even more lost years!) is yet another sprawling, unfinished PhD dissertation draft in cognitive linguistics from the university of Melbourne in the early 1990s, parts of which can be seen in the Academia.edu repository as The Generative Oscillation Model, Postsupposition and Pastiche Talk and a couple of other papers.

Thor has been teaching English to non-native speakers, training teachers and lecturing linguistics, since 1976. This work has taken him to seven countries in Oceania and East Asia, mostly with tertiary students, but with a couple of detours to teach secondary students and young children. He has trained teachers in Australia, Fiji and South Korea. In an earlier life, prior to becoming a teacher, he had a decade of finding his way out of working class origins, through unskilled jobs in Australia, New Zealand and finally England (after backpacking across Asia in 1972).

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