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States, Processes, and Actions

- 9.1 In this chapter and those which follow, some rather **specific suggestions regarding the semantic structure of English** will be made, and in Chapter 17 there will be some similar suggestions regarding the semantic structure of another language. The reader should keep in mind that these **suggestions are tentative in the extreme**. A vast amount of hard and detailed work will be necessary before anyone can feel even moderately secure regarding the matters that will be discussed. It is necessary, however, to **begin somewhere**, and it is in that spirit that the following chapters are presented.
- 9.2 Syntactic description has usually taken the *sentence* to be its basic unit of organization, although probably no one would deny that systematic constraints exist across sentence boundaries as well. From time to time some attention has been given to "discourse" structure, but the structure of the sentence has seemed to exhibit a kind of closure which allows it to be investigated in relative, if not complete, independence. If we look at language from a semantic perspective, intersentential constraints play a role that is probably more important than under other views of language, for a number of the limitations which cross sentence boundaries are clearly semantic in nature. Even so, it remains possible for us to focus on the semantic structures which underlie sentences, so long as we keep in mind that this focus is artificially narrow and that many things will be explainable only when we extend our view beyond it. From

time to time we will look briefly across sentence boundaries, but most of our discussion will be limited to sentences. At first the limitation will be even narrower: to sentences which contain only one occurrence of what I shall call a *verb*.

- 9.3 I shall take the position that every sentence which is of interest to us is built around a *predicative* element. Usually, though not always, this predicative element is accompanied by one or more *nominal* elements. For example, in the sentences *The clothes are dry* there is a predicative element involving the meaning (*be*) *dry*, and it is accompanied by the nominal element *the clothes*. In the sentence *Harriet sang* there is a predicative element *sang* accompanied by the nominal element *Harriet*. Henceforth I shall refer to predicative elements as *verbs* and to nominal elements as *nouns*. These terms have been used most often for elements of surface or syntactic structure, not for semantic elements. In discussing semantic structure I could very well—and perhaps more comfortably—use terms like *predicate* and *argument* for *verb* and *noun* respectively. The reason I shall not do so is that what I am calling semantic verbs and nouns are reflected typically—in a **distorted** way, to be sure—in surface verbs and nouns. It is unnecessarily awkward to start with one set of terms, say *predicate* and *argument*, and have to change to another, *verb* and *noun*, at some unmotivated point along the path from semantic to surface structure.
- 9.4 My assumption will be that the total human conceptual universe is dichotomized initially into two major areas. One, the area of the verb, embraces states (conditions, qualities) and events; the other, the area of the noun, embraces "things" (both physical objects and reified abstractions). Of these two, the verb will be assumed to be central and the noun peripheral. There are various kinds of evidence which are best explained by assuming centrality for the verb. I shall mention a few general points now, but the entire exposition which follows I think will tend to confirm this assumption. It is of some interest, first of all, that in every language a verb is present semantically in all but a few marginal utterances. While it is accompanied typically by one or more nouns, we will shortly discuss some sentences in which only a verb is present. Utterances which semantically have no verb, like *oh* or *ouch* perhaps, seem best regarded as relics of the prehuman kind of communication discussed in Chapter 2, in which the direct symbolization of unitary

messages was the rule. Otherwise, I would assert, a verb is always present, though it may in some instances be deleted before a surface structure is reached. A somewhat more interesting assertion is that the nature of the verb determines what the rest of the sentence will be like; in particular, that it determines what nouns will accompany it, what the relation of these nouns to it will be, and how these nouns will be semantically specified. For example, suppose the verb is specified as an *action*, as we shall see is true of the verb in *The men laughed*. Such a verb dictates that it be accompanied by a noun, that the noun be related to it as *agent*, and that the noun be specified as *animate*, perhaps also as *human*. Thus I am taking the position that it is the verb which dictates the presence and character of the noun, rather than vice versa.¹ The correctness of this view is suggested by such facts as the following. If we are confronted with a surface structure such as *The chair laughed* and forced to give it a meaning of some kind, what we do is to interpret *chair* as if it were abnormally *animate*, as dictated by the verb. What we do not do is to interpret *laugh* in an abnormal way as if it were a different kind of activity, performed by inanimate objects. Numerous examples of this sort can be contrived, and they apparently show that the semantic influence of the verb is dominant, extending itself over the subservient accompanying nouns.² It is relevant to observe also that when units which I shall later call *inflectional* are added to the verb in semantic structure, it is impossible to say whether they have been added to the verb or to the entire sentence. In *The men laughed* we find a semantic unit *past*. Does the presence of this unit mean that the laughing took place in the past—that *past* applies to *laugh*—or that the men's laughing took place in the past—that *past* applies to the configuration of *laugh* with *the men*? I believe that the question has no significance, that any unit like *past* which is added semantically to a verb is added simultaneously to the entire sentence which is built around that verb, in the same way that anything which happens to the sun affects the entire solar system. In contrast, we may note that the fact that *men* is *plural* is relevant only to that noun: it is not a meaning that extends over the sentence as a whole. A noun is like a planet whose internal modifications affect it alone, and not the

¹Essentially the opposite position is taken in Chomsky 1965 and Fillmore 1968.

²Cf. McIntosh 1961:337. Although examples which appear to show the opposite may also be found, there are usually and perhaps always additional considerations which keep them from being counterexamples.

solar system as whole. As we proceed we shall see other evidence that the verb is central, the accompanying noun or nouns peripheral to it. In fact, although the term *sentence* provides a convenient way of referring to a verb and its accompanying nouns (and to more complex structures containing several verbs), the status of *sentence* as an independent structural entity is doubtful. There seems no need for some independent symbol *S* as the starting point for the generation of sentences; the verb is all the starting point we need. What we may call for convenience a sentence is either a verb alone, a verb accompanied by one or more nouns, or a configuration of this kind to which one or more coordinate or subordinate verbs have been added.

9.5 **States.** A good way to begin is by trying to account for certain basic differences between the semantic structures of the following four sets of sentences:

- (1) a. The wood is dry.
b. The rope is tight.
c. The dish is broken.
d. The elephant is dead.
- (2) a. The wood dried.
b. The rope tightened.
c. The dish broke.
d. The elephant died.
- (3) a. Michael ran.
b. The men laughed.
c. Harriet sang.
d. The tiger pounced.
- (4) a. Michael dried the wood.
b. The men tightened the rope.
c. Harriet broke the dish.
d. The tiger killed the elephant.

In set (1) a certain noun (*wood, rope, dish, elephant*) is said to be in a certain state or condition (*dry, tight, broken, dead*). I shall say of such sentences that the verb is specified as a *state* and that, as is typically true of such a verb, it is accompanied by a noun which is its *patient*. The patient specifies what it is that is in the state. The remaining sentences, those of sets (2), (3), and (4), contain verbs which are not specified as states. As a rule of thumb, nonstates can be distinguished from states by the fact that they answer the question

What happened?, What's happening?, and so on. A nonstate is a "happening," an event:

What happened?
The wood dried.
The men laughed.
Harriet broke the dish.
but not (for example)
*The wood was dry.

Various other rough tests can be applied to distinguish nonstates from states.³ In many instances, for example, a nonstate can occur in the "progressive" form, which is not available to a state:

The wood is drying.
The men are laughing.
Harriet is breaking the dish.
but not
*The wood is being dry.

Such rules of thumb are presented only as rough, practical guides, not as "discovery procedures." They are not necessarily always accurate, nor do they necessarily provide unfailing criteria for decisions in doubtful cases. In general, there is no reason to think that a particular semantic fact will be mirrored with 100 percent consistency by some other fact. To indicate that a verb may or may not be specified as a state, a rule of the following form can be used:

(S9-1) V → state

The fact that the arrow has a broken shaft means that its application is optional. The fact that it has a double head means that it must be read *is further specified as*, and not *is rewritten as, is replaced by*, or the like. A rewrite rule, several of which we shall encounter shortly, will be given with the usual single-headed arrow. In the convention of numbering rules which I shall follow, the designation (S9-1) means that this is the first semantic structure rule to be introduced in Chapter 9. This rule says that a verb, abbreviated V, may be specified optionally as a state. By implication, if a verb is not so specified it is a nonstate or, informally, a "happening" or event.

9.6 **Processes and actions.** But there are major differences between the sentences of (2), (3), and (4) which show that nonstates are not all of the same kind. In the sentences of (2) we seem to be dealing with

³Cf. Lakoff 1966.

^{stated}
processes, where the noun is said to have *changed* its state or condition. I shall say, therefore, that the verb in such sentences has been further specified as a process. Since a process still involves a relation between a noun and a state, it still seems valid in the sentences of (2) to say that the noun is the *patient* of the verb. The verbs in (3), however, are of a different sort. They have nothing to do with either a state or a change of state; instead, they express an activity or *action*, something which someone *does*. A rule of thumb which helps to distinguish an action from a process is that an action sentence will answer the question *What did N do?*, where N is some noun:

What did Harriet do?
She sang.
but not (for example)
*She died.

Conversely, it is often the case that a simple process sentence will answer the question *What happened to N?*, to which a simple action sentence is not an appropriate answer:

What happened to Harriet?
She died.
but not
*She sang.

The noun in an action sentence like those of (3) can no longer be said to be the patient of the verb. It specifies something which is neither in some state nor (in the same sense as above) changing its state; rather, it specifies something which performs the action. Such a noun can be said to be the *agent* of the verb. Thus states and processes are accompanied by patients, but actions by agents. If we now turn to the sentences of (4), it appears that the verb in these sentences is, simultaneously, both a process and an action. As a process it involves a change in the condition of a noun, its patient. As an action it expresses what someone, its agent, does. The agent is still someone who does something, but in (4) the agent does it *to* (or sometimes *with*) something, the patient of a process:

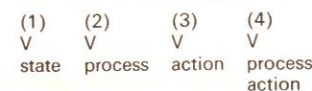
What did Harriet do?
She broke the dish.
What happened to the dish?
Harriet broke it.

In summary, a verb which has not been specified as a state by rule (S9-1) can be specified in either or both of two other ways. It may be a process, as in (2), it may be an action, as in (3), or it may be

both a process and an action, as in (4). These three possibilities are captured in the following rule, where the parentheses indicate an inclusive disjunction—either *process* or *action* or both may be chosen. The solid shaft on the arrow shows that the rule is obligatory; the designation “-state” is intended to mean, not that a semantic unit “nonstate” is present, but that the semantic unit *state* is absent:



Rules (S9-1) and (S9-2) together provide the following four semantic specifications for a verb:



9.7 **Ambient.** Now we need to indicate how verbs of these four types come to be accompanied by patient and/or agent nouns. Before we do, however, it might be well to consider the possibility that no noun at all need be present in some sentences:

- (5) a. It's hot.
 b. It's late.
 c. It's Tuesday.

The meaning of sentences like these seems to involve nothing but a predication, in which there is no “thing” of which the predication is made. It should be evident that the *it* in these sentences may be a surface element only; it need not reflect anything at all in the semantic structure. (Of course, there is another sentence in which the *it* of *It's hot*, for example, does reflect the presence of some semantic element.) Apparently the verb in each of these sentences is specified as a state. These sentences do not answer the question *What's happening?*, nor can they be made *progressive*: **It's being hot* is ruled out. What seems to be the case is that the particular states in (5) are all-encompassing states. They cover the total environment, not just some object within it. I shall say that the verb in these sentences is specified as *ambient*. In addition we might consider sentences like the following:

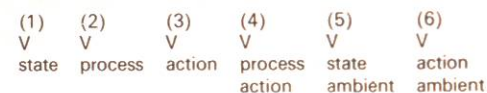
- (6) a. It's raining.
 b. It's snowing.

(26)

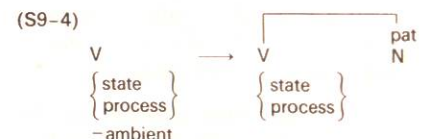
Here too the surface element *it* reflects nothing in the semantic structure. These sentences, however, evidently do not express states, for they answer the question *What's happening?* Furthermore, they seem to express actions rather than processes, for they also answer the question *What's it doing?*, where the *it* in the question does not reflect any item in the semantic structure either. If they express actions, the sentences of (6) do so without assigning any agent. Again we can say that the verb is *ambient*; it involves an all-encompassing event which is without reference to some particular “thing” within the environment. It would appear that a verb may be specified as ambient if it is a state or an action, but not if it is a process, a situation we can state with the following rule:



That is, a verb which is not specified as a process may be specified optionally as ambient. If we now look at the results of (S9-1, 2, 3) applied, of course, in that order, we find verbs specified in the following six ways, as illustrated in the sets of sentences indicated by the numbers:

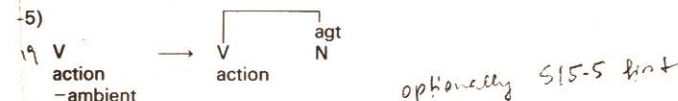


9.8 **Patient and agent.** We are now in a position to discuss the manner in which each of these six kinds of verb dictates the presence of accompanying nouns, as well as the relation (patient or agent) which such nouns bear to each verb. In the first place, a verb which is specified as a state or process requires the accompaniment of a patient noun, provided the verb is not specified as ambient at the same time. This requirement can be stated in the following way:

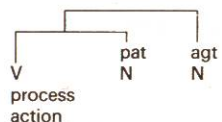


In these diagrams *pat* will be used as an abbreviation for *patient* and N for noun. The single-headed arrow means that the con-

figuration on the left is replaced by that on the right. It is understood that whichever member of the exclusive state/process disjunction (indicated by the braces) is present on the left of the arrow, that same member must be present on the right also. We need to provide also for the addition of an agent noun to an action verb, again provided the verb is not ambient:



Agt, of course, is used as an abbreviation for *agent*. In the sentences of (4) above, where the verb is both a process and an action, rules (S9-4) and (S9-5) both apply. In that case, various kinds of evidence suggest that the resulting configuration (perhaps by a universal convention) should be diagramed as in (7), where the patient relation is more “internal” than the agent relation:



For one thing, it may be noted that under certain circumstances an action verb may be *pronominalized* (“proverbalized” would be a more appropriate term), in which case it will be reflected in the surface structure in the form *do it*:

Harriet sang.
 She did it (that is, sang) beautifully.

Now, if the action verb is at the same time a process, and thus has a patient noun, “proverbalization” affects the entire configuration of verb plus patient, not simply the verb alone:

Harriet broke the dish.
 She did it (that is, broke the dish) accidentally.

This observation suggests that the verb plus patient configuration behaves as a unit in a way that the verb plus agent configuration does not, for there is no “proverbal” form analogous to *do it* which substitutes for the verb plus agent as a unit. Second, it seems to me that “adverbs” like *accidentally* in the example just given can have

as their domain of modification only the total verb plus patient configuration and never the verb alone, independently of the patient. In *Harriet broke the dish accidentally* the adverb *accidentally* modifies *broke the dish* as a unit. Apparently it cannot modify *broke* alone, a fact which might explain why *Harriet broke accidentally the dish* is deviant. This observation, then, also confirms the special internal coherence of the verb plus patient configuration. It is interesting to note also that idioms are often literalized as verb-patient configurations (*break-the-ice*, for example), but never, so far as I know, as verb-agent configurations. When we come later to a discussion in Chapter 15 of how a sentence distinguishes new from old information, other evidence relevant to this matter will be pointed out.

9.9 By way of recapitulation, rules (S9-1) through (S9-5) create the following six semantic configurations, given with an example for each:

- | | |
|--------------------------------------|-------------------------|
| (1) V (state) pat N | The wood is dry. |
| (2) V (process) pat N | The wood dried. |
| (3) V (action) agt N | Harriet sang. |
| (4) V (process / action) pat N agt N | Michael dried the wood. |
| (5) V (state / ambient) | It's hot. |
| (6) V (action / ambient) | It's raining. |

(27)

