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A SEMANTICALLY BASED SKETCH OF ONONDAGA

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A SEMANTICALLY BASED SKETCH OF ONONDAGA

By

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Dedicated to my colleague
Mary R. Haas

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1. INTRODUCTION

1.1. This study is in the nature of a preliminary sketch for a much larger description of Onondaga—or, for that matter, of some other Northern Iroquoian language—which I hope will some day be completed. Aside from the fact that it deals specifically with a language on which there is at present little accessible information, its claim to novelty is that it attempts to describe aspects of Onondaga structure in ‘generative semantic’ terms. Instead of beginning with some fancied ‘deep structure’, as is the current fashion, and then discussing transformations and phonological rules which lead to an eventual phonetic output, having perhaps a few additional words to say about a semantic ‘interpretation’, it sees the area of semantic structure as the place where the well-formedness of utterances in the language is determined. The first few sections of this work will attempt to describe some of the factors relevant to semantically well-formed Onondaga sentences. After that attention will be given to the transformation of semantic structures into surface structures, the ‘symbolization’ of the latter by underlying phonological arrangements, and the conversion of these last into phonetic outputs.¹

1.2. As is well known, the Iroquoian language family is divided into a southern branch, consisting only of Cherokee in its various dialects, and a more diverse northern branch. To mention only the languages still spoken, Northern Iroquoian includes the closely related languages of the original Five Nations of the Iroquois—Mohawk, Oneida, Onondaga, Cayuga, and Seneca—plus the somewhat more divergent Tuscarora.² The present sketch is based on work with Onondaga which I began while teaching in the 1968 spring semester at Cornell University. I was able to add two months of more concentrated work after the semester was over. It would be presumptuous to base any kind of linguistic description on such a small amount of contact with the language, let alone the kind of description that is attempted here, were it not for the considerable head start provided by my work with Seneca a decade earlier and by the descriptions of Oneida and Mohawk mentioned in footnote 2. The Five Nations languages are so closely related that much of the knowledge gained of any one of them can be applied to any of the others. I should mention that, while a few other linguists have done some fieldwork on Onondaga, I know of nothing substantial and coherent that has ever been published on the language except for two long texts.³ This state-

¹ An account of the theoretical background of this work may be found in W. L. Chafe’s *Meaning and the Structure of Language*, Chicago: University of Chicago (1970).

² Some of the major linguistic works dealing with these languages have been Floyd G. Lounsbury, *Oneida Verb Morphology*, Yale University Publications in Anthropology No. 48 (1953); Paul M. Postal, *Some Syntactic Rules in Mohawk*, unpublished Yale University dissertation (1962); and Wallace L. Chafe, *Seneca Morphology and Dictionary*, Smithsonian Contributions to Anthropology No. 4 (1967). I am very much indebted to both the Lounsbury and Postal works.

³ J. N. B. Hewitt, *Iroquoian Cosmology, First Part*, in the 21st Annual Report of the Bureau of American Ethnology (1903), pp. 127–339 (Onondaga Version, pp. 141–220); and *Iroquoian Cosmology, Second Part*, in the 43rd Annual Report of the Bureau of American Ethnology (1928), pp. 449–819 (Onondaga Text, pp. 612–791).

ment may come as a surprise to those who know of the publications of Zeisberger's work,⁴ but the language there set forth is clearly not that which is called Onondaga today. My guess is that Zeisberger, who spent considerable time with the Onondaga in the mid-eighteenth century, was guilty, as it was later put, of 'disregarding his Indian friends' advice on mixing dialects',⁵ and that he did not trouble to separate what he may have known of Onondaga from what he knew of Mohawk and perhaps other languages. I must express my gratitude to Cornell University for providing a faculty research grant which paid my field-work expenses during the spring semester, to the Phillips Fund of the American Philosophical Society for their support of similar expenses during the period which followed, and to the Humanities Institute of the University of California for providing me with a salary while the summer work was in progress. I am also greatly indebted to several individuals on the Onondaga Reservation in New York, above all to Mrs. Jessie Pierce and Mrs. Delia Carpenter.

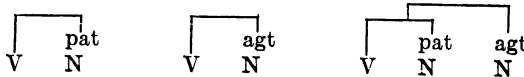
1.3. It is a real question whether one can describe with any degree of accuracy the semantic structure of a language which he does not speak natively. The difficulties are only magnified when, as in this case, one can rely on nothing more than brief fieldwork—work with elderly informants who, like most people, are unused to introspecting about subtle details of their language. The task would be altogether hopeless were it not for the extent to which the semantic structures of all languages are alike. Since a linguist is a human being who speaks some language natively (and probably has at least some familiarity with others), he cannot help but have a tacit understanding of much of the semantics of all languages. One could not have expressed such a view until recently, but today it need not even seem revolutionary. Informants' reactions to questions, their choice of one or another usage in particular contexts, their translations into English—observations like these can serve as clues to the presence of meanings which, to a greater or lesser extent, may already be familiar to the linguist. In the case of semantic units like 'past' or 'plural' or 'dual', recognizability presents no problem at all. Other semantic units may not be as readily accessible, but the difference is one of degree and of the amount of hard work that is required. Languages do not have identical semantic structures any more than they have identical phonetic structures (the analogy is instructive), but I believe there is a range of semantic possibilities available to all languages, a range which is limited and ultimately knowable, just as seems to be the case in the phonetic area. Eventually we may know enough about semantic universals that we will be able to investigate their presence or absence in unfamiliar languages with a great deal more confidence than can be attached to this tentative exploration of Onondaga.

⁴ E. N. Horsford, ed., *Zeisberger's Indian Dictionary*, Cambridge, Mass.: John Wilson and Son (1887); and David Zeisberger, *Essay of an Onondaga Grammar, or a Short Introduction to Learn the Onondaga al. Maqua Tongue*, reprinted from *The Pennsylvania Magazine of History and Biography*, Philadelphia (1888). The word 'Maqua' in the title of the latter is significant; it is another name for Mohawk.

⁵ Rev. William M. Beauchamp, *Moravian Journals Relating to Central New York, 1745-66*, Syracuse: Onondaga Historical Association (1916), p. 5.

But we can hardly begin to approach such a goal without making provisional efforts of the type set forth here.

1.4. Not only is it difficult to determine facts about the semantic structure of a language with which one has had such minimal contact, there is also no satisfactory available model of what semantic structure is like. I do not believe that it can be described in terms of the 'phrase structure' model which has been used for 'deep' structure, and I have no choice but to present Onondaga in terms that will seem novel to the reader. The model used is one that I have been concerned with developing over a number of years, but it remains one with which I am not fully satisfied. In its most recent form it owes much to ideas set forth in a variety of publications, and to discussions, trials, and errors too numerous to mention. In brief summary, the nucleus of a sentence is seen to be a 'verbal' or 'predicative' unit, which I shall label 'Verb' or simply 'V'. To this verb are usually attached one or more nominal units, labeled 'Noun' or 'N', which stand to it in one of several possible relations, for example the relations of 'patient' or 'agent'. The following diagrams show a verb which has a patient noun, one which has an agent noun, and one which has both:



(In the third diagram the relation of patient is shown as subordinate to that of agent on grounds which will not be discussed here.) The left-to-right order of the elements in these diagrams has nothing whatsoever to do with the order of elements in the eventual surface structure, and may be regarded for present purposes as arbitrary.

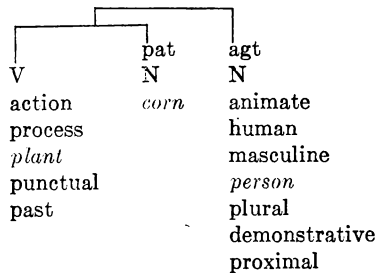
1.5. Both verbs and nouns are subject to further specification in terms of narrower semantic units, and these units fall into three different types. The first type, which I shall call 'selectional', may be exemplified for verbs by the unit 'state'; that is, the meaning of a verb may be one describable as a state. The choice of a selectional unit has at least two consequences. First, it dictates which of the arrangements like those illustrated above is appropriate. If a verb is specified as a state, for example, it normally requires the accompaniment of a patient noun, as in the first diagram on the left above. (It can be seen that in the abstract formation of a semantic structure the choice of selectional units for the verb must be made before the number of accompanying nouns and their relations to the verb can be determined.) Second, a selectional unit narrows the choice of the second kind of unit found within a verb or a noun, the 'lexical' unit, of which each verb or noun contains only one. (In a noun, it may be noted, selectional units play only this second role.) Thus, a verb which is selectionally specified as a state may be lexically specified as 'old' or 'sharp', but not as 'cough' or 'eat.' Or a noun which is selectionally specified as masculine, for example, may be lexically specified as 'chief' or 'Ax Carrier' (a man's name), but not as 'knife' or 'Flowers in Water' (a woman's name). The lexical unit carries the maximum

burden of information within its verb or noun. The third kind of semantic unit that we may find within a verb or a noun will be labeled 'inflectional'. Such units as past or plural fall into this category, which is characterized especially by its lack of relevance to the choice of a lexical unit.

1.6. As a more concrete illustration, let us consider the sentence whose phonetic output may be indicated as follows, along with an English translation:

- (1) neke heŋokwé wa?hatinehayéthwa? These men planted corn.

The phonetic symbols have their usual values, except that the nasalized vowel ϵ is a low, rather than mid, front vowel. The acute accent marks indicate a higher pitch on the marked vowels; there are further details of pitch with which we need not concern ourselves here. The spaces indicate word boundaries, and are included partly for clarity of presentation. They do have some phonetic significance, however, in that pauses may occur normally at these points; it would be odd for a speaker to pause anywhere else. (Pauses are not, however, equally likely at all word boundaries.) This sentence will be said to have a semantic structure which can be diagrammed as follows:



I am sure there is more to the semantic structure of this sentence than is indicated here, but the diagram does include all the features relevant to this sentence from among those that will be discussed in this work. The skeleton of this structure is provided by the verb and the two nouns, one of which is related to the verb as patient, the other of which is related to it as agent. The verb is selectionally specified as an 'action' and as a 'process'. It is the presence of the selectional unit action that requires the accompaniment of an agent noun, and the presence of process that requires a patient noun. The verb is, furthermore, lexically specified as 'plant'. This lexical unit is an action in that it is something which people, here 'these men', *do*. It is a process in that it involves a change in the condition or disposition of the patient, here 'corn'. In these diagrams I shall identify a lexical unit by italicizing it. Below the italics will be given whatever inflectional units may be present. In this verb they include 'punctual', indicating that the meaning of the verb took place at one point in time, and 'past'. If we turn to the patient noun, we see that it is lexically specified as 'corn', but that no selectional or inflectional units are given. I am assuming a system in which certain semantic units are either 'marked' as being present or not indicated at all. Those units whose presence is marked will be introduced gradually as we

proceed, but we may note especially that the patient noun in this sentence, since it is not marked as animate, is understood to be selectionally '-animate' (that is, 'inanimate'). The absence of such a unit will be indicated with a minus sign, but only when that absence needs to be referred to for some reason. Since the patient noun is not marked as 'plural', it is understood to be inflectionally '-plural' (or, of course, 'singular'). The agent noun, unlike the patient, is selectionally specified as 'animate', and also as 'human' and 'masculine'. The lexical unit in this agent noun is given as 'person'. Under the lexical unit are listed several inflectional units: 'plural', 'demonstrative', and 'proximal'.

1.7. This, then, however incomplete and tentative, is the kind of semantic structure that will be described. A number of semantic rules will be given, with the intention that they should generate some of the structures of this kind which are possible in Onondaga. To a large extent the possibilities here will coincide with the possibilities found in other languages, but to some extent they will be peculiar to Onondaga or to the Northern Iroquoian languages. Undoubtedly when more is known about semantic structures it will be possible to assume as given by the universal nature of language many things that will have to be explicitly mentioned here. Semantic structures, once established, are related to surface structures and to eventual phonetic realizations through a complex series of 'postsemantic' processes, and it is in these processes that the differences between languages become most conspicuous. I believe that it is in large part the long history of changes peculiar to an individual language which creates the necessity for such processes, and the history of every language is unique, even if the changes it has undergone are subject to universal constraints. Many of the postsemantic processes that will be discussed here are unique to the Northern Iroquoian languages, or to Onondaga itself. The study as a whole will be presented in terms of four different types of rules. First, and to me of the greatest interest since they deal with the area least well understood, will be rules for the formation of semantic structures (Chapters **2**, **3**, **4**, and **8**). Second will be rules ('transformations') which convert semantic structures into surface structures (Chapters **5**, **6**, and also **8** in part). Third will be 'symbolization' rules, which substitute phonological configurations for the postsemantic units of the surface structure. Rules of this third type will not be explicitly stated, but will be indicated only in passing; for example, 'house' might be said at some point to be symbolized *nghs*. Fourth will be phonological rules, which transform the underlying phonological arrangements into phonetic ones (Chapter **7**). The separate function and order of application of these four types of rules should be kept in mind as the exposition proceeds.

1.8. There are several unusual conventions I shall follow in the statement of rules, especially in the kinds of arrows I shall use. In the first place, a single-headed arrow with a solid shaft ($A \rightarrow B$) will mean that A is obligatorily replaced by B. A single-headed arrow with a broken shaft ($A - \rightarrow B$) will mean that A is *optionally* replaced by B. Arrows of these two kinds will appear largely in the statement of transformations and phonological rules. More unorthodox will be the use of a double-headed arrow. A double-headed arrow with a solid shaft

($A \rightarrow > B$) will mean that A is 'further specified' as B. For example:

$$\text{demonstrative} \rightarrow \left. \begin{array}{l} \text{proximal} \\ \text{distributive} \end{array} \right\}$$

does not mean that demonstrative is replaced by proximal or distributive, but that something which is already specified as demonstrative must be further specified in one of these two ways. A double-headed arrow with a broken shaft ($A \dashrightarrow B$) will mean that A is *optionally* further specified as B. Thus:

$$\text{animate} \dashrightarrow \text{human}$$

means that something which is specified as animate may or may not be further specified as human. These last two kinds of arrows will be used predominantly in semantic rules, although occasionally in transformations also.

1.9. When examples are cited, whether of sentences or of individual words, they will be given in the phonetic shapes which they have as isolated utterances. There are several phonological processes which very commonly affect such shapes, and which it is therefore desirable to mention here at the outset. For one thing, every sentence (or word stated in isolation) that would otherwise begin with a vowel acquires an initial *ʔ*, and every sentence (or word) that would otherwise end with a vowel acquires a final *h*. Thus, 'I am planting' or 'I have planted', which would otherwise be cited as *akyéthwi*, will here be written as *ʔakyéthwih*. It will also be easier to understand the cited examples if it is realized that most words acquire an accent on their final vowel when they are not sentence-final. When they are sentence-final, they acquire an accent on their penultimate vowel in the majority of cases, although in some sentence-final words the accent will be on the antepenultimate or the final vowel. At the same time a sentence-final word with penultimate accent will usually show lengthening of the accented vowel if it is in an open syllable. These matters will be discussed further in Chapter 7.

2. SELECTIONAL UNITS OF A VERB AND THEIR DETERMINATION OF ACCOMPANYING NOUNS

2.1. States and actions. The configuration consisting of a verb and one or more nouns related to it in certain ways forms what may be regarded as the skeletal semantic structure of a simple sentence. (Sentences containing more than one verb will not be discussed until Chapter 8.) Since, however, the nouns which accompany a verb and the relations which such nouns bear to the verb are determined by selectional units within the verb, it is necessary for us to concern ourselves with these selectional units at the outset. Let us begin by examining certain features of the following two sentences:

- | | | |
|-----|---------------------------|---------------------|
| (2) | a. <i>cihá okstéʔah</i> | The dog is old. |
| | b. <i>cihá kahnyá'haʔ</i> | The dog is barking. |

Both sentences contain a verb and a single noun, and the latter is lexically specified as 'dog' in both. Except for these points of similarity, the sentences are quite different. The first communicates that the noun 'has the quality' specified by the

verb; the second, that the noun 'is performing the action' which the verb specifies. This semantic difference finds a phonological reflection in the fact that the second word in (2a) begins with a prefix symbolized *o* (from underlying *yo*), while the second word in (2b) begins with a prefix symbolized *ka*. From these sentences it appears that a verb may involve either a 'state' (condition, quality) or an 'action', a fact which can be indicated in the following provisional semantic rule:

$$(S1') \quad V \rightarrow \left\{ \begin{array}{l} \text{state} \\ \text{action} \end{array} \right\}$$

(The braces indicate an exclusive disjunction: state or action, but not both.) The rule is numbered with a superscript 'prime' to indicate that it is provisional, eventually to be replaced by (S1). We might next posit a two-part rule like (S2') to indicate that a state verb requires the accompaniment of a patient noun, such as 'dog' in (2a), indicating what it is that is in the state, while an action verb requires the accompaniment of an agent noun, such as 'dog' in (2b), indicating what it is that performs the action:

$$(S2') \quad \begin{array}{l} \text{a.} \\ \text{b.} \end{array} \quad \begin{array}{l} V \\ V \end{array} \rightarrow \begin{array}{l} V \\ V \end{array} \quad \begin{array}{l} \text{pat} \\ \text{agt} \\ \text{N} \\ \text{N} \end{array}$$

state state action action

2.2. Processes. The full range of possibilities is not thereby accounted for, however. We might, for example, compare the following two sentences:

- (3) a. ?onqhsaká:yqh The house is old.
 b. ?onqhsaté:kha? The house is burning.

(The postsemantic phenomenon of 'incorporation' of the patient noun into the verb can be observed in the surface structures of both these sentences, but that is not the issue at the moment.) Sentence (3a) involves a patient being in a state, just as did (2a), but sentence (3b) involves a patient being subjected to a process. We can say that in (3b) something is 'happening', that an event is taking place, while this is not the case for (3a). Furthermore, it is possible for the verb in (3b) to be inflected in ways that are not available to the verb in (3a); for example:

- (4) wa?onqhsaté·ka? The house burned.

where a single transitory occurrence is involved (this inflection will be termed 'punctual' in 3.2 below). Sentence (2b) described something happening also, and the verb of that sentence can be inflected in ways including that illustrated in (4):

- (5) cihá wa?káhnya? The dog barked.

But in spite of these similarities between sentence (3b) and sentence (2b), these sentences cannot be considered to contain the same kind of verb. In (3b) something is happening *to* something. The house is a patient, just as it is in (3a). In (2b), on the other hand, it is not that something is happening to the dog, but

rather that the dog is doing something; it is an agent. Let us say, therefore, that the verb in (3b) is specified as a 'process', while that in (2b), as noted earlier, is specified as an action. Processes and actions have in common the fact that they involve something happening, as opposed to states, where a condition is said to exist. Furthermore, both processes and actions, as opposed to states, are subject to the kind of inflection suggested in (4) and (5), while states are not. On the other hand, processes and states have in common the fact that they normally require the accompaniment of a patient noun, while an action must normally be accompanied by an agent noun. This situation is reflected in the fact that both (3a) and (3b) exhibit a patient prefix symbolized *o* (from *yo*), while (2b) shows an agent prefix symbolized *ka*.

2.3. Action-processes. There is still more to be considered, however. In sentence (6) both a patient and an agent noun are present:

(6) $\text{cihá iwéks o'wáhæ:ʔ}$ The dog eats meat.

The dog does something (as an agent), but at the same time something happens to the meat (as a patient). Evidently the verb in this sentence is specified as both action and process; these two selectional units are not, then, mutually exclusive. What is traditionally known as a 'transitive' verb may be regarded as one which is specified in this double way. The various possibilities for a verb, judging from this discussion, can be stated in the following revision of (S1'):

$$(S1) \quad V \rightarrow \left\{ \begin{array}{l} \text{state} \\ \text{(action)} \\ \text{(process)} \end{array} \right\}$$

(The parentheses indicate an inclusive disjunction: action or process or both.) We have, then, the following four kinds of verbs, as illustrated in the sentences indicated:

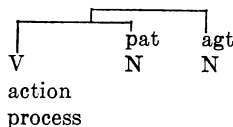
(2a, 3a)	(2b)	(3b)	(6)
V	V	V	V
state	action	process	action process

Rule (S2') can now be modified to indicate that either a state or a process verb requires the accompaniment of a patient noun, while an action verb requires the accompaniment of an agent:

$$(S2) \quad \begin{array}{l} \text{a. } V \rightarrow V \begin{array}{l} \text{pat} \\ \text{N} \end{array} \\ \left\{ \begin{array}{l} \text{state} \\ \text{process} \end{array} \right\} \quad \left\{ \begin{array}{l} \text{state} \\ \text{process} \end{array} \right\} \\ \text{b. } V \rightarrow V \begin{array}{l} \text{agt} \\ \text{N} \end{array} \\ \text{action} \quad \text{action} \end{array} \quad (S12)$$

(In (S2a) it is understood by convention that, with either state or process being present on the left of the arrow, the same unit will be present on the right.) A verb

which is specified as both an action and a process requires the accompaniment of both a patient and an agent noun, and the resulting configuration will be diagrammed as follows:



2.4. Verb roots. Once a verb has been specified in terms of one of the four possibilities just described, it may go on to be specified in terms of a particular lexical unit such as 'old', 'burn', 'bark', 'eat', or the like. As a general term for the lexical units which are found within a verb, I shall use the name 'verb root'. Thus 'old', 'burn', etc. will be called verb roots. Provisionally, verb roots can be introduced by rules like the following:

- (S3')
- a. state →> old, sharp, . . .
 - b. action →> bark, cough, . . .
 - c. process →> burn, get thin, . . .
 - d. $\left[\begin{array}{c} \text{action} \\ \text{process} \end{array} \right]$ →> eat, plant, . . .

(The square brackets in (S3'd) indicate the simultaneous presence of both action and process.) The list of units to the right of each arrow is very long, and would be difficult to complete not only because of its length, but also because of the variation which exists among different speakers of the language so far as its full content is concerned. In addition, it must be understood that there are factors beyond the specification of a verb as state, action, or process which are relevant to the determination of a particular verb root. Such factors have to do particularly with the influence a verb exerts on the selectional units that may occur in an accompanying noun. Thus, for example, if a verb is to contain the verb root 'wise' it must have a patient noun that is selectionally specified as animate; only animate things are wise. If a verb is to contain the verb root 'sharp', on the other hand, it must have a patient noun that is selectionally -animate (not specified as animate). In order to account for such requirements, we might first allow a verb to be specified in terms of selectional units like those indicated on the right of the arrow in (S4):

- (S4) $V \longrightarrow \left\{ \begin{array}{l} \text{animate patient} \\ \text{-animate patient} \end{array} \right\} / \left\{ \begin{array}{l} \text{state} \\ \text{process} \end{array} \right\}$

That is, a verb which is specified as a state or a process may be specified also in terms of selectional units like 'animate patient' or '-animate patient'. Actually, selectional units like those introduced by (S4) amount to statements of the obligatory application or nonapplication of rules which introduce the selectional units of a noun. In the above examples the rule which introduces animate (rule (S26) in chapter 4 below) is said to be obligatory—or to be impossible—for a patient noun. Rules like those of (S3') can now be complicated in the direction of including

specifications like these:

- (S3) a. $\left[\begin{array}{l} \text{state} \\ \text{animate patient} \end{array} \right] \rightarrow \text{wise, ...}$
 b. $\left[\begin{array}{l} \text{state} \\ \text{-animate patient} \end{array} \right] \rightarrow \text{sharp, ...}$

(S3) must, of course, be applied after (S4). (The numbering of rules in this work will often be governed solely by convenience of presentation.) Another question is whether we should, for example, try to account for observations such as that the agent noun for 'bark' must contain a noun root like 'dog' or 'fox', dependent on a selectional unit 'canine animal' perhaps. A comprehensive description of requirements like these would lead us into a study of unforeseeable complexity, and I shall have no more to say about them here.

2.5. Optional deletion of process. It is still necessary to say one more thing about a verb that is specified as both an action and a process. After a verb of this kind has received a lexical specification such as 'eat' by means of rules like (S3'd), it is possible for process to be dropped from its bundle of selectional units, and for this to happen before a patient noun is added by (S2a). In other words, we find sentences like:

- (7) *cihá í-weks* The dog eats.

where no patient noun is present. Such a sentence is actually ambiguous: this one might mean 'The dog eats it' as well (where the patient noun has lost its lexical unit postsemantically through pronominalization). But given the meaning indicated in (7), we must say that the following optional process can be applied to modify the semantic structure of an action-process verb:

- (S5) process $\rightarrow \phi / V$
 action

The ordering of these rules must allow (S3'd) to operate first to establish a lexical unit, (S5) must come next to delete the selectional unit process, and (S2a) must be applied after (S5) so that no patient is added in this circumstance.

2.6. Derivation. I am assuming that a verb root is intrinsically a state, a process, an action, or simultaneously an action and a process, but often it is the case that a verb root which is intrinsically one or another of these types can be converted into a verb root of a different type through the addition to it of a certain 'derivational' unit. For example, 'dirty' is inherently a state:

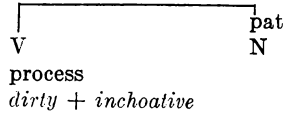
- (8) *ʔótkiʔ* It's dirty.

(In this and the following examples a postsemantic pronominalization has taken place, as it has in the English translation, to delete the lexical unit from the patient noun, the identity of this unit having been established by the context; see 6.1.) A process verb root can, however, be created by the addition to 'dirty' of a derivational unit which may be labeled 'inchoative':⁶

- (9) *ʔotkiʔih* It has gotten dirty.

⁶ Cf. Lounsbury, *ibid.*, 78.

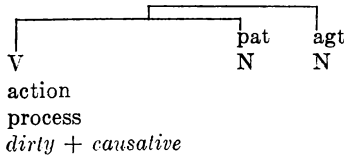
The relevant semantic structure of this sentence can be diagrammed as follows:



It is also possible to create an action-process verb root, by the addition to 'dirty' of a derivational unit 'causative':

(10) wa?katkihta? I got it dirty.

This sentence has a semantic structure whose relevant features can be diagrammed in this way:



Derivational processes like these are not something that can be described with generally applicable rules. Statements like the following can be made:

- (S6)
- a. V → V
state process
root root + inchoative
- b. V → V
state action
root process
root + causative

(*root* being a cover term for some particular verb root—the same on both sides of the arrow). But the verb roots which will undergo such processes are strictly limited. In a list of verb roots it is necessary to especially mark those to which rules like (S6a) and/or (S6b) are applicable. It should also be pointed out that such rules must be applied before the introduction of agent and patient nouns by (S2). It is interesting also, in this connection, that (S6b) must be applied *after* the optional dropping of 'process' allowed by (S5), for when process has been introduced by (S6b) it cannot be deleted. That is, a sentence like (10) must have a patient; it cannot communicate an agent and an action alone. While one can either 'eat something' or just 'eat', one can only 'get something dirty'. One cannot simply 'get dirty' as the agent of an action (although, of course, one can 'get dirty' as the patient of a process).

2.7. Benefactive and experiential verbs. Apparently a noun can be related to a verb not only as patient or agent, but also in several other ways. Two other relations of this sort will be mentioned here, and are illustrated in these sentences:

- (11)
- a. Harry hohq.wá.ye? Harry has a boat.
b. Harry wa?hahq.wá.kę? Harry saw a boat.

(English personal names are used almost exclusively in normal conversation in this language, so that it would be unusual to find an Onondaga name in sentences like these.) Each of these sentences contains a patient noun, which is lexically specified in each of them as 'boat'. Postsemantically this lexical unit is subject to 'incorporation' into the verb, and appears phonologically as *hqw*. Each sentence also contains another noun, lexically specified as 'Harry', which cannot be regarded as either a semantic patient or a semantic agent. In (11a) this noun bears what I shall call a 'beneficiary' relation to the verb. The verb in (11a) involves a state—let us call it the state of being possessed—and the patient noun 'boat' is said to be in this state. 'Harry', we might say, is the one who benefits from the boat being possessed, hence the noun containing 'Harry' can be said to be the beneficiary of the verb. As we shall note later, and as is reflected in the prefix symbolized *ho*—the masculine patient prefix—a beneficiary noun in Onondaga is postsemantically transformed into a patient noun. In sentence (11b) the noun which is lexically specified as 'Harry' is related to the verb in still another way; I shall say that it is the 'experiencer' of the verb. The verb in this case evidently involves a process, the process of becoming visible, and the patient noun 'boat' is the patient of this process, the thing affected by it. The process is one which involves an 'experiencing' on the part of some individual, in this case Harry, so that we can identify the noun which is lexically specified as 'Harry' as the experiencer of the verb. The prefix symbolized *ha*—the masculine agent prefix—shows that in Onondaga an experiencer noun is postsemantically transformed into an agent noun. In the surface structure, then, a beneficiary is reflected as a patient, while an experiencer is reflected as an agent. Before we go on to consider the beneficiary and experiencer relations in somewhat more detail, we might also note that any noun which bears either of these two relations to a verb must apparently be animate:

$$(S7) \quad \left. \begin{array}{c} \{ \text{beneficiary} \} \\ \{ \text{experiencer} \} \\ \text{N} \end{array} \right\} \rightarrow \left. \begin{array}{c} \{ \text{beneficiary} \} \\ \{ \text{experiencer} \} \\ \text{N} \\ \text{animate} \end{array} \right\}$$

Let us now give further attention to the relation of beneficiary. A verb which will support such a relation must be a verb which involves a state or event that operates to someone's benefit. We can say, then, that a verb may be selectionally specified as 'benefactive':

$$(S8) \quad V \rightarrow \triangleright \text{benefactive}$$

A subsequent rule, like those of (S2), can then state that such a verb is accompanied by a noun which bears to it the relation of beneficiary:

$$(S9) \quad \begin{array}{c} V \\ \text{benefactive} \end{array} \rightarrow \begin{array}{c} \overbrace{\hspace{1.5cm}}^{\text{ben}} \\ V \\ \text{benefactive} \end{array} \begin{array}{c} \text{N} \end{array}$$

This rule is either optional or obligatory, depending on the particular verb root

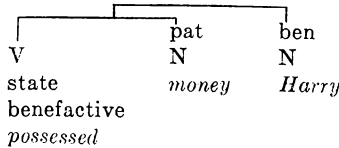
that is specified for the benefactive verb. Probably the introduction of benefactive is not as free as rule (S8) suggests. In fact, aside from the derivational possibilities that will be described shortly, it would seem that the list of benefactive verb roots is confined to just a few states:

- (S10)
- | | | |
|----|--|---|
| a. | state
benefactive | → > possessed |
| b. | state
benefactive
-animate patient | → > owned |
| c. | state
benefactive
animate patient | owned and forcibly
→ > controlled, in,
attached |

(In (S10a) it is understood that neither the selectional unit ‘-animate patient’ nor the selectional unit ‘animate patient’ is present, since neither is specified.) It is the verb roots labeled ‘in’ and ‘attached’ which are accompanied only optionally by a beneficiary noun. Another way in which ‘in’ is used will be discussed in Chapter 8. The verb root ‘possessed’ given on the right of (S10a) may occur with a variety of different nouns as patient. Its meaning involves possession of a most general sort, whether temporary or permanent. In (12a,b) its presence is reflected phonologically by *yε*, in (12c) by *ε*:

- (12)
- | | | |
|----|--------------------|---|
| a. | Harry hohwistá:yε? | Harry has money. |
| b. | Harry honaskwá:yε? | Harry has cattle, or
domestic animals of
some kind. |
| c. | Harry ho?níshe? | Harry has a father. |

The relevant semantic structure of sentence (12a) can be diagrammed in this way:



The verb root ‘owned’ given on the right of (S10b) involves the private ownership—not just the possession—of inanimate things. Its use is illustrated in the following sentence, where its underlying phonological shape is *awε* (the *a* being swallowed up by the *o* of the masculine patient prefix):

- (13) Harry howé kahó:wa? Harry owns a boat.

The first of the verb roots given on the right of (S10c), that which is labeled ‘owned and forcibly controlled’, involves the ownership of a domestic animal. In the following sentence its phonological representation is *chenε*:

- (14) Harry hochené? kohsá:tes Harry owns a horse.

The verb root ‘in’ is symbolized *ata*, and ‘attached’ is symbolized *qt* in the following sentences. The symbolization of ‘head’ in (15b) is *nq?war*, but phonological

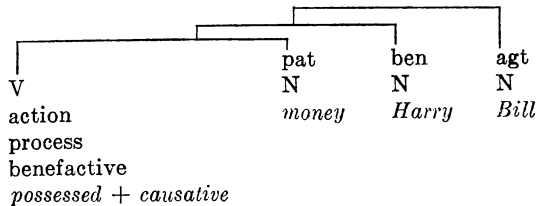
rules transform the sequence $n\phi^?war\phi t$ into $n\phi^?wa\acute{e}t$ (see chapter 7):

- (15) a. Harry hawe-yáhsatah Harry has a heart (in him).
 b. Harry hono $\phi^?wa\acute{e}$ -ta $\phi^?$ Harry has a head (attached to him).

In (15a) the *haw* of the second word is the symbolization of the masculine patient prefix which occurs before *e*; it is thus equivalent to the *ho* of (15b). The lexical unit which occurs in a benefactive verb need not be of the sort listed in (S10), but may instead be derived. For example, sentences in which the verb root is translated 'give' probably contain the state-benefactive verb root 'possessed', converted into an action-process verb root through the addition of the derivational unit 'causative':

- (16) Bill wa $\phi^?hohwist\phi^?$ Harry Bill gave money to Harry.

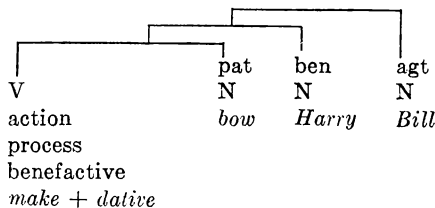
As in English, the combination of 'possessed' with causative is reflected in the surface structure by what appears to be a simple verb root 'give', represented phonologically in the above sentence by ϕ . The relevant semantic structure of this sentence might be diagrammed in this way:



A benefactive verb root can also be created derivationally through the addition to some simple verb root of a derivational unit which can be labeled 'dative'. For example, in the following sentence the verb root 'make' has been derivationally converted into a benefactive verb root in such a way:

- (17) Bill wa $\phi^?ho\phi^?en\phi^?ny\acute{e}$? Harry Bill made a bow for Harry.

The verb root 'make' is usually represented phonologically as *gni*. In this sentence the derivational unit dative is represented as a following \acute{e} , and the 'make + dative' combination is eventually realized as *ny \acute{e}* . We could diagram the relevant semantic structure of sentence (17) as follows:



We noted earlier that derivational processes are limited to particular lexical units, and here too it is the case that only certain verb roots are subject to the dative derivation.^{6a} We have now seen some of the situations in which a beneficiary

^{6a}. In *Meaning and the Structure of Language*, however, I question whether this is true, and a somewhat different semantic structure for sentences of this type is suggested in Chapter 17 of that work.

noun can be introduced into the semantic structure of an Onondaga sentence. Let us turn finally to the relation of 'experiencer', still another relation which a noun can bear to a verb. Apparently an experiencer noun must accompany a verb whose meaning involves a mental disposition or process of some kind, and I shall label this verbal selectional unit 'experiential'. Perhaps only a state or process verb can be specified in this way, so that the rule can be stated as follows:

$$(S11) \quad \left\{ \begin{array}{l} \text{state} \\ \text{process} \end{array} \right\} \rightarrow \text{experiential}$$

A subsequent rule can then state the requirement that an experiential verb requires the accompaniment of an experiencer noun:

$$\begin{array}{ccc} & & \text{exp} \\ & & \text{N} \\ & \text{---} & \text{---} \\ & \text{---} & \text{---} \\ \text{V} & \rightarrow \text{V} & \\ \text{experiential} & \text{experiential} & \end{array}$$

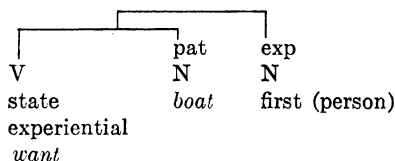
The verb roots which are determined by the selectional unit 'experiential' call for less comment than did the benefactive verb roots, and can be introduced by straightforward lexical rules:

$$(S13) \quad \begin{array}{l} \text{a. } \left[\begin{array}{l} \text{state} \\ \text{experiential} \end{array} \right] \rightarrow \text{want, know, ...} \\ \text{b. } \left[\begin{array}{l} \text{process} \\ \text{experiential} \end{array} \right] \rightarrow \text{see, like, ...} \end{array}$$

(There may be some question as to whether 'see' or 'like' should be regarded as processes. They do, however, appear to be so treated by Onondaga, if we can judge from the fact that they are subject to the kind of inflection illustrated in (4) and (5) above.) The following sentences illustrate the occurrence of experiential verbs. As noted earlier, the experiencer noun is reflected in surface structure as an agent. In these sentences the first person agent prefix appears phonologically as *k* (converted into *h* before another *k* in (18c)):

- (18) a. *kehé? kahó-wa?* I want a boat.
 b. *kheyeteí Alice* I know Alice.
 c. *hkehá? cí-hah* I see a dog.
 d. *ka?sha-nóhwe?s* I like the knife.

The relevant semantic structure of sentence (18a) can be diagrammed as follows:



3. THE INFLECTION OF A VERB

3.1. In Chapter 2 attention was drawn to some of the selectional units that are found within a verb. We saw what some of these units are, how they may affect

the choice of a particular lexical unit, and how they determine the presence of accompanying nouns and the relations which such nouns bear to the verb. At this point we are left with partially formed semantic structures consisting of verbs which are selectionally and lexically specified, together with various nouns which are attached to the verbs in the relations of patient, agent, beneficiary, and experiencer. In this chapter we shall be concerned with the inflectional units of a verb, those nonlexical semantic units which do not affect the choice of a verb root.

3.2. Descriptive, iterative, and punctual. We can begin by examining the following three sentences:

- | | | |
|------|----------------|------------------|
| (19) | a. kothé?tih | She is pounding. |
| | b. ?ethé?tha? | She pounds. |
| | c. wa?ethé?ta? | She is pounding. |

Sentences like these are related to longer sentences like:

- | | | |
|------|---------------------------|-------------------------|
| (20) | Alice kothé?tí ne? onéha? | Alice is pounding corn. |
|------|---------------------------|-------------------------|

In (19) the agent 'Alice' has been pronominalized, and there is no patient because rule (S5), discussed in **2.5**, has been applied. (It may also be noted that the kind of pounding involved in these sentences is the kind associated with the pounding of corn.) The semantic structures of the three sentences in (19) differ from each other by one inflectional unit of the verb. I shall say that the verb in (19a) is inflectionally specified as 'descriptive', that in (19b) as 'iterative', and that in (19c) as 'punctual'. The reader who already has some familiarity with Northern Iroquoian languages will recognize that other meanings are possible for all three of the phonetic outputs indicated in (19)—each of these sentences is ambiguous—but for the moment I wish to concentrate on the meanings to which I have just assigned labels. 'Descriptive' is the most difficult of the three to characterize satisfactorily, but evidently the event specified in (19a) is viewed as if it were a kind of dynamic state: there exists a condition of pounding going on. It is interesting that the agent of a descriptive verb is, in the majority of cases, post-semantically transformed into a patient. In (19a) this fact is illustrated by the feminine prefix symbolized *ko* (from underlying *yako*), which contrasts with the prefix symbolized *e* (from underlying *ye*) in (19b,c). Although I shall account for this peculiar treatment of the agent of a descriptive verb as a postsemantic phenomenon, it seems to reflect the fact that the action is regarded as a kind of state, states being regularly accompanied by patients and not agents. We shall see below that the descriptive inflection is obligatory for a verb which is selectionally specified a state (the inflectional poverty of state verbs was already mentioned in **2.2**). The 'iterative' inflectional unit in (19b) means that the pounding is an action which is repeated through time. This sentence means that she pounds habitually. Finally, the 'punctual' inflection of (19c) means that the pounding is a single action which takes place at one moment in time. The notion is that she is just now pounding at this moment. While (19a) and (19c) were given identical translations, their meanings are quite distinct. We can introduce these three

mutually exclusive inflectional units with a provisional rule like the following:

$$(S14') \quad V \rightarrow \left\{ \begin{array}{l} \text{descriptive} \\ \text{iterative} \\ \text{punctual} \end{array} \right\}$$

3.3. Perfective and contemporaneous. As has been mentioned, each of the sentences in (19) is ambiguous. The ambiguity of (19c) will be discussed later, but we can note at this point the following alternative meanings for (19a,b):

- (21) a. kothé?tih She has pounded.
 b. ?ethé?tha? She is pounding.

Sentence (21a) indicates that there exists, at the time of the utterance or of some other reference point, a condition which is the result of an action already performed. The meaning seems similar if not identical to one meaning of the 'have' plus 'past participle' formation in English. I shall say that in sentence (21a) 'descriptive' is further specified as 'perfective'.⁷ Sentence (21b) indicates that the agent is at the moment engaged in the iterative action of pounding. I shall say, therefore, that iterative is further specified as 'contemporaneous' in this case. These examples have illustrated, then, that a descriptive verb may optionally be perfective and that an iterative verb may optionally be contemporaneous. Apparently, however, these options are not available to every verb. While 'pound', for example, may be subject to the ambiguities just described, a verb which is lexically specified as 'sing' or 'dance' does not seem to allow the perfective or contemporaneous meanings (no state verb does so either). Thus, the following sentences have only the meanings indicated:

- (22) a. hotę·nó·ta? He is singing.
 b. hatę·nótha? He sings (is a singer).
 c. tehótkwēh He is dancing.
 d. tehátkhwa? He dances (is a dancer).

The verb in (22a,c) is descriptive, while that in (22b,d) is iterative. (The prefix symbolized *te* in (22c,d) is a surface element which is part of the postsemantic representation of this verb root.) Although the facts are not clear, the following tentative suggestions may be made in explanation of the refusal of certain verbs to be specified as perfective or contemporaneous. To a large extent it appears that the verbs which do support such meanings are those that would traditionally be called transitive—verbs which are simultaneously action and process. The correlation is not complete, however, and some other factor seems to be involved. If we consider why a speaker of Onondaga might not say something like 'He has sung' or 'He has danced' while he would say things like 'He has planted corn' or 'It has burned', we notice that events like planting or burning have perceptible consequences. They result in states which can be talked about. Events like singing and dancing, on the other hand, do not have similarly perceptible results. Although,

⁷ The term that was introduced in Lounsbury, *ibid.*, for the surface structure reflection of the semantic unit I am here calling descriptive.

to be sure, ceremonial singing and dancing may have beneficial consequences through supernatural agencies, such consequences cannot be seen as immediately present states. We might, then, posit a new selectional unit for verbs, one that can be labeled 'consequential'. Its meaning involves the potentiality of present and perceptible states, such as those that would result from pounding or planting corn, from burning, and the like. Only a verb not specified as a state can be consequential, a fact which explains the nonavailability of the perfective inflection to a state verb:

$$(S15) \quad \begin{array}{l} V \quad \rightarrow \text{consequential} \\ \text{-state} \end{array}$$

The lexical rules that introduce verbs like 'pound', 'plant', and 'burn' must now include consequential to the left of the arrow. We can go on to say that the descriptive inflection may be further specified as perfective in the environment of consequential. Furthermore, iterative may apparently be further specified as contemporaneous in this same environment, so that a single complex rule is possible:

$$(S16) \quad \left\{ \begin{array}{l} \text{descriptive} \\ \text{iterative} \end{array} \right\} \rightarrow \left\{ \begin{array}{l} \text{perfective} \\ \text{contemporaneous} \end{array} \right\} / \text{consequential}$$

3.4. Actions without agents. The next two sentences illustrate a special, passive-like device that is available in Onondaga with a perfective verb:

- (23) a. *kanəhayə́thwih* The corn has been planted.
 b. *kahsatə́nfh* The hole has been made.

What we find in sentences like these are inherently action-process verb roots ('plant', 'make') occurring with no agent but with only a patient ('corn', 'hole'). The analogous kind of sentence in English is a passive one without an agent. We can say for Onondaga that once an action-process verb has been inflectionally specified as perfective, it may lose its action specification before an agent noun is added by rule (S2), and thus not require the adding of such a noun:

$$(S17) \quad \begin{array}{l} \text{action} \rightarrow \phi / V \\ \text{process} \\ \text{descriptive} \\ \text{perfective} \end{array}$$

This rule obviously applies after (S16), since perfective would not be present otherwise, but it must apply before (S2), in order to prevent the addition of an agent to sentences like those of (23). It is a rule very much like (S5), which allows an action-process verb to lose its process specification after a lexical unit has been added, but before a patient is added by (S2). Rule (S17) suggests that a verb must be completely specified, in terms even of its inflectional units, before any nouns are added to it by (S2). There is one other peculiarity of the sentences in (23): the fact that the patient in them is postsemantically reflected as an agent, as indicated by the neuter agent prefix *ka*. In 3.2 we saw that the agent of a descriptive verb become postsemantically a patient in many instances. Here we see

that under some circumstances the reverse process takes place: the patient of a descriptive verb becomes postsemantically an agent. The relevant transformations will be discussed in 6.2.

3.5. Purposive. Besides the three inflectional units—descriptive, iterative, and punctual—that were illustrated in the three sentences of (19), there is a fourth unit which, by virtue of the fact that it is mutually exclusive with these three, deserves to be mentioned here. It stands apart from the others, however, in not entering into combinations with certain other inflectional units that will be described below. A sentence which illustrates this unit is the following:

(24) ?ethe?táhne? She intends to pound.

The meaning is one of intention or purpose, and I shall label this inflectional unit ‘purposive’. Apparently it occurs only with a verb that is selectionally specified as an action. Such a verb requires an agent, and purposive indicates that the agent has the intention of engaging in the action. We can now replace rule (S14’) with a more complete rule that includes the possibility that an action verb may be inflected in this additional way. We can also take into account the fact that a state verb cannot be inflected as anything but descriptive, so far as the four possibilities allowed by this rule are concerned. A revised rule (S14) can now be written as follows:

$$(S14) \quad V \rightarrow \left\{ \begin{array}{l} \text{descriptive} \\ \text{iterative} \\ \text{punctual} \\ \text{purposive/action} \end{array} \right\} / \text{-state}$$

That is, any verb, regardless of its selectional units, may be made descriptive. A verb which is not selectionally a state verb may be made either iterative or punctual. A verb which is selectionally an action verb may be made purposive. So far, then, taking (S16) into account also, we have the following six inflectional possibilities:

descriptive	descriptive perfective	iterative	iterative contemporaneous	punctual	purposive
-------------	---------------------------	-----------	------------------------------	----------	-----------

The availability of these inflections is limited by the selectional nature of the verb in ways that have been described.

3.6. Past, future, and imperative. There are three other inflectional units, naturally labeled ‘past’, ‘future’, and ‘imperative’, which can in general be added to any one of the above combinations except the last one; past can be added to that also. Let us look first at some sentences which contain ‘past’:

(25) a. kothe?tíhna? She was pounding, had pounded.
 b. ?ethe?tháhkwa? She used to pound, was pounding.
 c. wa?ethé?ta? She pounded.
 d. ?ethe?tahné'na? She intended to pound.

The translations of (25a,b) are intended to suggest that each of these sentences is ambiguous: (25a) is descriptive, and may or may not be perfective; (25b) is iterative, and may or may not be contemporaneous with some contextually established

point of time in the past. At least for some verb roots, these ambiguities do appear to exist. Sentence (25c) is inflected as punctual and past. It should be noted that the phonetic output is not different from that of (19c), where the inflection was punctual but -past: *wa?ethé?ta?* means either 'She is (just now) pounding' or 'She pounded'. Punctual sentences like (25c) and (19c) do occur in both past and -past contexts, and are given both kinds of translations by informants. It might be concluded that no tense distinction is present in them, that they are simply punctual and nothing else. Informants' reactions, however, suggest that such sentences are indeed ambiguous, and we shall find, furthermore, that 'punctual past' and 'punctual -past' are actually distinguished in the surface structures of some sentences. (These are sentences which contain the 'dislocative' inflection to be discussed in 3.8.) Turning to the possibility of a 'future' inflection, we find it illustrated in the following sentences:

- (26)
- | | | |
|----|----------------------|--|
| a. | <i>?eyakothe?tík</i> | She will be pounding, will have pounded. |
| b. | <i>?eyethe?thák</i> | She will pound, will be pounding. |
| c. | <i>?eyethé?ta?</i> | She will pound. |

These sentences are descriptive, iterative, and punctual in that order. It may be noted that sentences (26a,b) both exhibit a surface suffix symbolized *k*. In previous descriptions of Northern Iroquoian languages this *k* was assigned to a 'continuative morpheme', and there was an implication that this morpheme 'had a meaning' involving continuation of a state or event. It might, then, be valid to posit a semantic unit 'continuative' which is automatically present whenever a descriptive or iterative verb is future (or, as we shall see, imperative). I shall not do so here, however, because it seems to me that descriptive and iterative involve continuation in any case, and because I have the distinct impression that (26a,b) are semantically nothing more than the future counterparts of (19a,b), just as (25a,b) are their past counterparts. Finally, we can look at corresponding sentences which contain the imperative inflection:

- (27)
- | | | |
|----|-------------------|-----------------------|
| a. | <i>sathe?tík</i> | Be pounding! |
| b. | <i>sethe?thák</i> | Pound (be a pounder)! |
| c. | <i>sethé?tah</i> | Pound! |

It is not necessary that an imperative verb have a second person agent:

- (28)
- | | |
|------------------|----------------|
| <i>?ethé?tah</i> | Let her pound! |
|------------------|----------------|

although, like a purposive verb, it probably must have an agent of some kind. That is, unlike past and future, imperative will perhaps occur only in a verb that is selectionally an action. English translations of sentences like (27a,b) are awkward. In both cases a translation like 'Keep up the pounding!' is possible, but (27b) also exhorts the hearer to be one who pounds habitually. We need now a rule which will introduce past, future, or imperative as optional inflectional units of a verb, imperative being possible only for an action verb which is neither perfective nor contemporaneous, and both future and imperative being possible only

for a verb that is not purposive:

$$(S18) \quad v \rightarrow \left\{ \begin{array}{l} \text{past} \\ \text{future} \\ \text{imperative/} \left[\begin{array}{l} \text{action} \\ \text{-perfective} \\ \text{-contemporaneous} \end{array} \right] \end{array} \right\} / \text{-purposive}$$

At this point we have the following twenty possible semantic inflections for a verb:

descriptive	descriptive perfective	iterative	iterative contemporaneous	punctual	purposive
descriptive past	descriptive perfective past	iterative past	iterative contemporaneous past	punctual past	purposive past
descriptive future	descriptive perfective future	iterative future	iterative contemporaneous future	punctual future	
descriptive imperative		iterative imperative		punctual imperative	

3.7. Indefinite and peremptory. There are two special semantic inflections that are available only to a verb which is already inflected as future. One of them may be illustrated with the following sentences:

- (29)
- | | | |
|----|--------------|---------------------------------------|
| a. | ʔayetheʔtík | She should be pounding, have pounded. |
| b. | ʔayetheʔthák | She should pound, be pounding. |
| c. | ʔayethéʔtaʔ | She should pound. |

Again these sentences are descriptive, iterative and punctual respectively. All are future in addition. But beyond that, all are inflected with a semantic unit which I shall label 'indefinite'.⁸ Its meaning is that the event is not certain to take place (or the state to exist), but that in the normal course of things it can be expected to. Perhaps some idea of obligation is included. Rule (S19) is all that is needed to add this possibility to the list of inflections just given:

$$(S19) \quad \text{future} \rightarrow \text{indefinite}$$

That is, future can be further specified as indefinite. The other inflection that can be added to a future verb can be illustrated in the ambiguity of sentences like the following:

- (30) ʔəhsethéʔtaʔ You will pound.

The same ambiguity is present in the English sentence. The speaker may simply be stating a fact, or he may be commanding the hearer to do something. The latter kind of sentence constitutes a kind of strong imperative; the hearer is not given as much room to refuse the request as he has in the case of a normal im-

⁸ Again following Lounsbury, *ibid.*

perative. We might label this unit 'peremptory':

(S20) future →> peremptory/action

I am assuming that only an action verb can be peremptory, just as only an action verb can be imperative.

3.8. Dislocative. We have by no means exhausted the inflectional possibilities available to a verb in Onondaga. The sentences of (31) illustrate another:

- (31)
- | | | |
|----|----------------|----------------------------------|
| a. | kotheʔtahnóh | She has gone somewhere to pound. |
| b. | ʔetheʔtáhneʔs | She goes somewhere to pound. |
| c. | waʔetheʔtáhneʔ | She is going somewhere to pound. |
| d. | waʔetheʔtáhnaʔ | She went somewhere to pound. |
| e. | ʔeyetheʔtáhnaʔ | She will go somewhere to pound. |
| | etc. | |

All such sentences include the meaning that the action in question—and only an action verb seems possible here—takes place after the agent goes somewhere, away from the place where the sentence is uttered or from some other reference point. I shall label this semantic unit 'dislocative'. It can be introduced through the following rule:

(S21) V →> dislocative/action

So far as I have been able to tell, all the other inflectional possibilities described earlier can co-occur with dislocative. This unit is especially interesting because of the light it throws on the validity of the distinction between 'punctual -past' and 'punctual past' alluded to in **3.6**. Sentences (31c) and (31d) differ in just this respect, (31c) being simply punctual, and (31d) being punctual and past. The semantic facts seem clear in this case, and for some reason with the dislocative inflection punctual is symbolized as *aʔ* in the presence of either past or future, but as *eʔ* in their absence.

3.9. Facilitative and eventuative. Two other inflectional units that may be found in a verb can be labeled 'facilitative' and 'eventuative'. The following sentences illustrate the occurrence of facilitative, whose meaning is that an event takes place easily and often:

- (32)
- | | | |
|----|----------------|--------------------------------------|
| a. | ʔonaʔnawęckóh | It melts easily. |
| b. | ʔohnyackóh | It barks all the time at everything. |
| c. | hotekhonyackóh | He eats all the time. |

It can be introduced by a rule like the following:

(S22) V →> facilitative/X

where the environment X includes -descriptive, -iterative, -past, etc. That is, facilitative seems to be mutually exclusive with all other inflectional units. X must probably also include -state, since a state verb seems unable to be inflected as facilitative. Eventuative seems to be an additional specification which can be added to the inflectional combination of punctual and past:

(S23) V →> eventuative/ $\left[\begin{array}{l} \text{punctual} \\ \text{past} \end{array} \right]$

It apparently means that something took place 'in the course of events':

- (33) hoyəthwás?ih In the course of events he planted.

It is rarely used by itself, but, as we shall see in **3.10.**, it is common in negative sentences which are at the same time both punctual and past.

3.10. Negative. The view of semantic structure being followed here holds that a verb is the nucleus of a sentence, any nouns or other such elements being peripheral to it. From this point of view, the meaning of an inflectional unit within a verb has as its domain the entire sentence, not just the verb itself, for in a sense the verb *is* the sentence. Thus, if the verb is inflected as past or imperative the entire sentence is past or imperative, and similarly for the other inflectional units which have been discussed. This is in contrast to the inflectional units of a noun ('plural', for example), whose semantic domain does not extend beyond the noun itself. What I am leading up to is the suggestion that semantic elements such as might be called 'negative' or 'interrogative', whose domain is quite obviously the entire sentence in many instances, are also (in those instances) best regarded as inflectional units within the verb. Suppose, then, that we consider that a verb may also be inflected as 'negative'. We find in Onondaga sentences like these:

- (34) a. yá te?ethé?tha? She doesn't pound, isn't pounding.
 b. yá te?ethe?tháhkwa? She didn't use to pound, wasn't pounding.
 c. yá te?ethe?táhne? She doesn't intend to pound.
 d. yá te?akothé?tih She didn't pound.
 e. yá thayéthé?tah She won't pound, shouldn't pound.
 etc.

In general we can say that a verb in Onondaga, so long as it is not imperative or, apparently, descriptive, may be specified as negative:

- (S24) V →→ negative/ $\left[\begin{array}{l} \text{-imperative} \\ \text{-descriptive} \end{array} \right]$

As (34d) and (34e) may suggest, the surface structures of some semantic combinations containing negative are unexpected: (34d) is punctual and past, although it shows a surface structure normally associated with descriptive and -past. (34e) is ambiguous. It is punctual and future, and may or may not be indefinite in addition. Its surface structure shows an unusual prefix representing negative, the indefinite prefix representing either future or future-indefinite, and the imperative suffix representing punctual. Past punctual negative sentences quite often contain the unit eventutive (**3.9**), with a meaning that might be translated 'this time':

- (35) a. yá te?hoyəthwás?ih He didn't plant this time.
 b. yá te?ostaətyós?ih It didn't rain this time.

That negative and imperative do not co-occur might suggest that it is impossible to communicate a prohibition in Onondaga, but such is not the case. Rather a prohibition contains, quite reasonably, the semantic unit preemptory discussed

in 3.7. We find, then, sentences like these:

- (36)
- | | | |
|----|--------------------|----------------------|
| a. | ʔahkwí ɛhsethéʔtah | Don't pound! |
| b. | ʔahkwí ɛyethéʔtah | Don't let her pound! |
| c. | ʔahkwí ɛskɛístah | Don't move it! |

Such sentences may also contain indefinite, as reflected in the prefix *a* in the second word of:

- (37) ʔahkwí ayethéʔtah Don't let her pound!

3.11. Confirmative. Brief mention may be made of just one type of question sentence that exists in Onondaga. I believe that there are two distinct kinds of questions in English that may be illustrated with the sentences 'Is she pounding?' and 'She's pounding?'. The former might be called a 'disjunctive' question. It requests that the hearer specify which of two alternatives accords with his knowledge of the facts: 'She's pounding' or 'She isn't pounding'. The latter might be called a 'confirmative' question. It asks for confirmation of tentative knowledge which the speaker already has.⁹ It seems to me that Onondaga may not have disjunctive questions at all, but only confirmative ones:

- (38)
- | | | |
|----|-----------------|-----------------|
| a. | ʔetheʔtháʔ khɛh | She's pounding? |
| b. | ʔostaɛtyó khɛh | It's raining? |

One informant suggested that (38b) means something like 'It's raining, huh?'. While such a sentence might sometimes be translated roughly 'Is it raining?', it would appear that its meaning is really the confirmative one. Let us say that there is a semantic unit 'confirmative' which may be added as an inflectional unit within a verb; apparently within any verb that is not imperative:

- (S25) V →> confirmative/-imperative

The presence of this unit is then reflected in a surface particle symbolized *khɛ*.

4. SEMANTIC SPECIFICATION OF A NOUN

4.1. Chapters 2 and 3 discussed the semantic specification of an Onondaga verb. It is now possible for us to turn our attention to some of the semantic units which are found within a noun. Again we shall be able to distinguish three major types: 'selectional' units, a particular combination of which limits the choice of a 'lexical' unit (which in this case will be called a 'noun root'), and 'inflectional' units, which are independent of the choice of a noun root.

4.2. Animate, human, and related units. It is probably universally true that languages distinguish semantically between nouns which are 'animate' and those which are not, that animate nouns may be further specified as 'human', and that at least human nouns, and perhaps all animate ones, may be specified as 'masculine' or 'feminine'. The following sentences illustrate a few of the ways in which

⁹ I discuss this matter in Ch. 19 of *Meaning and the Structure of Language*.

these distinctions are reflected postsemantically in Onondaga:

- | | | |
|------|--------------------|-------------------|
| (39) | a. ʔonqhsaká:yq̃h | The house is old. |
| | b. cihá okstéʔah | The dog is old. |
| | c. Harry hokstéʔah | Harry is old. |
| | d. Alice kokstéʔah | Alice is old. |

Each of these sentences consists of a state verb and a patient noun. In (39b,c,d) the noun is animate, but in (39a) it is not. Apparently the language has two different verb roots, both of them translated 'old'. One, symbolized *akayq*, requires a patient which is not animate; the other symbolized *kstéʔa*, requires a patient which is. (The distinction is reminiscent of the English one between 'new' and 'young', but it is the opposite meanings which are distinguished in the surface structure of Onondaga.) Another obvious difference between the surface structures of (39a) and (39b,c,d) is the fact that in the first sentence the patient noun has been postsemantically 'incorporated' into the verb, whereas no such incorporation has taken place in (39b,c,d). This postsemantic difference is in part triggered by the difference in animateness of the nouns. Among the animate nouns, those of (39c,d) are specified as 'human', leaving (39a,b) as not so specified. The prefixes attached to the surface structure verbs of these sentences show that the -human vs. human distinction is also reflected postsemantically in Onondaga. Where the noun is -human the prefix is *o* (from underlying *yo*). Where the noun is human the prefix is *ho* or *ko* (from underlying *yako*). Finally, this very difference between *ho* and *yako* in (39c,d) is a surface reflection of the semantic distinction between 'masculine' and 'feminine'. The situation is not quite so simple, however. In the first place, it is possible for a -human but animate noun to be specified as masculine, although it is not clear that such a noun can be specified as feminine:

- | | | |
|------|----------------|------------------------|
| (40) | cihá hokstéʔah | The (male) dog is old. |
|------|----------------|------------------------|

At least the following rules, therefore, seem called for to begin with:

- | | |
|-------|--|
| (S26) | N →> animate |
| (S27) | animate →> human |
| (S28) | $\left[\begin{array}{l} \text{animate} \\ \text{-human} \end{array} \right] \rightarrow \text{masculine}$ |

That is to say, a noun may optionally be specified as animate. If it is so specified, it may optionally be further specified as human. If it is animate but not human, it may optionally be further specified as masculine. Before we go further, we must consider the additional data provided by sentences like these:

- | | | |
|------|----------------|-----------------------------|
| (41) | a. kokstéʔah | People are old, one is old. |
| | b. ʔqt̃:nóthaʔ | People sing, one sings. |

Without a clarifying context both of these sentences are odd; (41a) would be a true statement only if everyone were old, and (41b) seems a pointless thing to say. Nevertheless, these sentences illustrate that a noun, once specified as human, need not necessarily be further specified as masculine or feminine, but may be left as human only. Such is evidently the case in (41), where the nouns are animate

and human, but nothing else. We need also, at this point, to take sentences like the following into account:

- (42)
- | | |
|-----------------|-----------------|
| a. ʔakekstéʔah | I'm old. |
| b. sakstéʔah | You're old. |
| c. katɛ·nóthaʔ | I sing. |
| d. satɛ·nóthaʔ | You sing. |
| e. tyatɛ·nóthaʔ | You and I sing. |

These sentences show, as we might expect, that a human noun can also be specified as 'first' or 'second' person, and also as 'inclusive' person. To allow for the possibility of nonsingular inflections, as will be described below, the meanings of these three semantic units can be stated as follows. 'First' means that the noun involves a group of one or more people which includes at least the speaker, but which excludes the hearer. 'Second' means that the noun involves a group of one or more people which includes at least the hearer, but which excludes the speaker. 'Inclusive' means that the noun involves a group of two or more people which includes at least the speaker and the hearer. (On similar grounds we should define 'masculine' as involving a group of one or more people which includes at least one male, since a mixed group of several people is regarded as masculine.) If we now take into account all the possibilities we have seen as available to a human noun, we can state them in the following rule:

$$(S29) \quad \text{human} \rightarrow \left\{ \begin{array}{l} \text{masculine} \\ \text{feminine} \\ \text{first} \\ \text{second} \\ \text{inclusive} \end{array} \right\}$$

Since the rule is optional, we are left with the possibility of a noun that is no more than human, as illustrated in the sentences of (41). It might be argued, on general grounds, that first and second person should not be mutually exclusive with masculine and feminine, since a speaker or hearer will always be one or the other in actual fact, and since this distinction may be of obvious linguistic relevance in some instances of pronominalization, as when I begin a sentence with 'I' and the next person refers to the same individual by saying 'he'. If this argument is valid, it must apply only to first and second person singular, since the sex of other parties who are added in the dual or plural (and in the necessarily nonsingular inclusive) seems always to be irrelevant. In this work, in any case, I shall follow the pattern set forth in (S29).

4.3. Unique. One last rule is necessary before we go on to discuss the introduction of lexical units:

$$(S30) \quad \text{N} \rightarrow \text{unique} \left\{ \begin{array}{l} \text{-human} \\ \text{masculine} \\ \text{feminine} \end{array} \right\}$$

The reason for introducing a selectional unit 'unique' is to account for noun roots with unique reference, like 'Harry' or 'Alice'—noun roots which refer to only a single object or individual—and especially (below) to account for the nonoccur-

rence of the 'dual and 'plural' inflections with such noun roots. It can be seen from (S30) that unique does not occur in human nouns unless they are specified as masculine or feminine. That is, it does not occur in the kind of nouns that were illustrated in (41) and (42). If we now consider all the specifications of a noun which are generated by rules (S26) through (S30), we find the following fourteen possibilities:

(a)	(b)	(c)
N	N	N
	animate	animate masculine
(d)	(e)	(f)
N	N	N
animate	animate	animate
human	human	human
	masculine	feminine
(g)	(h)	(i)
N	N	N
animate	animate	animate
human	human	human
first	second	inclusive
(j)	(k)	(l)
N	N	N
unique	unique	unique
	animate	animate masculine
(m)	(n)	
N	N	
unique	unique	
animate	animate	
human	human	
masculine	feminine	

4.4. Noun roots. Undoubtedly there are many other selectional units which are relevant to Onondaga nouns. Here we shall have to content ourselves with these and go on to consider the introduction of lexical units, or noun roots. A noun root may be added to any of the above configurations except (g), (h), and (i); to any of the others except (d) a noun root *must* be added. We can describe the available possibilities with rules like the following, most of which are obligatory:

(S31) -animate →> house, knife, town, ...

That is, a noun which is not specified as animate (configuration (a) above) may be specified in terms of a lexical unit like 'house', 'knife', or 'town'. I am not allowing at the moment for the possibility that such a noun may also be unique (configuration (j) above), but we shall discuss the lexical specification of unique nouns in **4.5**. The noun which would under certain circumstances appear in the surface structure as a word symbolized *kanóhsa?* 'house' will be posited as having

a semantic structure that can be diagramed as follows:

N
house

(As before, I shall follow the practice of indicating lexical units in diagrams by italicizing them.) Turning now to nouns which are selectionally specified as animate, we can begin with those which are not further specified as human (configurations (b) and (c) above). Under these conditions a lexical rule like the following is called for:

(S32) $\left[\begin{array}{l} \text{animate} \\ \text{-human} \end{array} \right] \rightarrow \text{domestic animal, wild animal, snake, turtle, ...}$

Representing the first two of these noun roots in isolation we find as isolated words *kanáskwa?* 'domestic animal' and *ka·yó?* 'wild animal'. The latter includes birds and beasts, but not reptiles, which must therefore be listed separately in (S32). Noun roots like 'domestic animal' and 'wild animal' fall into a special category: while they sometimes serve as lexical units, they may also function in the manner of selectional units for other, more specific lexical units:

(S33) domestic animal $\rightarrow \text{dog, horse, ...}$

(S34) wild animal $\rightarrow \text{deer, bear, bird, ...}$

Noun roots with these ambivalent selectional-lexical characteristics I shall refer to as 'classificatory'. The noun root 'bird' introduced in (S34) is actually itself a classificatory root. For while we find the word *ka·yó?ah* 'bird', we also find more specific noun roots for which 'bird' acts as a selectional unit:

(S35) bird $\rightarrow \text{hawk, robin, ...}$

Thus there is sometimes a hierarchy of lexical units, all but the most specific of which is a classificatory unit. This phenomenon is evidently the basis of what have been called 'folk taxonomies'. The semantic structure of *ciska?ká?* 'robin' can be diagramed in this way:

N
animate
wild animal
bird
robin

It may be recalled that (S28) allows an animate but -human noun to be further specified as masculine. Whether this possibility is open to all such nouns is not entirely clear, but certainly *ciha* 'dog', for example, may have either of the following semantic structures:

N	N
animate	animate
domestic animal	masculine
<i>dog</i>	domestic animal
	<i>dog</i>

If we turn now to human nouns, we find at least two nouns which may be either

human and nothing more, or additionally masculine or feminine. These are the noun roots 'person' and 'child', which can be introduced by the following rules:

$$(S36) \quad \text{human} \longrightarrow \left\{ \begin{array}{l} \text{person} \\ \text{child} \end{array} \right\} / \left[\begin{array}{l} \text{-first} \\ \text{-second} \\ \text{-inclusive} \end{array} \right]$$

That is, a human noun may be lexically specified as 'person' or 'child' provided it is not specified as first, second, or inclusive. It may or may not be specified as masculine or feminine (configurations (d,e,f) above). Thus we find the following semantic structures and phonetic outputs:

N	ʔó·kweh	'person'
animate		
human		
<i>person</i>		
N	hế·kweh	'man'
animate		
human		
masculine		
<i>person</i>		
N	ʔakó·kweh	'woman'
animate		
human		
feminine		
<i>person</i>		

Similarly with 'child' we find:

kaksáʔah	'child'
haksáʔah	'boy'
ʔeksáʔah	'girl'

There are other noun roots which *must* be masculine:

$$(S37) \quad \text{masculine} \longrightarrow \text{chief, brave, ...}$$

so that the semantic structure of *hahsenowá·neh* 'chief', for example, is:

N
animate
human
masculine
chief

Outside of kinship terms, which I am omitting from consideration here, it is difficult to find noun roots which must similarly be feminine. Perhaps at least *koti·hótaʔ* 'clan mother' is one:

$$(S38) \quad \text{feminine} \longrightarrow \text{clan mother, ...}$$

{Such a rule is obligatory only if no other noun root has already been introduced into the noun at this point.}

4.5. Unique noun roots. In the last paragraph we ignored the possibility that a

noun may also be specified as unique (configurations (j) through (n)). The noun roots introduced so far have involved classes of many members: the class of houses, the class of hawks, etc. Some noun roots, however, refer to only one individual, and it was for this reason that the selectional unit unique was introduced in rule (S30). In addition to the lexical rules given in 4.4, we can sketch other rules in which the nouns are specified as unique. Such nouns may or may not include as classificatory noun roots some of those already introduced in 4.4. Unique noun roots which are -animate include place names, at least. The names of towns or cities have a classificatory specification 'town':

(S39) $\left[\begin{array}{l} \text{unique} \\ \text{town} \end{array} \right] \rightarrow \triangleright$ New York, Albany, ...

and we have words like *kanó'no?* 'New York' and *skahnehtá'tih* 'Albany' whose semantic structure can be diagrammed in the following way:

N
unique
town
New York

Unique noun roots which are animate but -human include proper names given to animals. They may be exemplified with the names of dogs, which include 'dog' as a classificatory noun root:

(S40) $\left[\begin{array}{l} \text{unique} \\ \text{dog} \end{array} \right] \rightarrow \triangleright$ Spot, Big Eater, ...

That is, Onondaga has names for dogs like *ʔóæhkwa?* 'Spot' and *cyotéche?* 'Big Eater'. A noun which contains one of these names can be diagrammed as follows:

N
unique
animate
(masculine)
domestic animal
dog
Spot

We also, of course, find names for human beings, and rules like these can serve to introduce them:

(S41) $\left[\begin{array}{l} \text{unique} \\ \text{masculine} \end{array} \right] \rightarrow \triangleright$ Ax Carrier, Harry, ...

(S42) $\left[\begin{array}{l} \text{unique} \\ \text{feminine} \end{array} \right] \rightarrow \triangleright$ Flowers in Water, Alice, ...

The exotic English names are given as rough indices to the man's name *skwehséghwa?* and the woman's name *ʔawého?*. As noted above, however, Onondaga names like these are little used at present, having given way to English names like Harry and Alice, which are incorporated into Onondaga sentences.

The semantic structure of a personal name can be diagramed in this way:

N
unique
animate
human
masculine
Harry

Even noun roots like 'chief', it may be added, can serve a classificatory function in the development of unique noun roots:

(S43) $\left[\begin{array}{c} \text{unique} \\ \text{chief} \end{array} \right] \rightarrow \triangleright$ He Looks Both Ways, ...

or the name *tehatkáhtqs*. Names which belong on the right of (S43) make up the list of traditional chief names (the Onondaga have fourteen of them). The semantic structure of such a noun can be diagramed:

N
unique
animate
human
masculine
chief
He Looks Both Ways

4.6. Dual and Plural. We have seen how some of the selectional units are introduced into Onondaga nouns, and how some lexical units may be introduced in terms of these selectional units. We need now to look at some of the inflectional units which are available to a noun. Let us consider first the specification of 'number'. It will be sufficient to look at a few sentences like the following in order to establish that a noun in Onondaga may optionally be either 'dual' or 'plural', where plural means 'three or more':

- (43) a. *cihá kahnyá·ha?* The dog is barking.
- b. *cihá knihnyá·ha?* The dogs (dual) are barking.
- c. *cihá q̄tihnyá·ha?* The dogs (plural) are barking.

(As is often the case with the semantic units of a noun, dual and plural in these sentences have been postsemantically transferred from the noun to the verb.) The rule which introduces these two inflectional units can be stated as follows:

(S44) $N \rightarrow \triangleright \left\{ \begin{array}{c} \text{dual} \\ \text{plural} \end{array} \right\} / \left[\begin{array}{c} -\text{unique} \\ \text{root} \\ \text{first} \\ \text{second} \\ \text{inclusive} \end{array} \right]$
(obligatory if the noun is inclusive)

That is to say, a noun may optionally be specified as dual or plural provided (1) it is not specified as unique and (2) it contains either some lexical specification (for which *root* is a cover symbol) or the unit first, second, or inclusive. A noun

which is specified as inclusive *must* be made dual or plural, a requirement which follows from the description of the meaning of inclusive given in 4.2. The requirement that a noun root be present if the noun is not first, second, or inclusive rules out the possibility of inflecting as dual or plural a noun that is specified as human only, as in the sentences of (41).

4.7. Demonstrative. Another possibility for the inflection of an Onondaga noun can be illustrated with the following sentences:

- (44)
- | | |
|------------------------|--------------------|
| a. neḱe onḱsaká:yḱh | This house is old. |
| b. thoḱe onḱsaká:yḱh | That house is old. |
| c. neḱe cihá oksté?ah | This dog is old. |
| d. thoḱe cihá oksté?ah | That dog is old. |

Evidently a noun can be inflected as what might be called 'demonstrative', and further as either 'proximal' or 'distal'. Such specification is not possible for a noun that is unique, it would seem, and it is possible only for one that has a lexical specification. We can state the necessary rules in the following way:

$$(S45) \quad N \rightarrow \text{demonstrative} / \left[\begin{array}{l} \text{-unique} \\ \text{root} \end{array} \right]$$

$$(S46) \quad \text{demonstrative} \rightarrow \left\{ \begin{array}{l} \text{proximal} \\ \text{distal} \end{array} \right\}$$

The environments which restrict the occurrence of demonstrative can be seen to be similar to those which restrict dual and plural in rule (S44), but they are somewhat more limited since they exclude first, second, and inclusive. It may be noted in the sample sentences of (44) that demonstrative is not absorbed into the surface structure verb, but appears postsemantically as a separate word. It is, of course, possible for a noun to be both plural (or dual) and demonstrative, as is true of the patient noun in:

- (45) neḱe cihá otiksté?ah These dogs are old.

whose semantic structure can be diagrammed as follows:

N
animate
domestic animal
dog
plural
demonstrative
proximal

4.8. Emphatic. Still another kind of inflection of a noun is illustrated in the following sentences:

- (46)
- | | |
|---------------------------|--------------------------|
| a. ?i? akyó?te? | <i>I</i> am working. |
| b. haḱhwá? Harry hoyó?te? | <i>Harry</i> is working. |
| c. haḱhwá? hoyó?te? | <i>He</i> is working. |

The noun in these sentences is inflected as 'emphatic', in order to communicate that the new information supplied by the sentence is concentrated in this noun.

The rule which introduces this semantic option can be stated as follows:

(S47) $N \rightarrow \text{emphatic}$

It yields semantic structures like the following for the nouns in (46a, b):

(46a)	(46b)
N	N
animate	unique
human	animate
first	human
emphatic	masculine
	<i>Harry</i>
	emphatic

In (46c), as in the English translation, postsemantic pronominalization has taken place, removing whatever lexical unit was present in the semantic noun, but leaving behind the masculine specification. We can also note that it is possible for emphatic itself to receive further specification:

(47)	a. $\text{?akqhwa?shó? akyó?te?}$	Even <i>I</i> am working.
	b. $\text{haqhwa?shó? Harry hoyó?te?}$	Even <i>Harry</i> is working.
	c. $\text{haqhwa?shó? hoyó?te?}$	Even <i>he</i> is working.
	d. $\text{?akqhwa?á akyó?te?}$	Only <i>I</i> am working.
	e. $\text{haqhwa?á Harry hoyó?te?}$	Only <i>Harry</i> is working.
	f. haqhwa?á hoyó?te?	Only <i>he</i> is working.

In (47a, b, c) it may be enough for present purposes to say that emphatic is further specified as ‘even’. The meaning is quite well reflected in the English translation. Similarly, in (47d, e, f) we can say that emphatic is further specified as ‘only’. Thus:

(S48) $\text{emphatic} \rightarrow \left\{ \begin{array}{l} \text{even} \\ \text{only} \end{array} \right\}$

and the structure of the noun in (47a) can be diagrammed in this way:

N
animate
human
first
emphatic
even

4.9. Impersonal reference to women. One additional and fairly common semantic device in Onondaga appears in the following sentence:

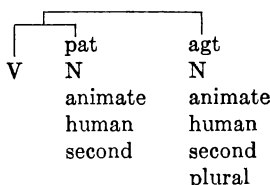
(48) Alice oksté?ah Alice is old.

This sentence contrasts minimally with (39d) above (*Alice koksté?ah*), which was given the same translation. It can be seen that its surface structure verb contains the prefix *o* (from underlying *yo*) which otherwise reflects a -human noun, as in (39a, b). A sentence like (48) has been characterized by informants as a somewhat

rough, unpleasant, distant, cold, or impersonal way of talking about Alice. I shall say that a noun which has been specified as feminine may optionally go on to be inflected as 'impersonal', with the postsemantic result that the noun appears in the surface structure as if it were -human. The rule which allows for this semantic possibility can be stated in this way:

(S49) $N \rightarrow \text{impersonal/feminine}$

4.10. Reflexive sentences. One special kind of restriction on the occurrence of the semantic units of a noun must be mentioned, one which is undoubtedly attributable to a phenomenon of universal semantics. I shall do no more than allude to it discursively here. It involves the impossibility of semantic structures like the following:



that is, of sentences which might be translated 'You injured you', 'You injured yourself', 'You injured yourselves', or the like, in which the number of the agent and the patient nouns are different; for example, where one 'you' is singular but the other is dual or plural. The restriction against such semantic structures is not confined to second person nouns, or even to semantic patients and agents. What seems to be involved is a requirement that two nouns associated with a particular verb must have referents which are either totally different or totally the same. The referents of two such nouns cannot be partially—but only partially—identical. Such partial identity is present in the case of one noun which is specified as second singular and another which is specified as second plural. It is also present in English sentences like 'He injured them', where the referent of 'he' is included in the referent of 'them'. Such sentences are also ruled out semantically in both English and Onondaga. Here I will say no more than that there is in Onondaga this general prohibition against partially identical reference. Completely identical reference, of course, is common, and leads to sentences in English like 'You injured yourself' or 'You injured yourselves', in which 'you' is either singular or plural throughout the sentence. Similar sentences occur in Onondaga, and, as in English, are subject to special postsemantic treatment (6.3). For some reason, English seems to violate the prohibition mentioned above in the case of first person, to the extent that we are able to say things like 'I injured us'. Speakers of Onondaga seem unable to construct analogous sentences in their language. The following sentences illustrate the reflexive situation in Onondaga:

- (49)
- | | | |
|----|---|----------------------------------|
| a. | wa [?] hataté:yo [?] | He killed himself. |
| b. | wa [?] hyataté:yo [?] | They (dual) killed themselves. |
| c. | wa [?] hqtaté:yo [?] | They (plural) killed themselves. |

4.11. Reciprocal sentences. When the agent and patient have identical reference and when in addition they are either dual or plural, the verb may be inflected as ‘reciprocal’, with the meaning that each pairing of agent with patient is not a pairing of identical individuals but of different ones:

- (50) a. wa^ʔthyataté:yo^ʔ They (dual) killed each other.
 b. wa^ʔthqtaté:yo^ʔ They (plural) killed each other.

A surface unit, symbolized *t* in these sentences, reflects the semantic presence of reciprocal, and distinguishes the phonetic outputs of (50) from those of (49). A semantic rule such as the following is called for:

(S50) V →⁺ reciprocal/X

That is, a verb may be inflected as reciprocal in environment X, this environment being the one described informally at the beginning of this paragraph.

5. TRANSFORMATIONS STEMMING FROM THE SEMANTIC COMPOSITION OF A VERB

5.1. Deletion of selectional units. So far we have given our attention to how the semantic structures of some simple Onondaga sentences may be formed. These sentences have been cited in terms of their phonetic realizations, and at times the latter have been quite indirectly related to the underlying semantic structures. These phonetic outputs are, of course, much more directly related to the sentences’ surface structures, derived from the semantic structures by post-semantic processes of the type generally known as ‘transformations’. Let us turn now to a consideration of those Onondaga transformations which are relevant to the semantic structures so far described, and let us begin in this chapter by considering what happens to the various semantic units contained within a verb, as described in chapters 2 and 3. It will be convenient to organize our discussion around the postsemantic reflexes of the three different kinds of units that have been discussed: selectional units and lexical units as discussed in Chapter 2, and inflectional units as discussed in Chapter 3. There will be the most to say concerning the inflectional units. In fact, so far as the selectional units are concerned (state, process, action, benefactive, and experiential were the ones described) there is only one thing that needs mentioning. Such units have purely semantic relevance, and their postsemantic consequences are nil. We can, then, formulate our first transformation as follows:

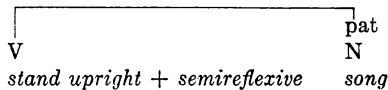
(T1)
$$\begin{array}{ccc} V & \rightarrow & V \\ X & & \textit{root} \\ \textit{root} & & \end{array}$$

The symbol X stands for whatever semantic units may be positioned between the verb and the verb root. According to the diagramming conventions which I have followed, such units are selectional (inflectional units have been diagrammed below the verb root). The effect of (T1), then, is to delete all selectional units post-semantically from a verb.

5.2. The verb root. The verb root itself is little affected by postsemantic processes, retaining its identity into the surface structure. There are times, however, when the verb root has an internal structure—sometimes semantically, sometimes only postsemantically. An internal structure is present semantically in the case of derived verb roots; perhaps through the use of inchoative or causative as mentioned in 2.6, or of dative as mentioned in 2.7. These derivational units do show up in surface structure, but in general all that need be said about them is that they occur in a certain linear position within the surface verb. Later in this chapter we shall give some consideration to the linear ordering of surface elements. There are also, however, a great many verb roots (and noun roots also) which are simple units semantically, but are reflected in surface structure as complex arrangements. These are the verb roots which are idioms, which must be expanded into arbitrary postsemantic structures by means of ‘literalization rules’, a particular kind of transformation.¹⁰ For example, there is a verb root ‘sing’ which is found in sentences like the following:

(51) Harry *hotɛ·nó·taʔ* Harry is singing.

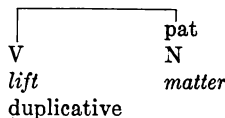
While this verb root is semantically a single unit, post-semanticly it is expanded into the following combination of units:



which, if it were semantic rather than postsemantic only, would mean something like ‘stand the voice upright for oneself’. In (51) the postsemantic verb root ‘stand upright’ is symbolized *ot* and the incorporated noun root ‘song’ is symbolized *ɛn* (from underlying *ren*). The postsemantic unit ‘semireflexive’¹¹ behaves as a derivational unit prefixed to ‘stand upright’; it is symbolized *at*, with the *a* here absorbed by the prefix *ho*. The verb root in question is one that is used in connection with ritual singing, as in the Longhouse. There is another verb root ‘sing’ which is used in connection with hymn singing in protestant churches:

(52) Harry *tehoihwáhkweh* Harry is singing.

This verb root is an idiom also. A simple semantic unit, it is transformed by post-semantic literalization into an arrangement like the following:



Here there is a postsemantic verb root ‘lift’, symbolized *hkw*, an incorporated noun root ‘matter’ (‘thing’, ‘affair’, etc.), symbolized *ihw* (from underlying *rihw*),

¹⁰ See W. L. Chafe, *Idiomatcity as an Anomaly in the Chomskyan Paradigm*, *Foundations of Language* 4.109–127 (1968), as well as *Meaning and the Structure of Language*.

¹¹ Cf. Lounsbury, *ibid.*, 72.

and a postsemantic inflectional unit which I shall call 'duplicative'.¹² It is symbolized *te* in this sentence. There are a great many verb roots, and noun roots as well, which are subject to literalization processes. Each has its own literalization, and a full account of idioms can only be given in a dictionary.

5.3. Inflectional units. We can now turn to the question of what happens to semantic inflectional units as postsemantic processes are applied to them. Let us for the moment disregard the units indefinite, peremptory, dislocative, facilitative, eventulative, negative, and confirmative discussed at the end of Chapter 3, and concentrate on the surface structures derived from the twenty inflectional combinations listed at the end of 3.6. I repeat them here for convenience, and add alphabetic labels so that they can be easily referred to in what follows:

(a)	(b)	(c)	(d)	(e)	(f)
descriptive	descriptive perfective	iterative	iterative contemporaneous	punctual	purposive
(g)	(h)	(i)	(j)	(k)	(l)
descriptive past	descriptive perfective past	iterative past	iterative contemporaneous past	punctual past	purposive past
(m)	(n)	(o)	(p)	(q)	
descriptive future	descriptive perfective future	iterative future	iterative contemporaneous future	punctual future	
(r)		(s)		(t)	
descriptive imperative		iterative imperative		punctual imperative	

These combinations form the starting point for several transformations which either add units to them or delete units from them. In the first place, as the ambiguity of sentences like the following suggests:

- (53) a. *kothé?tih* She is pounding, has pounded.
 b. *?ethé?tha?* She pounds, is pounding.

the inflectional units perfective and contemporaneous have no more than semantic relevance, and can be deleted immediately:

$$(T2) \quad \left. \begin{array}{l} \text{perfective} \\ \text{contemporaneous} \end{array} \right\} \rightarrow \phi$$

So far as surface structure is concerned, (53a, b) are descriptive and iterative respectively, and nothing more. Rule (T2) has the effect of removing the columns (b, h, n) and (d, j, p) as separate entities in the list above, merging each with the column to its left. We noted in 3.5 that a verb which is punctual but neither past, future, nor imperative is usually indistinguishable in its surface structure from a verb that is punctual and past:

- (54) *wa?ethé?ta?* She is pounding, pounded.

Furthermore, it may be noted that past is usually represented as a surface suffix

¹² As in my *Seneca Morphology and Dictionary*; Lounsbury calls it dualic.

(see (25a, b, d)), but that when it occurs together with punctual it is not. The surface prefix symbolized *waʔ* does not consistently reflect the semantic presence of past, as (54) illustrates. Apparently, then, we must say that past is post-semantically deleted, but only in the environment of punctual:

(T3) $\text{past} \rightarrow \phi/\text{punctual}$

What, then, can be said of the prefix symbolized *waʔ*? It depends on the semantic presence of punctual, but is in complementary distribution with future and imperative. It seems best to regard this surface unit as a postsemantic specification added to punctual when future and imperative are absent. It can be labeled 'aorist',¹³ but it must be regarded as strictly a postsemantic unit:

(T4) $\text{punctual} \rightarrow \text{aorist} \left[\begin{array}{l} \text{-future} \\ \text{-imperative} \end{array} \right]$

The result of this rule and (T3) is to make (e) and (k) identical, both having this postsemantic structure:

punctual
aorist

Finally, we need to account for the suffix symbolized *k*, with accent on the immediately preceding vowel, that is found in future and imperative sentences like the following:

- (55)
- | | | |
|----|---------------|-----------------------|
| a. | ʔeyakotheʔtík | She will be pounding. |
| b. | ʔeyetheʔthák | She will pound. |
| c. | satheʔtík | Be pounding! |
| d. | setheʔthák | Pound (be a pounder)! |

I mentioned in 3.6 that this suffix has, in other studies, been called the 'continuative', and that I was here treating it as a postsemantic unit only. There is no reason why we cannot retain the label 'continuative' for it. We need now to account for its postsemantic introduction. It occurs in the surface representation of a verb that is either descriptive or iterative, and can therefore be regarded as an additional specification of either of these two inflections, but one that is found only in the presence of future or imperative:

(T5) $\left\{ \begin{array}{l} \text{descriptive} \\ \text{iterative} \end{array} \right\} \rightarrow \text{continuative} \left\{ \begin{array}{l} \text{future} \\ \text{imperative} \end{array} \right\}$

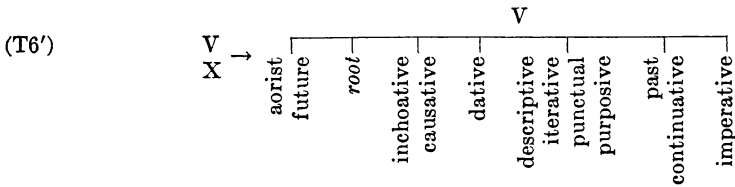
This rule has the effect of adding continuative to combinations (m, o, r, s) in the list above, (n, p) having already merged with (m, o). As a result of transformations (T2) through (T5), the twenty inflectional combinations listed at the be-

¹³ As it was in Lounsbury, *ibid.*

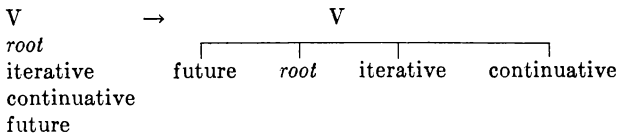
ginning of this paragraph have now been converted into the following:

(a, b) descriptive	(c, d) iterative	(e, k) punctual aorist	(f) purposive
(g, h) descriptive past	(i, j) iterative past		(l) purposive past
(m, n) descriptive continuative future	(o, p) iterative continuative future	(q) punctual future	
(r) descriptive continuative imperative	(s) iterative continuative imperative	(t) punctual imperative	

5.4. Preliminary linearization. At a late point in the sequence of transformations these units and others are assigned a linear order with relation to the verb root, so that the final surface structure verb consists of a linear arrangement. As we shall see in what follows, especially in Chapter 6, there are a number of other units which enter into a surface verb. We can, however, consider at this point the linearization of the units so far mentioned, with the understanding that a variety of other units will have to be added before we are through. The kind of linearization in question can be stated in a rule like the following:



That is to say, whatever units (X) happen to be included within a verb at this point, they are arranged in the order indicated. Thus, given an arrangement like (o, p) in the above list, a transformation like the following takes place:



The example just given could not, however, constitute a complete surface structure verb, since there are essential units missing from it.

5.5. Symbolization. Once linearization has been accomplished, it is possible to enter the area of phonology by means of symbolization rules. So far as the above units are concerned, we find symbolizations like the following:

aorist	→ waʔ
future	→ e

inchoative	→ ?
causative	→ ht
dative	→ e
descriptive	→ i
iterative	→ ha?
punctual	→ a?
purposive	→ hne?
past	→ hkwa?
continuative	→ 'k
imperative	→ (? → φ)

Iroquoian languages are not nearly this simple, however, and the symbolizations given above are merely typical samples from among the numerous variants which are found. Aorist is usually symbolized *wa?*, but it appears as *we?* before a second person element which either refers to a patient noun or is dual or plural. (It still appears as *wa?* before a second person singular agent element.)

- (56)
- | | | |
|----|--|-------------------------|
| a. | we [?] saya [?] takénha [?] | It helped you. |
| b. | we [?] swathé [?] ta [?] | You (plural) pounded. |
| c. | wa [?] sethé [?] ta [?] | You (singular) pounded. |

Inchoative, causative, and dative have a variety of symbolizations, conditioned by whatever precedes them in the surface structure.¹⁴ Descriptive, iterative, and punctual likewise have a variety of symbolizations, which also are conditioned by the preceding item in the surface structure. The symbolizations given above are those which appear after the verb root 'pound'. After the verb root 'write', symbolized *hyat₀*, as another example, we find descriptive φ, iterative *k*, and punctual '?:

- (57)
- | | | |
|----|-------------------------------------|-----------------------------|
| a. | hohyá:tq̄h | He is writing, has written. |
| b. | hahyá:tq̄k | He writes, is writing. |
| c. | wa [?] hahyat [?] | He is writing, wrote. |

but there are numerous other possibilities.¹⁵ Iterative *ha?* has a final ? only in word-final position. Before past or continuative, for example, it appears as *ha*. Punctual always has a symbolization ending in ?, except when its symbolization is φ, as it is after some verb roots. Purposive has several different symbolizations also, *hne?* being the one which occurs after 'pound'. All of them end in *e?*. However, we shall see in the discussion of dislocative below that purposive is best regarded as having a composite surface structure reflection, so that what has been said about it so far will have to be revised. Past is symbolized as *hkwa?* or *na?*, the *h* of *hkwa?* often disappearing as the result of phonological processes. Continuative is regularly symbolized as *k* with accent on the immediately preceding vowel. Imperative is consistently symbolized in the same way as punctual, except that when punctual has a final ? this ? is missing. That is what the parenthetical notation is meant to suggest.

¹⁴ Cf. Lounsbury, *ibid.*, 78–81, and Chafe, *Seneca Morphology and Dictionary*, 23–25.

¹⁵ Cf. Lounsbury, *ibid.*, 85–87, and Chafe, *ibid.*, 12, 15. The Northern Iroquoian languages differ considerably, however, in their symbolizations of these units. It is worth noting that when Seneca has a long vowel in or preceding one of these symbolizations, Onondaga usually has a short accented vowel.

5.8. Facilitative and eventutive. The two semantic units labeled facilitative and eventutive in 3.9 appear there to be represented by surface structure suffixes symbolized *ckó* and *sʔi* respectively. However, both *ó* and *i* are common symbolizations of descriptive, and words containing facilitative or eventutive indicate in another way that the unit descriptive is present in them postsemantically, although not semantically: as is usual in the presence of descriptive, a semantic agent becomes a postsemantic patient. Thus, in the following sentences we find a masculine patient prefix symbolized *ho* reflecting the semantic agent:

- (63) a. hotekhonyackóh He eats all the time.
 b. hoyethwásʔih In the course of events he planted.

We can say, then, that both facilitative and eventutive are further specified postsemantically as descriptive:

$$(T11) \quad \left. \begin{array}{l} \text{facilitative} \\ \text{eventutive} \end{array} \right\} \rightarrow \text{descriptive}$$

Facilitative and eventutive then go on to be linearized so that they precede descriptive directly (perhaps sharing this positional slot with dislocative), and to be symbolized as *ck* and *sʔ* respectively, while descriptive receives the symbolizations mentioned at the beginning of this paragraph.

5.9. Negative. As was suggested by some of the examples in 3.10, the surface representation of sentences containing negative is not always what one would expect; some negative sentences undergo transformations which modify them in seemingly quite arbitrary ways. To begin with the most typical surface representations of negative sentences, all such sentences regularly contain a negative particle. Except in a verb which also contains preemptory—that is, in a prohibition—this particle is a postsemantic unit which I shall simply label ‘negative particle’. It is symbolized *ya*, and seems historically to be an abbreviated form of *hiya*, the word for ‘no’. Occasionally in fact, the unabbreviated word is used; both (64a) and (64b) are heard:

- (64) a. yá teʔethéʔthaʔ } She doesn't pound.
 b. hiyá teʔethéʔthaʔ }

Sentence (65) illustrates that the negative particle does not always precede the surface verb directly:

- (65) yá khę teʔethéʔthaʔ She isn't pounding?

If other particles are present, as in this case the confirmative particle symbolized *khę*, it precedes them. In prohibitions we find a different particle, which I shall label ‘prohibitive particle’. It is symbolized *ahkwi*:

- (66) ʔahkwí ęhsetheʔtah Don't pound!

Each of these two particles can be introduced postsemantically as an additional

specification of the semantic unit negative:

$$(T12) \quad \text{negative} \rightarrow \left\{ \begin{array}{l} \text{negative particle} \\ \text{prohibitive particle} \end{array} \right\} / \left\{ \begin{array}{l} \text{-peremptory} \\ \text{peremptory} \end{array} \right\}$$

Later, in the linearization process, these particles can be separated from the verb as independent words. The semantic unit negative itself becomes a surface prefix, symbolized *te*². Let us now look at the following sentences, each of which is semantically punctual, although it would not appear so from their surface structures:

- (67)
- | | | |
|----|-------------------|----------------------|
| a. | ʔahkwí ħsethéʔtah | Don't pound! |
| b. | yá thayethéʔtah | She won't pound. |
| c. | yá thayethéʔtah | She shouldn't pound. |
| d. | yá teʔakothéʔtih | She didn't pound. |

In the first three of these sentences, punctual is represented by a surface suffix symbolized *a*, not *a*², although the usual symbolization for punctual after 'pound' is *a*². This *a* appears to be the symbolization of imperative. The first three sentences also contain the semantic unit future. We can, therefore, formulate a transformation like the following:

$$(T13) \quad \text{punctual} \rightarrow \text{imperative} / \left[\begin{array}{l} \text{future} \\ \text{negative} \end{array} \right]$$

That is, in a verb that is both future and negative, the semantic unit punctual is postsemantically represented as imperative. More oddly, in sentence (67d) punctual appears in the surface structure as descriptive, symbolized *i* after 'pound'. Rule (T14) can thus be applied after (T13) to transform all remaining instances of punctual into descriptive:

$$(T14) \quad \text{punctual} \rightarrow \text{descriptive/negative}$$

Sentences (67b, c) show that the surface structures of negative sentences do not distinguish between indefinite future and -indefinite future; both appear as if the sentence were indefinite. We need, then, a transformation which converts future into indefinite in a negative verb:

$$(T15) \quad \text{future} \rightarrow \text{indefinite/negative}$$

(In order to prevent duplication of indefinite in the surface structures of sentences which already contain indefinite, (T15) can be ordered to follow (T7) above.) Finally, sentences (67b, c) show negative itself represented by an unusual surface unit. The surface unit negative is symbolized *te*², but here we have something which is symbolized *th*. This is the regular symbolization of a surface unit to which the name 'contrastive' has been given.¹⁶ We can, therefore, say that semantic negative becomes postsemantic contrastive in the environment of indefinite:

$$(T16) \quad \text{negative} \rightarrow \text{contrastive/indefinite}$$

¹⁶ In Lounsbury, *ibid.*

These rules, (T12) through (T16) account for the various surface peculiarities of negative sentences as they have been illustrated in this paragraph and in 3.10.

5.10. Confirmative. The confirmative questions mentioned in 3.11 require little discussion so far as their postsemantic development is concerned. As this example suggests:

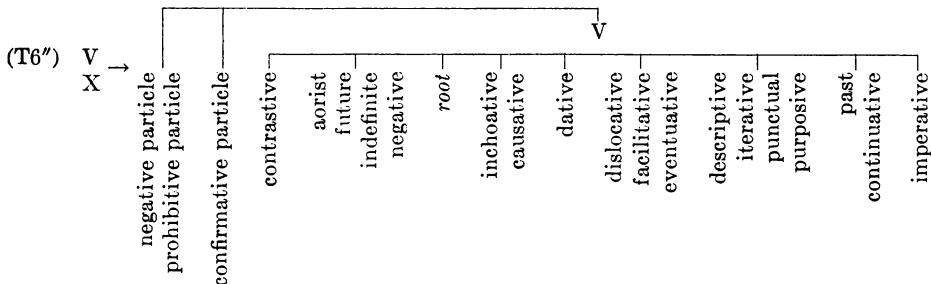
(68) ʔetheʔtháʔ khẹh She's pounding?

confirmative is represented in the surface structure by a unit which can be labeled 'confirmative particle', and which is symbolized *khẹ*. In order to make it clear that confirmative is treated as an independent word in the surface structure, we might formulate a rule like the following:

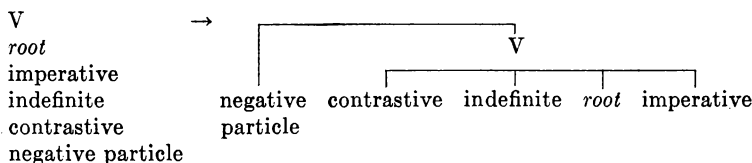
(T17) confirmative → confirmative particle

In the linearization process confirmative particle can be separated out from the surface verb.

5.11. Another look at linearization. Before we leave this chapter we might take note that the linear ordering of units in the surface structure verb, first provisionally described by means of (T6'), has since been affected by the introduction of certain other units into the surface structure. A revised (T6'') can now be stated, in anticipation of still other revisions that will lead to a final (T6) in Chapter 6. In the same rule we can take account of the fact that the several particles mentioned above are separated out from the surface verb to appear as separate words:



As just one example from the host of possibilities, given an arrangement like that on the left below, we find it linearized as shown on the right:



The final result, with a feminine agent added and with the verb root specified as 'pound', can be seen in sentences (67b, c).

6. TRANSFORMATIONS STEMMING FROM THE SEMANTIC COMPOSITION OF A NOUN

6.1. Pronominalization. We can now turn our attention to those transformations which depend on the semantic composition of a noun, as well as on the

relation which a noun bears to the verb with which it is associated. Many of these processes affect the surface composition of the verb, and some result in the complete loss of the noun itself. I shall mention only in passing the process of pronominalization, by which the lexical unit within a noun (the noun root) is deleted. Within a discourse it is usually the case that several nouns, either within the same sentence or within different sentences, have identical referents. When this is the case, the noun roots of all but one of such nouns—or sometimes of all of them—are typically deleted. The general principle is that the noun root of a noun can be deleted if the speaker assumes that the hearer knows, from either the linguistic or the nonlinguistic context, what that noun root would be if it were not deleted. It is difficult to formalize this extremely common kind of noun root deletion adequately. Doubtless universal principles are involved, and I am sure that what is learned about pronominalization in other languages will help to throw light on the same process in Onondaga. Here we can simply take note that sentences like (69a, b) can be reduced in the ways suggested by (69c, d):

- | | | |
|------|--------------------|--------------------|
| (69) | a. ʔonqhsaká:yq̄h | The house is old. |
| | b. Alice ethéʔthaʔ | Alice is pounding. |
| | c. ʔoká:yq̄h | It is old. |
| | d. ʔethéʔthaʔ | She is pounding. |

6.2. Establishment of postsemantic agents and patients. There are several processes which change the semantic relation between a noun and its verb into a different relation. We have already seen that the two relations other than agent and patient which have been mentioned, the relations of beneficiary and experiencer, appear in surface structure as if they were patient and agent respectively (2.7). For example, in the following sentences ‘dog’ is semantically the patient in (70a), but the beneficiary in (70b):

- | | | |
|------|--------------------|----------------------|
| (70) | a. cihá okstéʔah | The dog is old. |
| | b. cihá onqhsá:yeʔ | The dog has a house. |

and yet in both sentences ‘dog’ is treated in the surface structure as a patient, as indicated by the prefix symbolized *yo* (> *o*) in the surface verb. In the sentences of (71) ‘dog’ is semantically the agent in (71a), but the experiencer in (71b):

- | | | |
|------|---------------------------|-----------------------|
| (71) | a. cihá kahnyá:haʔ | The dog is barking. |
| | b. cihá kakéhaʔ neʔ takós | The dog sees the cat. |

Nevertheless, in both sentences ‘dog’ is treated in the surface structure as an agent, as indicated by the prefix *ka*. The following transformations, therefore, are in order:

- | | |
|-------|-----------------------|
| (T18) | beneficiary → patient |
| (T19) | experiencer → agent |

But these are not the only transformations which change the relations of nouns to the verb. A transformation of at least equal importance is the one that converts the semantic agent of a descriptive verb into a postsemantic patient, as mentioned in 3.2. Thus, in (72a) the semantic agent Alice is still an agent in the

surface structure, as indicated by the prefix *ye* (> *e*); but in (72b) Alice, still semantically an agent, is treated in the surface structure as a patient, as indicated by the prefix *yako* (> *ko*):

- (72) a. Alice ethé?tha? Alice pounds, is pounding.
 b. Alice kothé?tih Alice is pounding, has pounded.

This postsemantic shift of agent to patient takes place with a descriptive verb except under one condition: where the verb already has a patient noun, and where that noun is at the same time human. Thus, both sentences of (73) have a semantic first person agent:

- (73) a. ?akya?takénhëh I'm helping (it).
 b. heya?takénhëh I'm helping him.

(73a) has either a -human patient or no patient at all. The surface prefix symbolized *wak* (> *ak*) is the first person patient prefix, showing that the agent has become a postsemantic patient as expected. (73b), on the other hand, has a masculine, and therefore human patient. In this case the semantic agent remains a surface agent, reflected in the prefix symbolized *he*, which represents a combination of first person agent and masculine (singular) patient. (The symbolization of such combinations is quite arbitrary in many instances.) The rule in question might be stated as follows:

- (T20) agent → patient/V
 descriptive
 -(human patient)

That is, an agent noun becomes a patient noun in the environment of a verb that is descriptive, and that does not already, at the time the rule applies, have a human patient (it may have either a -human patient or no patient at all). This rule must follow (T19), since a postsemantic agent derived from a semantic experiencer also becomes a patient with a descriptive verb:

- (74) ?áhkëh I see, have seen it.

Here the prefix symbolized *wak* (> *ah*) reflects a first person patient, derived from a first person agent by (T20), the latter already derived from a semantic first person experiencer by (T19). (T20) must also be applied after rules (T11) and (T14), discussed in Chapter 5. Another postsemantic process which seems almost to be the mirror image of that just described is the one which was mentioned in 3.4, whereby the semantic patient of a descriptive verb becomes a surface agent. Thus, for example, the semantic patient in (75) is treated as a surface agent, as indicated by the agent prefix symbolized *ka*:

- (75) ?onëhá? kathé?tih The corn has been pounded.

This process appears to be restricted to the environment of a descriptive verb that is further specified as perfective. Such a verb, in addition, cannot already

The broken arrow indicates that this rule is optional, for if it does not apply there is another way in which the structure shown on the left will be reflected in the surface structure (cf. the discussion of rule (T46) below). As for reciprocal sentences, we saw in 4.11 that the unit reciprocal can be added semantically to the verb of a sentence whose agent and patient have identical referents, where, in addition, the referents in question are either dual or plural. In the surface structure of a reciprocal sentence:

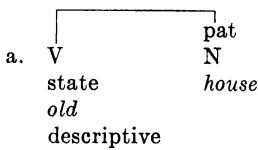
- (78) a. wa[?]thyataté·yo[?] They (dual) killed each other.
 b. wa[?]thotathé·na[?] They (plural) cut each other.

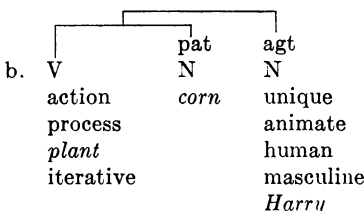
we find the unit reflexive, but also another unit which, here, is symbolized *t*. This is the surface unit which I call 'duplicative'. It reflects a variety of semantic phenomena, but the presence of the semantic unit reciprocal is one of them. In order to account for the surface structure of (78) we need only add the following rule to (T22):

- (T24) reciprocal → duplicative

6.4. The preceding paragraph gave us some preliminary evidence of something that will become more striking as we proceed: it is especially characteristic of postsemantic processes in Onondaga that they add units to the verb while very often subtracting them from elsewhere in the sentence. We saw how the unit reflexive is introduced into the verb while a patient noun is simultaneously deleted. By this and other processes the structure of the verb is gradually augmented, while that of associated nouns is eroded. By the time surface structure is reached it is often the case that the only word left in a sentence is the verb. Such complete erosion of nouns does not always take place, however, and frequently enough is left of a noun that it becomes symbolized as a separate word.

6.5. Incorporation. One important process serving to augment the verb is the copying into it of the lexical unit of a noun—that is, of a noun root. This is the process which is usually called 'incorporation'. As a general illustration we can look at what happens postsemantically to the following two semantic structures:

- (79) a. 

 a. V pat
 state N
 state house
 old
 descriptive
- b. 

 b. V pat agt
 action N N
 process corn unique
 plant animate
 iterative human
 masculine
 Harry

The eventual phonetic outputs are the following:

- a. ?onqhsaká·yqh The house is old.
 b. Harry hanqhayéthwas Harry plants corn.

These sentences suggest, and further evidence would confirm, that it is the noun root within a *patient* noun which is introduced postsemantically into the verb. Thus in (79a) the patient noun root 'house', symbolized *nqhs*, appears within the surface structure verb. In (79b) it is the patient noun root 'corn', symbolized *neh*, which is found in the surface verb. In general, then, a transformation is required which will copy the noun root of a patient noun into the verb with which it is associated. In many instances, including those illustrated in (79), the entire patient noun is subsequently deleted. This deletion does not always take place, however, and it will be discussed later as a separate process. Several other observations are relevant to the way in which incorporation must be described. Sentences of the following type present an interesting problem:

- (80) a. ʔokayó neʔ kanóhsaʔ The house is old.
 b. Harry hayəthwás neʔ onéhaʔ Harry plants corn.

There is no difference between these sentences and the two sentences of (79), except that incorporation has not taken place. Onondaga speakers are willing to admit such sentences as possible in their language, and with some combinations of verb root and patient noun root they even seem to prefer them. For the most part, however, they are apt to characterize sentences like these as the kind that might be used by children or by people who do not speak the language particularly well—individuals, it would seem, who have not learned to use the incorporation rule with complete facility. In other words, one has the impression that incorporation can be suspended without doing serious violence to the language, although an experienced speaker prefers to apply it in most instances. We might, then, regard incorporation as marginally optional, with usually a strong preference in its favor. By and large it is only -animate noun roots which are incorporated. Thus, as we noted earlier, the patient noun root 'house', which is -animate, is incorporated, while the patient noun 'dog', being animate, is not:

- (81) a. ʔonqhsaká:yqh The house is old.
 b. cihá okstéʔah The dog is old.

Most unique noun roots are animate, and thus would not be incorporated in any case. With the -animate names of cities a classificatory noun root 'town' is present within the noun (4.7), and it is this noun root which is incorporated:

- (82) kanonóʔ kanatowá:neh New York is a big city.

The incorporated 'town' is symbolized *nat* within the second word. Perhaps we can say that when a hierarchy of noun roots is present within the patient noun, it is the most inclusive noun root, such as 'town' in this example, which is incorporated. There are a few seemingly animate noun roots which are subject to incorporation. The behavior of 'person', 'child', 'domestic animal', 'baby', and 'family' may be noted:

- (83) a. həkweʔtahséʔ The person is young, young man.
 b. haksáʔtahséʔ The child is young, young boy.
 c. waʔhanaskwahníʔnqʔ He bought a domestic animal.

- d. ʔakwi:á:yəʔ I have a baby.
- e. ʔakathwaci:níh I have raised a family.

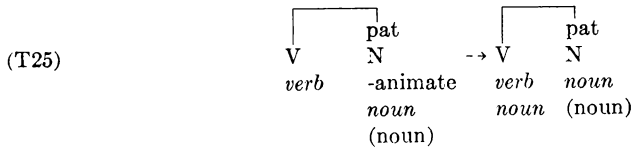
Perhaps such noun roots, if they are not in fact semantically -animate, are subject to postsemantic loss of their animateness before the incorporation process is applied. It is actually hard to establish that these nouns are semantically animate, and the occurrence of ‘person’ with the particular verb ‘old’ which takes a -animate patient suggests otherwise:

- (84) ʔokweʔtaká:yəh The person is old, old person.

Turning to verb roots, we find that there are certain ones which resist having a noun root incorporated with them. For example, ‘like’ accepts ‘knife’ for incorporation in (85a), but ‘want’ does not in (85b):

- (85) a. kaʔsha:nóhweʔs I like the knife.
- b. kehéʔ áʔsha:ʔ I want the knife.

There appears to be no semantic basis for this refusal to accept incorporation, and apparently it must be stated as a peculiarity of certain verb roots. Taking these various factors into account, we can describe the copying of a noun root into a verb with the following rule:



Another noun root is shown in parentheses below the noun root which is incorporated to indicate that it is the classificatory noun root, when there is one, which is incorporated in sentences like (82). Within the verb the incorporated noun root is diagramed directly below the verb root as a way of identifying it there; that is, in these diagrams it will be understood that the first italicized unit within the verb is a verb root, while the second, if there is one, is a noun root. Subsequently a linearization rule will have to order the noun root to precede the verb root. Certain verb roots will have to be marked as inhibiting the operation of (T25), and perhaps certain animate noun roots will have to be designated as subject to it. As we noted, the rule is optional but there is a strong preference for applying it in most instances.

6.6. Reversal of agent-patient relations with certain verb roots. In 6.2 several processes were described whose effect was to establish, for some nouns, agent or patient relations different from the relations exhibited by those nouns semantically. There are still other transformations which affect postsemantic agent and patient relations, but which are in the nature of special processes that apply in the presence of certain verb roots only, and not in any general way. They must apply after (T20) and (T21), stated in 6.2, for otherwise their effects would sometimes be reversed in an unwarranted way. But at least the first of them to be mentioned must apply after the incorporation rule (T25) also, for that rule

treats as patients (that is, incorporates the noun roots of) some nouns which are later transformed into agents. In each of the following sentences the noun containing 'house' is semantically a patient:

- (86)
- | | | |
|----|--------------|-------------------|
| a. | ʔoŋhsaká·yoh | The house is old. |
| b. | kanhsahséʔ | The house is new. |
| c. | kanhsowá·neh | The house is big. |

In (86a) this semantic patient is reflected in the surface structure as a patient, with the prefix *yo* (> *o*). In (86b, c), however, the same patient is reflected in the surface structure as an agent, with the prefix *ka*. All that can be said is that certain state verb roots like 'new' and 'big' cause their patients to appear as surface agents:

(T26) patient → agent/new, big, . . .

The list of such verb roots constitutes a significant proportion of all state verb roots. There is at least one action verb which has precisely the opposite effect: whose semantic agent is transformed into a postsemantic patient:

- (87) Harry hwaʔhó·tiʔ Harry threw it.

Semantically 'Harry' is the agent in this sentence, but it is reflected in the surface structure as a patient, as indicated by the prefix symbolized *ho* (the second syllable of the second word). Apparently, then, we need also a rule like the following:

(T27) agent → patient/throw, . . .

Perhaps there may be one or two other verb roots which have the same effect.

6.7. Nonlexical units. Not only are the noun roots of many patient nouns post-semantically incorporated, but some of the selectional and inflectional units of nouns are likewise copied into the verb. It is not only patient nouns for which this is true, as it was in the case of incorporation, but agent nouns as well. (According to the description which has been given, only agent and patient nouns are present at this postsemantic stage. We are not necessarily dealing now with semantic agents and patients, but with those that have been created through the operation of rules (T18) through (T21), (T26), and (T27). As preliminary examples of the kind of processes that will be discussed, we may note what happens postsemantically to the following two semantic structures:

- (88)
- | | | |
|----|-----------------|-----------------|
| a. | V | agt |
| | action | N |
| | <i>bark</i> | animate |
| | iterative | domestic animal |
| | contemporaneous | <i>dog</i> |
| | | |
| b. | V | pat |
| | state | N |
| | <i>old</i> | animate |
| | descriptive | domestic animal |
| | | <i>dog</i> |

(g)	(h)	(i)
N	N	N
animate	animate	animate
human	human	human
first	second	inclusive

((a) shows the absence of animate.) In a surface verb each of these combinations is reflected in a prefix, which varies also according to whether the combination originated in an agent or a patient noun. There are surface units which represent directly the semantic units masculine, feminine, first, second, and inclusive, although the surface unit feminine also represents certain semantic configurations which do not include the semantic unit feminine. It is convenient to retain the labels masculine, feminine, first, second, and inclusive for surface as well as semantic units. On the other hand, there are no surface units which represent the semantic units animate and human directly. The postsemantic representation of these units is more complex, and requires the recognition of another surface unit to which it seems convenient to give the label 'neuter'. To begin with configuration (a), that in which the noun is -animate, we find it in sentences like these:

- (90)
- | | | |
|----|---------------|-------------------|
| a. | kanqhsowá·neḥ | The house is big. |
| b. | ?onqhsaká·yoh | The house is old. |

We can say that *ka* symbolizes the neuter agent prefix, while *yo* (> *o*) symbolizes the neuter patient prefix. (It must be kept in mind that the agent status of the noun in (90a) is postsemantic only, in accordance with (T26). In both sentences of (90) the noun is semantically a patient.) We need to state, therefore, that a noun which is semantically -animate acquires postsemantically the unit neuter:

(T29) $N \rightarrow \text{neuter/-animate}$

But this is not the only source of the surface unit neuter, for we find the same prefixes in the following:

- (91)
- | | | |
|----|-----------------|---------------------|
| a. | cihá kahnyá·ha? | The dog is barking. |
| b. | cihá oksté?ah | The dog is old. |

(Here the nouns are distinguished even semantically as agent and patient respectively.) In both sentences of (1) the noun is animate but -human (as well as -masculine). Such a noun is represented in surface structure as neuter also. We shall find, however, that this is the case only if the noun is not dual or plural, so that the second rule which introduces neuter can be written in this way:

(T30) $\text{animate} \rightarrow \text{neuter/N}$

- human
- masculine
- dual
- plural

In the following sentences the noun is plural:

- (92) a. *cihá kḡtihnýá·háʔ* The dogs are barking.
 b. *cihá otikstéʔah* The dogs are old.

Here the prefixes are not neuter, but feminine, as the following sentences with a feminine noun illustrate:

- (93) a. *kḡnḡkwé kḡtithéʔthaʔ* The women are pounding.
 b. *kḡnḡkwé otikstéʔah* The women are old.

In both (92) and (93) we find the feminine plural agent prefix, symbolized *kḡti*, and the feminine plural patient prefix, symbolized *yoti* (> *oti*). A noun, therefore, which is animate and -human (as well as -masculine) and either dual or plural is postsemantically represented as feminine:

- (T31) animate → feminine/N
 -*human*
 -*masculine*
 {*dual* }
 {*plural* }

In all other circumstances—that is, in a noun which is either human or masculine (or both)—animate has no surface representation and can be deleted by the following rule, ordered to apply after (T30) and (T31):

- (T32) animate → ϕ

As the following sentences suggest, a noun which is human but nothing else (combination (d) above) is represented in surface structure in the same way as a noun that is feminine:

- (94) a. *ʔéthéʔthaʔ* One pounds.
 b. *Alice éthéʔthaʔ* Alice pounds.

The feminine agent prefix in these sentences is symbolized *ye* (> *e*). We can say that the semantic unit human is represented by the postsemantic unit feminine, provided the noun is not also specified as masculine, feminine, first, second, or inclusive:

- (T33) human → feminine/N
 -*masculine*
 -*feminine*
 -*first*
 -*second*
 -*inclusive*

Otherwise, human has no surface representation:

- (T34) human → ϕ

(The neuter prefixes attached to *kaksíʔah* ‘child’ and *ʔó·kweh* ‘person’—in the

latter y ($> \phi$ initially) is the variant of *ka* before ϕ —suggest that (T33) applies only when the human noun does not contain a noun root. Then (T34) would leave only animate in such a noun, to become neuter by (T30).) The effect of rules (T29) through (T34) is to transform the nine different semantic combinations listed earlier in this paragraph into the following six:

(a, b, d)	(c, e)	(b, d, f)
N	N	N
neuter	masculine	feminine
(g)	(h)	(i)
N	N	N
first	second	inclusive

Combination (b) is represented as neuter or feminine depending on whether the noun is not, or is, dual or plural. Combination (d) is neuter with ‘child’ or ‘person’, otherwise feminine. There is actually one other semantic source of the surface unit neuter:

(95) Alice oksté?ah Alice is old.

Here the noun is specified not only as feminine but also as impersonal (4.9). The semantic unit impersonal is reflected in the surface use of neuter in place of feminine, although only when the noun is singular. The following rule can therefore be written:

(T35) $\left[\begin{array}{l} \text{feminine} \\ \text{impersonal} \end{array} \right] \rightarrow \text{neuter/N}$
-dual
-plural

If the impersonal noun is dual or plural, then it is not represented in the surface structure any differently from a noun that is feminine only, so that impersonal can be considered deleted in that environment. (T36) is sufficient, if it is applied after (T35):

(T36) impersonal $\rightarrow \phi$

There are also two instances of simplification that take place in a patient noun but not in an agent. In the first place, no surface distinction is made between first and inclusive within a patient noun. The following surface structure:

(96) ?okwaksté?ah We are old.

is ambiguous as to whether the noun is first plural or inclusive plural. It is easiest to regard this simplification as a merging of inclusive with first:

(T37) inclusive \rightarrow first/N patient

In the second place, we find that dual merges with plural in a patient noun. This is not true for every patient noun, however, but only for those that are masculine

or feminine (subsequent to the transformations already given). Thus we find ambiguities like these:

- (97) a. hotiksté?ah They (masculine dual or plural) are old.
- b. ?otiksté?ah They (feminine dual or plural) are old.

We can, therefore, state another simplification rule as follows:

$$(T38) \quad \text{dual} \rightarrow \text{plural/N} \begin{matrix} \text{patient} \\ \left\{ \begin{matrix} \text{masculine} \\ \text{feminine} \end{matrix} \right\} \end{matrix}$$

6.9. Copying of nonlexical noun units into the verb. We can now turn to the question of how the nonlexical units of the noun, modified from the semantic units by the processes described in the last paragraph, are copied into the verb. The following rule can be stated:

$$(T39) \quad V \rightarrow \begin{matrix} \left\{ \begin{matrix} \text{agent} \\ \text{patient} \end{matrix} \right\} \end{matrix} \begin{matrix} \left\{ \begin{matrix} \text{neuter} \\ \text{masculine} \\ \text{feminine} \\ \text{first} \\ \text{second} \\ \text{inclusive} \end{matrix} \right\} \end{matrix} \begin{matrix} \left\{ \begin{matrix} \text{dual} \\ \text{plural} \\ \phi \end{matrix} \right\} \end{matrix} / \text{N} \begin{matrix} \left\{ \begin{matrix} \text{agent} \\ \text{patient} \end{matrix} \right\} \\ \left\{ \begin{matrix} \text{neuter} \\ \text{masculine} \\ \text{feminine} \\ \text{first} \\ \text{second} \\ \text{inclusive} \end{matrix} \right\} \\ \left\{ \begin{matrix} \text{dual} \\ \text{plural} \\ \phi \end{matrix} \right\} \end{matrix}$$

This rule says only that the verb is further specified with a configuration like the following:

V
agent masculine dual

if it has an agent noun which is specified at this stage as masculine and dual, and so on for all the other possible combinations. If a verb has both an agent and a patient associated with it, it takes on the specifications of both. Thus, it might now contain something like:

V
agent first
patient feminine plural

6.10. Simplification within the verb. Certain processes affecting the surface representations of dual, plural, and neuter can apply only after the operation of (T39). That is, they are processes which depend on the content of the verb after nonlexical units from one or more associated nouns have been copied into it. For one thing, a descriptive verb which contains an incorporated noun root by (T27)

and which contains plural by (T39) may optionally see the unit descriptive replaced by a different unit which I shall label 'descriptive plural'.¹⁷ This unit is symbolized in several different ways, but perhaps its symbolization always contains the sequence ?s . In the following examples there is no reflection of plurality in the prefix because of a deletion process yet to be mentioned:

- (98)
- | | | |
|----|--|----------------------|
| a. | ka [?] nq [?] tí·yo [?] s | The legs are pretty. |
| b. | kanqhsówanq [?] s | The houses are big. |
| c. | kawq [?] né·ci [?] s | The words are long. |
| d. | ?onqhsakayó [?] sq [?] | The houses are old. |

This unit descriptive plural, then, may optionally replace the unit descriptive if the verb contains both a noun root and plural:

- (T40)
- | | | |
|-------------|---|----------------------|
| descriptive | → | descriptive plural/V |
| | | <i>noun root</i> |
| | | plural |

Apparently only certain state verb roots allow this transformation. Many other verb roots, including many process and action-process verb roots, allow a verb whose patient is plural, whether or not there is an incorporated noun root, to acquire an additional postsemantic unit which can be labeled 'distributive'.¹⁸ The symbolization of this unit is also varied, but seems always to contain q (> phonetic q under certain conditions). The following sentences contain distributive:

- (99)
- | | | |
|----|--|-------------------------|
| a. | wa [?] hanqhsahninqnyó [?] | He bought houses. |
| b. | wa [?] ena [?] cyohaehó [?] | She washed the kettles. |
| c. | wa [?] thahkwahq [?] | He picked them up. |

We can say that a verb is optionally specified as distributive in the surface structure if it has a plural patient:

- (T41)
- | | | |
|---|---|-----------------------------|
| V | → | distributive/patient plural |
|---|---|-----------------------------|

But once again this transformation is restricted to certain verb roots. Once its presence has allowed for the introduction of the units descriptive plural or distributive, plural (along with dual) is obligatorily deleted in the environment of neuter. The sentences of (98) and (99) illustrate such deletion, since there is nothing in their prefixes to indicate the nonsingularity of their patients. The rule can be stated simply in this way:

- (T42)
- | | | |
|--|---|----------------|
| $\left\{ \begin{array}{l} \text{dual} \\ \text{plural} \end{array} \right\}$ | → | ϕ /neuter |
|--|---|----------------|

Since (T40) and (T41) are optional, the surface structure may lack the units descriptive plural or distributive as well as the unit plural, so that surface structures like the following do not reflect whether the patient noun is semantically singular or plural:

¹⁷ Cf. the unit called 'perfective plural' in Lounsbury, *ibid.*, 89.

¹⁸ Following Lounsbury, *ibid.*, 78; see also Chafe, *ibid.*, 24.

- (100)
- | | | |
|----|-------------------|--------------------------------|
| a. | kaʔnɔtiyóh | The leg is (legs are) pretty. |
| b. | ʔonɔhsaká'yɔh | The house is (houses are) old. |
| c. | waʔhanɔhsahní'nɔʔ | He bought a house (houses). |

There is one type of sentence which appears to represent an exception to (T42). With some verb roots which apparently depend on the presence of a selectional unit that might be labeled 'motion', plurality of a neuter noun does seem to be reflected in the surface structure prefix. The following sentence provides an example:

- (101)
- | | | |
|---------------|-------------------|---|
| kanɔhsakehé'ʔ | waʔtkɔtinetéʔnhaʔ | The houses fell down the hill (as in a mud slide, for example). |
|---------------|-------------------|---|

Several features of this sentence are beyond the range of what has been described in this work, but the point is that the prefix *kɔti* within the second word does reflect the semantic plurality of the patient noun containing 'house', even though the latter, apparently, is semantically -animate and should therefore, by (T29), be postsemantically neuter. There are several conceivable ways in which this surface situation might be accounted for. Rule (T42) might be described as suspended in the environment of a motion verb. Perhaps more revealing would be the assertion that a motion verb of this sort always requires a patient noun which is animate, that something which moves of its own accord is necessarily regarded as animate, and that when an otherwise -animate noun root like 'house' is put in this situation it becomes derivatively animate in the semantic structure. If the patient noun has been shifted into the animate category in sentence (101), rule (T42) will not apply, for the noun will have become feminine by (T31), rather than neuter by (T29). The fact that the prefix *kɔti* is not only plural but also feminine would thereby be explained as well. There are also circumstances where neuter itself is deleted. The following sentences will illustrate:

- (102)
- | | | |
|----|-------------------------|-----------------------|
| a. | cihá waʔwa'kí:k | The dog bit me. |
| b. | Harry waʔhanɔhsahní'nɔʔ | Harry bought a house. |

The prefix symbolized *wak* in the middle of the second word of (102a) is solely a first person patient prefix; it does not in addition reflect a neuter agent, such as we have postsemantically in this sentence. We find the same first person patient prefix in (103), where there is no agent at all (initial *w* → ϕ):

- (103)
- | | |
|-----------|-----------|
| ʔakstéʔah | I am old. |
|-----------|-----------|

In fact, we can say that a neuter agent never has a representation in the surface verb when there is present also a nonneuter patient:

- (T43)
- | | |
|-----------------|------------|
| agent neuter | → ϕ/V |
| patient -neuter | |

Sentence (102b) shows that the reverse process also applies. In this sentence the prefix symbolized *ha* in the second word is solely a masculine agent prefix; it does not in addition reflect a neuter patient. We find the same masculine agent

structure, as in (105b). (T46) also operates to remove the masculine and feminine agent specifications in (106), leaving only the patient prefixes in the surface structures of these sentences.

6.11. Further simplification within the noun. Earlier, in 6.8, we saw how the nonlexical units of a noun are simplified through deletion and merger—how, for example, the semantic units animate, human, masculine, feminine, and impersonal, as well as the semantic absence of animate, are reduced to the post-semantic units neuter, masculine, and feminine. Subsequently we saw how such units are copied into the verb and, in the last paragraph, what further simplification takes place within the verb. We need now to look back at the noun, for there are still a variety of transformations which apply to it before the final surface structure is reached. Again, most of these processes have the effect of eroding the content of a noun, sometimes to the point where nothing at all is left in the surface structure.

6.12. Deletion of a noun root which has been incorporated. In the discussion of noun incorporation in 6.5 the following two sentences were used as examples:

- (107) a. ʔonqhsaká·yqh The house is old.
 b. Harry hanqhayéthwas Harry plants corn.

In neither sentence does ‘house’ or ‘corn’ appear in the surface structure as a separate word; each appears only as an incorporated noun root in the surface verb. These examples suggest that once a noun root has been incorporated into a verb it is dropped from its original position in the noun, all of which then disappears. Such is not always the case, however. Both of the following sentences are identical with (107a), except that the patient noun is additionally specified as demonstrative and proximal:

- (108) a. ʔonqhsakayó nq̄·kq̄h This house is old.
 b. ʔonqhsakayó nq̄kq̄ kanq̄hsaʔ

In the first place, in (108a), although the noun root itself has been lost as a separate word, the demonstrative-proximal nature of the patient noun has been retained as a word in the surface structure; this is a matter to which we shall return in the next paragraph. More interesting at the moment is the fact that in (108b) the noun root ‘house’ (symbolized *nqhs*) appears in the surface structure in two places: both within the verb and within a surface noun symbolized *kanqhsaʔ*. When the noun is demonstrative, in other words, there is a choice, after the noun has been incorporated into the verb, of deleting the noun root in its original position or of retaining it there. The same option is not available if the noun is not demonstrative. The following is an impossible alternative for (107a):

- (109) * ʔonqhsakayó kanq̄hsaʔ (The house is old.)

The reaction to such a surface structure is apt to be, “You said ‘house’ once; why say it again?” Sentence (108b), on the other hand, does not elicit such a reaction. The rule which deletes a noun root from its noun once it has been copied into

the verb can be stated in essentially this way:

$$(T47) \quad \overbrace{\text{V}}^{\text{noun root}} \quad \overbrace{\text{N}}^{\text{noun root}} \quad \rightarrow \quad \overbrace{\text{V}}^{\text{noun root}} \quad \overbrace{\text{N}}^{\text{noun root}}$$

(optional if the noun is demonstrative)

where it is understood to be the same noun root that occurs in each position in the rule.

6.13. Separation of demonstrative. The sentences of (108) both illustrate also that, regardless of whether the noun root is retained or not, demonstrative itself appears in the surface structure as an independent word. That is, while we have been regarding demonstrative semantically as an inflectional unit within the noun, as a surface unit it appears as a word in itself, separate from the surface noun if there is one. A rule like the following is therefore necessary:

$$(T48) \quad \text{N} \quad \rightarrow \quad \overbrace{\text{N}}^{\text{demonstrative}} \quad \text{demonstrative}$$

This rule is not intended to establish the relative order of the noun and the demonstrative word in the surface structure, but only to establish the latter *as a* word. Subsequently, a linearization rule will be needed to place the demonstrative word before the noun. Demonstrative will have been specified in the semantic structure as either proximal or distal, and it is understood that these units too are carried along into the independent word. The eventual symbolization of demonstrative and proximal is *někě* (the significance of the breves will be explained in 7.3); of demonstrative and distal it is *thōkě*.

6.14. Separation of emphatic. Not only is demonstrative separated from the noun to appear in the surface structure as a separate word, but the same treatment is accorded the unit emphatic also. The following was one of the illustrations given for emphatic in 4.8:

$$(110) \quad \text{ha}qhwá? \text{ Harry hoyó?te?} \quad \textit{Harry is working.}$$

It can be seen that emphatic is represented in the word symbolized *haqhwa?*, which is independent of the word *Harry* in the surface structure. We might, provisionally, then, posit a rule much like the earlier (T48) to effect this separation:

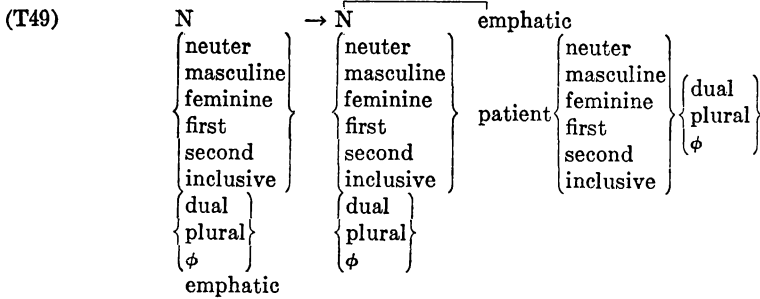
$$(T49') \quad \text{N} \quad \rightarrow \quad \overbrace{\text{N}}^{\text{emphatic}} \quad \text{emphatic}$$

There is, however, an additional consideration. The surface word representing emphatic reflects not only the semantic unit emphatic itself, but also certain non-lexical features of the noun in which emphatic originated. The emphatic word in (110), for example, reflects the fact that the noun was masculine. If it had been feminine, the word would have a different prefix:

$$(111) \quad \text{ka}qhwá? \text{ Alice koyó?te?} \quad \textit{Alice is working.}$$

(The prefixes symbolized *ha* and *ho* in (110) are identical, as are those symbolized *yaka* (> *ka*) and *yako* (> *ko*) in (111). The symbolizations with a final *a* are those

found before a following *o* or *o*.) These are the regular surface patient prefixes. We can, then, revise (T49') to state not only that emphatic appears as a separate surface word, but also that it carries along with it certain units copied from the noun, specified as if they were reflections of a patient noun:



The unit emphatic itself then goes on to be symbolized *qhwa*², and the other combinations of units as the usual patient prefixes (subject, in fact, to (T38)). If the optional further specifications of emphatic—labeled ‘even’ and ‘only’ in 4.8—are present, they appear as surface suffixes symbolized *shq*² and *a* respectively. (Perhaps, as surface units, they should be equated respectively with one variant of the noun plural suffix, to be mentioned in 6.16, and with the diminutive suffix, not described in this work.) Thus, to repeat the examples of 4.8:

- (112) a. haqhwa²shq² Harry hoyó²te² Even *Harry* is working.
 b. haqhwa²a Harry hoyó²te² Only *Harry* is working.

There is one further complication, however. If we have simple emphatic, without ‘even’ or ‘only’, then the surface units and symbolizations are totally different for first, second, and inclusive:

- (113) a. ?i² akyó²te² I am working.
 b. ?is sayó²te² You are working.
 c. ?i² eyakwayéthwa² We (exclusive) will plant.
 d. ?i² ɛtwayéthwa² We (inclusive) will plant.

Here the surface structure exhibits nothing more than one or the other of two particles. One, which we can call the ‘first particle’, symbolized *i*², is found when the emphatic noun is either first or inclusive. The other, the ‘second particle’, symbolized *is*, is found when the emphatic noun is second. With ‘even’ and ‘only’ we do not find these particles, but the expected representations:

- (114) a. ?akqhwa²shq² akyó²te² Even *I* am working.
 b. ?akqhwa²a akyó²te² Only *I* am working.

The following rules may be stated:

- (T50) a. emphatic → first particle
 { first
 inclusive }
 -even
 -only

- b. emphatic → second particle
 second
 -even
 -only

6.15. Total deletion of the noun. After pronominalization and the deletion from a noun of a noun root that has been incorporated (6.12), there are many nouns which no longer contain a noun root, although they did contain one semantically. Other nouns—those specified semantically as first, second, or inclusive, or as human only—did not even contain a noun root in the semantic structure. Whatever the reason for the absence of a noun root, it can be said that at this point in the postsemantic development every noun now without a noun root is itself entirely deleted, along with whatever remaining nonlexical units it may contain. Such deletion might be stated in this way:

(T51)
$$\begin{array}{ccc} N & & \rightarrow \phi \\ -noun\ root & & \end{array}$$

Hence, the surface structures of sentences like the following contain no word to represent a noun that was present in the semantic structure:

- (115) a. ʔonqhsaká:yq̄h The house is old.
 b. ʔethéʔthaʔ She is pounding.
 c. kethéʔthaʔ I am pounding.
 d. ʔonqhsakayó nê:kq̄h This house is old.
 e. haq̄hwáʔ hoyóʔteʔ He is working.

In (115a) the patient noun root was incorporated, and subsequently deleted from the noun by (T47). The remaining configuration:

N
 neuter

has now been deleted by (T51). In (115b) the noun root was dropped from the agent noun by pronominalization, and the remaining configuration of N and feminine has now been dropped from the surface structure. In (115c) no noun root was present in the agent noun semantically, and again the configuration of N and first has been dropped. In (115d) the noun root was deleted from the patient noun by (T47), and the remaining configuration of N and neuter has now been deleted also. Prior to the operation of (T51) the unit demonstrative was separated from the noun, thus escaping deletion and surviving as a surface word. The same kind of statement can be made with regard to (115e), where the prior separation of emphatic from the noun rescued it from deletion by (T51).

6.16. Noun plural. The nouns which are left at this point all contain a noun root, a selectional unit which must be either neuter, masculine, or feminine, and perhaps either dual or plural. We have not yet arrived at the final surface representation of such nouns. For one thing, there is a surface suffix, usually symbolized *shq²a* but occasionally *shq²*, which optionally appears within a surface noun to

reflect the presence of plural:

- (116)
- | | | |
|----|---|----------|
| a. | $\text{?aw\text{e}ha?sh\text{ó}?\text{a}h}$ | flowers |
| b. | $\text{cihash\text{ó}?\text{a}h}$ | dogs |
| c. | $\text{hatiksa?sh\text{ó}?\text{a}h}$ | children |

I shall label this surface unit 'noun plural'. It can be introduced with the following rule:

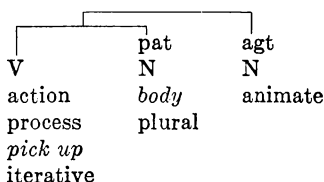
- (T52) $N \rightarrow \text{noun plural/plural}$

That is, a noun may optionally be further specified as noun plural if it contains plural. (It must also contain a noun root, but only nouns containing noun roots are left at this point.)

6.17. Idioms. A great many noun roots are idioms, and must be literalized into arbitrary postsemantic structures. As just one example, we might consider the noun root 'hawk', which is symbolized $\text{tekaya?t\acute{a}khwa?}$. This symbolization is indistinguishable from that of the sentence:

- (117) $\text{tekaya?t\acute{a}khwa?}$ It picks up bodies.

The semantic noun root 'hawk', then, (and actually the entire noun that contains it) must be transformed into the following postsemantic structure:



where the agent noun is like one that has lost its noun root through pronominalization. The patient noun root 'body' is incorporated into the surface verb, to be symbolized ya?t , the agent is reflected in the neuter agent prefix symbolized ka , and the surface unit 'duplicative', symbolized te in this case, is required by the verb root 'pick up'. It is interesting that the literalization process may sometimes require reference to one or more of the nonlexical units present in the noun. For example, the symbolizations of 'chief' and 'chiefs' are identical with those of the following two sentences:

- (118)
- | | | |
|----|---|------------------------|
| a. | $\text{hahs\text{e}now\acute{a}n\text{e}h}$ | His name is great. |
| b. | $\text{hatihs\text{e}n\acute{o}wane?s}$ | Their names are great. |

These sentences contain a possessive configuration which will not be discussed until chapter 8, but the point here is that the literalization of 'chief' must take account of whether the noun containing it is or is not plural. If it is, the unit plural is inserted into the literalization in two places: in the possessor noun 'their' and in the noun containing 'name'. The plurality of the first is reflected in the prefix symbolized ti , that of the second in the descriptive plural suffix symbolized ?s . The place of literalizations in the ordering of transformations is an intriguing

question. Since various features of the nouns concerned must be simplified and then copied into the verb in the usual way, just as if the noun root were a single unit, as it is semantically, the literalization of the noun root would seem to be a fairly late process, for it destroys the integrity of the entire noun in which it is contained. On the other hand, the literalization itself is subject to many of the same processes that affect normal sentences, from beginning to end. I would conclude, therefore, that the literalization of a noun root must generally take place at a late stage in the sequence of transformations, perhaps at about the stage where I have introduced it here, but that the literalization is then subject to a reapplication of earlier transformations in a 'cyclic' manner.

6.18. Final considerations in the surface structure of a noun. Many human noun roots are, in fact, idioms, and are likely to be represented at this point by a complex postsemantic configuration. Conspicuous human noun roots which have a more straightforward representation are 'person' and 'child'. In these two cases the noun roots are symbolized *qkwe* and *ksa²a* (or *ksa²*) respectively, and neuter, masculine, and feminine are represented by the usual neuter, masculine, and feminine agent prefixes, perhaps supplemented by plural as in (119f):

(119)	a.	ʔó·kweh	person
	b.	hé·kweh	man
	c.	ʔakó·kweh	woman
	d.	kaksáʔah	child
	e.	haksáʔah	boy
	f.	hatiksaʔshóʔah	children
		etc.	

(There are certain irregularities associated with several of these words, but I will not try to describe them here.) In order to account for the *agent* character of the surface prefixes in words like these, we might formulate a rule like the following:

$$(T53) \quad \left\{ \begin{array}{l} \text{masculine} \\ \text{feminine} \end{array} \right\} \rightarrow \text{agent} \left\{ \begin{array}{l} \text{masculine} \\ \text{feminine} \end{array} \right\} / \text{person, child, ...}$$

Other human noun roots which are not idioms include the many 'unique' noun roots, among which are English borrowings like 'Harry', 'Alice', etc. For these, and also some native names which cannot be considered idioms, we can say that masculine and feminine never reach the surface structure:

$$(T54') \quad \left\{ \begin{array}{l} \text{masculine} \\ \text{feminine} \end{array} \right\} \rightarrow \phi / \text{Harry, Alice, ...}$$

Among the noun roots which are animate but -human there are many idioms also (cf. the discussion of 'hawk' above), but other noun roots in this category are represented in surface structure by the noun root alone, with no prefix or suffix:

(120)	a.	cí·hah	dog
	b.	takós	cat
	c.	kwískwis	pig

At the stage which we have reached so far, the nouns containing noun roots like these may be specified as either neuter or masculine. It is possible, therefore, to

prevent these latter units from attaining the status of surface structure prefixes by extending (T54') in the following way:

$$(T54) \quad \left\{ \begin{array}{l} \text{neuter} \\ \text{masculine} \\ \text{feminine} \end{array} \right\} \rightarrow \phi / \text{Harry, Alice, dog, cat, ...}$$

This rule thus becomes a more general way of accounting for the absence of neuter, masculine, or feminine prefixes with surface noun roots of various types. If 'dog', 'cat', and the like were semantically plural, it is possible that they acquired the noun plural suffix by (T52). Whether they did or not, neither dual nor plural appears as a surface prefix with such noun roots:

$$(T55) \quad \left\{ \begin{array}{l} \text{dual} \\ \text{plural} \end{array} \right\} \rightarrow \phi / \text{dog, cat, ...}$$

A few noun roots in the animate but -human category are accorded the same post-semantic treatment as the majority of -animate noun roots. Some noun roots of this last type are also idioms, as is, for example, 'table', whose symbolization is identical with that of the sentence:

$$(121) \quad \text{?otekhwahé:khwa?} \quad \text{One uses it to put food on.}$$

except that for 'table' the initial syllable is more often than not omitted. But the usual surface representation of a noun which is -animate and which contains a noun root is apt to be thought of as the 'normal' representation of a Northern Iroquoian noun root. The following words will illustrate:

(122)	a.	kanóhsa?	house
	b.	kaná?cya?	kettle
	c.	?ohó-ta?	tree
	d.	?ohwísta?	money

Both the prefixes and the suffix must be commented on. All these words have a neuter prefix, the expected consequence of (T29). In (122a, b) this prefix is an agent prefix; in (122c, d) it is a patient prefix. This distinction has nothing to do with the semantic functioning of these nouns or with their adjusted postsemantic status as agents or patients. It is something assigned in an arbitrary way to the surface structure of each noun, depending on the identity of its noun root. Thus, 'house' and 'kettle' acquire a neuter agent prefix, while 'tree' and 'money' acquire a neuter patient prefix. Rules of the following sort are necessary:

(T56)	a.	N	→ N	/ house, kettle, ...
		neuter	agent neuter	
	b.	N	→ N	/ tree, money, ...
		neuter	patient neuter	

The words in (122) also contain an arbitrary surface structure suffix, symbolized ? (preceded by an epenthetic *a*). I shall label this unit simply 'noun suffix'. Its presence can be accounted for with a rule like the following:

$$(T57) \quad N \rightarrow \text{? noun suffix} / \text{neuter}$$

That is, a noun is further specified with the unit noun suffix if it is specified as neuter at this point. While rules (T56) and (T57) apply to a great many noun roots which are semantically -animate, they also apply to a few noun roots which are animate but -human. If such noun roots are not idioms, and if they do not lose their neuter specification by (T54), rules (T56) and (T57) apply to them automatically, without revision. Hence we find surface structures like the following for animate noun roots like 'fish' and 'housefly':

- (123)
- | | | |
|----|-----------|----------|
| a. | ʔocyóʔtaʔ | fish |
| b. | ʔochéʔtaʔ | housefly |

There is, however, a difficulty when nouns like these are semantically dual or plural, for (T31) ought then to make them postsemantically feminine rather than neuter. If they were not neuter, (T56) and (T57) would not affect them, but we would not want to revise those rules to apply to feminine nouns as well. I believe, however, that nouns containing noun roots like 'fish' and 'housefly' behave post-semantically as if they were -animate noun roots from the beginning, even with respect to their postsemantic reflections in the verb. If that is so, then the difficulty just mentioned can be avoided by submitting such nouns to an early rule of the sort:

- (T58) animate $\rightarrow \phi$ / fish, housefly, ...

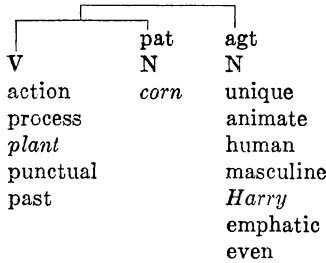
so that they receive the usual postsemantic treatment of -animate nouns.

6.19. Words and their linearization. Beginning with semantic arrangements, each consisting of a verb accompanied by one or more nouns related to it as agent, patient, beneficiary, or experiencer, and each verb and noun being specified in terms of selectional, lexical, and inflectional semantic units, we have seen how these arrangements are gradually transformed into surface structures. In the surface structures that have been discussed we find a surface verb, sometimes but not always accompanied by one or more surface nouns related to it as agent or patient, each verb and noun being specified in terms of at least a lexical unit. All verbs in the surface structure, and some nouns, contain nonlexical units as well. Besides verbs and nouns, we have noted the surface existence of the separate units demonstrative and emphatic. It is now possible to say that each surface verb, along with whatever lexical and nonlexical units it contains, constitutes a 'word'. (The term 'word' has been used loosely with regard to surface structure up to now, but we can become clearer at this point as to what it signifies.) Each surface noun also, with its lexical unit and its nonlexical units if it has them, constitutes a word. Demonstrative does so as well, with its subordinate units proximal or distal, and so does emphatic, perhaps further specified as 'even' or 'only'. Since it will be necessary to have reference to word boundaries in the statement of phonological rules, we can understand at this point that each verb, noun, demonstrative, and emphatic has a word boundary on either side. We must also consider now the fact that a surface structure does not attain its final form until linearization has been imposed on it. As a first and major part of the linearization process, the verb, the noun, and the units demonstrative and em-

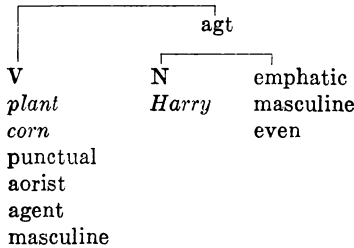
phatic must be placed in a linear order with relation to each other. One has the initial impression that word order in the Northern Iroquoian languages is quite 'free'. Probably this impression is mistaken and reflects only our ignorance regarding the factors which determine such ordering. At present, however, I can do no more than point out that the linearization of words is an important postsemantic process that must be applied before a final surface structure is reached. As part of this process, evidently, the relations agent and patient can be deleted. They probably have some relevance to the process, but need not be subsequently retained. As a general illustration we might consider the postsemantic fate of the following sentence:

(124) haq̄hwaʔshóʔ Harry waʔhanəhayéthwaʔ Even *Harry* planted corn.

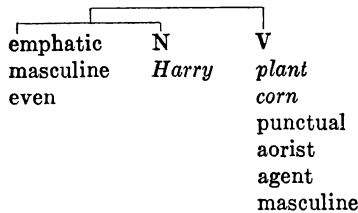
Its initial semantic structure can be diagrammed in this way:



As a consequence of the transformations which have been described in chapters 5 and 6, the following postsemantic structure is achieved:



The first stage of linearization then establishes the verb, the noun, and the unit emphatic in the following order:



Here each column of surface structure units is understood to be preceded and followed by a word boundary. A different linearization is possible—one with the verb in first position—but it is this kind of alternative which I make no attempt

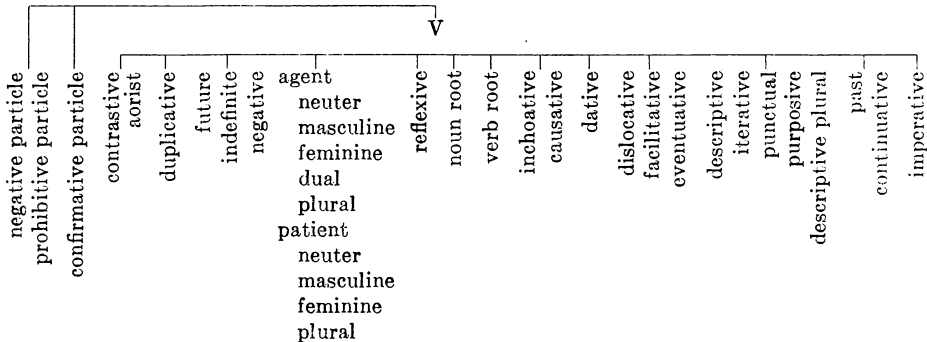
to account for here. At this point some mention should be made of the surface structure particle symbolized $ne\delta^?$, which has always been something of a puzzle to Iroquoian linguists. Its use seems largely or wholly optional, and I have included it only rarely in citing examples in this work (see the sentences of (80), for instance). It seems, however, to be insertable in the surface structure before any noun, except before one that begins a sentence. Thus we may find (125a), but never (125b):

- (125) a. $wa^?hahnin\phi^? ne^? Harry ne^? ci^?hah$ Harry bought a dog.
 b. $*ne^? Harry wa^?hahnin\phi^? ne^? ci^?hah$

This very common particle, however, very likely reflects semantic features of a kind unaccounted for here.

6.20. Still we have not arrived at a final surface structure, for the units *within* each column of the last diagram above must also be placed in a linear order. Rule (T6'') at the end of Chapter 5 was a preliminary statement of the ordering of this kind which is found within a verb. Other units have been added to a verb in the meantime and a more complete statement can now be given in the form of (T6)

(T6) V
 $X \rightarrow$



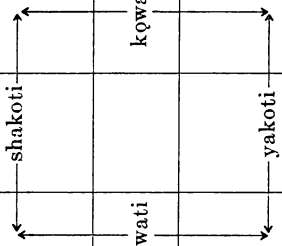
No one verb will contain all these units, and most verbs contain only a few of them. Which units are present within a surface verb has already been established by the semantic structure and by the transformations of chapters 5 and 6. Rule (T6), which must be applied after all those other rules, shows the relative order of whatever units may be present at this stage. The agent and patient specifications may be regarded as units which still occur in nonlinear fashion with relation to each other, although it would be possible to attempt a partial linearization of them. In other words, a configuration like:

agent masculine
 patient first plural

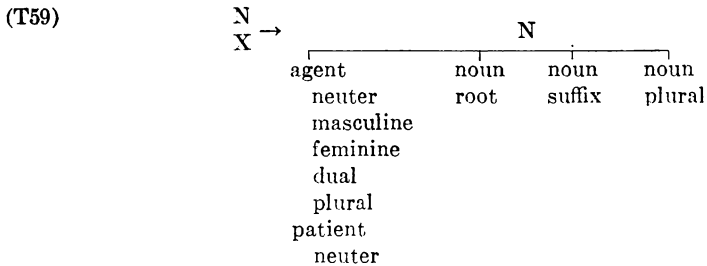
is considered here to be a bundle of surface structure units which is directly subject to symbolization. The kind of symbolizations which are given to such configurations are suggested by Table 1, which lists the most common of them but omits a number of variants. The agent possibilities (including ϕ) are listed down

TABLE 1

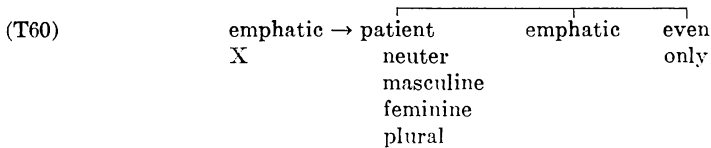
φ	first	first dual	first plural	second	second dual	second plural	masculine	masculine plural	feminine	feminine plural	neuter
φ	wak	yøkni	yøkwa	sa	sni	swa	ho	hoti	yako	yoti	yo
k				kq			he		khe		
yakni					kni		shakni				
yakwa						kwa	shakwa		yakhi		
tni							shetni				
twa							shetwa		yethi		
s	sk						hes		she		
sni		skni					hesni				
swa			skwa				heswa		yechi		
ha	hak	shøkni	shøkwa	hya	hesni	heswa			shako		
hni											
hati											
ye	yøk		yøkhi	yesa		yechi					
kni							høwa			køwati	
køti											
kø											



the left side, and the patient possibilities across the top. The appropriate symbolizations are then given at the intersections. For various reasons, discussed in various places above, no surface structure combinations exist for the intersections that are blank. The converging arrows in the four boxes in the lower right show that there is an apparently free choice between the indicated symbolizations. It will be seen that the description of symbolizations in Table 1 can be simplified by positing still further simplifications in the surface structure. For example, second dual and plural agents are not symbolized any differently from second dual and plural patients. We might then state a rule which merges patients with agents in the environment of second dual and plural. I have not attempted to account for all such simplifications here because this chapter has already presented more than enough postsemantic processes for a work of this size, but there should be no difficulty in accounting for them in a more complete description. As for words that are not verbs, the linearization which takes place within them can be easily described. The units within a noun are linearized as follows:



Usually there will be only a neuter agent or a neuter patient prefix. Several other possibilities are allowed for because of words like *hatiksaʔshǫʔah* 'children', where there is a masculine plural agent prefix. An emphatic configuration is linearized in this way (cf. 6.14):



No linearization statement need be made for demonstrative words, whose symbolization has already been described in terms of bundles of surface units (6.13).

7. PHONOLOGICAL PROCESSES

7.1. Given the underlying phonological arrangements arrived at by the end of Chapter 6, we must still apply a number of phonological rules before the final phonetic output is reached. A complete discussion of these rules and their ordering would be a large project in itself. Here I shall discuss a small sample, not necessarily in the order in which the rules must be applied. Many of the same rules are found in Onondaga as in Mohawk, Oneida, and Seneca, so that an examination of the works mentioned in footnote 2 will suggest many of the processes which are operative in Onondaga as well.

7.2. Initial *ʔ* and final *h*. I shall mention first two quite unimportant rules, whose effects are nonetheless evident in perhaps the majority of the examples given throughout this work, and which were for that reason alluded to in **1.9**. These are the rules which prevent Onondaga sentences from beginning or ending with a vowel. It is simply the case that a vowel at the beginning of a sentence is preceded by *ʔ*, while a vowel at the end of a sentence is followed by *h*. Thus, we might formulate two phonological rules as follows:

$$(P1) \quad \phi \rightarrow ʔ / \# - V$$

$$(P2) \quad \phi \rightarrow h / V - \#$$

where $\#$ indicates a sentence boundary. Examples abound in the preceding chapters, as well as in what follows.

7.3. Word- but not sentence-final accent. Relevant also to most of the examples which have been and will be given are the rules which assign accent and vowel length within words. For present purposes accent can be regarded as physically manifested in a higher pitch on the accented syllable, although a more subtle phonetic description would have to mention various rises to and falls from this higher pitch in different environments. In general it can be said that words which are not sentence-final receive an accent on their final syllable. Thus we find word-final accents on the first two words of the following sentence:

$$(126) \quad \text{cihá waʔkákéʔ kohsáːtɛs} \quad \text{The dog saw a horse.}$$

There appear to be some suffixes, however, whose potentially word-final vowels do not accept this accent, but pass it on to the nearest preceding vowel that will accept it. Vowels which have this immunity may be marked with a breve. The locative suffix symbolized *ʔkǝ*, to be mentioned in chapter **8**, is an example:

$$(127) \quad \text{khnɛhsáʔke wáʔkheʔ} \quad \text{I put it on my shoulder.}$$

Here the word-final accent of the first word has been passed on to the penultimate vowel. There are also a number of particles whose vowels will not accept the word-final accent at all, for example the nominal particle symbolized *něʔ*, or the proximal demonstrative particle symbolized *nǝkǝ*. In the following sentences the particles receive no accent:

$$(128) \quad \begin{array}{ll} \text{a. cihá waʔkákéʔ neʔ kohsáːtɛs} & \text{The dog saw a horse.} \\ \text{b. cihá waʔkákéʔ nɛkɛ kohsáːtɛs} & \text{The dog saw this horse.} \end{array}$$

On the other hand, the vowel of the interrogative particle symbolized *ya* is not immune to word-final accent:

$$(129) \quad \text{yá teʔhakǝhaʔ} \quad \text{He doesn't see it.}$$

The rule which assigns this word-final (but not sentence-final) accent can be written as follows:

$$(P3) \quad V \rightarrow \bar{V} / -C_0(\check{V}C_0)_0 + \left\{ \begin{array}{l} \bar{V} \\ C \end{array} \right\}$$

which is to say, a vowel (understood not to be \check{V}) takes on an accent when it is followed by 'zero or more' consonants, symbolized C_0 , and then, ignoring for a moment the parenthetical expression, by word boundary, symbolized $+$. The following V or C in braces indicates that the word boundary is not also a sentence boundary, but that another vowel or consonant must immediately follow. To return to the expression in parentheses, it is simply a way of indicating that zero or more other syllables containing a vowel immune to this rule (\check{V}), may intervene between the vowel which is accented and the word boundary.

7.4. Sentence-final accent. A different kind of accent assignment takes place in words which are sentence-final. In many sentence-final words, furthermore, there are additional processes of vowel lengthening which are closely related to the assignment of accent. There are a number of interrelated factors which determine this accenting and lengthening, and they are not as yet completely understood; nevertheless, most of what is involved can be stated here. Actually, 'sentence-final' is not quite accurate as a description of the environment within which these processes operate. 'Phrase-final' might be a better term, since they operate also at certain points within some sentences. For the sake of simplicity, however, and because I am unable to locate the apparently evanescent boundaries of 'phrases' in this sense with any degree of assurance, I shall pretend that it is only sentence boundaries which are involved. Every word in sentence-final position is assigned an accent on its ultimate, penultimate, or antepenultimate vowel. In addition, either the vowel receiving the accent or some preceding vowel (or both) may be lengthened, although there are many words in which no such lengthening takes place. The position of the accent is relatively easy to describe. There are three possibilities. (1) The last vowel of the last word in a sentence may already be accented in the underlying phonological representation. A number of suffixes yield an underlying accent on a word-final vowel. For example, the punctual suffix in (130a) is symbolized $'_?$, a glottal stop plus accenting of the preceding vowel, while the descriptive suffix in (130b) is symbolized simply $'$, that is, as nothing but an accenting of the word-final vowel:

- (130) a. wa^hhahninó[?] He bought it.
 b. honqhsqñih He has built a house.

(Sentence (130b) has a final h by rule (P2).) No phonological rule is necessary to account for these sentence-final accents, since they are already present in the underlying phonological structure. (2) There are a few word-final elements whose phonological effect is to throw the sentence-final accent all the way back to the antepenultimate vowel of the sentence-final word. This phenomenon can be observed in the following sentences:

- (131) a. kanqhsówane[?]s The houses are big.
 b. kasahé[?]tatah The beans are inside.
 c. waté[?] nisa'yá[?]tawes What's the matter with you?

Here it appears to be the descriptive plural suffix in (131a), the descriptive suffix in (131b), and the iterative suffix in (131c) which repel the accent in this way. I

shall indicate the accent repellent characteristic in the symbolizations of such suffixes with the symbol <. Thus, in (131a) the descriptive plural suffix has the symbolization <ʔs. In (131b) the descriptive suffix has a symbolization which can be noted simply as <. And in (131c) the iterative suffix has the symbolization <s. The rule for sentence-final antepenultimate accenting can be stated:

$$(P4) \quad V \rightarrow \hat{V} / -C_0VC_0V < C_0 \#$$

That is, a vowel receives an accent if it is followed by two more vowels before a sentence boundary, and the last of these vowels is followed by the accent repellent feature <. (3) We are now left with many sentence-final words which still do not contain an accent, since their final vowel was not accented in the underlying form and they did not have the accent repellent feature following their final vowel (or they did have it, but did not have an antepenultimate vowel). What happens in all these remaining words is extremely simple: their penultimate vowel receives the primary accent. The great majority of the sentences given as illustrations so far in this work have exhibited this assignment of accent to the next-to-last syllable of a sentence, so that there is no need to give any additional examples here. It must be noted, however, that this penultimate accenting takes place even in a word whose final vowel is followed by the accent repellent feature, provided that word does not contain an antepenultimate syllable on which the accent could have been placed by (P4). Instead of (131b), for example, we might find the following, in which incorporation has not taken place:

$$(132) \quad \text{ʔosaheʔtáʔ wá·tah} \quad \text{The beans are inside.}$$

and in which the accent is on the penultimate vowel of the last word, despite the fact that the word ends with the accent repellent feature, as (131b) demonstrates. We can state the penultimate accenting rule as follows:

$$(P5) \quad V \rightarrow \hat{V} / \left\{ \begin{array}{l} -C_0\check{V}C_0 \# \\ +C_0 - C_0\check{V} < C_0 \# \end{array} \right\}$$

where, in general, all that is said is that the penultimate syllable of a sentence-final word is given an accent. The following vowel must be without an accent, and the second environment allows for possibilities like that in (132), where < is present but the penultimate vowel is the first vowel of the word. We are now left with an accent on one of the last three vowels of the last word in a sentence.

7.5. Penultimate lengthening. A sentence-penultimate vowel which has been accented in accordance with (P5) is now lengthened, provided it is in an open syllable. An open syllable in Onondaga is one whose vowel is followed by not more than one consonant, or by one consonant plus a resonant (*n, r, w, y*). That is, a combination of consonant followed by resonant behaves as if it were a single consonant. Thus we find penultimate lengthening in the following:

$$(133) \quad \begin{array}{ll} \text{a. } \text{ʔeyehnyó·tęʔ} & \text{She will stand it up.} \\ \text{b. } \text{waʔké·kwaʔ} & \text{I picked it.} \end{array}$$

but not in these, where the penultimate syllable is closed:

- (134) a. ʔakéktɔʔ I have examined it.
 b. hoyéthwih He has planted.

A complication arises from the fact that the two 'laryngeal' consonants, *h* and *ʔ*, even when they are not part of a cluster, sometimes close a syllable. It seems necessary to distinguish in underlying forms between laryngeals which close syllables and those which do not. One easy but ad hoc way to cope with this problem is to posit underlying sequences like *hh* and *ʔʔ* which are simplified to *h* and *ʔ* after the vowel lengthening rule has applied. We can then state the lengthening rules as follows:

(P6) $\bar{V} \rightarrow \bar{V} \cdot / -C (R)VC_0 \#$

If we posit that the iterative suffix has the symbolization *haʔ* after some preceding surface units (such as 'bark', symbolized *hnyá*), but *hhaʔ* after others (such as 'tell', symbolized *athrorýa*), we can now explain the difference in penultimate length in sentences like:

- (135) a. kahnyá·haʔ It is barking.
 b. hatho·yáhaʔ He is telling it.

However, it seems to be the case that informants differ in this respect, so that instead of (135a) another person will say:

- (136) kahnyáhaʔ It is barking.

treating the *h* as *hh*, or as one that closes a syllable. In any case, the important point to be made here is that the first *C* in rule (P6) sometimes includes *h* and *ʔ*, as in (135a), and sometimes does not, as in (135b) and (136). The Onondaga greeting:

- (137) sikóleh Hello.

also does not show the expected penultimate lengthening, but it is exceptional also in being, apparently, the only Onondaga word that contains an *l*.^{18a}

7.6. Pretonic lengthening. Every sentence-final word is now accented on one of its last three vowels, as described in 7.4. Let us call the vowel thus accented the 'tonic' vowel. We saw in 7.5 that the tonic vowel is long if it is in an open penultimate syllable. Under certain circumstances the vowel preceding the tonic vowel is also lengthened, but the conditioning factors are more limited, and more complex, than those described for lengthening of the tonic vowel. The following words, cited as they would appear in sentence-final position, exhibit lengthened pretonic vowels:

- (138) a. ʔeye·ké·taʔ She will scrape it.
 b. kana·táʔkeh in town
 c. ʔake·nóhtɔʔ I know it.
 d. tehonatya·é·tɔʔ They have put up a tent.

^{18a}. It is a borrowing from Oneida.

The lengthened pretonic vowels are, first of all, in open syllables, in the sense discussed above. That condition alone, however, is not sufficient to produce the lengthening, as the following words illustrate:

- | | | | |
|-------|----|--------------------|-----------------------|
| (139) | a. | ʔəkotiké·taʔ | They will scrape it. |
| | b. | honǫhtqʔ | He knows. |
| | c. | (yá) teʔwakənǫhtqʔ | I don't know. |
| | d. | tehotyaé·tqʔ | He has put up a tent. |

The pretonic vowels in these words are in open syllables, but they are not lengthened. The difference is that, while the pretonic vowels in (138) are even numbered vowels, counting from the beginning of the word, those in (139) are odd numbered vowels—in (139b) the first vowel, in the other sentences the third vowel. In (138) the lengthened pretonic vowels are second or fourth in the word. We might conclude, then, that pretonic vowels are lengthened when they are in open syllables and even. This accounts for the lengthening in (140a), but why is the pretonic vowel in (140b) not lengthened—and why is the first vowel in (140d) lengthened, when it is apparently in the first syllable?

- | | | | |
|-------|----|--------------|---------------------------|
| (140) | a. | ohq·tó·taʔ | A tree is standing. |
| | b. | tyohq·tó·taʔ | A tree is standing there. |
| | c. | hatá·tyeʔs | He is standing. |
| | d. | tha·tá·tyeʔs | He is standing there. |

The unexpected results in (140b, d) are caused by the fact that these words begin with a consonant cluster: *ty* in (140b) and *th* in (140d). Evidently a word-initial consonant cluster shifts the odd-even count of vowels—behaves, it might be said, like an additional vowel at the beginning of the word. The first real vowel must then be counted as even, and so on. Given this qualification on the determination of odd and even vowels, (140b, d) show the appropriate pretonic lengthening or lack of lengthening. But why, now, are the pretonic vowels in (141) not lengthened?

- | | | | |
|-------|----|-------------|------------------------|
| (141) | a. | haketáhe·k | He is scraping things. |
| | b. | hatiyéthwas | They are planting. |

What evidently prevents pretonic lengthening here is the fact that the tonic vowel is short. In order, then, for the pretonic vowel to be lengthened, the tonic vowel must be long also. But what, in that case, of the already cited words (138b, c):

- | | | | |
|-------|----|-------------|------------|
| (138) | b. | kana·yáʔkeh | in town |
| | c. | ake·nǫhtqʔ | I know it. |

Here the tonic vowel appears to be short, but the pretonic vowel is lengthened nonetheless. It seems that, so far as the pretonic lengthening process is concerned, a tonic vowel followed by a sequence of laryngeal (*h* or *ʔ*) plus obstruent is equivalent to a long tonic vowel. The same phenomenon is seen in (142), where the final vowel is tonic:

- | | | | |
|-------|--|------------|-----------|
| (142) | | kakhwi·yóh | good food |
|-------|--|------------|-----------|

Finally, we might ask why the pretonic vowel in the following word is not lengthened, since it is even, in an open syllable, and followed by a long tonic vowel:

(143) hotaʔɛnaké·tɛh He's scraping a stick.

Here it must be said simply that there are vowels immune to pretonic lengthening. A vowel which is thus immune is usually or always the vowel *a*, but not all instances of *a* are immune. Perhaps, in fact, the immunity is present always and only in an *a* which follows, in the underlying phonological structure, the symbolization of a noun root. In (143), for example, the noun root 'stick' is symbolized *aʔɛn* and the nonlengthened pretonic vowel is an epenthetic *a* inserted between this symbolization and that of the verb 'scrape', which is *ket*. It might be thought that only such an epenthetic *a* is immune to pretonic lengthening, but this is not the case:

(144) tekanɔhsakéh two houses

The pretonic vowel in this word is even and in an open syllable, and seems eligible for lengthening. This *a* is not epenthetic, for the numerative verb which is present here is symbolized *ake*; the *a* belongs to the verb itself. Still, however, it is not lengthened, perhaps because it is immediately preceded by the symbolization of the noun root 'house' (*nɔhs*). On the basis of everything that has been said in this paragraph, it might be possible to describe the lengthening of pretonic vowels with a rule like the following:

(P7)
$$V_{\text{even}}^{-(a)} \rightarrow V \cdot / -C (R) \bar{V} \left\{ \begin{array}{l} \cdot (C) \\ LO \end{array} \right\} VC_{\text{off}}$$

That is, an even vowel (determined with regard to the skewing effect of word-initial consonant clusters) other than certain instances of *a* becomes long if it is followed by a single consonant (or single consonant plus resonant) and an accented vowel. The accented vowel must be either penultimate and long or penultimate and followed by a laryngeal plus an obstruent. With this rule we have now accounted for the most straightforward instances of accenting and lengthening which result from the position of a word at the end of a sentence. Other instances of accenting and lengthening are encountered, however. It is frequently the case, for example, that the pretonic vowel is also accented. Other vowels, earlier than the pretonic, are sometimes found accented and/or lengthened as well. The facts are inconsistent and uncertain, and I cannot account for them systematically at the present time.

7.7. The fate of *r*. Proto Northern Iroquoian contained a liquid consonant which is reflected in modern Oneida as *l*, in Mohawk and Cayuga as *r*. Cayuga has lost this consonant phonetically in certain environments, but has kept it in others. Onondaga and Seneca no longer have a liquid consonant at all phonetically, but there are facts in both languages which are impossible to explain satisfactorily unless such a consonant—let us call it *r*—is posited in underlying phonological structures. Chief among the phonological processes associated with *r* in Onondaga are the fronting of following back vowels and a compensatory

lengthening associated with the loss of *r*. Suppose we take 'basket', symbolized *ʔahsr*, as an example of an item for which this underlying *r* must be posited. The fronting of back vowels can be illustrated with words in which 'basket' is followed in the surface structure by 'big', 'make', and 'noun suffix', symbolized *owanɛ*, *ɔni*, and *aʔ* respectively. (The three back vowels in Onondaga are *o*, *ɔ*, and *a*.) The forms on the right are not phonetic, but intermediate phonological forms:

- (145)
- | | | | |
|----|---------------------|-----------------------|-----------------------|
| a. | <i>kaʔahsrowanɛ</i> | → <i>kaʔahsrewanɛ</i> | The basket is big. |
| b. | <i>hoʔahsrɔni</i> | → <i>hoʔahsrɛni</i> | He has made a basket. |
| c. | <i>kaʔahsraʔ</i> | → <i>kaʔahsræʔ</i> | basket |

The rule can be stated simply:

- (P8) $\text{back} \rightarrow \text{front} / r-$

Subsequently, then, *r* is dropped. Between a vowel and a consonant, however, (in the environments C—V or V—C) it leaves behind a lengthening of the vowel. The words of (145) become thereby:

- | | |
|----|---------------------|
| a. | <i>kaʔahse·wanɛ</i> |
| b. | <i>hoʔahse·ni</i> |
| c. | <i>kaʔahsæ·ʔ</i> |

Compensatory lengthening in the position V—C can be illustrated by:

- (146) $\text{karhakɔwa} \rightarrow \text{ka·hakɔwa}$ in the woods

Thus, *r* is either replaced by length or dropped outright:

- (P9) $\begin{Bmatrix} rV \\ Vr \end{Bmatrix} \rightarrow V \cdot / \begin{Bmatrix} C- \\ -C \end{Bmatrix}$

- (P10) $r \rightarrow \phi$

If the words cited in (145) and (146) are sentence-final, the processes described earlier eventually yield the following phonetic outputs:

- (145)
- | | |
|----|-----------------------|
| a. | <i>kaʔahse·wá·nɛh</i> |
| b. | <i>hoʔahse·nih</i> |
| c. | <i>kaʔáhsæ·ʔ</i> |

- (146) ka·hakɔ·wah

7.8. Other processes. As in the other Northern Iroquoian languages, there are some phonological rules which apply only to the symbolizations of agent and patient prefixes, so that it is necessary to retain the agent and/or patient prefix identity of certain phonological sequences until after such rules have applied. In Onondaga a word-initial resonant consonant is dropped, provided it belongs to the symbolization of such a prefix. Thus we find:

- (147)
- | | | | |
|----|-------------------|--------------------|-----------------------|
| a. | <i>yetheʔthaʔ</i> | → <i>etheʔthaʔ</i> | → <i>ʔethéʔthaʔ</i> |
| | She pounds. | | |
| b. | <i>waʔɛnaʔ</i> | → <i>aʔɛnaʔ</i> | → <i>ʔaʔé·naʔ</i> |
| | bow | | |
| c. | <i>wakhɔwayɛʔ</i> | → <i>akhɔwayɛʔ</i> | → <i>ʔakhɔ·wá·yɛʔ</i> |
| | I have a boat. | | |

There is, then, a rule:

(P11) $R \rightarrow \phi / + -$

but only the symbolizations of agent and/or patient prefixes are subject to it. A number of other rules, similarly restricted, affect the joining of a pronominal prefix with whatever follows it. Vowel sequences fuse into single vowels, an epenthetic *e* is sometimes introduced, etc. On the whole, these processes are the same in all the Northern Iroquoian languages.¹⁹ One interesting development in Onondaga is that:

(P12) $k \rightarrow h / -k$

so that, for example:

- (148)
- a. $kk\acute{e}ha? \rightarrow hk\acute{e}ha? \rightarrow hk\acute{e}ha?$
I see it.
 - b. $\acute{e}kk\acute{e}? \rightarrow \acute{e}hk\acute{e}? \rightarrow ?\acute{e}hk\acute{e}?$
I will see it.
 - c. $wa?kk\acute{e}? \rightarrow wa?hk\acute{e}? \rightarrow w\acute{a}?hk\acute{e}?$
I saw it.

This process is not restricted to agent/patient prefixes, and takes place even when the two *k*'s are in separate words:²⁰

- (149) $hachiyek\ kh\acute{e} \rightarrow hachiyeh\ kh\acute{e} \rightarrow hach\acute{i}yeh\ kh\acute{e}h$ He's finishing.

8. SENTENCES OF GREATER COMPLEXITY

8.1. So far we have examined some aspects of the semantic structure of simple sentences in Onondaga, and have seen the manner in which such structures are transformed into surface structures and then into a phonetic output. In this last chapter we shall note briefly a few of the ways in which more complex semantic structures are formed.²¹ The postsemantic fate of such structures will be mentioned also, but to a large extent it will be seen to be determined by processes already described.

8.2. Temporal adverbs. We can begin by considering sentences like the following:

- (150) $?ahset\acute{e}\ hoyo?tehkwa? ne? Harry$ Harry was working yesterday.

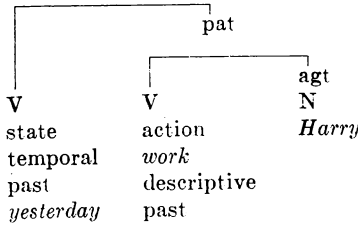
I shall assume that in this sentence there is a configuration made up of the verb 'work' and the agent 'Harry' which, in its totality, has been made the patient of an adverbial element lexically specified as 'yesterday'. I shall assume further

¹⁹ Thus, the works mentioned in fn. 2 can be consulted for further details. When Seneca and Oneida differ, Onondaga seems for the most part to follow Oneida. Like Seneca, however, it does not exhibit the forms ending in *kw* for the prefixes numbered 16, 34, 46, and 55 of Table 6 in Lounsbury, *ibid*.

²⁰ The final phonetic shape of this example shows that before the interrogative particle accenting and lengthening take place as in sentence-final position.

²¹ This chapter draws heavily on the theoretical background set forth in Chapter 18 of *Meaning and the Structure of Language*.

that this adverbial element is a state verb of a particular kind. The general structure of (150) can thus be sketched as follows:



The verb and noun on the right constitute the sentence ‘Harry was working’. This sentence in turn occurs as the patient of an adverbial element, which is shown as a state verb, selectionally specified as ‘temporal’ and ‘past’ and lexically specified as ‘yesterday’. The result is the sentence ‘Harry was working yesterday’. Structures like this can be generated by means of a rule that can be stated provisionally as follows:



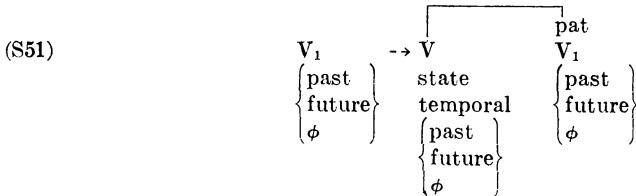
This rule says that a verb, to which, we may assume, an agent and/or other nouns have already been added as appropriate, may optionally become the patient of another verb, which is specified as a temporal state. Again provisionally, we might say that ‘temporal’ is lexically specified in various ways:

(S52') temporal → yesterday, tomorrow, again, ...

In a more complete account, however, narrower selectional units would have to be introduced. For example, the generation of utterances like the following would have to be prevented:

(151) *?ahseté ɛhoyo?ték ne? Harry Harry will be working yesterday.

Cases like this show that there must be agreement between the temporal adverb and the temporal inflection of the original verb (V₁). If that verb was past, the adverbial element must be selectionally specified as past, etc. This requirement can be captured by restating (S51') as follows:



That is, the adverbial element must agree as to past, future, or neither with the original verb. Rule (S52') then needs to be modified to take such additional

specification into account:

- (S52)
- a. $\left[\begin{array}{c} \text{temporal} \\ \text{past} \end{array} \right] \rightarrow \text{yesterday, ...}$
 - b. $\left[\begin{array}{c} \text{temporal} \\ \text{future} \end{array} \right] \rightarrow \text{tomorrow, ...}$
 - c. temporal $\rightarrow \text{again, ...}$

In the following sentences, all of which can be translated 'He is working again', the adverbial element has been lexically specified as 'again':

- (152)
- a. $\text{?on}\epsilon \text{ h}\acute{\epsilon}\text{? sho:y}\acute{o}\text{?te?}$
 - b. $\text{shoyo?t}\acute{\epsilon}\text{? }\acute{\epsilon}\text{?}$
 - c. $\text{sho:y}\acute{o}\text{?te?}$

(152a, b) differ in their surface treatment of the adverbial element. In (152a) it appears in the surface structure as a sequence of two units positioned before the verb and symbolized $\acute{o}n\epsilon \text{ he?}$. In (152b) it appears as a single unit positioned after the verb and symbolized $\acute{\epsilon}\text{?}$. Probably there is some difference in meaning which underlies these surface differences: (152a) seems to mean something more like 'He is working again now', in view of the fact that $on\epsilon$ reflects a semantic unit 'now' in other sentences. (152c) shows another kind of difference. In it, the adverbial element has been postsemantically deleted. Nevertheless, we know in this sentence that the unit 'again' was semantically present because, before the deletion took place, there was a copying of 'again' into the patient verb as an inflectional unit, as there was in the other two sentences also. The transformation which accomplishes this copying can be stated:

$$(T61) \quad \begin{array}{ccc} \begin{array}{cc} \text{pat} & \\ \diagdown & \diagup \\ \text{V} & \text{V} \end{array} & \rightarrow & \begin{array}{cc} \text{pat} & \\ \diagdown & \diagup \\ \text{V} & \text{V} \end{array} \\ \text{again} & & \text{again} \quad \text{again} \end{array}$$

It can be seen that 'again' is represented within the patient verb as a surface structure prefix, symbolized *s*. Without it we would have simply:

- (153) $\text{hoy}\acute{o}\text{?te?}$ He is working.

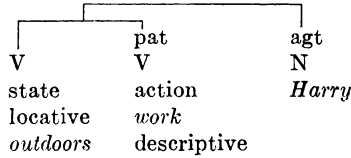
8.3. Locative adverbs. The following sentence contains an adverbial element which is selectionally specified as 'locative' rather than temporal, and lexically specified as 'outdoors':

- (154) $\text{?aste thoyo?t}\acute{\epsilon}\text{? ne?}$ Harry Harry is working outdoors.

We can thus posit a rule, similar to (S51), which this time introduces a locative element:

$$(S53) \quad \begin{array}{ccc} & & \text{pat} \\ & & \diagdown \quad \diagup \\ \text{V}_1 \rightarrow \text{V} & & \text{V}_1 \\ & & \text{state} \\ & & \text{locative} \end{array}$$

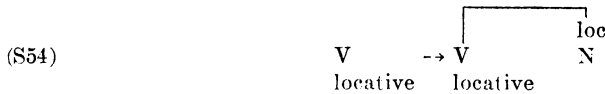
It seems likely that one difference between this rule and (S51) is in its order of application. Probably (S53) should be regarded as applying before any nouns are added to V₁, so that the structure of (154) shows the adverb inside, rather than outside the other sentence:



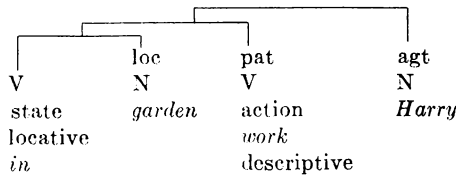
Perhaps, however, the majority of locative adverbs are not of the simple type illustrated by 'outdoors', but are rather of the type illustrated in the following sentences:

- (155) a. *kahętakówa thoyo?té? ne? Harry* Harry is working in the garden.
 b. *?oneyá?ke thatkotá? ne? Harry* Harry is sitting on the rock.

In these sentences the locative verb ('in' or 'on') has been expanded by the addition of a 'location' noun. That is, a process like the following has applied:



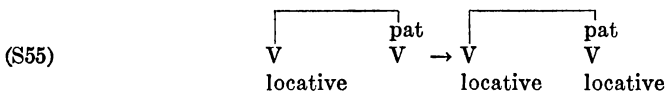
where the new noun stands in the relation of 'location' to the locative verb. The essential structure of sentence (154a) can thus be diagrammed:



Subsequently, in the surface structure, the locative verb roots 'in' and 'on' appear as suffixes, symbolized *kqwa* and *?kě* respectively, attached to the location noun. It may be noted that the surface structure verb in sentences with a locative adverb, sentences like (154) and (155a, b), begins with a prefix symbolized *t*:

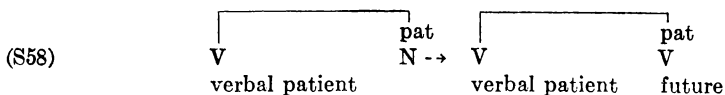
thoyo?te?
thatkota?

This *t* is what earlier writers have called the 'cislocative morpheme'.²² In the present framework we can see it as representing a postsemantic absorption by the original verb of the semantic unit 'locative'. That is, there is a transformation which copies this unit into the patient verb when it is present in the adverbial element:

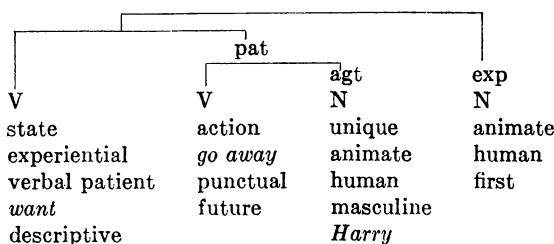


²² Another term introduced in Lounsbury, *ibid.*

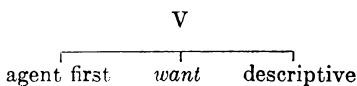
A rule like the following can then be used to replace the patient noun of a verb specified as verbal patient with a patient noun—one that is, in addition, inflected as future:



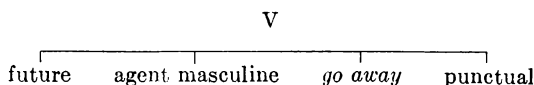
This rule is stated as optional in order to allow for sentences like (159) in which it has not applied. For some verb roots introduced by (S57)—‘hope’, for example—it is evidently obligatory, however. The semantic structure of sentence (158a) can be diagrammed as follows:



In summary, the principal sentence contains an experiential state verb ‘want’, accompanied by an experiencer noun, specified as ‘first’, and a patient. This patient is an action verb containing the verb root ‘go away’, accompanied by an agent noun containing the noun root ‘Harry’. What happens to this structure postsemantically needs little comment, in view of the transformations already stated in chapters 5 and 6. The experiencer noun is converted into an agent, and its semantic units, simplified to the unit first alone, are absorbed into the principal verb. No semantic units enter that verb from its patient. The principal verb, then, once it has been linearized, takes the following form:



and this arrangement is symbolized *k ehe* [?]. The subordinate verb absorbs the units of its agent noun, reduced to masculine. It is linearized as follows:



This arrangement is symbolized *ε ha ahteti a* [?], phonetically *ε hahté·tya* [?]. The noun root ‘Harry’ is retained as a separate word. Thus we arrive at the phonetic output given in (158a). The other sentences illustrated in (158) have semantic structures parallel to this one, and are subject to similar postsemantic processes.

8.5. Relative clauses. A discussion of relative clauses in Onondaga can be

centered around the following example:

- (160) wa?khwistachéni? Harry hahwistahtq?tíhna?
I found the money which Harry had lost.

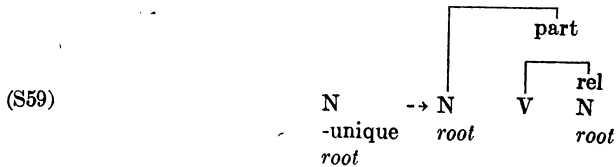
The principal sentence here is one that can occur independently as:

- (161) wa?khwistachéni? I found the money.

Its semantic structure exhibits an experiential process verb root 'find', a patient 'money', and an experiencer specified as 'first'. Embedded in this sentence is another one, which also can occur independently:

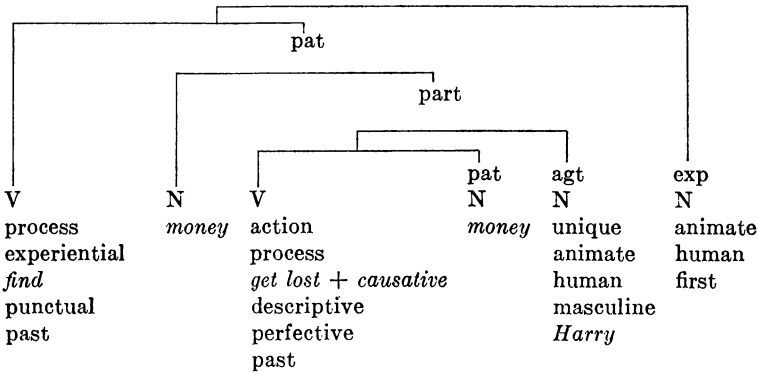
- (162) Harry hahwistahtq?tíhna? Harry had lost the money.

This sentence has a semantic structure consisting of an action-process verb causatively derived from a verb root 'get lost', a patient 'money', and an agent 'Harry', who was the one who caused the money to get lost. The rule by which the embedding of (162) into (161) takes place may be stated in roughly the following way:



That is, any noun which is not unique and which has a lexical specification (as indicated by the notation 'root') may have added to it, in a relation which I have labeled 'partitive' (or 'part'), a verb. That verb, furthermore, must be accompanied by a noun which is lexically specified in the same way as the original noun, and which is related to its verb in any relation whatsoever—here abbreviated 'rel' (a cover term for patient, agent, beneficiary, experiencer, etc.). The function of the partitive relation is to limit the meaning of the original noun root in the manner specified by the partitive clause. In the present example, the meaning of the noun root 'money' is limited to that money designated in the sentence 'Harry had lost the money'. That is the money which I found, and not anything else that would otherwise be comprehended by the noun root money. If we apply (S59) to the semantic structure of (161), and specifically to the patient noun containing the noun root money, we arrive at the following semantic structure, which is that of sentence (160):²³

²³ I omit a variety of relevant considerations, some of which are discussed in Chapter 18 of *Meaning and the Structure of Language*.



Again there is little that need be said concerning the postsemantic transformation of this structure into the eventual phonetic output given in (160). The experiencer noun of the principal verb becomes an agent and its units are absorbed into that verb, along with the patient noun root 'money'. The result is the word given in (161). The subordinate verb incorporates its own patient noun root, the same that was incorporated into the principal verb. Its agent 'Harry' remains as a separate word. These transformations in themselves produce the sentence given in (162). The complete sentence takes the shape of (160). It may be noted that there is no 'relative pronoun' as such. Aside from the word order, which tends to place the principal verb first, and the inflectional specifications of the verbs, which are significant in this example, it would be impossible to tell from (160) which sentence is embedded in which. The reverse embedding, however, would here result in the following:

- (163) Harry waʔhahwistahtoʔtáʔ akhwistachęnyóhnaʔ
 Harry lost the money which I had found.

in which both the word order and the inflections of the verbs are reversed. In other sentences other factors may indicate which of two verbs is subordinate. In the following, for example, the presence of *něʔ* helps to make clear the subordinate position of the sentence translatable as 'I bought a horse':

- (164) kahwishéʔ kohsatés neʔ waʔkhní:nqʔ
 The horse which I bought is strong.

(rather than 'I bought the horse which is strong'). 'Horse' is a noun root which cannot be incorporated. Since it occurs in both sentences in (164), it is deleted from one of them by pronominalization. Normally it is deleted from the subordinate sentence, evidently leaving behind *něʔ* as a clue that a noun root was once there. Pronominalization may also take place in both the principal and the subordinate sentences, as in the following:

- (165) sakechęníʔ neʔ akahtoʔtíhnaʔ
 I found again what (that which) I had lost.

8.6. Possessives. Like many languages, Onondaga has a special ‘possessive’ transformation when there is an embedded relative clause whose verb indicates possession. The characteristics of the Onondaga verb ‘possessed’ as a principal verb root were discussed in Chapter 2. In the semantic structure of a sentence like the following there is evidently a relative clause containing this verb root:

(166) waʔkathkathwáʔ Harry hohó·waʔ I saw Harry’s boat.

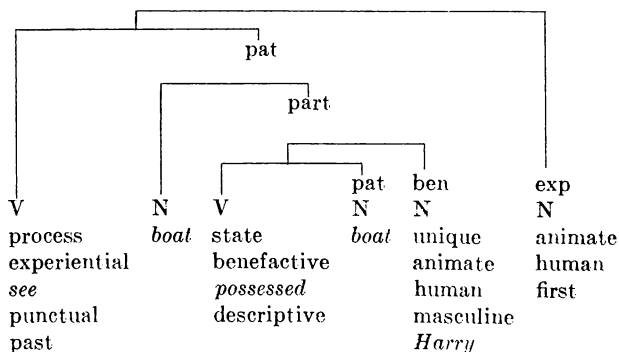
The principal sentence here consists of a verb containing the verb root ‘see’ accompanied by a first person experiencer noun and a patient noun containing the noun root ‘boat’. If this clause constituted the complete sentence we would have:

(167) waʔkathkathwáʔ kahó·waʔ I saw the boat.

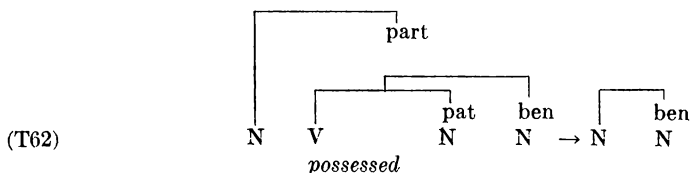
In (166), however, the patient noun containing ‘boat’ is modified by a relative clause whose verb contains the verb root ‘possessed’. If this clause were a sentence by itself, we would have:

(168) Harry hohq·wá·yęʔ Harry has a boat.

What is special about the surface structure of the complex sentence (166) is that the verb root ‘possessed’ is not represented at all. It has been postsemantically deleted, and we might want to say that its place has been taken by its own patient noun. For the semantic beneficiary noun, transformed into a postsemantic patient, has some of its semantic units reflected in a masculine patient prefix (symbolized *ho*) attached to a surface noun (*hohqwaʔ*) rather than to a surface verb (*hohqwayęʔ*, as in (168)). Let us diagram the semantic structure of (166) as follows:



The transformation we are concerned with now may be stated in this way:

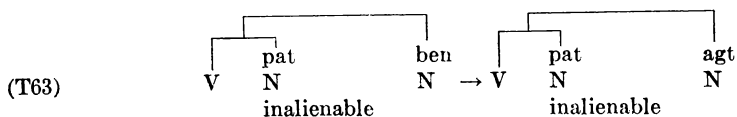


The semantic structure of this sentence is parallel to that of (169a), with the noun root 'body' (symbolized *yaʔt*) in place of 'boat' and the verb root 'wet' (symbolized *nqwe*) in place of 'new'. The postsemantic treatment is identical to that of (169a). Now the verb root 'wet' can occur only in a verb which contains the selectional unit '-animate patient'; that is, only an inanimate noun root can be said to be wet in Onondaga. 'Body' is such a noun root, and thus the semantic structure of (170) is allowed. But it is impossible in Onondaga to form a semantic structure whose direct translation into English would be 'I am wet', 'Harry is dirty', or the like, for such sentences would have animate patients associated with verb roots that will accept only -animate patients. Whereas in English a *person* can be said to be wet or dirty, in Onondaga only a person's body can be given such qualities. This fact might suggest to the reader with a Whorfian orientation that Onondaga speakers make a more fundamental distinction than we do between a person as a spiritual, incorporeal being, and a person's body as a material object.

8.8. Inalienable nouns. There is one other fact about possessives which seems important enough to mention here. It is necessary first to point out a fact about certain simple sentences containing a benefactive verb which was not pointed out during the discussion of such verbs in chapter 2. We can compare the following two sentences, the first of which was cited in that earlier discussion:

- (171) a. Harry honoʔwaé'taʔ Harry has a head (attached to him).
 b. Harry haʔnyó'taʔ Harry has a hand (attached to him).

It may be noted that, while (171a) shows the masculine patient prefix symbolized *ho* that we would expect as a reflection of a beneficiary noun, (171b) shows the masculine agent prefix, symbolized *ha*. This peculiar postsemantic treatment seems to be accorded most beneficiary nouns when the patient of the benefactive verb is selectionally 'inalienable', to use the standard term for things which cannot readily be removed from one's possession. In other words, a noun may be selectionally specified as inalienable, and this semantic unit must be present for the choice of a noun root like 'hand'. We can, then, posit a transformation which makes a beneficiary noun an agent rather than a patient in case inalienable is present in the patient noun of the same verb:



This rule must be applied before (T18) of Chapter 6, which changes the remaining instances of 'beneficiary' to 'patient'. (T63) accounts for the surface structure of (171b) with its agent prefix, but what of (171a), which has the patient prefix which would be expected if there were no such transformation as (T63)? It would certainly seem that a head (or a heart, as indicated by sentence (15a) of chapter 2) is just as inalienable as a hand, if not more so. The situation is much like that which we find with respect to 'gender' in a number of languages. In German, for

example, feminine is a semantic unit, but its semantic distribution does not explain the different surface 'articles' in *die Frau* and *das Weib*. Just so in Onondaga both 'head' and 'hand' are semantically inalienable, but the difference between (171a) and (171b) does not reflect this semantic sameness. What can be said is that a few particular inalienable noun roots, like 'head' and 'heart', prevent the operation of (T63), so that the subsequent application of (T18) transforms the beneficiary noun into a patient, not an agent. (Another expedient would be to posit the deletion of inalienable from the selectional units associated with these particular noun roots before the application of (T63), so that this rule would not be relevant; this alternative might better reflect the feeling that 'head' and 'heart', although semantically inalienable, behave postsemantically as if they were alienable.) But this subject was raised here to account for the fact that we find words like the following:

- (172) a. haʔnyáʔkeh his hand
 b. haʔnq·táʔkeh his leg

where, just as in (171b), there is an agent prefix where a patient might have been expected—might have been expected, that is, except for the operation of (T63), which affects the beneficiary noun of a subordinate relative clause just as it affects such a noun in a principal clause. It is the inalienable character of 'hand' and 'leg' that leads to the prefix symbolized *ha* in (172), as it did in (171b). And again, the particular noun roots which prevent the operation of (T63) in a principal clause do so in a subordinate clause also:

- (173) honqʔwáʔkeh his head

Since it has been illustrated in these examples, mention must also be made of the fact that the words in (172) and (173) have the surface form of adverbials meaning 'on his hand', 'on his leg', and 'on his head'. Each of these words is, in fact, ambiguous, and could also stem from a location noun of the type described in 8.3. In (172) and (173), however, all the words are intended to reflect simple, nonlocative nouns. The suffix 'on', symbolized ²*kě*, is introduced postsemantically in the case of certain possessed noun roots. It may be that the presence of a semantic unit dictates the introduction of this suffix, which seems to be found in the surface structure of most or all possessed noun roots whose meanings have to do with external body parts—those which can be seen, perhaps, without resort to dissection. Thus, 'heart' does not acquire this suffix:

- (174) hawe·yáhsaʔ his heart

but 'hand', 'leg', and 'head' do, as has been illustrated.

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