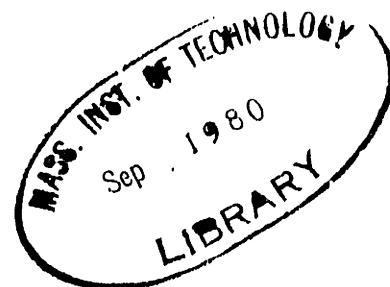


ON THE INTERACTION OF MORPHOLOGY AND SYNTAX

by

ANN KATHLEEN FARMER

B.A., SUNY Stony Brook  
(1975)



SUBMITTED IN PARTIAL FULFILLMENT  
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Signature of Author . . . . . *Ann Kathleen Farmer*  
Department of Linguistics and Philosophy  
May 27, 1980

Certified by . . . . . *Kenneth Hale*  
Thesis Supervisor

Accepted by . . . . . *Samuel Jay Keyser*  
Chairman, Departmental Committee

*Hum*  
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# ON THE INTERACTION OF MORPHOLOGY AND SYNTAX

by

Ann Kathleen Farmer

Submitted to the Department of Linguistics and Philosophy  
on 27 May 1980 in partial fulfillment of the requirements of  
the Degree of Doctor of Philosophy

## ABSTRACT

The purpose of this study is to develop a theory of the interaction of morphology and syntax in Japanese based on the hypothesis that all derivational word formation is accomplished prior to lexical insertion. This involves the assumption that entities such as sase (the causative morpheme) are verbal suffixes and not independent verbs.

Numerous phenomena that interact with the sase-type constructions are outlined. Our initial task is to account for the grammatical case arrays of simple sentences and to identify the possible antecedents for the reflexive pronoun, zibun.

In order to achieve a characterization of these two phenomena, we introduce the level of the "Propositional Argument Structure" (PAS), case linking rules, and a principle to assign a diacritic 'S(ubject)' to PAS's. In addition, we propose a modified version of X-Bar that enables us to deduce "scrambling" from context-free lexical insertion.

Finally, we find that given the theoretical devices that have been developed, we are able to account for a heretofore problematic feature of the passive construction.

Thesis Supervisor: Kenneth Hale

Title: Professor of Linguistics and Philosophy

To my friends

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## INTRODUCTION

The origins of this thesis are rooted in my generals paper "An Alternative Analysis of the Complex Verb in Japanese" (1977), and in a subsequent paper "Speculations on the Interaction of Morphology and Syntax." The intent of these papers was to ask two very basic questions: (i) are the complex verbal constructions like the causative tabe-sase 'cause to eat' words? and (ii) how does word formation interact with the syntax? In these earlier papers, this question was asked by way of comparing two hypotheses: the Complex Source Hypothesis (CSH) and the Word Formation Hypothesis (WFH).<sup>1</sup> The endeavor was to compare the WFH to the simplest version of the traditional analysis of these complex verbs (cf. Chapter 1 for the details of this approach), that is, the CSH without word formation, or transformations. Obviously, if tabe-sase were not clearly a "word", then the CSH would win hands down over the WFH. I discussed various reasons for concluding that the complex verbs were in fact single words. Thus, in establishing the lexical integrity of tabe-sase, we were able to juxtapose the two theories, justifying the move to the more interesting question. Given that tabe-sase is a word, one must then ask the question concerning when it is a word. This effects the paradigms of the respective hypotheses. Among the issues to be addressed by any theory, i.e., by any particular way of organizing the parts of the grammar, are: (i) the zibun phenomenon. (cf. Chapter 1, section 1.3), (ii) the notion subject -- that class of nouns that triggers reflexivization, subject honorification, etc., (iii) the grammatical case particles and their distribution, (iv)

the role of the phrase structure component and (v) "scrambling". This is not an exhaustive list; rather, it includes topics that have interested me as a result of asking the initial questions. In the earlier papers, I speculated about the organization of grammars based on the CSH and WFH. At the time, I held certain assumptions constant, one having to do with the phrase structure component. It was assumed that phrase structure rules were the primary mechanism for limiting the number of overt NP arguments which could appear with a predicate in a single clause. Suppose, counterfactually, the number of overt arguments in a simple clause in Japanese could be one or two, but not more than two nor less than one. This could be expressed in the PS component by a rule of the form:

$$(1) \quad S \longrightarrow NP (NP) V$$

This can be said to express a dependency between the category V and possible argument frames. Another assumption was that scrambling was actually a rule in the grammar -- a "stylistic" rule. This assumption was dependent on taking the "preferred" word order as basic and all other permutations as derivative. The final assumption was that S-boundaries were in some way special.

In comparing the two hypotheses, several questions were raised that bore on the above assumptions. The assumption that PS rules should express verb/argument dependencies is thrown into question as soon as one realizes that in the complex source hypothesis there are cases (e.g., the causative construction) where, by virtue of the recursive capability of the PS component, no limit can be set on the

number of overt arguments appearing in superficially simple clauses. Are these sentences well-formed? If they are ill-formed, then the CSH falsely characterizes them as grammatical. If they are, in fact, grammatical, then this raises the question of the role of the PS component. Should there even be the expression of the dependency between a verb and the number of arguments required in the PS component since, given a theory such as the CSH, this dependency cannot be expressed for all verbs. At the time I was leaning towards a direction consistent with the more traditional way of viewing the PS rules (i.e., that the PS rule expresses the abovementioned dependency) which resulted in my view that these causatives were ungrammatical, not just "unprocessable".

Another question raised was just how are the NPs that trigger "reflexivization" to be characterized? This is certainly not a new question, but given the WFH, an alternative must be offered. Presumably, rules relating anaphors and antecedents are rules of construal (Hale for origin of term; cf. Chomsky 1977), that is, in Logical Form. It is clear (cf. Kuno 1973, Goshima 1979 and Chapters 1-6 of this thesis) that in order to account properly for the zibun-phenomenon and for the coreference possibilities of pronouns (e.g., kare 'he') that sentences involving complex verbs have some kind of complex structure. This structure is necessary in order to characterize the "cyclic" subject (cf. Kuno, *ibid.*, and Chapters 1-6 of this thesis). The question becomes: at what level of structure are these "subjects" defined? When I refer to "level of structure", I mean to include structure in LF. The question centers on the issue



of whether or not these "subjects" are defined at S-structure. Both hypotheses presented share the assumption that disjoint reference operates in LF. Where they differed was with respect to the nature of the interface between S-structure and LF. The CSH involved utilization of S-structure in LF without any modification to the structure. The WFH required some type of mapping of the S-structures onto LF structures (i.e., structure building rules).

As for case, we assumed that "government" of case is restricted to the domain of S and that a case marking rule associated with a matrix clause cannot "look" into the S-complement to: (i) change the case marking of an NP in the complement or (ii) see if the downstairs sentence has an object or not. The two hypotheses differed in where they required "case marking" to be handled. It was felt that a solution involving case marking across S-boundaries retaining the complex structures would miss an important generalization, namely, that such "exceptional case marking" would: (i) be necessary just in the case of the morphologically bound verbs at issue and (ii) give rise to case arrays which are possible in simple clauses. Thus, we are left with the question of where case marking does in fact take place. The CSH required that case checking apply on the "left side" of the grammar. The WFH required that case be checked ("linked"; cf. Chapter 4 for a definition of "linking") but does not predict where this linking takes place -- right or left -- since the structure is already syntactically simplex at S-structure. The raising of these questions initiated a reassessment of: the PS component (cf. Chapter 3), the status of the case arrays (Chapter 4), the notion "subject" in

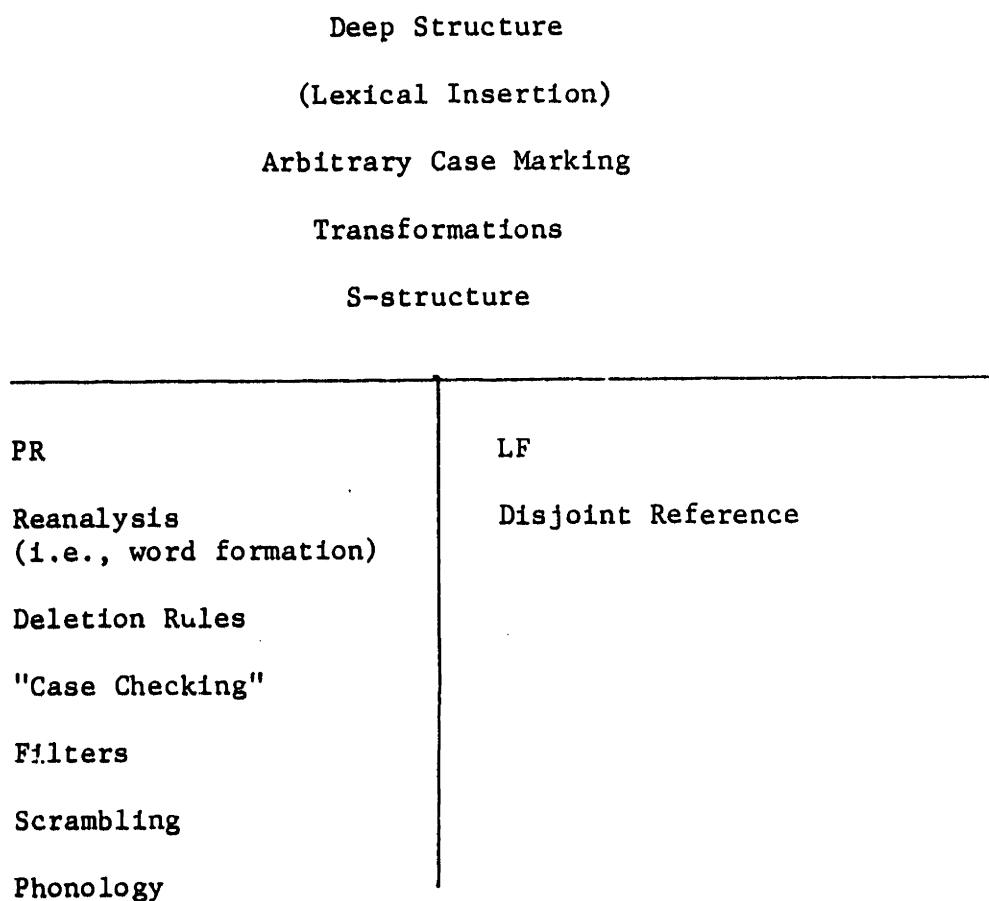
Japanese (Chapters 5 and 6). For the purposes of this investigation, I will assume that derivational word formation takes place prior to lexical insertion (cf. Chapter 2). This is based in part on accepting the organization of the lexicon as developed by Lieber (1980). It is the purpose of this thesis to follow through the various consequences entailed in this assumption. This is accomplished by way of addressing the issues outlined earlier in this introduction (i.e., zibun, case particles, etc.).

Chapter 1 provides some background information concerning some of the major issues of Japanese syntax to be touched upon. The works of such linguists as Kuno, Kuroda, and Howard will be outlined, since I will be drawing on their intuitions. Chapter 2 is an outline of the "morphological" picture. Chapters 3, 4, 5 and 6 are the beginnings of a proposal for the account of the syntax of morphologically complex verbs and phenomena that interact with their various levels of structure.

## FOOTNOTES: INTRODUCTION

1. In order to compare a theory involving complex syntactic structures with a theory like the WFH, we took the essence of a Kuno/Kuroda-type theory; the complex syntactic source of the causative minus most of the transformations constitutes this essence. Thus, we have the CSH.

Below is a diagram of the design offered by the CSH:



The Word Formation Hypothesis offers a rather different paradigm. The following diagram depicts the organization of the grammar in this theory (circa 1978):

Deep Structure  
(including case marking)

Word Formation	Surface Structure Lexical Insertion
-------------------	--

<p>PR</p> <p>Deletion Rules</p> <p>Scrambling</p> <p>Phonology</p>	<p>LF</p> <p>Structure Building Rules</p> <p>Disjoint Reference Rule</p> <p>Evaluation of case marked NP's with argument positions (theme, agent, etc.)*</p>
--	--

\*See Ostler (1980).

## CHAPTER 1: A REVIEW OF MAJOR ISSUES IN JAPANESE SYNTAX

The purpose of this chapter is twofold: the first aim is to familiarize the reader with some of the major issues of Japanese syntax, and the second is to put these issues into some kind of theoretical perspective. Questions concerning morphologically complex verbs, case marking arrays, the generation of dative noun phrases in the causative construction, reflexivization, and scrambling will be touched upon.

The first section deals with the major issues in Japanese syntax mentioned above; the second section reviews analyses of these problems while at the same time drawing out the basic assumptions that led the various researchers to their respective conclusions.

## 1. Major Issues in Japanese Syntax

## 1.1 The Syntax of Morphologically Complex Verbs

In Japanese verbal morphology there is a class of bound verbalizing suffixes; among these are -(s)ase<sup>1</sup> (causative), -(r)are (passive), and rare ~ e (potential). The process of affixing these suffixes to verbal stems is quite productive.

Causative:

-O- Causative<sup>2</sup>

- (1) a. Hanako ga<sup>3</sup> hatarak-ta<sup>4</sup>  
           NOM 'work' tense, past  
           'Hanako worked.'
- b. Taroo ga Hanako o hatarak-ase-ta.<sup>5</sup>  
           NOM           ACC 'work' -cause-tense, past  
           'Taro made Hanako work.'

## -Ni- Causative:

- (2) Taroo ga Hanako ni hatarak-ase-ta.  
       NOM           DAT 'work' -cause-tense, past  
       'Taro let Hanako work.'

## Causative with a Direct Object:

- (3) Hanako ga hon o yon - da.  
       NOM 'book' ACC 'read' -tense, past  
       'Hanako read the book.'
- (4) Taroo ga Hanako ni hon o yom-ase-ta.  
       NOM           DAT 'book' ACC 'read' -cause-tense, past  
       'Taroo made/let Hanako read the book.'

## Passive:

Direct Passive<sup>6</sup>

- (5) Sensei wa John o sikar-ta.<sup>7</sup>  
       'teacher' ACC 'scold'-tense, past  
       'The teacher scolded John.'
- (6) John wa sensei ni sikar - are - ta.  
       'teacher' DAT 'scold' -passive-tense, past  
       'John was scolded by the teacher.'

Indirect Passive:<sup>8</sup>

- (7) Ame ga hut-ta.  
       'rain' NOM fall-tense, past  
       'The rain fell.'
- (8) John ga ame ni hur-are-ta.  
       NOM 'rain' DAT 'fall'-passive-tense, past  
       '(Lit.) John was fallen on by rain.'
- (9) Tuma ga sin-da.  
       'wife' NOM 'die'-tense, past  
       'The wife died.'

- (10) John ga tuma ni sin-are-ta.  
       NOM 'wife' DAT 'die' -passive-tense, past  
       '(Lit.) John was died by his wife.'  
       or: John was adversely affected by his wife dying.

Potential:

- (11) Taroo ga mesi ga<sup>9</sup> tak-e-ru.  
       'rice' NOM 'cook'-potential-tense, non-past  
       'Taro can cook rice.'

The theoretical characterization of these constructions involving complex verbs has been the focus of concern for the past fifteen years. The "syntax" of the complex verbs is intimately connected with case marking. Establishing just what the correlations and dependencies between these verbs and case are has occupied people interested in Japanese syntax ever since Kuroda's MIT Ph.D. dissertation, Generative Grammatical Studies in the Japanese Language (1965), where he was the first to work within a generative transformational framework.

## 1.2 Case Marking

The three grammatical cases in Japanese are 'ga' (nominative case), 'ni' (dative case), and 'o' (accusative case).<sup>10</sup> A major effort of theoreticians has been to account for the distribution of these cases. One of the features that complicates this issue is that there is not always a one-to-one correspondence between the grammatical relations (i.e., subject, direct object, and indirect object) and case (i.e., nominative, accusative, and dative) (cf. Shibatani, 1977, 1978). Among the facts that must be accounted for are:

- (1) Every sentence requires at least one nominative.<sup>11</sup>

(ii) No sentence/clause can have two accusative arguments:

- (12) \*Taroo wa Hanako o hon o yom-ase-ta.  
'Taro made Hanako read the book.'

(iii) Object of a stative verb is marked 'ga' (Kuno 1973):

- (13) Taroo wa nihongo ga wakaru.  
'Japanese' 'understand'  
+stative  
'Taro understands Japanese.'

Object of derived statives can optionally be marked 'ga':

- (14) Taroo wa nihongo { o } hanas- e - ru.  
                                  { ga } 'speak' 'potential-tense, nonpast  
  -stative, +stative  
'Taro can speak Japanese.'

(iv) Subject of some stative verbs can be marked 'ni' when the object is marked 'ga':

- (15) a. Dare ga kore ga dekiru ka?  
          'who' 'this' 'can'  
  +stative

- b. Dare ni kore ga dekiru ka?  
'Who can do this?'

- (16) a. Dare ga kono uta ga uta-e-ru ka?  
          'this' 'song' 'sing'-potential-tense, nonpast, ?  
  +stative  
'Who can sing this song?'

- b. Dare ni kono uta ga uta-e-ru ka?

- c. \*Dare ni kono uta o uta-e-ru ka?

- d. Dare ga kono uta o uta-eru ka?

The above sentences are illustrative of an interaction of the complex verbs and case marking. In order to understand the role that certain noun phrase arguments play in sentences like those above, certain diagnostics have been developed. One of these involves "reflexivization".





Here not only 'John' but also 'Mary' can be the antecedent for zibun even though 'Mary' is marked with the dative case. It was noticed independently by Kuno and Noriko McCawley that the various passive constructions offered different antecedent possibilities; that is, direct passive sentences with zibun are unambiguous whereas indirect passives are usually ambiguous.

Indirect Passives (Kuno 1973:303-04, examples (9) a and b, (10) a and b):

- (20) a. John<sub>i</sub> wa Mary<sub>j</sub> ni zibun<sub>i,j</sub> no kazoku no hanasi bakari sareta.  
'family' 'talk' 'only' 'do-pass'  
'John was affected by Mary's talking only about self's family.'
- b. John<sub>i</sub> wa Mary<sub>j</sub> ni zibun<sub>i,j</sub> no koto o ziman sareta.  
'matter' 'boast' 'do-pass'  
'John suffered from Mary's bragging about self's matter.'

**Direct Passives** (Kuno *ibid.*, p. 307):

- (21) a. Mary<sub>1</sub> wa John<sub>j</sub> ni zibun<sub>1,j</sub> no uti de korosareta.  
'house' 'kill-pass'  
'Mary<sub>1</sub> was killed by John<sub>j</sub>\* in self's<sub>1,j</sub>\* house.'
- b. Mary<sub>1</sub> wa John<sub>j</sub> ni zibun<sub>1,j</sub>\* no uti de hon o yomaserareta.  
'house' 'book' 'read-cause-pass'  
'Mary<sub>1</sub> was made by John<sub>j</sub> to read the book in self<sub>1,j</sub>\* house.'

#### 1.4 Dative Noun Phrases and the Causative Construction

Thus far we have seen the close interaction of a number of phenomena (i.e., complex verbs interacting with case distribution and the reflexive zibun). Next let us discuss the generation of dative noun phrases in the causative construction. Notice the following sentences with varying numbers of "embeddings":

## Intransitive:

- (22) a. Hanako ga isya ni/o ko- sase- ta  
               'doctor' 'come'-cause-tense, past  
               'Hanako let/made<sup>13</sup> the doctor come.'
- b. ?Taroo ga Hanako ni isya ni/o ko-sase-sase-ta.  
       'Taro let (make) Hanako make/let the doctor come.'
- c. \*Yooko ga Taroo ni Hanako ni isya ni/o ko-sase-sase-sase-ta.  
       'Yoko let (make) Taro let (make) Hanako let/make the doctor  
       come.'

## Transitive:

- (23) a. ??Taroo ga Hanako ni isya ni kodomo o koros-sase-sase-ta.  
           'Taro made (let) Hanako make (let) the doctor kill the child.'
- b. \*Yooko ga Taroo ni Hanako ni isya ni kodomo o koros-sase-sase-  
       sase-ta.  
       'Yoko made (let) Taro make (let) Hanako make (let) the doctor  
       kill the child.'

## Transitive with Dative Object:

- (24) a. ?Taroo ga isya ni Hanako ni kusuri o age-sase-ta.  
                                   'medicine' 'give' 'cause'-tense  
           'Taro made (let) the doctor give Hanako the medicine.'
- b. \*Taroo ga isya ni Yooko ni Hanako ni kusuri o age-sase-sase-ta.  
       'Taro made (let) the doctor make (let) Yoko give the medicine  
       to Hanako.'

The productive nature of the bound suffix sase, whether its productiveness is characterized via multiplicity of syntactic embedding or through productive word formation, raises certain important questions concerning the role of the phrase structure component in the broader theoretical sense, that is, cross linguistically. In the above sentences, several observations can be made, foremost of which is that

the judgments in the above sentences indicate that the "ungrammaticality" of (24) b cannot be due to the number of sase's since (22) b, which has two sase's as well is not nearly so bad as (24) b.

### 1.5 Scrambling

The final issue to be described here is the well-known scrambling property of Japanese. A few examples will suffice to illustrate this phenomenon. Just what is an instance of "scrambling" and what is actually due to some other property or the grammar is still very much debated (cf. Kuno and Tonoike 1980).

Scrambling:

- (25) a. Mary ga okasi o taberu.  
               'cake'     'eat'  
               'Mary eats cake.'
- b. Okasi o Mary ga taberu.
- (26) a. John ga Mary ni okasi o tabe-sase-ta.  
               'John made (let) Mary eat the cake.'
- b. Mary ni John ga okasi o tabe-sase-ta.  
       c. Okasi o Mary ni John ga tabe-sase-ta.  
       d. Mary ni okasi o John ga tabe-sase-ta.

In short, many of the possible permutations are grammatical with the one clear constraint that the verb must always remain to the right:

- (27) a. \*Mary ga taberu okasi o.  
       b. \*Okasi o taberu Mary ga.

For a discussion of how scrambling is to be constrained, cf. the Kuno/Tonoike exchanges, 1980; see also Hale 1980 and Chapter 6 of this thesis.

## 2. Prevailing Accounts

This section will outline some of the proposals that have been put forth as accounts and explanations of the above phenomena. Most of the problems discussed in section 1 were discovered and their properties explored by linguists such as Inoue, Kuroda, Kuno and Harada. They share a number of very basic assumptions that have defined the problems as belonging to components of the grammar that interact very specifically with the syntactic domain. One fairly consistent assumption is that the morphologically complex verbs (cf. causative, passive, etc.) involve syntactically complex structures with the bound verbalizing morpheme a matrix verb which requires a sentential complement. Proposing this type of structure is a reflex of a set of more basic assumptions: (1) the syntax corresponds closely to the semantic representation, (2) syntactic transformations such as equi NP deletion and predicate raising (et al.) map deep structures onto surface structures, and (3) word formation is post-syntactic. Another fairly consistent assumption is that case marking necessarily indicates some specific underlying syntactic configuration.<sup>14</sup>

### 2.1 The Case Particles GA, NI, and O

The most widely accepted accounts of the grammatical case particles in Japanese are based on proposals made by Kuno (1973) and Kuroda (1965, 1978). Kuno and Kuroda agree that the particles ga and o are distinct from other particles in that they are not generated in the base but are assigned to a noun phrase via case marking transformations. They differ in the following interesting way: Kuno utilizes context sensitive case marking transformations, the context defined not only by

syntactic position but also by reference to a lexical feature (i.e., stativity), while Kuroda, on the other hand, employs a much simplified case assignment rule, limiting overgeneration by an autonomous filtering component consisting of a set of stipulated "canonical sentence patterns". The mechanisms employed by these two different approaches possibly reflect different intuitions about how case marking interacts with the rest of the grammar. I will try to draw out this difference after the following brief summary of the two positions.

#### 2.1.1 Kuno on Case Marking

Kuno questions the validity of Martin's (1962:44) statement that the "particle ga shows the subject" in the sentences like the following:

- (28) a. Eiga ga suki desu.  
           'movies' 'like' copula  
           'I like movies.'
- b. Watakusi wa eigo ga hanas-e-ru.  
               'English'       'speak'-can-tense  
           'I can speak English.'
- c. Watakusi wa okane ga hosii.  
               'money'       'want'  
           'I want money.'
- d. Watakusi wa Mary ga suki da.  
                           'fond of'-copula  
           'I like Mary.'

Kuno demonstrates that these ga marked NP's do not have the same cluster of properties associated with other "true" subjects. In addition, sentences represented by (28) a-d above do not behave like

the so-called "double subject" sentences. Kuno compares the following sets of sentences (1973:80-1, examples 7 and 8 a-b):

- (29) a. Bunmeikoku ga dansei no heikin-zyumyoo ga mizikai.  
           'civilized       'male' 's 'average-life-span' 'short is'  
           countries'  
           'It is the civilized countries that male's average life-span is short in.'
- b.        ∅           Dansei no heikin-syumyoo ga mizikai.  
           'It is males' average life-span that is short.'
- (30) a. Watashi ga eiga ga suki desu  
           'I'           'movie' 'fond-of' 'is'  
           'I like movies.'
- b.        ∅        Eiga ga suki desu.  
           '(I am, he is, etc.) fond of movies.'

Deletion of an initial ga phrase from (29) a yields a non-elliptical sentence; by contrast, deletion of the initial subject in (30) a gives the elliptical sentence (30) b.<sup>15</sup> Thus, Kuno concludes that there are cases where ga is used to mark direct objects "of all transitive adjectives, nominal adjectives and a certain class of transitive verbs" (1973:81).

The special case marking observed in (28) is related by Kuno to the feature "stative" present in the predicate. Kuno offers the following cyclic case marking transformations (1973:330):

- (11) a. Indirect object marking: Attach ni to the second of three unmarked NP's (noun phrases), that is the NP's that do not yet have a particle.
- b. Subject marking: Attach ga to the subject NP.
- c. Object marking: Attach o to the first nonsubject unmarked NP to the left of the main verb if it is -stative, and ga





that appears in the adversity passive, the ni causative and in the potential. Kuroda's conception of the grammar necessarily allows massive overgeneration. His system involves the following mechanisms:

- (31) a. Case marking transformation (1978:33-34):  
Mark the first unmarked noun phrase with ga, and mark any other unmarked noun phrase or phrase with o.
- b. There exist two deletion rules: (i) counter equi NP deletion (Harada 1973) and (ii) ordinary equi which apply as free variants.
- c. (p. 35) Canonical sentence patterns which apply cyclically:
- |     |                                |             |
|-----|--------------------------------|-------------|
| I   | Transitive sentence pattern:   | NP ga NP o  |
| II  | Ergative sentence pattern:     | NP ni NP ga |
| III | Intransitive sentence pattern: | NP ga       |
- d. Subject ni-raising ("makes the embedded subject a clausemate of a matrix and assigns it the particle ni." This process is bound with predicate raising.)
- e. Since the subject ni-raising rule yields a sentence that does not "contain a ga phrase" Kuroda allows the ga case marking rule to mark the accusative marked NP from the previous cycle to be marked ga (i.e., (p. 34) "For the purpose of case marking, a noun phrase is, by definition, considered 'unmarked' even if the particle o has already been assigned to it prior to the cycle in question.")

Kuroda proposes that counter equi and normal equi apply in free variation. That is, he does not impose an extrinsic ordering relation between these two deletion rules. His system therefore overgenerates; hence, the need for the filtering device (31) c above. The interaction of these components can be observed in the following derivations:

derivations:

Kuroda (1978:33)

(11) [Taroo [Taroo hatarak] eru]

straight equi:  $\emptyset$

predicate Taroo hatarak-eru  
raising:

case marking: Taroo ga  
'Taroo ga hatarak-eru.'  
'Taro can work.'

(12) [Taroo [Taroo mesi tak] eru]

case marking: Taroo ga mesi o

counter equi:  $\emptyset$

subject ni- Taroo ni mesi o tak-eru  
raising:

case marking mesi ga  
o — ga (see  
31 e):

Taroo ni mesi ga takeru.  
'Taro can cook rice.'

If straight equi is applied to (12) instead of counter equi the  
derivation would look like:

(32) [Taroo [Taroo mesi tak] eru]

straight equi:  $\emptyset$

case marking: mesi o

predicate tak-eru  
raising:

case marking: Taroo ga  
Taroo ga mesi o takeru.  
'Taro can cook rice.'

Where does the overgeneration come in? A look at the causative construction reveals this possibility:

Kuroda (1978:37)

(20) [Taroo Hanako [Hanako mesi tak] saseta]

cycle I

Hanako ga mesi o

case:

cycle II

straight equi:



case marking:

Taroo ga Hanako o mesi o

predicate

takaseta

raising:

\*Taroo ga Hanako o mesi o takaseta.

But now the sentence is subject to the sentence pattern filters. None of the patterns sanctions this sentence; therefore, it is ruled out.

The Ergative pattern allows for the case arrays associated with stative predicates (Kuroda 1978:36):

(16) Taroo ni (wa) kane ga aru.

which is derived from:

(18) Taroo ni kane aru.

Kuroda admittedly does not seem to have an account of the NP ga NP ga arrays. His approach is, nonetheless, intriguing since it depends on the interaction of various autonomous components to define the set of grammatical sentences. Also, his version of case marking seems to differ crucially from Kuno's in that since his account generates the

the double accusative (i.e., NP<sub>o</sub> NP<sub>o</sub>) sentences it is conceivable that under Kuroda's analysis, there could be a language exactly like Japanese, except that it does not have the case array filters. The double-o sentences would then be good in this language. Kuno's approach would necessarily characterize this language as quite unlike Japanese.

## 2.2 Passive and the Reflexive Pronoun Zibun

In section 1.3 the reflexive zibun was discussed. It has been pointed out that the antecedent of zibun must be "some sort of subject." The prevailing opinion is that the antecedent's subjectness must be characterized syntactically. Coupling this assumption with the observed ambiguity of sentences (20) a-b (Kuno's (9) a-b) versus the clear unambiguity of (21) a-b (Kuno's (10) a-b) results in various analyses of the Indirect/Direct passive construction. The two alternatives discussed here are popularly referred to as the "uniform" vs. the "nonuniform" analyses. These two differing positions are represented by Kuno (nonuniform)<sup>16</sup> and Howard/Niyekawa-Howard (uniform).

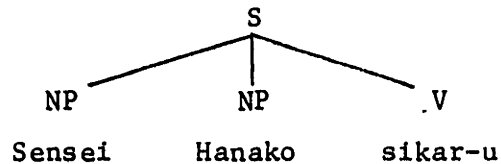
It should first be mentioned that all parties assume a reflexivization transformation; that is, a noun phrase is changed to zibun under identity with another NP that commands it.

### 2.2.1 The Nonuniform Hypothesis (Kuno)

This hypothesis argues that direct passives are derived from a simple sentence. Kuno cites the following example (1978:256):

- (102) Hanako ga sensei ni sikar -- are - ta.  
           'teacher' 'scold'-passive-tense, past  
           'Hanako was scolded by the teacher.'

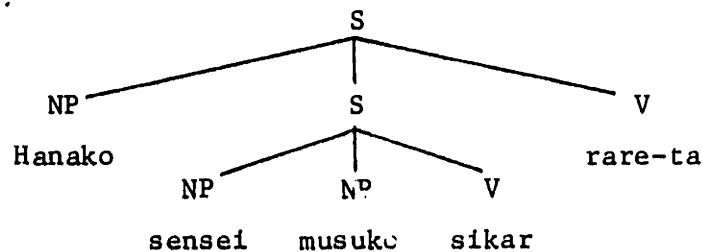
- (103) Underlying Structure



The adversity or indirect passive is derived from a complex source  
 (p. 257):

- (104) Hanako ga sensei ni musuko o sikar-are-ta.  
           'Hanako was adversely affected by the teacher's scolding  
           her son.'

- (105) Underlying Structure for (104)



This analysis is based on the assumption that reflexivization  
 applies cyclically and follows passivization (p. 257):

- (107) a. Taroo<sub>i</sub> ga Hanako<sub>j</sub> o zibun<sub>i,j\*</sub> no ie de sikat-ta.  
           'Taro scolded Hanako in self's (Taro's) house.'
- b. Hanako<sub>i</sub> ga/wa Taroo<sub>j</sub> ni zibun<sub>i,j\*</sub> no ie de sikar-are-ta.  
           'Hanako was scolded by Taro in self's (Hanako's) house.'

Since the adversity passive has a complex source there are two

cycles. Therefore, reflexivization has two opportunities to apply in the derivation.

(33) Hanako Taroo (trigger) Taroo no ie de nekom-are-ta.

⇓  
zibun

(34) Hanako (trigger) Taroo Hanako no ie de nekom-are-ta.

⇓  
zibun

Therefore, the ambiguity/nonambiguity of the anaphor/antecedent relationship is correlated with the complexity of the syntactic structure.

#### 2.2.2 The Uniform Hypothesis (Howard and Niyekawa-Howard)

The Uniform Hypothesis assumes that the indirect passives involve embedding (see (105) above). Howard and Niyekawa-Howard also assume the following:

- (35) a. Case marking transformations (cf. Kuno 1973).
- b. Predicate raising (adjoin the embedded verb to the matrix verb).
- c. Node deletion (in accordance with Ross 1969).
- d. Reflexivization applies cyclically.

This hypothesis differs from the nonuniform analysis in that it posits a complex underlying source for both the indirect and direct passive. In order to account for the nonambiguity of (107) b Howard and Niyekawa-Howard propose the following constraint:

(36) Reflexive Coreference Constraint (RCC):<sup>17</sup>

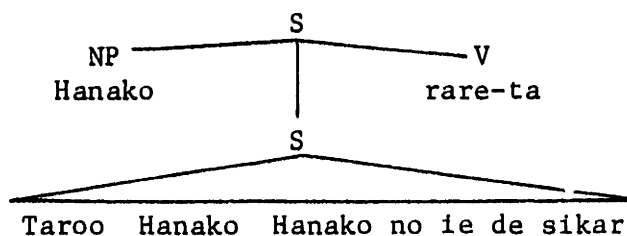
Two instances of the reflexive pronoun zibun commanded by the same pair of possible antecedents must be coreferential. If they are not, the sentence is marked as ungrammatical.

The use of the above constraint relies on the following two assumptions (taken from Kuno 1978:262):

- (37) a. Embedded Object Deletion<sup>18</sup> must apply after reflexivization and the Reflexive Coreference Constraint (RCC) must apply after reflexivization, but before Embedded Object Deletion.  
b. Reflexivization of the embedded object is obligatory.

The following is the derivation of (107) a of the "unified" hypothesis (not detailing case marking or predicate raising):

(38) Hanako<sub>i</sub> ga Taroo<sub>j</sub> ni zibun<sub>i,j\*</sub> no ie de sikar-are-ta.



Cycle I

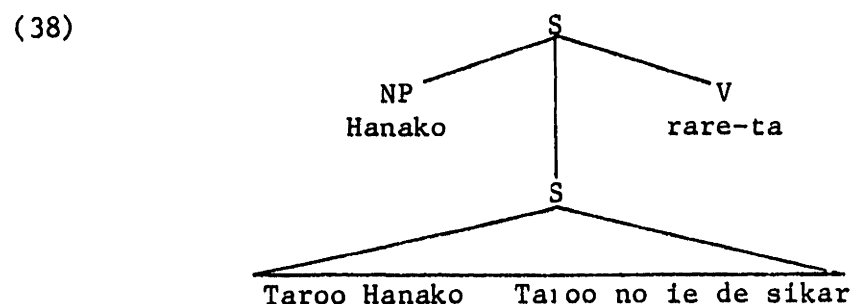
case: Taroo ga Hanako o Hanako no ie de sikar

Cycle II

reflexivization: Hanako Taroo zibun o zibun no ie de sikar-rare-ta.  
(both occurrences  
of Hanako zibun)

Embedded Object Deletion: Hanako ga Taroo ni  $\emptyset$  zibun no ie de sikar-rare-ta.

(107) b with coreference between Taroo and zibun has the following derivation:

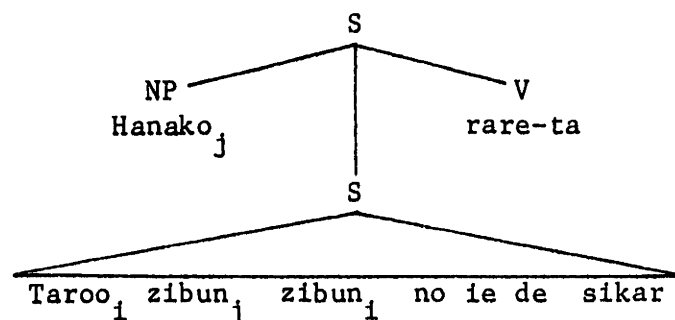


Cycle I

Reflexivization: Taroo<sub>i</sub> Hanako zibun<sub>i</sub> no ie de sikar.

Cycle II

Reflexivization: Hanako<sub>j</sub> Taroo<sub>i</sub> zibun<sub>j</sub> zibun<sub>i</sub> no ie de sikar rare-ta.



The above derivation would ultimately generate (39) if something like the RCC were not brought into play at some point:

(39) \*Hanako<sub>j</sub> ga Taroo<sub>i</sub> ni zibun<sub>i,j</sub> no ie de sikar-rare-ta.

The prediction would be that (39) is ambiguous. But Howard and Niyekawa-Howard rule out (39) by imposing the RC Constraint on the derivation. (39) is a case where the two instances of zibun are not



coreferential; therefore the derivation is thrown out. The ordering dependency between reflexivization, object deletion and the RCC was mentioned above. The reason that the reflexivization of the embedded object is obligatory is that unless there are two instances of zibun, the RCC cannot be used to throw out the derivation. Thus, the introduction of the RCC coupled with ordering and obligatoriness of the application of rules is a reflex of the attempt to minimize the number of possible underlying structures.

The last two issues to be discussed are the generation of dative noun phrases in the causative construction and scrambling. Let us draw on these two phenomena to shed more light on the theoretical picture that has been outlined above.

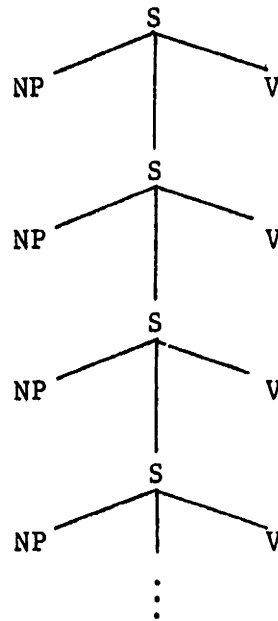
### 2.3 The Causative Construction and Its Arguments

In section 1.4, several examples were given illustrating the productive nature of the causative suffix sase. Since in the theory represented by Kuno, Kuroda, Howard et al. the suffix sase is actually a verb that requires a sentential complement, it is theoretically possible to generate the following sentence (22) c, repeated here (p. 6):

- (22) c. \*Yoko ga Taroo ni Hanako ni isya ni/o ko-sase-sase-sase-ta.  
'Yoko made (let) Taro make (let) Hanako make/let the doctor come.'

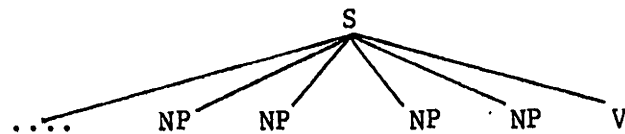
Structures that initially start out like (40) below:

(40)



end up like (41) after predicate raising:

(41)



Implicit in this theory is the claim that the phrase structure component cannot in fact play any kind of role in delimiting the number of arguments a verb (at least derived verbs) may have.

## 2.4 Scrambling

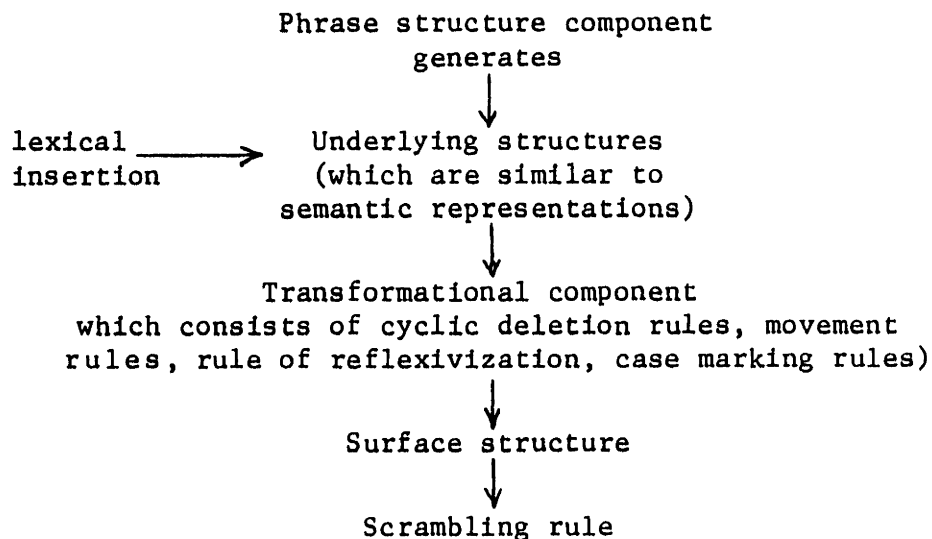
Section 1.5 gives some examples of scrambling. The one constraint that seems to be agreed upon is that the verb be the rightmost constituent in its clause. Establishing the various other constraints on scrambling has been less generally agreed upon. Tonoike (1980) argues that only constituents within the same clause may permute, whereas Kuno claims that, in fact, the domain of scrambling is not limited to the clause. Instead, Kuno imposes a

"cross over" constraint to account for the inability of the scrambling of:

- (42) a. Taroo ga sakano ga suki da.  
 b. \*Sakana ga Taroo ga suki da.

Tonoike claims that Taroo and sakana in (42) are not clausemates. We will not venture into this particular controversy here. The reader is referred to the Tonoike/Kuno exchanges (1980). One general property of the grammar can be extracted and that is that a Kuno-, Kuroda-, Howard-type theory suggests that scrambling necessarily follows all transformations (case marking, predicate raising, etc.).

In concluding this section let us summarize the basic theoretical assumptions discussed here by reference to the following descriptive model:



The transformational component consists of many types of rules (i.e., deletion rules, movement rules, etc.) whose proper interaction is mediated by the imposition of strict ordering relations. This

extrinsic ordering is necessary since all these rules operate within the same domain, i.e., the syntactic domain. Within this model of grammar there are tendencies to distinguish rule types within the syntactic domain. While Kuno, on the one hand, opts for sensitizing transformations so that they, in concert with nonuniform structures, will never overgenerate, Kuroda and Howard, on the other hand, free up various points in order to gain generality. Kuroda proposes to allow the deletion transformations to apply as free variants, relying on the "canonical sentence patterns" to filter out the bad sentences. Howard and Niyekawa-Howard propose to unify the structure of the various passives, resorting to the RCC to throw out potentially deviant sentences. The various attempts to simplify areas of the grammar have resulted in introducing rules of a type to be distinguished from transformations (i.e., filters and constraints on rule application), thus giving the part of the grammar which involves mapping "deep structure" to surface structure, more texture.

This concludes our review of some of the major issues in Japanese. In the following chapters (3, 4, 5 and 6) we will be addressing these same issues from a slightly different point of view. In some respects, our approach is similar to Kuroda and Howard's; that is, parts of the grammar are allowed to overgenerate. We do not, however, utilize filters to rule out sentences. Instead, we rely on the interaction of autonomous components to affect the result of a filter. In other respects our theory is not unlike Kuno's in that we develop case linking rules that appear to be similar to Kuno's case marking rules. But the overall theoretical picture we will be developing differs from previous

works. The reason for the differences is rooted in our attempt to deduce some of the effects of various phenomena, such as passive, from independent properties of the grammar.

## FOOTNOTES: CHAPTER 1

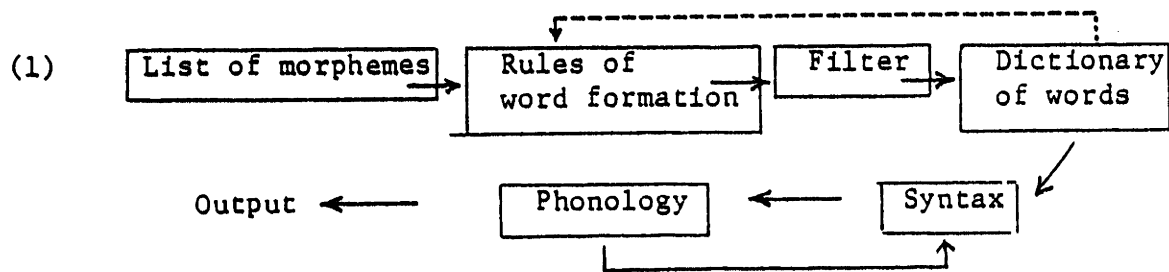
1. The consonants that appear in parentheses in the these suffixes surface in the derived word depending on whether the verb stem ends in a consonant or not.
2. The distinction between the -o- causative and the -ni- causative will be discussed in the section on case marking.
3. I will not go into the difference between the wa and ga particles. Often wa will be used instead of ga because it is more natural.
4. hatarak-ta is realized as [hataraita].
5. Many of the example sentences are taken from Kuno (1973, 1978).
6. I will adopt the terminology used by Kuno et al. Later on in Chapters 4, 5, and 6 this usage becomes inappropriate and so it will be altered accordingly.
7. Realized as [sikatta].
8. The indirect passive is often referred to as the "adversity passive."
9. Nominative marking of a direct object is to be discussed in the section on case marking.
10. Throughout this dissertation, I will be concerned primarily with these three case particles. I will not touch closely on what Ostler calls the "semantic case particles": kara, de, e, etc. Nor will I go into instances of the genitive particle no.
11. For an example of an exception to (i) see Bedell, PIJL, 1972.



## CHAPTER 2: THE LEXICON

In recent years we have seen the emergence of generative morphology. Since Chomsky's "Remarks on Nominalization" (1970) and Halle's "Prolegomena to a Theory of Word Formation" (1973), several linguists have turned their efforts to organizing the lexicon. One of the major questions has been: what word formation processes are the province of the syntax and which are processes to be accounted for in the lexicon? The first move (Chomsky 1970) was to place all derivational word formation into the lexicon, distinct from syntactic processes.<sup>1</sup> Halle (1973) was one of the first to respond to the need to develop a theory of the organization of the lexicon. He utilizes three components in his model: 1) a list of morphemes, 2) rules of word formation, 3) "a filter containing the idiosyncratic properties of words" (1973:8). The first two components interact to generate "potential words of the language". The third component, the filter, defines the set of "actual words". A potential word "that is not an 'actual word' is marked [-lexical insertion]". It is from the dictionary of words -- actual words -- that lexical items are drawn to be inserted into the syntactic tree. Halle suggests that a particular type of interface exists between the morphological and syntactic components by proposing that the dictionary contains fully inflected forms and that full paradigms are inserted into the syntactic tree where, at some later point in the derivation, all but the appropriate form is filtered out. Halle offers the following illustrative diagram to summarize:





Word formation rules assign each word to a lexical category, specify semantics of the derived word (provided the meaning is compositional), and specify subcategorizational and selectional restrictions. Idiosyncratic information "will be provided by special entries in the exception filter" (p. 10). Word formation, which in Halle's system, is based on deriving a word from a word, would have the following form:

(2)      [verb+al]<sub>N</sub>      [Adj (+i)+ty]<sub>N</sub>      [Adj+en]<sub>N</sub>      [N+ish]<sub>A</sub>

These rules make reference to "verb", "adj", "noun", information that is in the "dictionary". Halle does not suggest that an interaction of the above components (i.e., morpheme list, word formation and filter) is involved every time a speaker uses a word. Instead, he proposes that there is a part of the speaker's "permanent memory" that resembles a word list or dictionary. The word formation component is called upon only when an "unfamiliar word" is encountered or when making up a new word.

### 1. A Word-Base Theory of Morphology

While Halle's "Prolegomena" has more the air of speculation, Aronoff's work begins to articulate in more detail what such a theory should -- or rather could -- look like when adopting certain assumptions, i.e., adopting an "extended standard theory" view of

syntax and assuming a particular role of meaning in generative morphology. Upon assuming the lexicalist hypothesis of Chomsky (1970), Aronoff regards derivational morphology as belonging to the domain of "lexical category" (the lexicon) regardless of compositionality. According to Aronoff, inflection, which contains "purely grammatical markers" (p.2) is distinct from derivational morphology in that it is dealt with in the syntax and is "paradigmatic". Such a model accounts for the observation, so far as it is correct, that derivational and inflectional affixes may not be interspersed and that inflectional affixes will occur at the periphery of words. Aronoff admits that it is not always so easy to determine when an affix is derivational and when it is inflectional. This ambiguity in itself may seem odd, given that the two processes are conceived of as belonging to two different domains, which presumably exhibit characteristically different properties. He focuses on developing a theory of derivational morphology and removes inflection from the scope of concern.

### 1.1 The Word as the Minimal Sign

Aronoff, in proposing a word-base theory of morphology, challenges the claim that morphemes are the minimal meaningful elements of a language. This questions part of the Halle (1973) conception of the components of the morphology. The morphemes (cf. (1) above) in the list constitute the building blocks for deriving words. Both Aronoff (1976) and Halle (1973) share the assumption that words are derived from meaningful units.

Aronoff describes the morpheme based theory of morphology as assuming that the process of combining morphemes (i.e., deriving words)

necessarily results in both semantic and structural compositionality. That is, it does not make sense under this hypothesis to have morphemes that do not have a meaning associated with them. Aronoff's strategy is to demonstrate that while the word can be considered a minimal sign, not all morphemes can be said to have meaning. One argument involves the well-known "cranberry morphs".

- |     |    |           |             |             |
|-----|----|-----------|-------------|-------------|
| (3) | a. | cranberry | boysenberry | huckleberry |
|     | b. | #berry    | #berry      | #berry      |
|     | c. | cran#     | boysen#     | huckle#     |

While the morpheme in (3) b can be assigned a meaning, the morphemes in (3) c can only be given a meaning in a circular way; that is to say, a meaning which is wholly dependent on the meaning of the derived word. These morphemes do not occur in any other word, so there is no testing ground for the compositionality of the meaning of "cran". Aronoff rules out the reasonability of such an approach by way of applying the same strategy to other "berry" words:

- |     |    |            |           |            |            |
|-----|----|------------|-----------|------------|------------|
| (4) | a. | strawberry | blueberry | blackberry | gooseberry |
|     | b. | straw#     | blue#     | black#     | goose#     |

The "morphemes" in (3) b do in fact exist as independent words but their respective meanings do not contribute to the meaning of the derived word in (3) a. Aronoff illustrates this point again with such verbs as re-mit, de-mit, com-mit, trans-mit (p. 112) where it is not possible to pinpoint a single meaning to be associated with "-mit". While it is reasonable to identify morphemes in a word, Aronoff

concludes that, since it is at the level of the word that meaning can be assigned, it is at this level that new words can be built. In short, a word is derived from another word.

"All regular word-formation processes are word-based. A new word is formed by applying a regular rule to a single already existing word. Both the new word and the existing one are members of major lexical categories." (p. 21)

The above review of Aronoff's work briefly summarizes the path which brought him to settle on the above hypothesis. Aronoff has determined that it is the word which always bears some meaning, as opposed to the morpheme which does not always bear meaning. Therefore, given the form of the hypothesis (i.e., "A new word is formed by applying a regular rule to a single already existing word") one can deduce from this the significance of meaning in Aronoff's model of generative morphology.<sup>2</sup>

## 1.2 Defining the Word Formation Rule (WFR)

We should mention that Aronoff envisions WFRs as operating solely within the domain of the lexicon. While it can refer to syntactic, semantic and phonological properties of the word, a WFR cannot refer to the rules of other components. Aronoff considers WFRs as rules that add words to or analyze words in the dictionary. They can be thought of as "once only" rules. Aronoff claims that there is no extrinsic ordering among WFRs; instead, he opts for "negative conditions on the base" (cf. p. 58). The following are the formal properties of the WFRs:

- (5) a. specifies the syntactic and semantic requirements of the base.
- b. "specifies the semantics of its output as a compositional function of the meaning of the base." (p. 58)
- c. assigns the derived word to a lexical category, specifying also its subcategorization.
- d. specifies some morphological operation.
- e. "assigns a boundary to the affix it produces."

### 1.3 Siegel and Allen

Siegel and Allen, like Aronoff, distinguish between derivational word formation and inflectional word formation.

- (i) derivational affixes "invariably" change lexical category:

Allen's example:

- |     |                        |                            |
|-----|------------------------|----------------------------|
| (1) | [possess] <sub>V</sub> | [possess-ion] <sub>N</sub> |
|     | [faith] <sub>N</sub>   | [faith-ful] <sub>A</sub>   |

- (ii) while inflectional endings do not:

- |     |                     |                         |
|-----|---------------------|-------------------------|
| (1) | [sing] <sub>V</sub> | [sing-ing] <sub>V</sub> |
|     | [walk] <sub>V</sub> | [walk-ed] <sub>V</sub>  |

Note: This distinction cannot involve a biconditional dependency of the type: if an affix changes category it is derivational and if it is a derivational affix it changes category. Consider: [paint]<sub>V</sub> [re-paint]<sub>V</sub> where the prefix is "derivational" but it does not alter the category (cf. Allen 1978:60).

- (iii) inflectional endings appear on the periphery of the word, that is, it does not appear between a stem and a derivational affix:

Siegel (1977) and Allen (1978) also use word formation rules, but instead of imposing negative conditions on the base (to effect

extrinsic ordering), they develop the level ordering hypothesis (Siegel 1974, Allen 1978). At the same time, Siegel and Allen moved toward constraining the notion "possible WFR", hence the "adjacency condition".<sup>3</sup> These innovations are just mentioned in passing. We will not go into these issues here since they do not bear directly on our central question, which is: what is the nature of the interface between morphology and syntax?

Returning to our discussion, we will summarize briefly what has developed up to this point in generative morphology. Halle (1973) and Aronoff (1976) both assume that the building blocks for word formation are the minimal meaningful units; for Halle it is the morpheme and for Aronoff it is the word. These theories incorporate word formation rules which have associated with them an affix. The affix, therefore, does not exist autonomously in the lexicon. Derivational word formation is viewed as a distinct process from inflectional word formation. To account for the observation that inflectional affixes attach to the periphery of words, it is assumed that this type of affixation interacts with the syntax; i.e., the inflected word is derived only after the syntactic derivation is complete. This interaction contrasts with the supposed autonomy of derivational word formation. Recently, there has been a move towards unifying the process of word formation. Selkirk (forthcoming), Williams (1979) and Lieber (1980) all assert that stems and affixes are listed in the lexicon. This is at variance with Aronoff who says that only words are listed in the lexicon. An affix, according to Aronoff, is actually part of the word formation rule itself. In addition, Selkirk proposes

a set of context-free rewrite rules which define lexical structures.  
Lexical items from the permanent lexicon are inserted into these trees:

(6) Inflectional Morphology

$$X \longrightarrow \dots (\text{Af}) X_s (\text{Af}) \dots$$

Compound Formation

$$X_s \longrightarrow Y_s \quad Z_s$$

Derivational Morphology

$$(i) \quad X_s \longrightarrow (\text{Af}) Y_s$$

$$X_s \longrightarrow Y_s (\text{Af})$$

$$(ii) \quad X_s \longrightarrow X_r$$

$$(iii) \quad X_r \longrightarrow (\text{Af}) Y_r$$

$$X_r \longrightarrow Y_r (\text{Af})$$

where X, Y and Z are major lexical categories and s and r are stem and root.

The distinction between stem and root encodes the effect of level ordering; that is, level I (cf. Allen 1978 for term) affixes attach to roots while level II affixes attach to stems. Selkirk's system of rewrite rules creates the possibility of extending "level ordering" to inflectional affixes as well. Just as level I affixes cannot intersperse with level II affixes, inflectional affixes cannot appear interspersed with these two levels. Selkirk accomplishes this extension by the rewrite rule:  $X \longrightarrow \dots (\text{Af}) X_s (\text{Af}) \dots$ . The

output of this type of affixation is a word. Since words are not stems or roots, an inflectional affix cannot attach them. Lieber (1980) incorporates some of Selkirk's suggestions. The version of morphology that Lieber offers utilizes a permanent lexicon in which stems and affixes are listed. Like Selkirk, she uses rewrite rules to generate binary branching tree structures. However, these trees are unlabelled; for example, there are no specifications like stem, root affix. We will use Lieber's theory of the lexicon as a point of departure in asking questions about the interaction of morphology and syntax. Therefore, we will concisely detail the points of interest to us in her theory.

## 2. A Summary of Lieber's Organization of the Lexicon

The major category types, noun, verb, adjective, are divided into lexical classes consisting of roots and "related" stems, both of which are listed in the permanent lexicon. The roots and stems are related to one another by morpholexical rules:

$$(7) \quad X \sim X$$

Morpholexical rules define lexical classes. Lieber suggests the following morpholexical rules "to cover the range of the German nominal paradigm":

$$(8) \quad X \sim X_n$$

$$(9) \quad X \sim X_e$$

$$(10) \quad C_o \vee C_o \sim C_o \overset{''}{V} C_o r$$

$$(11) \quad X \sim X_s$$

$$(12) \quad C_o \vee C_o \sim C_o \overset{''}{V} C_o$$





morpholexical framework is the following: the stem allomorphs which are related to roots by morpholexical rules are listed in the lexicon... whereas the output of the morphological readjustment rules...is not." In Lieber's theory, the prediction is that stem allomorphs, by virtue of being listed in the lexicon, are available for derivational word formation. Lieber demonstrates the correctness of this prediction (cf. Chapter 1, section 3 on compounding and stem allomorphy). So far, Lieber's suggestion has been to list the stem allomorphs in the lexicon and to rely on morpholexical rules to define lexical classes. Her next move is "to justify the assimilation of all inflectional processes into the lexicon" (p. 21). Lieber's strategy is to show that just those mechanisms needed to account for derivational word formation are needed by the inflectional word formation cases as well. Lieber organizes the lexicon in the following way:

Lexical Entries ("lexical terminal elements"):

- Include:
- (i) The category and conjugation or declension of an item
  - (ii) Phonological representation
  - (iii) Semantic representation
  - (iv) Subcategorization
  - (v) Diacritics
  - (vi) Insertion frames

(13) Examples: a. PREFIX: in- (phonological representation)  
 semantic representation: negative  
 category/subcategorization: [<sub>A</sub> — [<sub>A</sub>  
 insertion frame: (whatever insertion  
 frames for A's look like)  
 diacritics: Level I

- b. SUFFIX:    -ize       (phonological representation)  
                   semantic representation: causative  
                   category/subcategorization: ]<sub>N</sub> — ]<sub>V</sub>  
                   insertion frame: NP — (NP)  
                   diacritics: Level II
- c. STEMS:     run       (phonological representation)  
                   semantic representation: ...  
                   category: [ ]<sub>V</sub> — ]<sub>V</sub>  
                   insertion frame: NP — (NP)  
                   diacritics: [-linate]

The lexical entries for affixes are the same as for "non-affix morphemes" except that affixes have subcategorization frames: i.e., ]<sub>N</sub> — ]<sub>V</sub>. The insertion frames are actually syntactic insertion frames (strict subcategorization).

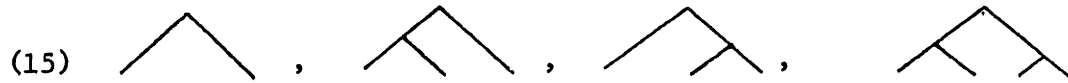
### Morpholexical Rules:

Lieber's summary:

- (14) a. "Morpholexical rules are predicates which define sets of ordered pairs of lexical items, both of which are listed in the permanent lexicon. The relationships defined by morpholexical rules mimic the sorts of relationships defined by more productive morphological processes."
- b. Morpholexical rules are purely classificatory in nature. Unlike other rules of word formation, they do not change category, alter subcategorization or add to, change or subtract from semantic content, however that is characterized. They merely define the limits of a class of items, and specify relatedness between pairs of those items."
- c. "It is purely arbitrary whether or not any given lexical item conforms to the specifications of a lexical class as defined by its morpholexical rules."

## Lexical Structure

Lexical structure is defined by a context-free rewrite rule. This rule generates unlabeled binary branching tree structures (p. 83, example 16):



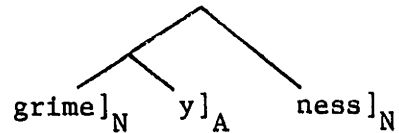
Entries from the permanent lexicon are inserted into the terminal nodes of these structures.

(p. 83, examples 17-19):

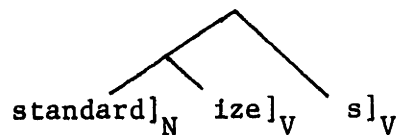
(16) a.



b.



c.



A set of feature percolation conventions are responsible for the labeling of the tree structure:<sup>6</sup>

(p. 85, example 21):

- a. Convention I: all features of a stem morpheme, including category features percolate to the first non-branching node dominating that morpheme.
- b. Convention II: all features of an affix morpheme, including category features, percolate to the first branching node dominating that morpheme.

(p. 88, example 25):

- c. Convention III: If a branching node fails to obtain features

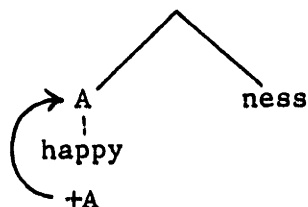
by convention II, features from the next lowest labeled node are automatically percolated up to the unlabeled branching node.

(p. 93, example 31):

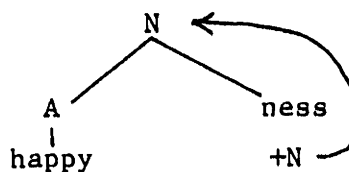
- d. Convention IV (compounds): In compound words in English features from the righthand stem are percolated up to the branching node dominating the stems.<sup>7</sup>

Lieber offers the following illustration of conventions I and II at work (p. 84, example (19) a-b):

(17) a.

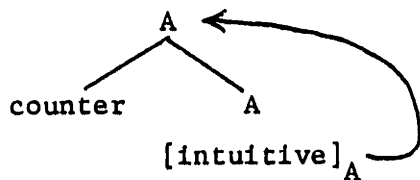
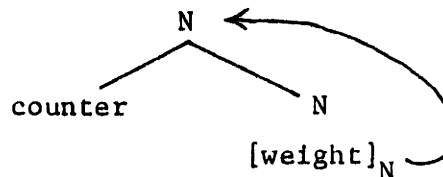
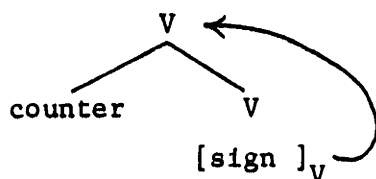


b.



(18) below is an example of convention III (p. 88, example (26)):

(19)



Following a direction suggested by Selkirk, Lieber has eliminated Word Formation Rules. This move is possible since: (i) affixes, as well as stems, are listed in the lexicon, (ii) affixes have subcategorization frames, and (iii) a context-free rewrite rule in

concert with the feature percolation conventions define lexical structures.

In the following discussion, we will assume Lieber's model of the lexicon.

### 3. The Status of Tabe and Sase<sup>8</sup> in the Lexicon

In the Introduction, we outlined a series of questions that would be addressed in this thesis. We remarked that we would assume that derivational word formation takes place prior to lexical insertion. Now, having discussed the organization of the lexicon, we are in a position to show why we hold this assumption.

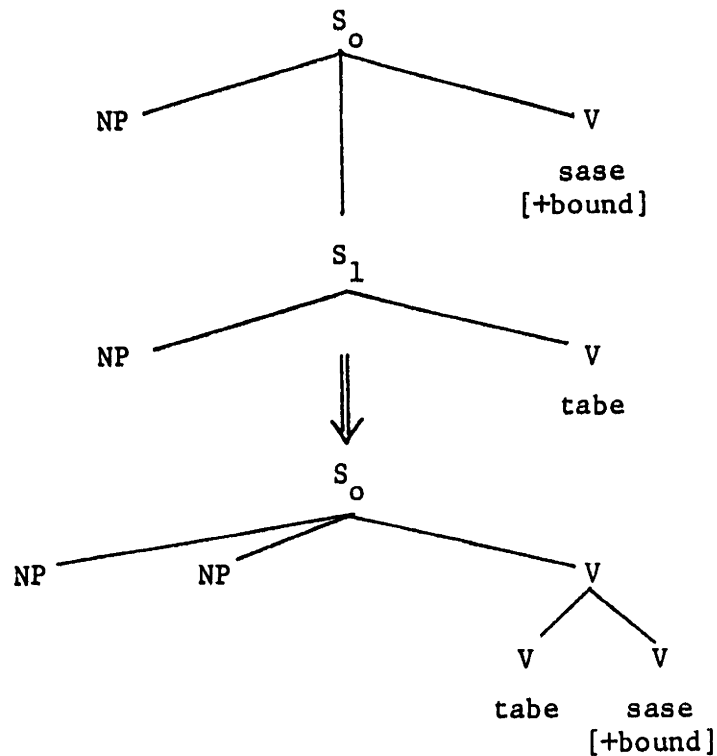
#### 3.1 Sase: Verb or Verbal Affix?

In Chapter 1, we reviewed the various analyses that were based on assuming that sase is a verb. According to these analyses, sase is subcategorized to take a tenseless sentential complement. The structure, however, does not remain complex. The verb of the sentential complement is raised up into the higher clause and made a sister to sase. This verb and sase become a single -- albeit complex -- verb. Though sase<sup>9</sup> is a verb, it is quite unlike the others, in that it must be bound to another verb. Sase<sup>10</sup> does not occur as an independent verb. It is not enough to say that only a sentential complement is required<sup>11</sup> since the verb in the embedded sentence and sase are phonologically a single word.

Therefore, we can see the motivation for predicate raising in the traditional analyses. Let us assume that there is a feature on the verb sase that would trigger predicate raising.<sup>12</sup> We will simply call the feature +bound. If a verb is +bound, it necessarily triggers

predicate raising.

(20)



After predicate raising has taken place, these verbs undergo word formation.

(21)  $[_v \text{tabe}] \quad [_v \text{sase}] \implies [_v \text{tabesase}]$

A lexical entry would look something like:

(22)	TABE	SASE +bound
	$[_v \text{_____}]$	$[_v \text{_____}]$
	<u>NP</u> tabe <sup>13</sup>	<u>S -tense</u> sase

Notice that given the lexicon we are assuming, there is a ready way in which we can characterize the feature +bound:

(23)

$$c] \text{ --- } c]$$

where 'c' is some category

The subcategorization frames express the affixes's dependencies on stems of particular categories. Adopting this method of encoding the dependency of sase on a verb entails calling it a verbal suffix and not a verb. If sase is a suffix, it cannot be inserted into the syntactic tree as an independent verb. By this route we have come to say that the word formation of tabe+sase is accomplished before lexical insertion.

The consequence of such a move severely curtails the complexity of the syntactic tree. We have seen that the complex syntactic trees have conveniently handled some well-known facts concerning antecedent ambiguities (cf. zibun). Ultimately, we must account for these same facts at least as well as the analyses based on the complex syntactic structures did. The task in the following chapters is to do just that.



## FOOTNOTES: CHAPTER 2

1. Chomsky distinguished word formation processes that produced derived nominals from other word formation processes that derive gerundive nominals and inflected words. According to Chomsky, the latter are derived post-syntactically.
2. In order to maintain the word-base theory, Aronoff must utilize rules of allomorphy. These rules apply only to particular morphemes in the environment causing some phonological change. Allomorphy rules are distinct from truncation rules in that they look more like phonological rules and they are distinct from phonological rules since they are restricted to "certain designated morphemes." (Cf. 1976:104 for details of the rule of allomorphy.)
3. The Adjacency Condition: "No rule of word formation can involve X and Y, unless Y is uniquely contained in the cycle adjacent to X."
4. Cf. also Williams (1979). Williams offers the following lexical structure rules:

(1)	root	→	af root, root af
	stem	→	root
	stem	→	af stem, stem af
	word	→	word word

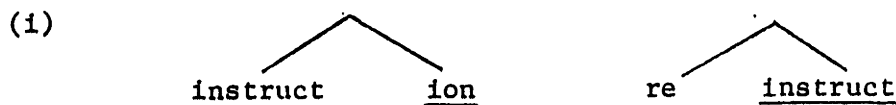
5. "In a traditional framework such as Wurzel's, nominal roots are listed in the lexicon with some indication of their class membership. Class membership is specified as a matrix of features (e.g., [+ r-stem], [+ s-plural], [+ plural umlaut], [+ strong], and so on) rather than as a function of some set of morpholexical rules; the

segmental material associated with a given constellation of features is added only at surface structure, before the operation of phonological rules, by means of morphological readjustment rules. Thus...a noun like Vater would be listed as part of some class which might be distinguished by the feature matrix [+strong, +masculine, -feminine, -r-stem, +plural umlaut, etc.]. A morphological readjustment rule such as (12) would operate at surface structure:" (p. 28)

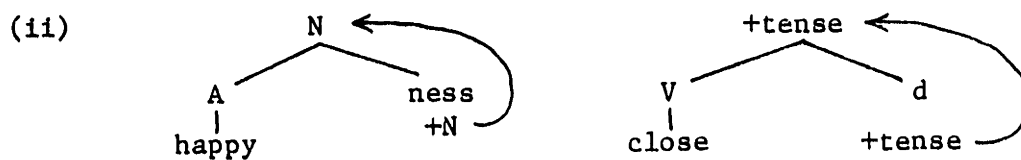
$$(12) \quad V \rightarrow V / \_\_\_] + \text{pl. umlaut}$$

6. Williams (1979:5) defines the notion lexical head by way of the Righthand Head Rule (RHR) (cf. also Lieber's thesis, p. 194):

"In morphology, we define the head of a morphologically complex word to be the righthand member of that word -- thus, the head is underlined in the following:"



Williams suggests that features from the head percolate into the lexical tree:



7. The claim is that conventions I-III are "language universal principles of word formation while IV is language particular."

8. Cf. Shigeru Miyagawa (1980) for an interesting discussion of the status of tabesase based on a theory of "blocking". Miyagawa offers a refinement of Aronoff's notion of blocking.

9. And the other "bound" morphemes: rare, rare~e, ta-i, etc.

10. Not to be confused with the causative of suru 'to do'.
11. This would give a  $V]_s \text{ sase}]_s$  sequence.
12. Somehow this has to be encoded in sase. I am sure there are other possibilities. One that would be a little less direct would be to say: (i) sase takes a tenseless sentential complement and that (ii) the verbs of sentences without tense raise up into the next clause. The raising in this case is indirectly related to sase (i.e., encoded in the -tense complement requirement).
13. In Chapter 4, we will discuss how to represent the arguments of verbs.

## CHAPTER 3: THE PHRASE STRUCTURE COMPONENT

In this chapter, we will discuss the role of configuration and the phrase structure (PS) component. We will claim that grammatical relations in Japanese are not defined configurationally. This claim is necessarily related to our method of characterizing "scrambling".<sup>1</sup> A strict version of the X-bar theory will be adopted.<sup>2</sup> Our conclusion that grammatical relations are not defined configurationally in Japanese is at variance with what has been assumed by much of the work in Japanese syntax. There have been moves in other directions. Tonoike (1979) suggests that the grammatical relations -- subject, object, indirect object -- are primitives. Ostler, on the other hand, wishes to do away with grammatical relations altogether. In the next section we will review Ostler's work on Japanese.

## 1. Ostler on Case Linking and the PS Component

Ostler sets out to build a system which (i) incorporates a mechanism for associating surface cases with thematic roles and (ii) accounts for the non-occurrence of double accusatives and the requirement "that there be at least one nominative NP" in a sentence.<sup>3</sup> The grammar consists of a surface form, a semantic representation and a system of linking that relates these two structures.

## (1) The PS rules:

$$a. \quad S \longrightarrow \begin{bmatrix} \text{NP} \\ \text{NOM} \end{bmatrix} \left\{ \begin{array}{c} S \\ v'' \end{array} \right\}$$

- b.  $V'' \rightarrow \left( \left\{ \begin{bmatrix} NP \\ DAT \end{bmatrix} \right\} \right) V'$
- c.  $V' \rightarrow \left( \left\{ \begin{bmatrix} NP \\ DAT \end{bmatrix} \right\} \right) \left( \begin{bmatrix} NP \\ ACC \end{bmatrix} \right) V$
- d.  $P' \rightarrow NP \quad P$

He points out that the PS rules state (1980:64) "that there be at least one nominative NP (marked with ga) in a sentence, and that there be no more than one accusative NP (marked with o) in a simplex sentence."

#### Lexical Subcategorization Frames:

Verbs are subcategorized to make reference to  $V'$ . That is, "only sisters of the major categories can be mentioned." The following are the possible subcategorization frames for simple verbs:

- (2)
- |    |             |             |
|----|-------------|-------------|
| a. | $\emptyset$ |             |
| b. | ACC         |             |
| c. | DAT ACC     | e. NP+P ACC |
| d. | DAT         | f. NP+P     |

#### Functional Structures (FS):

The functional structures, which are part of semantic representation, provide information concerning thematic relations (p. 66) "borne by NPs to the predicate (verb or adjective) of the S."<sup>4</sup> Ostler proposes a set of universal FS's, referring to them as "cores":

- (3)
- |     |             |
|-----|-------------|
| ___ | BE Adj      |
| ___ | BE Prep ___ |
| ___ | BE Noun     |
| ___ | BE ___      |

On the left is a position for an NP. On the right is a "property, relation or other entity." There is also a set of external operators:

- (4)
- |            |                   |
|------------|-------------------|
| Operators: | C (for cause)     |
|            | A (for affect)    |
|            | P (for potential) |
|            | Ch (for change)   |

These operators can bind argument positions of the core FS's.

(Examples, p. 67):

- (5)
- |    |                              |               |
|----|------------------------------|---------------|
| a. | Taroo wa sinde iru.          | 'T. is dead.' |
|    | Taroo BE dead                |               |
| b. | Taroo wa sinu.               | 'T. dies.'    |
|    | ( <u>Taroo</u> BE dead) Ch   |               |
| c. | Hanako wa Taroo o mita.      | 'H. saw T.'   |
|    | (( T. BE visible) A ___) C H |               |
|    | └────────┘                   |               |

The thematic relations correspond to argument positions -- the theme is the left argument of BE and the agent is the right argument of C.

Linking Rules:

There are two types of linking rules: grammatical and semantic. These rules interpret syntactic structures "in terms of FS's."

Semantic linking rules interpret postpositional phrases as they occur in FS's. An NP with a postposition is "matched" with a free-argument

position. (Example, p. 68):

(6) Semantic Linking Rule

Assign:	NP ni	to	AT ____
	NP kara	to	FROM ____
	NP to	to	COM ____ (i.e., comitative)

The semantic linking rules apply before the grammatical linking rules. The grammatical linking rules link the grammatical cases (NOM-GA, DAT-NI, ACC-O) with argument positions. Ostler offers the following two rules:

(7) Normal Rule

Assign Accusative (NP o) to the leftmost argument.  
 Then assign Datives (NP ni) to the remaining leftmost arguments.  
 Finally, assign Nominatives (NP ga) to what remains. "

(8) Ergative Rule

Assign Nominatives to the leftmost argument.  
 Then assign Datives to what remains.

Individual verbs (or adjectives) select one of the two possible linking rules.

The theory just outlined does away with the notions subject, object and indirect object (i.e., grammatical relations). (p. 70):  
 "Our system posits a direct link between the purely formal cases, positioned according to syntactic rules, and thematic roles, represented in FS." Ostler's response to arguments<sup>5</sup> that the notion subject is distinct is to say that subject can be defined (p. 70) "on the basis of FS: the argument in question will simply be the rightmost one."

As one can see, Ostler's work is quite innovative. In this thesis, we adapt several of his basic ideas. Among them are the importance of the thematic level and the use of case linking rules. However, we do not utilize the phrase structure component in the same way as Ostler does, nor do we posit functional structures based on his universal "cores" and external operators. It has been observed (cf. Hale 1980, Kuno 1980a, Poser 1980, and Simpson 1980) that Ostler's theory runs into a number of problems. One has to do with a redundancy in the system and the other has to do with an improper prediction. Hale (1980) discusses the first of these problems.

#### The Redundancy:

The claim is that the well-known double-o constraint is accounted for by way of phrase structure rules, which allow for only one accusative NP per clause. Hale questions this move: (p. 191) "The question one must ask, particularly in the context of the linking grammar framework, is whether (the expression of the double-o constraint) is indeed the province of phrase structure but rather of the linking rules themselves." Hale notices that there is a redundancy in Ostler's grammar which lies in the fact that the "normal" linking rule (p. 191) "guarantees that a given predicate may have no more than one accusative argument."<sup>6</sup>

#### Functional Structure and Zibun:

Ostler suggests that the antecedent for zibun must be defined in terms of argument positions in FS. Kuno (1980a) offers several examples which bring out a problem inherent to a grammar which does



not distinguish (at any level) between 'kill' and 'cause to die' -- that is, between lexical causatives and derived causatives.

Kuno's examples (3) a-b, (4) a-b, and (5) a-b, pp. 110-111:

- (9) a. John ga zibun no ie de sinda.  
'John died in his house.'
- b. (John BE DEAD) Ch & IN self's house
- (10) a. Mary ga John o zibun no ie de korosita. (unambiguous)  
'Mary killed John in her own house.'
- b. (John BE DEAD) C Mary & IN self's house.
- (11) a. Bill ga Mary ni niisan no John o zibun no ie de  
korosareta. (ambiguous)  
'Bill was adversely affected by Mary's having killed his  
big brother John in his (=Bill's)/her (=Mary's) own house.'
- b. ((John BE DEAD) C Mary) A Bill & IN self's house.

In (9), the reflexive can be coreferent with the argument in the FS (    BE DEAD). But this is not the case in (10) and (11).<sup>7</sup>

In the next section, we will outline a theory of the Phrase Structure component that is, in a sense, a marriage of X-bar and  $W^*$ .<sup>8</sup>

## 2. An Alternative Phrase Structure Rule

Phrase structure rules have always had the role of defining the structure of categories -- that is, relating supercategories,  $\bar{X}$ ,  $\bar{\bar{X}}$ ...  $X^k$ , where X is some lexical category, to X. The head of the phrase is identified as  $X^{n-1}$ , or as X if it is the terminal node.<sup>9</sup>

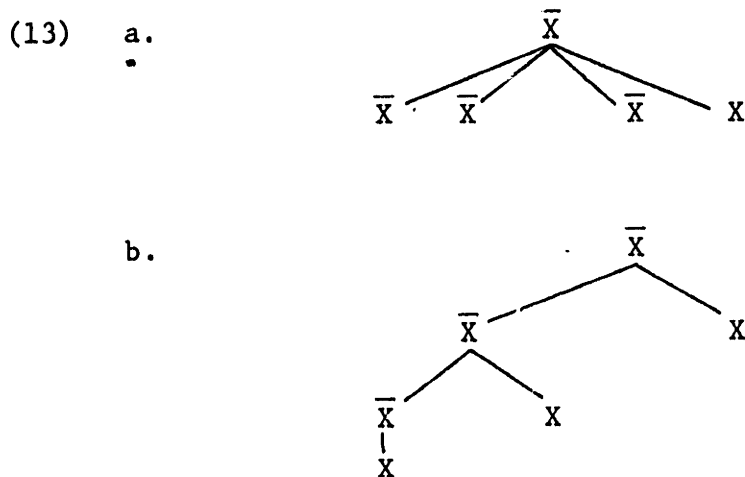
For Japanese, we will propose a phrase structure rule that only specifies depth of structure and indicates the location of the head ( $X^{n-1}$ ). The phrase structure rule itself does not project categories ( $N^n N^{n-1}$ ). Instead, the PS rule projects node-markers, X, which do

not have any categorial content,<sup>10</sup> but are associated with an exponent. The exponent represents the level of structure. The head in each expansion is identified by the reduction in the exponent:

$$(12) \quad \bar{X} \longrightarrow \bar{X}^* X$$

where X is the head

I would like to emphasize that the X's in the above rule do not stand for variables that range over categories. They are to be interpreted as node-markers. This means that (12) should not be understood to mean that each instance of X must be the same category. The following are possible structures defined by these rules:



These structures correspond to (14) a-b, respectively:

- (14) a. Taroo wa Hanako ni hon o agetta.  
'Taro gave Hanako the book.'
- b. Hanako ga yonda hon o  
'The book which Hanako read...'

## 2.1 The Role of the Lexical Item

In a theory that incorporates a PS component that projects only categorially unspecified nodes, the role that a lexical item plays must be carefully defined. It is the lexical item itself that plays an important role in defining the nature of its constituents.<sup>11</sup>

The following are a few examples of lexical entries (cf. Chapter 2 for a discussion of all the information that is associated with lexical items):

(15) HON 'book'

- (1) [N \_\_\_\_]
- (ii) phonological representation
- (iii) semantic representation

TABE 'eat'

- (1) [v \_\_\_\_]
- (ii) phonological representation
- (iii) semantic representation
- (iv) Propositional Argument Structure: ( \_\_, \_\_ tabe)  
(cf. Chapter 4 for a discussion of PAS's)

AGE 'give'

- (1) [v \_\_\_\_]
- (ii) phonological representation
- (iii) semantic representation
- (iv) Propositional Argument Structure: ( \_\_, \_\_, \_\_ age)  
(cf. Chapter 4)

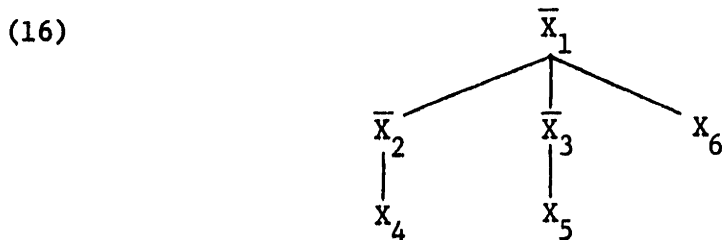
-SASE verbal suffix (causative)

- (i)  $v] \text{ --- } v]$
- (ii) phonological representation
- (iii) semantic representation
- (iv) Propositional Argument Structure: (     (PAS of stem) sase)

In Chapter 4 we define the role of the Propositional Argument Structure. This lexical representation figures quite importantly in determining the grammaticality of a string.<sup>12</sup>

## 2.2 Context Free Lexical Insertion

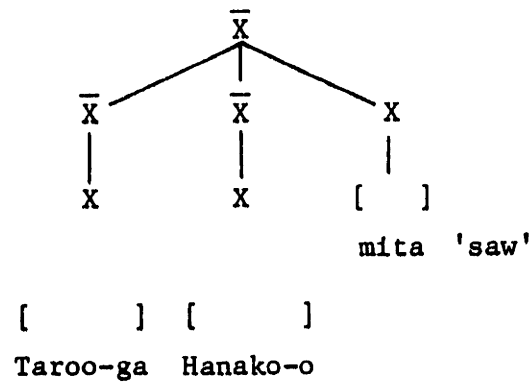
Strict subcategorization is not incorporated in the theory being outlined in this thesis. The proposal here is that lexical insertion is, in fact, context free. Since the phrase structure rules do not provide any categorial information, the only contexts that are available are the dominance relation of the unlabeled nodes:



In (16) we can see that  $\bar{X}_2$  is dominated by an  $\bar{X}$  ( $\bar{X}_1$ ) and that  $X_6$  is also dominated by  $\bar{X}_1$ . But, for the purposes of lexical insertion, we are only interested in the terminal nodes. A lexical item and its associated features are inserted under the terminal nodes. Included in the feature matrix of the lexical item is a specification for case which is later spelled out as GA (nominative), NI (dative) or 0

(accusative).<sup>13</sup>

(1.7)

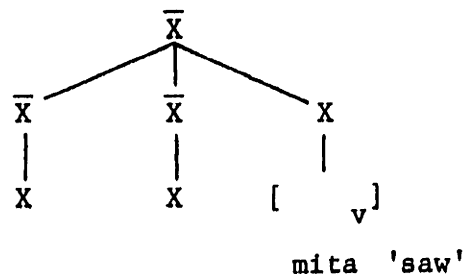


including (among others):

$[ \quad ]$	= feature complex
$\alpha$	= tense
$\beta$	= person
$\gamma$	= case, etc.

There is no way of rigging the lexical insertion to guarantee a particular configurational/lexical item link up (cf. section 4).

(18)



tabeta 'eat' itta 'go'

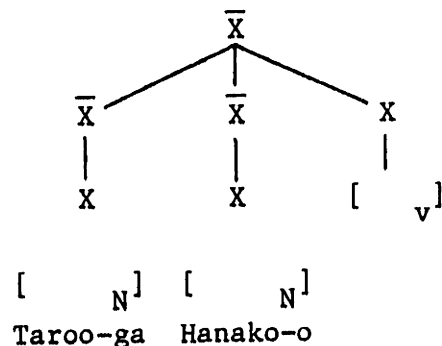
Examples such as (18) will be discussed in Chapter 6 and section 4 of this chapter.

### 2.3 Node Labeling

In Chapter 2, footnote 6, we mentioned Williams's feature

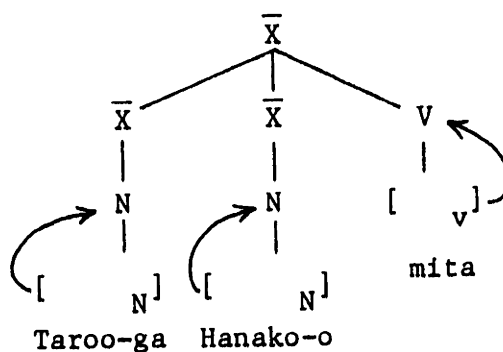
percolation system for the level of the word. Suppose this notion of feature percolation can be extended up into the syntactic tree (i.e., beyond  $X^0$  or lexical level). The unspecified nodes are then given categorial content by the action of the percolating features.

(19)

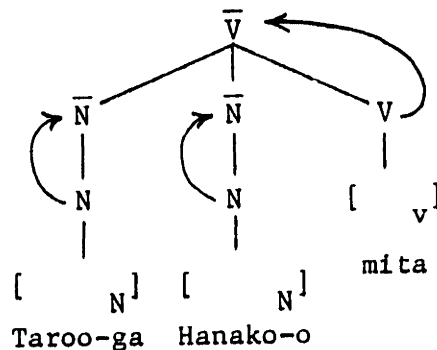


Feature percolation proceeds as follows:  $[\infty F]$  percolates up to  $X^{\max}$ , where  $F$  = features of the lexical item. In the sentence Taroo wa Hanako o mita 'Taro saw Hanako', the features would climb up in the following manner:

(20) a.



b.



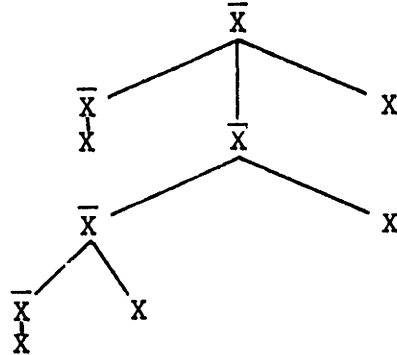
Notice that 'S' ( $\bar{X}$ ) is a projection of V in this theory.<sup>14</sup>

Another, more complex example would be:

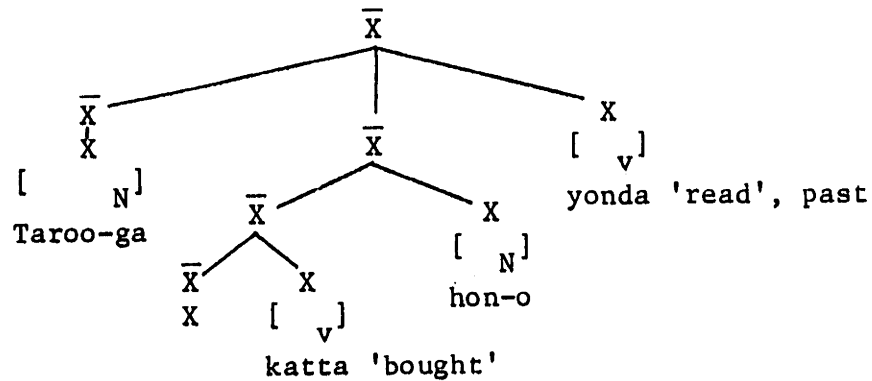
- (21) Taroo wa Hanako ga katta hon o yonda.  
'Taro read the book that Hanako bought.'

The structure would be as in (22):

(22) a.

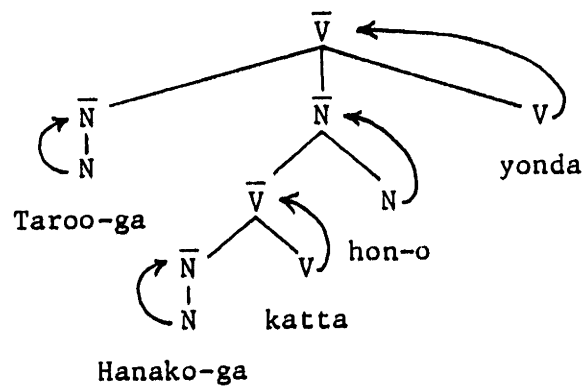


b.



After feature climbing:

c.



We have only shown instances of lexical items that are compatible with the structure they are embedded in. Cases of incompatibility raise the question of overgeneration that is inherent in the interaction of the above PS rules and context free lexical insertion. We will discuss this issue more fully in section 4. Notice that the above way of deriving the base (where the base equals the syntactic tree defined by the PS rules plus lexical insertion and feature climbing, i.e., categorially specified node-markers) renders it impossible to straightforwardly express an [<sub>NP</sub> e] element since lexical items are responsible for providing the features that give cateogrial content to the X's.<sup>15</sup> So, our only stipulation after lexical insertion is that all nodes must be categorially specified, otherwise the tree is ill-formed.

### 3. Scrambling

Hale (1980) points out that an autonomous PS rule (one that is independent of the categorial component) such as the one outlined in this chapter, gives rise to an interesting result. It turns out that "scrambling" is simply a derivative of context free lexical insertion. Thus, a rule of scrambling is not needed in the grammar of Japanese. Whitman, in his paper "Scrambled, Over Easy, or Sunnyside up?" concludes independently that scrambling is not "a rule of grammar at all." Whitman provides numerous arguments against sanctioning a rule like scrambling.

Whitman asserts that "the interpretation of the grammatical relations of complements in Japanese is accomplished on the basis of case marking, not linear order...(thus) a theory of Japanese grammar



based on a fixed underlying order of NPs, reordered by rules like scrambling, ignores this generality.<sup>16</sup> Whitman derives scrambling via lexical insertion. To achieve this result he proposes a "contiguous identical category hypothesis":

#### The Contiguous Identical Category Hypothesis

Linear order of contiguous constituents of the same syntactic category is free, subject to the restrictions of semantic interpretation.

Whitman still assumes that the PS component specifies category dependencies. Thus, to derive scrambling via lexical insertion he proposes the "Minimal Base Hypothesis":

#### The Minimal Base Hypothesis

The major syntactic categories of Japanese consist only of NP and VP. The possible expansions of the category NP include N, N+P(osition), adverb, and S. Oblique postpositions are inserted under P by the rules of lexical insertion. The nominative marker GA and the accusative marker O are inserted by transformation.

Whitman's PS rules are (his example 28):

$$\begin{aligned}
 (23) \quad S &\longrightarrow NP (NP) (NP) (NP) VP \\
 NP &\longrightarrow \left\{ \begin{array}{l} N \\ N+P \\ ADV \end{array} \right\}
 \end{aligned}$$

Notice that since the theory of phrase structure that we have outlined in this chapter does not incorporate PS rules that specify the categorial content of the nodes, we do not have to depend on anything like the Minimal Base Hypothesis to achieve the effect of

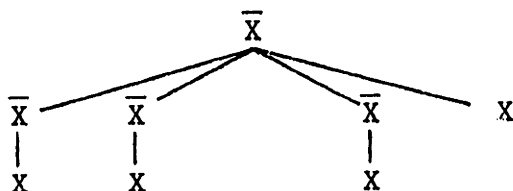
scrambling. Below are some examples of "scrambled" sentences.

- (24) a. Taroo wa Hanako ni hon o agetta.  
 b. Hon o Hanako ni Taroo wa agetta.  
 c. Hanako ni hon o Taroo wa agetta.  
 d. Hon o Taroo wa Hanako ni agetta.

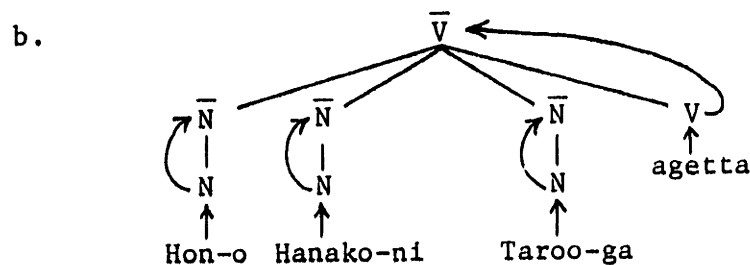
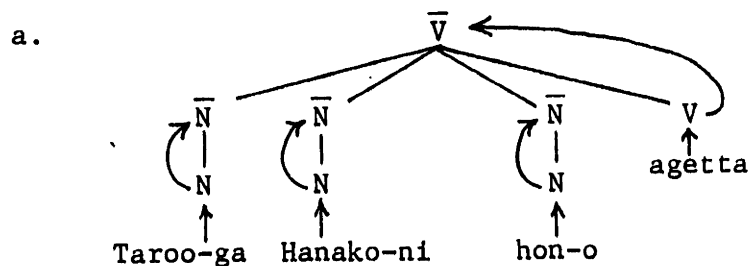
(and any other permutation you can think of)

The above examples would be derived in the following way in the theory we are proposing in this thesis:

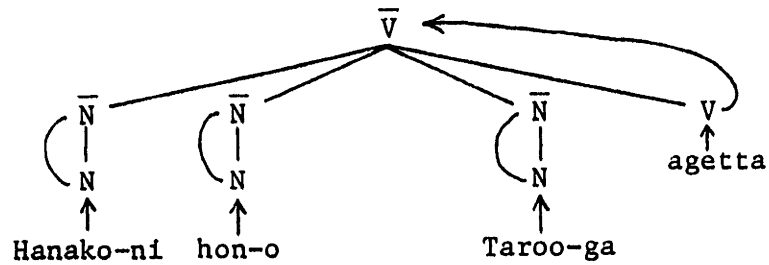
- (25) Basic Structure (for all the above sentences)



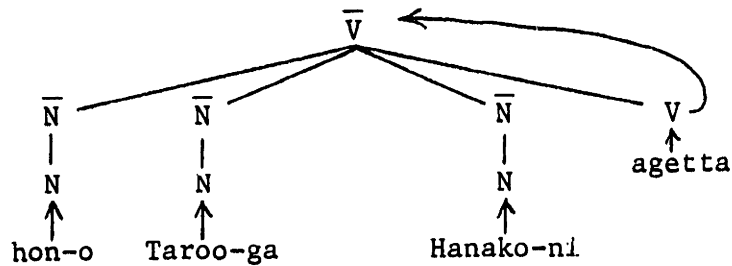
- (26) Lexical Insertion (and feature climbing)



c.



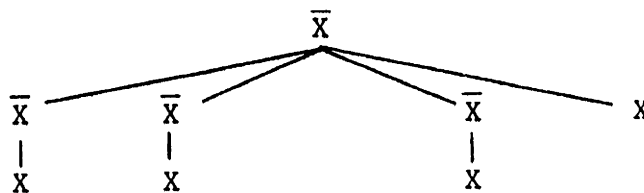
d.



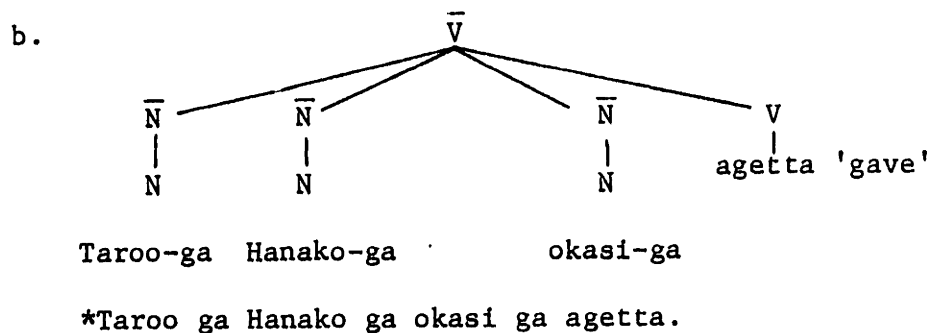
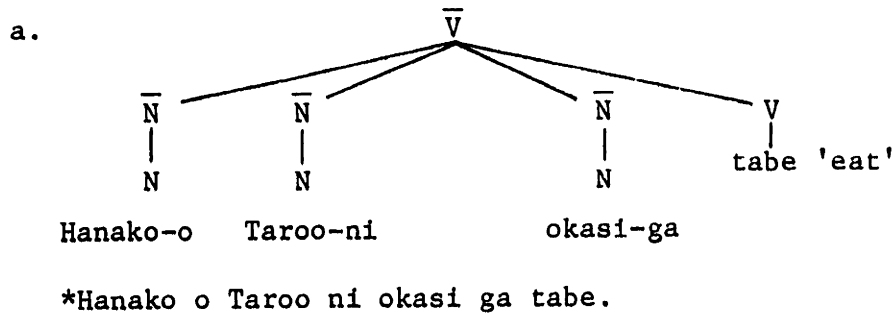
#### 4. Overgeneration

We will now turn to the question of overgeneration. Given the above theory of the role of the PS rules and the role of lexical insertion in deriving the base (i.e., that level of structure which has both phrase structure and category defined), we run into the problem of distinguishing the many ill-formed strings generated by our theory from the well-formed strings. Below are some examples of ill-formed strings:

(27) Basic Structure (i.e., a possible structure)



(28) Theoretically Possible Bases (after lexical insertion and feature climbing)



(28) a-b are all "ungrammatical". In part, structures will be ruled out based on a condition of the type suggested by Chomsky<sup>17</sup> (1980b). He calls this the " $\theta$ -criterion". Roughly, the  $\theta$ -criterion, which is a condition on D-structures, is (1980b) "...that every  $\theta$ -role determined by the lexical entries<sup>18</sup> in the D-structure must be filled by some lexical expression, and that each lexical expression must fill exactly one  $\theta$ -role, where we take a 'lexical expression' to be a major category (NP, S, etc.) that contains lexical elements and is not an 'idiom chunk', ... Thus, ... each NP fills exactly one  $\theta$ -role and each  $\theta$ -role is filled. The assumption that D-structures meet the  $\theta$ -criterion plays a role in eliminating the need for base rules, apart from language-specific idiosyncracies."

One of the most important components that plays a role in

evaluating the base is developed in Chapter 4 (the case linking component). In Chapter 6, we will return to this question of overgeneration.

## 5. Other Consequences

A result of removing the categorial information from the PS rules is that grammatical relations cannot be expressed for Japanese by the Base Component (where the Base Component is defined by the PS rules and the lexical items inserted into the structures produced by the PS rules). Expressing grammatical relations in this fashion -- upon syntactic structures, or rather, configurationally -- has been widely assumed in the literature of Japanese syntax (cf. Kuno and Shibatani). The "subject" of a sentence has been identified as the leftmost NP dominated by S. However, in the proposal here it is not possible to derive "subject" in this manner since the "subject" can appear anywhere in the sentence.

A proposal such as the one offered above necessitates a reexamination of the status of the interaction of the various autonomous components of grammar. The philosophy adopted in this endeavor entails the assumption that the definition of the set of possible (grammatical) sentences is accomplished by virtue of the interaction of highly constrained autonomous components of the grammar. Thus, the PS component will produce structures with nodes unspecified for category; context free lexical insertion will provide lexical items; linking rules (cf. Chapters 4 and 5) will assign case to argument positions in propositional argument structures and an evaluation procedure (cf. Chapters 4 and 6) will set about matching

overt NP's with the arguments of a verb. It is only after this interaction that we can begin to determine the grammaticality of a given string.

Let us return specifically to the PS rules. There are a number of consequences which can be attributed to limiting the PS rules to the task of the hierarchical organization and linear arrangement of constituents:

- (i) Grammatical relations for Japanese cannot be defined on the hierarchical structures defined by the PS rules.
- (ii) It is no longer necessary to stipulate a condition on PS rules that is intended to block the generation of exocentric structures (e.g.,  $V \rightarrow N$ ).

Since it is not possible to express categorial dependencies between 'X' and its sisters via the PS rules, the task must fall elsewhere. At this point, it looks as though the most feasible place to incorporate the expression of these dependencies is in the interpretive component of the grammar. In Chapters 4 and 5 we will develop a grammatical case linking component and define a level of the "propositional argument structure." Both of these notions will play a role in characterizing verb/argument dependencies.

## FOOTNOTES: CHAPTER 3

1. Tonoike (1979) outlines his Case Ordering Approach in which he takes (p. 10) "grammatical functions such as subject, direct object, and indirect object as syntactic primitives rather than as derivative notions as in Chomsky (1965)." Tonoike offers the following set of rules that (p. 12) "impose linear order on constituents":

## Case Ordering Rules (1-3)

- a. Place the verbal in the sentence-final position.
- b. Place the direct object immediately to the left of the verbal.
- c. Place the subject immediately to the left of the verbal if the verbal is intransitive and stative.
- d. Otherwise, place the subject in the sentence-initial position.

Tonoike points out, however, (p. 13) "...in Japanese the word order is relatively free among the nonverbal elements of a clause. The usual way to deal with the free word order among the nonverbal constituents of a clause in Japanese has been to posit a transformational rule called Scrambling. However, it seems that much of the word order variation of a sentence is related to discourse factors and can best be handled in terms of such notions as presupposition, new information, old information, emphasis, etc. If this is the case, (1-3) represent only a tendency rather than a set of rigorous restrictions and perhaps the core grammar of Japanese needs only (1-3a)." This is essentially what we will propose in this chapter, although we do not share the assumption that grammatical functions are primitives.

2. Cf. Chomsky (1970). For discussion motivating a theory of X-bar, see Jackendoff (1977), Bresnan (1976), Selkirk (1974) and Marantz (1978).
3. Cf. Simpson (1980) for a discussion of this point.
4. Cf. also Bresnan (1978) and Rubattel (1978).
5. The arguments are that the need for subject is based on such phenomena as reflexivization and subject honorification.
6. Cf. also Simpson (1980) for a critique of the PS component of Ostler (1979) and (1980).
7. Cf. also Poser (1980) "On Problems of Semantic Interpretation in a Non-Transformational Analysis of the Japanese Causative," unpublished manuscript for an interesting evaluation of predictions about antecedent possibilities of zibun made by Ostler's theory.
8. Cf. Hale (1979) where he discusses W\* type languages. See also Nash (1980).
9. Jackendoff (1977) offers the following phrase structure for English (p. 36):
 
$$(1) \quad X^n \rightarrow (C_1) \dots (C_j) - X^{n-1} - (C_{j+1}) \dots (C_k)$$

where  $1 \leq n \leq 3$ , and for all  $C_i = Y'''$  for some category Y, or  $C_i$  is a specified grammatical formative.
10. Cf. also Hale (1980) for a discussion of this idea.
11. Cf. Chomsky (1980b) and Brame (1979) for discussion of this point.
12. Cf. also work by Bresnan who offers a lexical approach to English.
13. Cf. also Taylor (1971) for a lexical approach to N/case affiliation.



14. Cf. Marantz (1979) for a discussion of S as a maximal projection of V.

15. One could posit a lexical entry with features [+N, -V] etc., but this is not necessary for Japanese.

16. In Chapters 4 and 5 we will show that it is not really possible to define grammatical relations on the basis of case marking. Rather we will offer an alternative account based on "Propositional Argument Structures" and thematic roles.

17. Cf. also Freidin (1978) who defines the notions "Functional Relatedness" and "Functional Uniqueness" (p. 537):

(i) Functional Relatedness

In a sentence  $S_1$ , each lexical NP with nonnull semantic content must fill some argument position in the logical form of  $S_1$ .

(ii) Functional Uniqueness

In a sentence  $S_1$ , no lexical NP may fill more than one argument position for any given predicate in the logical form of  $S_1$ .

18. Cf. Chapter 4, where we discuss thematic roles and argument positions of verbs.

## CHAPTER 4: CASE LINKING IN JAPANESE

In Chapter 3, an alternative theory of phrase structure was proposed. Section 4 was devoted to a discussion of a type of overgeneration inherent in the theory. One suggestion for accounting for these cases of overgeneration was to employ case linking rules. A filtering effect would result by virtue of these rules performing their independent tasks, together with the convention of evaluating an overt case marked NP with an argument position of a verb.

In this chapter a series of case linking rules will be offered. I will assume the PS rules presented in Chapter 3.

## 1. The Case Arrays

The cases that we will be concerned with here are the grammatical cases: GA, NI, and O (like Ostler, I will not discuss the genitive: NO). The following are the case arrays to be accounted for (the order used here reflects the preferred word order):

- |     |                        |
|-----|------------------------|
| (1) | a. NPga                |
|     | b. NPga NPo            |
|     | c. NPga NPni           |
|     | d. NPga NPni NPo       |
|     | e. NPga NPni NPni      |
|     | f. NPga NPga           |
|     | g. NPni NPga           |
|     | h. NPga NPni NPni* NPo |

The case arrays correspond to the following types of sentences:

- (2) NPga  
 a. Mary ga aruita. (intransitive)  
 'Mary walked.'
- (3) NPga NPo  
 a. Mary ga okasi o tabeta. (transitive-simple verb)  
 'Mary ate the cake.'  
 b. Mary ga nihongo o hanaseru. (potential-derived verb)  
 'Mary can understand Japanese.'  
 c. Taroo ga Mary o arukaseta. (O-causative-derived verb)  
 'Taro made Mary walk.'
- (4) NPga NPni NPo  
 a. Taroo ga Mary ni hon o agetta.  
 'Taro gave Mary the book.'
- (5) NPga NPni  
 a. Taroo ga Mary ni au. (transitive-simple verb)  
 'Taro meets Mary.'  
 b. Taroo ga ototoo ni sinareta. (indirect passive-derived verb)  
 'Taro's brother died on him.'  
 c. Taroo ga sensei ni sikarareta. (direct passive-derived verb)  
 'Taro was scolded by the teacher.'
- (6) NPga NPni NPni  
 a. Inu ga Mary ni John ni agerareta. (direct passive with dative)  
 'The dog was given to Mary by John.'  
 b. John ga Mary ni Bill ni awaseta. (causative of 'meet')  
 'John made/let Mary meet Bill.'  
 c. John ga Mary ni Bill ni arukasesaseta. (double causative)  
 'John made/let Mary let Bill walk.'
- (7) a. Mary ga nihongo ga wakaruu. (stative-simple verbs)  
 'Mary understands Japanese.'

- b. Mary ga nihongo ga hanaseru. (potential-derived verb)  
'Mary can speak Japanese.'

(8) NPni NPga

- a. Mary ni nihongo ga wakaru (stative-simple verb)  
'Mary understands Japanese.'
- b. Mary ni nihongo ga hanaseru. (potential-derived verb)  
'Mary can speak Japanese.'
- c. Taroo ni zibun no ketten ga wakaranai. (Shibatani, 1978:56):  
'Taro does not understand self's shortcomings.'

(9) NPga NPni NPni NPo

- a. Taroo ga Mary ni John ni sono koino o agerarete shimatta.  
(indirect passive with accusative)  
'Taro was adversely affected by Mary's having given the dog to John.'
- b. John ga Taroo ni Mary ni okasi o tabesaserareta.  
(passive/causative)  
'John was adversely affected by Taro making Mary eat cake.'

2. Propositional Argument Structures (PAS)

Each verb has associated with it a propositional argument structure (PAS). This corresponds, in part, to Ostler's functional structure representations in that it supplies the information regarding the argument requirements of a given verb. The PAS's differ from FS's in at least two important ways: (i) no semantic decomposition is involved (e.g., the PAS for koros 'kill', is not the same as the PAS for sinase 'cause to die') and (ii) operators (that may bind other argument positions) are not utilized. An argument position corresponds to a thematic relation. The following are the PAS's for aruk 'walk', tabe 'eat' and age 'give':

- (10) a. ( \_\_ aruk) intransitive  
 b. ( \_\_ \_\_ tabe) transitive  
 c. ( \_\_ \_\_ \_\_ age) di-transitive

The thematic roles associated with the argument positions for, say age 'give', are:<sup>1</sup>

- (11) ( agent goal theme age)

These argument positions are arranged in a linear order. Reference to "leftmost" position is actually reference to agent in (11) above. We adopt a thematic hierarchy which roughly incorporates such relations as: agent source, goal, theme. In addition, notions like active versus passive participant will be used to characterize an argument position.<sup>2</sup>

The bound verbalizing morphemes (e.g., causative sase, passive rare, etc.) also have PAS's:

- (12) a. ( \_\_ ( \_\_ ) sase) causative  
 b. ( ( \_\_ ( \_\_ ) rare) adversity passive or indirect passive  
 c. ( ( ( \_\_ ) rare) direct passive  
 d. ( ( ( \_\_ ) rare ~ e) potential

In the case of (12) a-d, the position indicated by ( \_\_ ) is to be filled by the PAS of another predicate:

- (13) a. ( \_\_ ( \_\_ aruk) sase)  
 b. ( \_\_ ( \_\_ \_\_ tabe) sase)  
 c. ( \_\_ ( \_\_ \_\_ \_\_ age) sase)

### 3. The Role of the Case Linking Rules

In the next six sections, a series of case linking rules will be proposed. These linking rules are to be viewed as operative only after word formation. Note that regardless of whether a theory akin to the CSH or the WFH is settled upon (i.e., no matter how one resolves the question of when word formation takes place with respect to lexical insertion), it is in any case necessary for any theory to account for the possible case arrays of (1). The linking rules as they are developed here are not intended to favor either of the above hypotheses. One major difference between the approach adopted in developing these rules and previous accounts of case in Japanese is the non-use of the cycle for some case particles (i.e., GA and O). The linking rules do not recognize the brackets of the inner propositional argument structure. This means that in (13) a above the PAS ( \_\_\_ ( \_\_\_ aruk) ase) is interpreted as ( \_\_\_ \_\_\_ arukase) for the purposes of linking. Questions arise as a result of such an approach. For example, certain "residue" case markings whose explanation requires the equivalent of the cycle will be discussed in section 11 of this chapter.

#### The Case Linking Rules

The purpose of the case linking rules is to assign a linking register to each argument in the PAS of a verb:

(14) ( \_\_\_ aruk) 'walk'

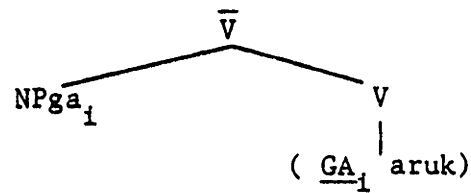
GA case linking rule: (GA aruk)

A completely specified PAS (i.e., argument positions specified

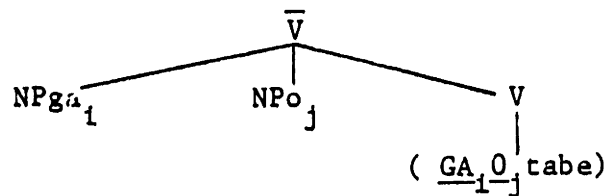
for case) is then utilized for the purpose of "evaluation".

Evaluation is a process that takes place at the syntactic level. Its purpose is to associate an argument position with an overt NP which is a sister to the verb. The NP<sub>ga</sub> in (15a) evaluates the GA argument position in (GA aruk). This evaluation is indicated by the use of indices 1, j, k.

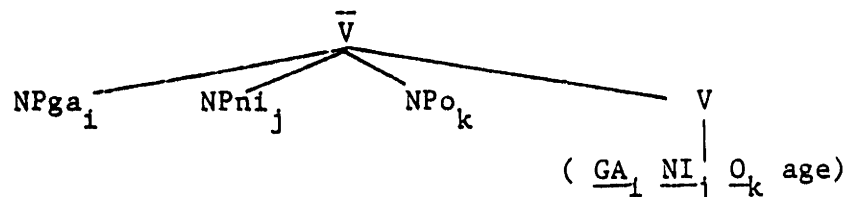
(15) a.



b.



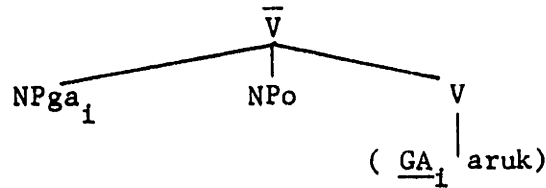
c.



The indexing employed in these examples is simply a convenient notation and should not be confused with other uses of indexing currently used in the literature.

Notice that the case marked noun phrase can be in any position to the left of the verb (i.e., leftmost NP, rightmost NP, etc.). The evaluation procedure acts as a filter for the cases of overgeneration that involve too many overt NP's or the wrong NP's:

(16)



To achieve this effect the following two conditions must be assumed:

- (i) After evaluation has been completed ("completion" is defined either as: there are no more argument positions or NP's to be indexed) all NP's in the clause are indexed.
- (ii) Only one NP per argument position and only one position per NP.

#### 4. The Regular Linking Rule

Of the arrays in (1), we will first discuss the cases in (2) a, (3) a, and (4) a; that is, only arrays involving simple, non-derived verbs will be accounted for. The following rule will properly assign a linking register to the positions in the propositional argument structures of the verbs in these sentences (i.e., ( \_\_ aruk), ( \_\_ \_\_ tabe), and ( \_\_ \_\_ \_\_ age)).

##### Regular Rule

- a. Link leftmost argument GA.
- b. Link rightmost argument O.
- c. Link what remains NI.

The subparts of the rule a, b, and c are extrinsically ordered with respect to one another: a must apply before b and b must apply before c. Ordering GA assignment before O or NI is our way of characterizing the fact that every sentence has a GA marked NP (abstracting away from the use of WA and from the optionality of any argument in a sentence). Reference to "leftmost" argument is an



artifact of the use of relative order of the positions to represent thematic roles. Example (17) below is an illustration of all three parts of the regular rule being used:<sup>3</sup>

- (17) ( \_ \_ \_ age)  
 Regular linking rule: GA: ( GA \_ \_ age)  
 O : ( GA \_ O age)  
 NI: ( GA NI O age)

In the next four sections we will posit special linking rules to account for the case arrays of the direct passive, indirect passive, the NI-causative, dative passive, and stative verbs. Some of the special linking rules proposed in this chapter will ultimately be dispensed with. The purpose of developing these linking rules is to try to discover any properties or regularities that may exist between, say passive, and the case arrays associated with the passive. It does turn out that the indirect passive and NI-causative linking rule has properties that suggest a particular modification of the grammar. This will be discussed in section 6.10. In Chapters 5 and 6, after having worked out an account of "reflexivization", we will be able to eliminate the direct passive and the dative passive linking rules. Therefore, the four sections that follow should be viewed as developing heuristic devices that will ultimately facilitate the process of unraveling the effects of the interaction of the embedding of PAS's, case distribution and the passive.

## 5. The Direct Passive<sup>4</sup> Linking Rule

Like Kuno (1973, 1978), we will maintain a distinction between the

direct and indirect passive. This difference was shown in (18) a-b.

The indirect passive "introduces" an argument while the direct passive does not:

- (18) a. ( \_\_ ( \_\_ ) rare) indirect passive  
b. (( \_\_ ) rare) direct passive

Though the direct passive does not add an argument, it does cause a change. Whatever passive does directly, this change is realized in the case array. We will represent this effect by way of a linking rule. Instead of a above, that is, link leftmost argument GA, the rule is:

- (19) Direct Passive Rule:  
Link rightmost argument GA

(19) substitutes the a part of the regular linking rule. The rest of the regular rule applies unchanged. It should be pointed out that only "empty" argument positions can be linked. Notice that in the direct passive rule the "rightmost" argument is marked GA; this means that the b part of the regular rule does not apply since the rightmost argument is already linked. (20) is an example of a direct passive:

- (20) (( \_\_ \_\_ sikar) are)
- Direct passive: (19): ( \_\_ GA sikarare)
- Regular linking rule: O: not applicable
- NI: ( NI GA sikarare)

(Note: (19) substitutes for the a part of the Regular linking rule.)

## 6. The Indirect Passive and the NI-Causative Linking Rule

A special linking rule is needed to account for the array in (1) c; that is, NPga NPni. Two of the sources of this array are the NI-causative, and the indirect passive.

### (21) The Indirect Passive and NI-Causative Linking Rule

Link the second argument NI

(This rule applies before the regular linking rule.)

NI-causative:

- (22) ( \_\_ ( \_\_ aruk) ase)  
 NI-linking rule: (21): ( \_\_ NI arukase)<sup>5</sup>  
 Regular linking rule: GA: ( GA NI arukase)  
 0: not applicable  
 NI: not applicable
- (23) ( \_\_ ( \_\_ \_\_ tabe) sase)  
 NI-linking rule: (21): ( \_\_ NI \_\_ tabesase)  
 Regular linking rule: GA: ( GA NI \_\_ tabesase)  
 0: ( GA NI 0 tabesase)  
 NI: not applicable

Indirect passive:

- (24) ( \_\_ ( \_\_ sin) are)  
 NI-linking rule: (21): ( \_\_ NI sinare)  
 Regular linking rule: GA: ( GA NI sinare)  
 0: not applicable  
 NI: not applicable

## 7. Linking Rule for the Dative Passive

The particular linking rule for the dative passive substitutes for a of the regular rule:

(25) Dative Passive:

Link second argument GA

(26) ((\_\_ \_\_ \_\_ atae) rare) 'award'

Dative passive: (25): ( \_\_ GA \_\_ ataerare)

Regular linking rule: 0: ( \_\_ GA 0 ataerare)

NI: ( NI GA 0 ataerare)

Notice that if a derived causative is "embedded" in the dative passive only the "higher dative" can be passivized (cf. Kuno 1980).

(27) ((\_\_ ( \_\_ \_\_ \_\_ atae) sase) rare)

Dative passive: (25): ( \_\_ GA \_\_ \_\_ ataesaserare)

Regular linking rule: 0: ( \_\_ GA \_\_ 0 ataesaserare)

NI: ( NI GA NI 0 ataesaserare)

Kuno (1980, examples (7) a-b) shows that it is the "higher dative" that can be passivized:

(6) a. Y. ga T. ni H. ni kunsyoo o ataesasete.

'Y. made T. award a medal to H.'

(7) a. T. ga Y. ni H. ni kunsyoo o ataesaserareta.

'T. was made by Y. to award a medal to H.'

b. \*H. ga T. ni Y. ni kunsyoo o ataesaserareta.

'(lit) H. was made by T. to be awarded a medal to.'

Rule (25), as it was formulated to handle the dative passive of simple non-derived verbs, generates (7) a, but not the ungrammatical (7) b.

#### 8. The Stative Linking Rule

The stative linking rule is utilized by simple verbs like wakaru 'understand' (and adjectives: hosii 'want') which Kuno identifies by way of a feature specification +stative. Derived potentials (e.g., hanas-eru) and desideratives (e.g., yom-i-tai) also employ the stative linking rule. This rule has two parts and substitutes for a of the regular linking rule. Only some verbs trigger (28) b.

#### (28) Stative Linking Rule:

- a. Link rightmost argument GA.
- b. Link leftmost argument NI only if a has applied;  
otherwise, link GA.

It is often noted in the literature that there is a dependency between GA object marking and the occurrence of NI subject marking. Shibatani (1978) has suggested that this apparent dependency is actually an artifact of the surface level constraint that every sentence must have a nominatively marked NP. If a constraint such as the one suggested by Shibatani is correct, then condition (b) in the above rule can be dispensed with.

Simple verb: wakar 'understand'

- (29) ( \_\_ \_\_ wakar)
- Stative linking rule: (28)a: ( \_\_ GA wakar)
- Regular linking rule: GA: ( GA GA wakar)
- O: not applicable
- NI: not applicable

OR:

- (30) Stative linking rule: (28)a-b: ( NI GA wakar)

Derived verb: hanase 'can speak' (optional triggering of the stative linking rule).

- (31) (( \_\_ \_\_ hanas) e)
- Stative linking rule: (28)a: ( \_\_ GA hanase)
- Regular linking rule: GA: ( GA GA hanase)

OR:

- (32) Stative linking rule: (28)a-b: ( NI GA hanase)

OR:

- (33) Regular linking rule: ( GA O hanase)
- (e.g., Mary ga nihongo o hanaseru.)

BUT NOT:

- (34) \* ( NI O hanase)

## 9. List of the Linking Rules

The following is a list of the rules discussed in sections 4-8:

## Linking Rules

### Regular Rule

- a. Link leftmost argument: GA
- b. Link rightmost argument: O
- c. Link what remains: NI

The following special rules substitute for a or apply before the above rule:

NI-Causative and Indirect Passive Linking Rule:

Link second argument: NI

(applies before the regular rule)

Stative Linking Rule (substitutes for a)

- a. Link rightmost argument GA.
- b. Link leftmost argument NI only if a has applied; otherwise like GA.

Direct Passive (substitutes for a)

Link rightmost argument: GA

Dative Passive (substitutes for a)

Link second argument: GA

## 10. An Examination of the Properties of the NI-Linking Rule

The regular linking rule as presented in this chapter is conceived of as applying in a post-cyclic fashion. Non-cyclic application of these rules entails claiming that there are no effects of the application of a rule on an earlier cycle. There are examples that throw into question the assertion that none of the proposed "linking

rules" have any residual effects:

- (35) a. John wa Mary ni au.  
'John meets Mary.'
- b. Bill wa John ni Mary NI awaseta.  
'Bill made/let John meet Mary.'
- (36) a. John wa Mary ni ikaseta.  
'John made Mary come.'
- b. Bill wa John ni Mary NI ikasesaseta.  
'Bill made/let John let Mary go.'

The examples involve the embedding of a PAS that has in it a DATIVE<sup>6</sup> argument. The marking of this argument is traceable to au and -sase. The regular rule alone cannot account for the case arrays in (35) a-b and (36) a-b. Concerning au, let us consider viewing the dative argument as in some way involving inherent case. Inherent case in this instance is distinct from the grammatical cases. That is, it may be that NI in (35) a-b above is not the dative case, but is, in fact, one of the semantic case particles. Among these semantic particles are: kara 'from', e 'to', de 'with'. NI does occur as a location particle:

- (37) Mary wa Tokyo ni itta.  
'Mary went to Tokyo.'

The question is: is the NI in (35) a-b above an instance of semantic linking or grammatical linking? Other semantic particles exhibit the same behavior as the NI in (35) and (36); that is, they don't change when embedded. The verb oku 'send', optionally links

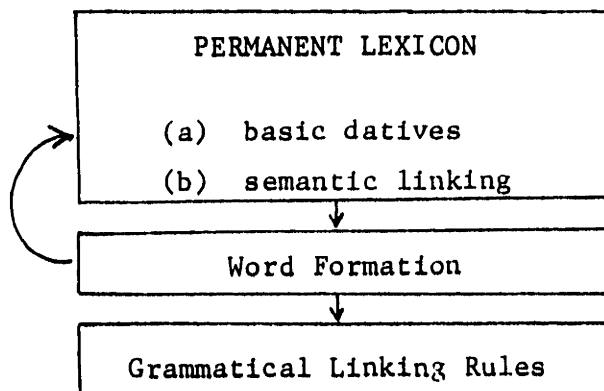


the leftmost argument semantically, kara:

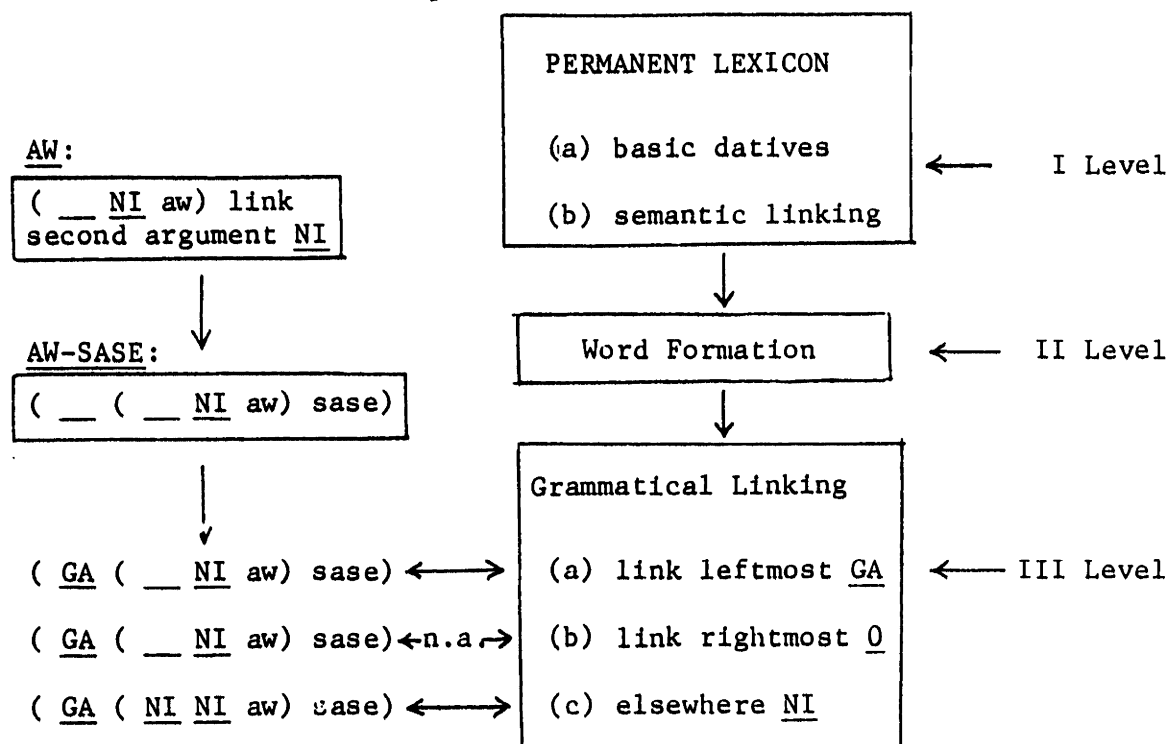
- (38) a. Taroo kara Hanako ni tegami o okutta.  
'Taro sent Hanako a letter.'
- b. Hanako wa Taroo kara tegami o okurareta. (Passive)  
'Hanako was sent a letter from Taro.'
- c. Taroo kara Hanako ni tegami o okuttagatte itta. (Desiderative)  
'Taro looked like he wanted to send a letter to Hanako.'
- d. Hanako wa Taroo kara tegami o okuraretagatte itta. (Passive/  
Desiderative)  
'Hanako looked like she wanted to be sent a letter from Taro.'

The point of this discussion is to show that there are examples of overlap: that is, sometimes semantic cases can be "called upon" to mark an argument of a verb. If a verb (optionally) links a semantic case, that case will show up even when further embeddings take place (i.e., a "residue" effect). If NI sometimes is an instance of this type of linking (i.e., semantic linking) its "anomalous" behavior would be accounted for. It would, in fact, not be anomalous at all but its behavior would be in line with the other semantic case particles.

Given these parallelisms between the NI in aw and other semantic particles, Ken Hale has suggested that the grammar has the following organization:



A morpheme (i.e., tabe, aw, okur) may trigger a particular kind of "linking". In the case of aw, the second argument is obligatorily marked NI. The morpheme okur optionally marks the leftmost argument kara, while the morpheme tabe has no such option. The following are examples of the interaction of the above components:



OKUR 'send':

Level I Link first argument KARA (optionally): ( kara \_\_ okur)  
 ↓  
 Level II Word Formation: Causative -sase: ( \_\_ ( kara \_\_ okur) sase)  
 ↓  
 Level III Grammatical Linking Rules:

The Regular Linking Rule:

GA: ( GA ( kara \_\_ okur) sase)  
O: ( GA ( kara \_\_ okur) sase)  
NI: not applicable

TABE 'eat':

Level I	No semantic linking rules apply:	( __ __ tabe)
↓		
Level II	Word Formation: Causative <u>-sase</u> :	( __ ( __ __ tabe) sase)
↓		
Level III	Grammatical Linking Rules:	
	The Regular Linking Rule: <u>GA</u> :	( <u>GA</u> ( __ __ tabe) sase)
	<u>O</u> :	( <u>GA</u> ( __ <u>O</u> tabe) sase)
	<u>NI</u> :	( <u>GA</u> ( <u>NI</u> <u>O</u> tabe) sase)

It was pointed out earlier that the NI-causative (cf. example 36 in section 11) exhibited a residue effect. The indirect passive as well has the residue NI:

- (39) Taroo wa Hanako ni sinareta.  
'Taro was adversely affected by Hanako's having died.'

The NI-causative linking rule (and the indirect passive) applies, as it stands now, before the regular rule. Following Hale's suggestion, the above ordering relation will be expressed by way of relegating the NI-causative linking rule to the domain of the "permanent lexicon". The NI in aw can be assigned by the same rule that assigns the NI in the indirect passive and in the NI-causative:

NI-causative:KO 'come'

Level I	No semantic linking rules apply:	( __ ko)
↓		
Level II	Word Formation: <u>NI</u> -causative:	( __ ( __ ko) sase)
↓		
Level I	Link second argument <u>NI</u>	( __ ( <u>NI</u> ko) sase)
↓		
Level III	Grammatical Linking Rules:	

## The Regular Linking Rule:

GA: ( GA ( NI ko) sase)O: not applicableNI: not applicable

## Indirect passive:

SIN 'die':

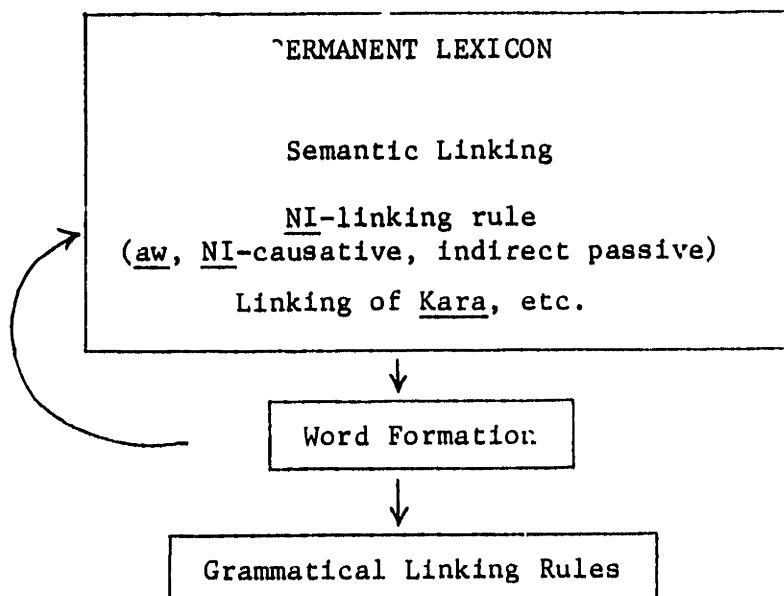
Level I No semantic linking rules apply: ( \_\_ sin)

↓  
Level II Word Formation: Indirect Passive: ( \_\_ ( \_\_ sin) are)↙  
Level I Link second argument NI: ( \_\_ ( NI sin) are)↓  
Level III Grammatical Linking Rules:

## The Regular Linking Rule:

GA: ( GA ( NI sin) are)O: not applicableNI: not applicable

Thus, the grammar is organized in the following way:



By placing the NI-linking rule in the permanent lexicon one is in effect recognizing that there are some "cyclic" rules.

# 11. The Word Formation Rules

It has been observed (cf. Kuno 1973, 1978, for example) that not all derived causatives can be passive:

## (40) O-Causative

- a. Taroo wa Hanako o zibun no ie e kosaseta.  
'Taro made Hanako come to self's house.'  
( GA ( O ko' sase)
- b. Hanako wa Taroo ni zibun no ie e kosaserareta.  
'Hanako was made by Taro to come to self's house.'  
((NI ( GA ko) sase) rare)
- c. Taroo wa Hanako ni sashimi o tabesasetta.  
'Taro made Hanako eat sashimi.'  
( GA ( NI O tabe) sase)
- d. Hanako wa Taroo ni sashimi o tabesaserareta.  
'Hanako was made to eat sashimi by Taro.'  
(( NI ( GA O tabe) sase) rare)
- e. \*Sashimi wa Taroo ni Hanako ni tabesaserareta.  
There is no translation.

## (41) NI-Causative

- a. Taroo wa Hanako ni zibun no ie e kosaseta.  
'Taro let Hanako come to self's house.'  
( GA ( NI ko) sase)
- b. \*Hanako wa Taroo ni zibun no ie e kosaserareta.  
'Hanako was allowed to come to self's house by Taro.'  
(( NI ( GA ko) sase) rare)

- c. Taroo wa Hanako ni sashimi o tabesasetta.  
'Taro let Hanako eat sashimi.'  
( GA ( NI O tabe) sase)
- d. \*Hanako wa Taroo ni sashimi o tabesasetta.  
'Hanako was allowed by Taro to eat sashimi.'
- e. \*Sashimi wa Taroo ni Hanako ni tabesaserareta.  
There is no translation.  
(( NI ( NI GA tabe) sase) rare)

In both the O- and the NI-Causative the direct object cannot passivize (cf. examples (40) e and (41) e). These will be accounted for not by a condition on the word formation process itself, but by a very general principle of "subject" identification. This will be discussed extensively in Chapter 5. As far as the apparent non-passivizability of the NI-Causative is concerned, the approach is much the same -- i.e., there is no condition on the word formation process. This will be discussed further in Chapter 6.

## 12. Cyclic vs. Non-Cyclic Analyses

It was mentioned earlier in this chapter (cf. section 3) that for the purposes of grammatical case linking, the cycle was being abandoned. The pros and cons of such a move will be discussed here by way of comparing Kuno's cyclical approach to case marking and the linear approach of the theory outlined above. We pointed out in Chapter 1 that Kuroda's account of the NI- and O-Causative reflected an intuition that was different from Kuno's intuition about the interaction of case marking with other transformations in the grammar. Both do employ cyclic case marking rules. The output of Kuno's cyclic case marking rules is always a possible case marking array.

Kuroda, on the other hand, allows the system to generate the sequence \*NP o NP o, which is then ruled out by a filter. Like Kuno, we have not relied on any explicit filter to rule out impossible case arrays. Unlike Kuno, however, we have developed case linking rules that apply non-cyclically. In Chapter 1, Kuno's (1973:330) case marking transformations were briefly discussed. These transformations are repeated below:

- (11) a. Indirect Object Marking: Attach ni to the second of three unmarked NP's (noun phrases), that is, the NP's that do not yet have a particle.
- b. Subject Marking: Attach ga to the subject NP.
- c. Object Marking: Attach o to the first non-subject unmarked NP to the left of the main verb if it is [-stative], and ga if it is [+stative].

These transformations account for the same arrays as the regular case linking rules and the stative rule. The case arrays in the NI-causatives and indirect passives are accounted for by the above rules and a special "agentive ni-attachment" rule. In sentences involving a potential -- i.e., derived stative -- the direct object can be either GA or O. The following strategy is adopted by Kuno:

(42) (Kuno, 1973:334-335):

"Let us assume that NPs that are followed by GA or O are unmarked. Since nihongo o is unmarked by definition, and since

it is the first unmarked NP to the left of re [+stative], GA is attached to it by object marking...object marking by GA is optional when the object is already followed by O. Thus...since nihongo is already followed by O, the transformation does not have to apply..." However, (p. 337) "Object marking with O is obligatory (cf. example (24))."

The cyclic case marking rules and the above condition on the application of the rules act in concert with deletion and raising rules to provide the case arrays discussed in section 4.1 of this chapter. In order to compare the two ways of accounting for the possible case arrays in Japanese, I would like to detail Kuno's use of (11) -c, the agentive ni-attachment rule, and (42) by working through derivations involving both simple and derived verbs. A more extensive discussion will follow this section on derivations.

The derivation in (12) below is of the simple transitive verb whose direct object is unexceptionally marked O.

(12) (Kuno, 1973:330):

- a. Deep structure: [John]<sub>NP</sub> [Mary]<sub>NP</sub> [okane]<sub>NP</sub> [yatta]<sub>V</sub>.  
[-stative]  
'John gave money to Mary.'
- b. Indirect Object Marking: [John]<sub>NP</sub> [Mary]<sub>NP</sub> ni [okane]<sub>NP</sub> [yatta]<sub>V</sub>.  
[-stative]
- c. Subject Marking: [John]<sub>NP</sub> ga [Mary]<sub>NP</sub> ni [okane]<sub>NP</sub> [yatta]<sub>V</sub>.  
[-stative]
- d. Object Marking: [John]<sub>NP</sub> ga [Mary]<sub>NP</sub> ni [okane]<sub>NP</sub> o [yatta]<sub>V</sub>.  
[-stative]

John wa/ga Mary ni okane o yatta.  
'John gave money to Mary.'



The sentence in (43) involves a "stative" predicate. The feature [+stative] triggers the GA object marking rule in (11) c above:

- (43) a. Deep structure: [John]<sub>NP</sub> [Mary]<sub>NP</sub> [suki da]<sub>V</sub>.  
[+stative]  
'John likes Mary.'  
John ga Mary ga suki da.

(16) is the first derivation that illustrates the cyclic application of (11) a-c. The verb hanas 'speak', is embedded in the potential eru. Notice the multitude of cases on the NP-- nihongo -- in (16) c (i.e., (V)). The 0 is deleted by the GA/O deletion rule. (16) c (V) would be ungrammatical if left as is.

(16) (p. 333):

- a. Deep structure: [John]<sub>NP</sub> [John nihongo hanas-ru]<sub>S</sub>  
re-ru.
- b. First cycle
- (i) Subject Marking: [John] [John ga nihongo hanas-ru]<sub>S</sub>  
re-ru.
- (ii) Object Marking: [John] [John ga nihongo o hanas-ru]<sub>S</sub>  
re-ru.
- c. Second cycle
- (i) Equi-NP Deletion<sup>7</sup>: [John] [∅ nihongo o hanas-ru]<sub>S</sub> re-ru.
- (ii) Aux Deletion: [John] [nihongo o hanas-∅]<sub>S</sub> re-ru.
- (iii) Verb Raising<sup>8</sup>: [John] [nihongo o] hanas-re-ru.
- (iv) Subject Marking: John ga nihongo o hanas-re-ru.
- (v) Object Marking: John ga nihongo o ga hanas-re-ru.
- (vi) Ga/O Deletion: John ga nihongo ∅ ga hanas-re-ru.

Example (21) below could have been derived from (16) by opting for not marking nihongo o with ga:

(21) (Kuno, 1973:335):

John ga nihongo o hanas-(r)eru.  
'John can speak Japanese.'

The next sentence involves the embedding of the desiderative ta(i). The subject in example (25) is in the third person. According to Kuno (1973:336), "The ta-i derivatives require that their subject be the first person pronoun (but) when the subject is a third person, the ta-gar-(r)u derivatives must be used". Ta-i, like the potential (rare ~ e), optionally marks the object ga. However, when ta-i is embedded in -gar-(r)u, this option is no longer available.

(22) (Kuno, 1973:336):

a. Deep structure:      Boku [boku hon yom-ru]<sub>S</sub> ta-i.  
                             I      I    book read      want  
                             'I want to read the book.'

Changing the subject to "John", the sentences can be embedded in -garu-:

(25) John [John ga hon ga/o yom-i-ta-i]<sub>S</sub> gar-ru.  
      John ga hon o yom-i-ta-gar-(r)-u.  
      'John looks like he wants to read the book.'

The above derivation makes use of the last statement in (42):  
(Kuno, 1973:337) "Object marking with o is obligatory". Notice that  
(44) a is ungrammatical:

- (44) a. \*John ga hon ga yom-i-ta-gar(r)u.  
 'John looks like he wants to read the book.' (Kuno, 1973:340)

In a derivation of the indirect passive with an intransitive sentence the Agentive-NI attachment is used to mark the "subject" of the "main" verb, hur 'fall':

- (37) John ga ame ni hur-(r)are-ta.  
       rain by fall-passive-ed  
 'John was adversely affected by (l't.) the rain falling,  
 John was rained on.'
- (38) a. Deep structure:           John [ame hur-ru]<sub>S</sub> rare-ta.  
       b. First cycle  
           (1) Subject Marking:   John [ame ga hur-ru]<sub>S</sub> rare-ta.  
       c. Second cycle  
           (1) Agentive-NI  
               Attachment:       John [ame ga ni hur-ru]<sub>S</sub> rare-ta.  
               Ga/0 Deletion:   John ga ame  $\emptyset$  ni hur-rare ta.

Adversity (indirect) passive/transitive sentence (p. 340-41):

- (39) a. Deep structure:           John [Mary okane nusum-ru]<sub>S</sub>  
   money steal  
   rare-ta.  
   'John was adversely affected by  
   Mary stealing money.'
- Object Marking:       John ga Mary ga ni okane o o  
   nusum-rare-ta.
- Ga/0 Deletion:       John ga Mary  $\emptyset$  ni okane  $\emptyset$  o  
   nusum-rare-ta.

The derivations of the indirect passives (examples 38-39)  
 illustrate the use of: (1) the special agentive ni-attachment rule

and (ii) the redundant marking of the direct object, okane.

The "agentive ni-attachment" rule is also called upon in the NI-causative to mark the causee:

The NI-Causative:

(43) NI causative (intransitive construction)

- a. Deep structure:            John [Mary ik-ru]<sub>S</sub> sase-ru.
- Subject Marking:    John ga Mary ga ni ik-sase-ru.
- Ga/O Deletion:     John ga Mary  $\emptyset$  ni ik-sase-ru.

The deep structure source of the O-causative differs from that of the NI-causative in the following way: the O-causative involves a "transitive" structure (Mary is an upstairs direct object):

The O-Causative: (p. 342)

(44) O causative (intransitive construction)

- a. Deep structure:            John Mary [Mary ik-ru]<sub>S</sub> sase-ru.
- b. First cycle
  - (i) Subject Marking:    John Mary [Mary ga ik-ru]<sub>S</sub> sase-ru.
- c. Second cycle
  - (i) Equi-NP Deletion: John Mary [ $\emptyset$  ik-ru]<sub>S</sub> sase-ru.
  - (ii) Verb Raising:       John Mary ik-sase-ru.
  - (iii) Subject Marking:   John ga Mary ik-sase-ru.
  - (iv) Object Marking:    John ga Mary o ik-sase-ru.

The next two derivations illustrate the ways in which a noun phrase can be marked NI (i.e., the indirect object transformation and the agent ni-attachment rule).

**The NI-Causative (transitive construction):** (p. 343)

(46) Ni causative (transitive construction)

- a. Deep structure: John [Mary hon yom-ru]<sub>S</sub> sase-ru.
- b. First cycle
- (i) Subject and  
Object Marking: John [Mary ga hon o yom-ru]<sub>S</sub>  
sase-ru.
- c. Second cycle
- (i) Agentive-Ni  
Attachment: John [Mary ga ni hon o yom-ru]<sub>S</sub>  
sase-ru
- Ga/o Deletion: John ga Mary  $\emptyset$  ni hon  $\emptyset$  o yom-  
sase-ru.

(47) 0 Causative (transitive construction)

- a. Deep structure: John Mary [Mary hon yom-ru]<sub>S</sub>  
sase-ru.  
Indirect Object  
Marking: John Mary ni hon yom-sase-ru.

## The Direct Passive

The passive rule performs three tasks: (i) adds -rare to the verb, (ii) switches order of NP's and (iii) adds the particle NI to 'John'. (Notice the passive is a third source for NI.) Example (61) below demonstrates Kuno's reason for ordering the Indirect Object Marking transformation before the Pure Passive formation:

- (59) [John]<sub>NP</sub> [Mary]<sub>NP</sub> [kunsyoo]<sub>NP</sub> atae-ta.  
medal give-past  
'John gave Mary a medal.'

- (61) a. Pure Passive Formation:      Kunsyoo John ni (yotte) Mary  
    medal                    by  
    atae-rare-ta  
    give-passive-past
- b. Subject Marking:      Kunsyoo ga John ni (yotte) Mary  
    atae-rare-ta.
- c. Object Marking:      \*Kunsyoo ga John ni (yotte) Mary o  
    atae-rare-ta.

Thus, it is assumed that the indirect object marking transformation precedes pure passive formation:

- (62) a. Indirect Object Marking:      John Mary ni kunsyoo atae-ta.  
    to medal      give-past
- b. Pure Passive Formation:      Kunsyoo John ni (yotte) Mary ni  
    by  
    atae-rare-ta.  
    give-passive
- c. Subject Marking:      Kunsyoo ga John ni (yotte) Mary ni  
    atae-rare-ta.
- d. Object Marking:      (does not apply)

The necessity for having this extrinsic ordering is a consequence of: (i) viewing the passive rule as involving NP movement and (ii) having case marking sensitive to the relative order of NP's in the syntactic tree.

The following is a summary of the transformations discussed in this last section:

## 1. Agentive-Ni Attachment:

Mark the subject of the constituent clause with ni.

## 2. Equi-NP Deletion:

Delete the subject of the constituent clause under identity with the object (or the subject, depending upon individual verbs) of the matrix sentence.

## 3. Aux Deletion:

Delete the tense auxiliary of the constituent clause that is not dominated by the NP node.

## 4. Verb Raising:

Attach the tenseless verb of the constituent clause to the left of the matrix verb. (Note: The VP node and the S node of the constituent clauses are deleted by the tree-pruning convention.)

## 5. Indirect Object Marking:

Attach ni to the second of three unmarked NP's. (Note: An NP is unmarked if it is not followed by any particle or if it is followed only by o or ga.)

## 6. Pure Passive Formation:

Place the direct object or dative object NP in subject position, and place the original subject NP after it with ni (yotte) attached.

## 7. Subject Marking:

Attach ga to the subject NP.

## 8. Object Marking:

If the matrix verb is [-stative], attach o to the first unmarked non-subject NP to the left of the verb. If the matrix verb is [+stative], attach ga to the first unmarked nonsubject NP to the left of the verb. In the latter case, the transformation is optional if the object is already followed by o.

## 9. Ga/Ni Conversion:

Attach ni to the first NP-ga of the NP-ga NP-ga verbal construction.

## 10. Ga/O Deletion:

Delete ga and o if they are followed by some other particle.

Now I would like to compare the two approaches to case marking. They can be summarized as follows:

### Theory of Cyclic Case Marking

#### Assumptions:

- (1) Deep structure reflects semantic distinctions (cf. NI versus O causative: NP ga NP ni NP<sub>o</sub> can come from different deep structures).
- (2) Rules: (i.e., transformations) map deep structures onto surface structures.
- (3) Transformations may: (i) case mark NP's (cf. agentive ni-attachment, indirect object marking, pure passive formation, subject marking, object marking, GA/NI conversion), (ii) delete elements (cf. equi-NP deletion, aux deletion, GA/O deletion), (iii) move elements (cf. verb raising, pure passive) and (iv) substitute a lexical item -- 'John' → zibun.
- (4) The above transformations apply cyclically.

#### Ramifications for the system given the above assumptions:

- (1) Because the case marking transformations apply cyclically, case particles must be allowed to stack up on a noun phrase in order to derive:

- (45) Mary wa nihongo ga hanaseru.  
'Mary can speak Japanese.'
- (46) Mary wa hon o yomitagaru.  
'Mary looks like she wants to read.'

The object marking rule is stated as: "Attach O to the first nonsubject unmarked NP to the left of the main verb if it is [-stative],



and ga if it is [+stative]." Therefore, an assumption must be made (1973:334-335): "Let us assume that NPs that are followed by GA or 0 are unmarked. Since NP<sub>0</sub> is unmarked by definition, and since it is the first unmarked NP to the left of re [+stative], GA is attached to it by object marking...object marking by GA is optional when the object is already followed by 0. Thus...since (if an NP) is already followed by 0, the transformation does not have to apply." However, (p. 337) "object marking with 0 is obligatory (cf. example (24))."

(2) The GA/0 deletion transformation is a consequence of cyclic case marking coupled with the assumption in (1). This transformation pares down the number of particles on an NP to one.

(3) Another result is that there are three ways an NP can be marked with NI: (i) Agentive ni-attachment (employed in NI-causative and the indirect passive), (ii) indirect object marking, (iii) pure passive formation ("...place the original subject NP after ii (direct object or dative object NP) with ni(yotte) attached").

(4) Though not mentioned in the summary of transformations the rule of reflexivization must follow pure passive formation.

(5) The grammatical case marking rules -- i.e., indirect object marking, subject marking and object marking -- do not apply in a block but are extrinsically ordered with respect to other rules -- i.e., the pure passive rule.

(6) Because the object marking rule follows the pure passive rule, the indirect object rule must precede passive (cf. derivations (59), (61), and (62)). One immediate consequence is that the passive rule, which permutes either a "direct object" or "dative NP" with a subject

NP, can front (subjectivize) NP's marked with NI. The subject marking rule will mark subject NP's (defined configurationally as leftmost NP dominated by S). This gives rise to an NP marked: NP ni ga. Recall that the particle deletion rule only deletes ga or o. (47) below is ungrammatical:

- (47) \*Mary ni ga John ni kunsyoo o ataerareta.  
'Mary was awarded the medal by John.'

In the cyclic case marking theory of Kuno (1973) grammatical and relational terms are referred to within a single rule. Recall that the pure passive rule makes reference to the "direct object" and to "dative object". The rule could have been written to refer only to configurational information -- i.e., indirect object: "the second of three unmarked NPs" and the direct object: "first unmarked non-subject NP to the left of the verb" -- so the criticism does not involve any inability to express in a consistent way the target NP. Rather, the point to be made here is that reference to grammatical and relational terms is interchangeable. The question becomes: is there a principled way to choose the appropriate notion to be used when characterizing a particular phenomenon?

### Theory of Non-Cyclic Grammatical Case Linking

#### Assumptions:

- (1) Deep structure does not play a role in distinguishing the NI and the O causatives.
- (2) The phrase structure component does not express verb/argument dependencies (cf. PS rule:  $\bar{X} \rightarrow \bar{X}^* X$ ).

- (3) It assumes propositional argument structures for verbs.
- (4) Grammatical case linking takes place after word formation.
- (5) Basic datives and semantic linking take place "cyclically".

Ramifications for the system given the above assumptions:

The second assumption necessitates that insertion is context free. This type of insertion yields a scrambling effect (cf. Hale 1980 and Chapter 3 of this thesis). Another effect of the above assumptions is overgeneration, which then must be accounted for by a system of evaluation (cf. section 4.3).

#### Comparisons of the Two Theories

The two theories have a number of properties in common. The ordering of Kuno's transformations are, in part, mirrored in the organization of autonomous components of the non-cyclic theory. For example, Kuno's agentive ni-attachment transformation is utilized by the NI-causative and indirect passive which are the same two cases that trigger the NI linking rule of the permanent lexicon. This transformation is ordered very early; in fact, it is the first transformation. The extrinsic ordering of the "cyclic" theory parallels the ordering imposed by the organization of the components of the non-cyclic theory.

Although the cyclic theory involves complex syntactic structures at some level (i.e., level of deep structure) the surface structure is a simplex one. The change in structure is effected by means of verb raising and tree-pruning. Verb raising is recognition of the lexical integrity of such complex verbs as tabe-sase-ta. The non-cyclic

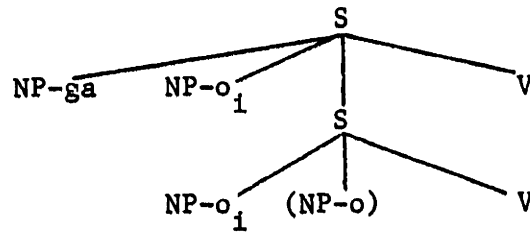
approach characterizes the above process in a word formation component which is independent of the syntax.

Among the differences between the two theories is the type of rules offered by the theories. The WFH (word formation hypothesis) does not rely on Equi-NP deletion, Aux deletion, GA/NI conversion and GA/O deletion. Notice that the majority of the above transformations are deletion rules. The reason for their necessity is related to the proliferation of lexical and case information associated with the interaction of complex syntactic structures and cyclic case marking rules. The most significant of these deletion rules is the GA/O deletion rule. The effect of the cyclic case marking rules followed by the GA/O deletion rule parallels the effect of applying the grammatical linking rule "post cyclically".

Another discrepancy between the cyclic theory and the non-cyclic theory stems from the assumption that deep phrase structure configuration reflects semantic differences. Recall that Kuno (1973, 1978) makes a distinction at deep structure between the NI and the O causative. Let us assume that there is a single sase which subcategorizes as follows: [ NP NP S \_\_\_ ] and [ NP S \_\_\_ ]. The first NP is the subject NP, the second NP is the controller of the subject of the sister S.<sup>10</sup>

These two structures are supposed to account for the semantic difference between the NI and the O causative. It has been pointed out many times in the literature that it is not obvious which structure corresponds to the O or the NI causative. Kuroda suggests that both the NI and the O causatives are derived from:<sup>11</sup>

(48)



The 0-causative is derived via equi-NP deletion while the NI-causative is derived via a rule called counter equi (cf. Chapter 1). The rule of counter equi deletes the matrix object (accusatively marked NP). This rule is then followed by a rule of "subject ni raising" (cf. Chapter 1). But if the NI and 0 causative have different meanings, then given such an analysis, the assumption that deep structure reflects the semantic differences of these surface strings is thrown into question.

The major difference between a theory of grammar such as the one proposed by Kuno (1973, 1978 and 1980) and the one outlined here is the apportioning of rule types to autonomous components of the grammar versus positing only one rule type (i.e., transformations as in Kuno *ibid*). Some of the points made here have been minor observations which have been closely related to various technical matters. Both theories account for most of the data. The greatest difference between them is in the way extrinsic ordering is used. Kuno must use extrinsic ordering to a much greater extent than we do. For example, it was pointed out that the extrinsic ordering of indirect object marking with passive and direct object marking is made necessary because of the way passive is done (i.e., NP movement). In our theory, ordering is, at least partly, a derivative of the organization of the components (i.e., output of one component is the input to another component).

At the empirical level the two theories make different predictions concerning passive/causative sentences. Kuno's theory predicts that (49) a-b are both good. Our theory predicts that only (49) b is grammatical. Judgments are not perfectly clear, but the consistent response among speakers who can get these passive/causative sentences (they are not even possible for all speakers) is that (49) b is much preferred to (49) a. (49) a is considered very marginal at best.

(49) a. ??Mary wa Taroo ni Ziroo ni homeraresaseta.

b. Mary wa Taroo o Ziroo ni homeraresaseta.

'Mary made Taro be praised by Ziro.'

The discussion so far has focused on case marking. In the next chapters, we will extend our critique to include passive and reflexivization. We will show how it is possible to attribute some of the effects of the two passives -- dative and direct passives -- to independently necessary properties of the grammar, enabling us to eliminate the special passive linking rules.

## FOOTNOTES: CHAPTER 4

1. Cf. Gruber 1965, Jackendoff 1972, Ostler 1979, Inoue 1976, for discussions on Thematic Relations.

2. We will not discuss place particles. Examples of these particles are:

Kuno (1973:329): John ga Tokyo ni itta.

'John went to Tokyo.'

John ga Tokyo kara kita.

'John came from Tokyo.'

John ga kawa de oyoida.

These particles are accounted for by a process different from the grammatical linking process outlined here in this chapter.

3. The following is a list of verbs and their associated Propositional Argument Structures. The thematic relations we will refer to are:

Agent, Experiencer, Goal and Theme. This list is not intended to be comprehensive.

Transitive: (agent, theme V)

( <u>agent</u> , <u>theme</u> miru)	'see'
(__, __ hiku)	'play'
(__, __ butu)	'hit'
(__, __ hageru)	'throw'
(__, __ yomu)	'read'
(__, __ taberu)	'eat'
(__, __ utau)	'sing'
(__, __ sinjiru)	'believe'
(__, __ ukeireru)	'accept'
(__, __ hanasu)	'speak'
(__, __ kau)	'buy'
(__, __ katazukeru)	'finish'

Transitive: (agent, goal, theme V)

( <u>agent</u> , <u>goal</u> , <u>theme</u> ataeru)	'award'
(__, __, __ ageru)	'give'
(__, __, __ okuru)	'send'
(__, __, __ todokeru)	'deliver'
(__, __, __ watasu)	'hand'

Intransitive: (agent V)

( <u>agent</u> iku)	'go'
(__ kuru)	'come'
(__ aruku)	'walk'
(__ okiru)	'get up'
(__ dekakeru)	'go out'
(__ haneru)	'jump'
(__ tobu)	'fly' (as in 'bird')

Intransitive: (theme V)

( <u>theme</u> otiru)	'fall'
(__ wareru)	'break' (as in 'window')
(__ tumazuku)	'trip'

Intransitive: (experiencer V)

(__ yorokubu)	'please'
(__ odorku)	'surprise'

4. We adopt Kuno's terminology here for expository purposes.

5. The inner brackets in examples (22), (23) and (24) are not really removed. The linking rules overlook these brackets.

6. It is not clear that this NI is in fact a Dative NI. It could be that AW is not a transitive verb and that the NI is the semantic NI.

7. Kuno (1973:333): "Aux deletion is a transformation that deletes the



tense auxiliary of the constituent sentence when the constituent sentence is not followed by nominalizers Koto 'that, the fact that' and no 'that, the fact that'."

8. Kuno (1973:334): "Verb raising is a transformation that takes the tenseless verb out of the embedded clause and attaches it to the left of the matrix sentence verb. When this transformation applies, the constituent clause loses its status as a sentence because of its loss of the main verb, and therefore the node S that dominates it is automatically deleted."

9. The -i- in yomitai is inserted at some later time in the derivation.

10. Notice that this controller/controllee relationship requires that there be a "like subject constraint." In other words, Equi-NP deletion is obligatory in configurations like [<sub>S</sub> NP NP [<sub>S</sub> NP V] V].

11. Recall that this structure is the one used by Kuno to characterize 0 causative.

## CHAPTER 5: ON THE NOTION "SUBJECT" IN JAPANESE

This chapter involves the reexamination of the role of "subject" in Japanese. Shibatani (1978:52) quotes Mikami Akira (1972:48) as having said: "I have never encountered any satisfactory definition or explanation as to what "subject" refers to in Japanese grammar." Mikami dismissed the use of the term "subject" for Japanese since nominatively marked NP's did not exhibit any special primacy over other case marked NP's. That is, there is no subject/verb agreement in Japanese. As Shibatani notes (1978), Mikami's dismissal of the notion "subject" is based on assuming a direct correlation between the grammatical relation, subject and the grammatical case, nominative. There has been much discussion in the literature (Kuroda, Shibatani, Kuno, Inoue, Kitagawa et al.) as to this relationship. Reference to "subject" has been made by way of labeling the NP that triggers reflexivization: the "subject".

1. On Defining the Antecedent of Zibun

It has often been noticed that a one-to-one correspondence does not exist between the nominative case marked NP's and NP's that can be an antecedent for the reflexive pronoun zibun.

- (1) a. Taroo ga<sub>i</sub> Hanako ga<sub>j</sub> zibun<sub>i,\*j</sub> no guruupu de itiban suki da.  
'Taro likes Hanako the best in self's (Taro's) group.'
- b. Taroo ga<sub>i</sub> Hanako o<sub>j</sub> zibun no ie e ikasasete.  
'Taro made Hanako go to self's<sub>i,j</sub> house.'

In (1) a, a nominative (Hanako ga) cannot be an antecedent for zibun. However, an accusative NP (Hanako o) in (1) b can be an

antecedent for zibun.

If one appeals to a structural or configurational definition of "subject"<sup>1</sup> then the possible antecedents in (1) a-b can be identified as the "leftmost NP", given the configurations in (2):

- (2) a. [Taroo ga<sub>i</sub> Hanako ga<sub>j</sub> zibun<sub>i,\*j</sub> no guruupu de itiban suki da].  
 b. [Taroo ga<sub>i</sub> [Hanako o<sub>j</sub> zibun<sub>i,j</sub> no ie e ik] ase]

The clause is the domain for defining "leftmost NP". Thus, in (2) a, there is only one such NP while in (2) b there are two "leftmost NPs" since there are two clauses -- i.e., one embedded in the other.

Since it has most often been assumed that reflexivization is a syntactic phenomenon and that the bound verbalizing morphemes sase, rare and -are ~ e are "higher" verbs, the observation that embedded sentences yield antecedent ambiguities has led to the use of a cyclic rule of reflexivization. While it appears, at first, adequate to appeal to structural configuration, it turns out to be an overgeneralization. The example below illustrates the case where not all "leftmost NPs" can be antecedents.

- (3) a. [Ziroo wa<sub>i</sub> [Hanako o<sub>j</sub> zibun<sub>i,j</sub> no ie e ik] ase]  
 b. Hanako<sub>j</sub> wa Ziroo<sub>i</sub> ni zibun<sub>\*i,j</sub> no ie e ikaserareta.  
 'Hanako was made by Ziro to go to self's (Hanako's) house.'  
 c. [Ziroo Hanako zibun no ie e ik] ase rareta.

This problem was discussed in Chapter 1. If the non-uniform hypothesis is assumed (cf. Kuno 1973, 1978) then extrinsic rule ordering must be imposed. The rule of reflexivization must follow

passivization. On the other hand, if the non-uniform hypothesis is assumed, then there are two cycles; hence two leftmost NP's. The non-ambiguity of (3) b must be accounted for by way of a condition on antecedent relationships among sequences of zibun. This condition interacts in a crucial way with other rules in the derivation. That is, it is extrinsically ordered with respect to "object deletion" (cf. Chapter 1). It should be the case that whatever the process of reflexivization is, it operates in a particular domain with a minimum of hardware. The proposal to be outlined here relies heavily on the conception of the grammar as composed of levels or dimensions of autonomous systems. The task of accounting for the phenomenon of, say, "passive" is viewed as a process of properly apportioning to the levels of the grammar various aspects of the passive. This view is incompatible in spirit with a theory that attributes to a single rule all the effects of the passive. For example, Kuno (1973:349-350) describes the passive in the following way in his "summary of transformations":

(4) Pure Passive Formation:

"Place the direct object or dative NP in subject position, and place the original subject NP after it with *ni(yotte)* attached."

This rule is presumably accompanied by the attachment of rare to the verb stem. Instead, we will construct a system whose subparts operate independently of each other. These subparts are "ordered"; that is, the "output" of one component is the "input" to another. It is not until after the interaction of these components that the

"antecedent" of zibun can be identified. It is claimed, therefore, that a possible reason for the confusion over, and indeed, complexity of the zibun phenomenon is due to the apparent dependency on a multi-dimensional definition of "subject". Thus, reliance on any particular dimension -- i.e., structural position, case -- leads only to semi-accurate results. In the following section a proposal will be made concerning the interaction of these dimensions.

## 1.2 The Diacritic: "Subject"

The goal of the following discussion is to identify the possible subjects in several types of constructions. "Subject" refers to that NP which "triggers" subject honorification (cf. Harada 1976) and "reflexivization" (i.e., that NP which can act as an antecedent for zibun). Following a suggestion by Ken Hale, we will use 'S' as a diacritic throughout this discussion to mean "subject". At this point, for purposes of exposition, we will adopt a rule that assigns the diacritic 'S'. Later in this chapter, this "rule" will be replaced by a general principle that identifies "subjects".

Note the following simple sentence:

- (5) Taroo ga okasi o tabeta.  
'Taro ate the cake.'

The "subject" can be described superficially as either the nominatively marked NP or as the leftmost NP. In any case, the "subject" NP is identifiable. It was pointed out before that nominative case is inadequate. The option left is to refer to argument position which is a reliance on some other notion like



Instead, the direct and dative passives will do, in part, what Kuno's rule for pure passive formation did. Instead of "placing the direct object or dative NP in subject position" our rule will replace the 'S'.

- (10) Remove leftmost 'S' diacritic and (i) reassign 'S' to the rightmost argument (direct passive) or (ii) reassign 'S' to the second argument.

Now the only "replacement" linking rule left is the linking rule utilized by stative verbs (simple and derived). These linking rules apply in a non-cyclic fashion, i.e., "postcyclically". Notice the following morphological derivations:

- (11) a. tabe<sub>v</sub> ]  
       b. tabe<sub>v</sub> ] sase<sub>v</sub> ]  
       c. tabe<sub>v</sub> ] sase<sub>v</sub> ] rare<sub>v</sub> ]

(11) a, b, and c correspond to the following argument structures in

(12) a, b, and c, respectively:

- (12) a. ( \_\_\_ \_\_\_ tabe)  
       b. ( \_\_\_ ( \_\_\_ \_\_\_ tabe) sase)  
       c. ( ( \_\_\_ ( \_\_\_ \_\_\_ tabe) sase) rare)

'S' in (13) a is assigned by (7):

- (13) a. ( \_\_\_ \_\_\_ tabe)  
           S

At the time (13) b is derived, (7) yields:

- (13) b. (     (         tabe) sase)  
           S      S

When the passive suffix is attached, rule (9) is triggered:

- (13) c. ((     (         tabe) sase) rare)

$\emptyset$       S ( )  
           ↑          ↑

- d. ((     (         tabe) sase) rare)<sup>2</sup>  
            $\emptyset$       S (S)

After word formation and 'S' assignment have been completed, the grammatical linking rules assign the linking registers GA, NI or O to the argument positions in the (derived) verb. The regular linking rule would derive the following case arrays for (12) a, b, and c:

- (14) (         tabe)  
           S

Regular linking rule: GA: ( GA     tabe)  
                           S

O: ( GA O tabe)  
       S

NI: not applicable

- (15) (     (         tabe) sase)  
           S      S

Regular linking rule: GA: ( GA (         tabe) sase)  
                           S      S

O: ( GA (     O tabe) sase)  
       S      S

NI: ( GA ( NI O tabe) sase)  
       S      S



(16) Passive: ((S (S — tabe) sase) rare)

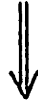
(18) (     ( NI sin) are): NI-Linking (cf. Level I)

S      S



The Grammatical Linking Rules

(19)



(     ( NI sin) are)

S      S

Regular linking rule: GA: ( GA ( NI sin) are)

S      S

O: not applicable

NI: not applicable

The examples in (20) summarize the position/case/diacritic combinations discussed so far:

(20)

a. ( GA O tabe)

S

b. ( GA ( NI O tabe) sase)

S      S

c. (( NI ( GA O tabe) sase) rare)

Ø      S

d. ( GA ( NI sin) are)

S      S

Notice also the stative examples:

e. ( GA GA waku)

S

f. ( NI GA waku)

S

Causatives:

g. ( GA ( O aruk) ase)

S      S

h. ( GA ( NI ( NI aruk) ase) sase)  
           S      S      S

i. ( GA ( NI ( O aruk) ase) sase)  
           S      S      S

Direct Passive: j. ( NI NI GA ataerare)  
                            $\emptyset$       S

The following chart summarizes the possible combinations of position/  
 case/ and 'S':

(21)

		CASE		
		GA	NI	O
POSITION	1	s	s	$\emptyset$
	2	s	s	s
	3	s	s	s

The reason there is a gap in (21) is that it is never possible to mark the primary position O. Superficially, it appears that 'S' can be anywhere. Positions 1, 2, and 3 correspond to the "surface" positions -- relative positions after embedding process is complete, e.g., ( 1 ( 2 ( 3 V) sase) sase)). The point here is simply to highlight the observation that a one-to-one correspondence, i.e., 'S' to case or surface position, does not exist.

### 1.3 Redefining the Role of the Passive

The following discussion is based on a suggestion by Chomsky<sup>3</sup> (personal communication) who has suggested a further refinement of the

passive rule. Recall that the passive rule described in section 2 essentially has two parts: (i) remove leftmost 'S' and (ii) reassign 'S' to another argument position. Chomsky's suggestion amounts to retaining only (i) in the form of: Passive (rare) stipulates that the leftmost 'S', or "highest" agent depending on whether or not there is embedding of PAS's, cannot be a "subject". In the case of simple predicates the effect is to render the PAS "subjectless":

- (22) a. (           tabe)  
          s
- b. ((           tabe) rare)  
          ø

If we assume that there is a general constraint against "subjectless" PAS's, then (22) b must be changed. Thus, a reflex of passivization is the reapplication of the rule 'S' assignment. Rule (7) is in fact a principle based on the condition that there can be no "subjectless" PAS's. If we combine (7) with the effects of passive, then the principle of 'S' assignment would look something like:

- (23) Assign 'S' to the primary argument (i.e., agent/most active participant). If this argument cannot be a subject for some reason, then assign 'S' to any other argument (each PAS is subject to this principle; that is, both the innermost and outermost PAS's are subject to the principle).

We must claim that passive blocks off the primary argument. That is, the passive rule does more than erase a diacritic. If this were not the case, then (23) would apply and reassign the diacritic to the position that had just deleted the 'S'. Below, we will indicate this

blocking as  $\emptyset$ . After passive, (22) b would be susceptible to 'S' assignment.

(22) b. (( \_ \_ \_ tabe) rare)

$\emptyset$

Assign 'S' (23): (( \_ \_ \_ tabe) rare)

$\emptyset$  S

(23) is written in such a way so as to account for both the so-called dative passive and the "direct" passive.

(24) a. ( \_ \_ \_ atae)

Assign 'S' (23): b. ( \_ \_ \_ atae)

S

Passive: c. (( \_ \_ \_ atae) rare)

$\emptyset$

Assign 'S' (23): d. (( \_ \_ \_ atae) rare)  $\rightarrow$  "Dative Passive"

$\emptyset$  S

OR

e. (( \_ \_ \_ atae) rare)  $\rightarrow$  "Dative Passive"

S

(24) d-e correspond to (25) a-b, respectively:

Kuno (1980:103, example (3a)):

(25) a. Yoshida syusyoo ga Tanaka tuusandaizin ni kunsyoo o ataeta.

'Prime Minister' 'Minister' 'medal'

'Prime Minister Yoshida awarded a medal to Minister Tanaka.'

b. Kunsyoo wa Yoshida syusyoo ga Tanaka tuusandaizin ni  
ataerareta.

'A medal was awarded to Minister Tanaka by Prime Minister  
Yoshida.'

We will now demonstrate how our account of the passive handles two well-known problems concerning the impossibility of "subjectivizing" certain object NP's (cf. Kuno 1978, 1980). These are shown in (26) c and f below.

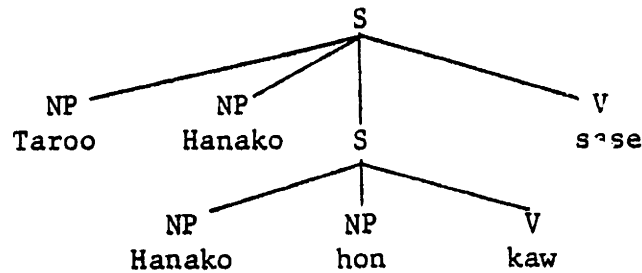
- (26) a. Taroo wa Hanako ni sono hon o kawaseta.  
'Taro made Hanako buy that book.'
- b. Hanako wa Taroo ni sono hon o kawasaserareta.  
'Hanako was made by Taro to buy that book.'
- c. \*Sono hon wa Taroo ni Hanako ni kawasaserareta.
- d. Taroo wa Hana'o ni Ziroo o zibun no ie e ikasasesasete.  
'Taro made/let Hanako make Ziro go to self's house.'
- e. Hanako wa Taroo ni Ziroo o zibun no ie e ikasasesaserareta.  
'Hanako was made/let by Taro to make Ziro go to self's house.'
- f. \*Ziroo wa Taroo ni Hanako ni zibun no ie e ikasasesaserareta.

Kuno has proposed the following global constraint to rule out (26) c and f (restated in 1978):

- (27) "Passive cannot subjectivize an NP that used to be a constituent of a sentence embedded in the sentence to which the rule applies."

Hon o in (26) meets the condition in (27) above; therefore, it cannot be subjectivized:

(28)



\*(26) c and f, however, can be accounted for in a very straightforward manner in the theory outlined in this work. It can be shown that (27) is an unnecessary condition given a theory of the interaction of passive, with the principle of 'S' assignment and embedding of propositional argument structures. A proper characterization of the above phenomenon can only be accomplished if a distinction can be made between simple 3 place propositions and derived 3 place propositions:

(29) Taroo wa Hanako ni sono syoo o ataeta.  
'that' 'prize'

'Taro awarded that prize to Hanako.'

(30) Taroo wa Hanako ni sono hon o yomaseta.

'Taro made Hanako read that book.'

Sono syoo o in (29) can be subjectivized -- marked ga -- while hon o in (30) cannot be. The PAS's of (29) and (30) are (31) and (32), respectively:

(31) ( \_ \_ \_ atae)

(32) ( \_ ( \_ \_ yom) ase)

After the operation of 'S' assignment, these representations look like:

(31)'            ( \_ \_ \_ atae)  
                  S

(32)'            ( \_ ( \_ \_ yom) ase)  
                  S     S

If the passive -rare- is attached to the above PAS's, (33) and (34) result:

(33)            (( \_ \_ \_ atae) rare)  
                  Ø

(34)            (( \_ ( \_ \_ yom) ase) rare)  
                  Ø     S

The contrast between these two argument structures is clear. In (33) there is no 'S', while in (34) there is, in fact, an 'S' present. This contrast is crucial since it interacts with (23), the '3' assignment principle. Recall that the principle of 'S' assignment is based on the assumption that every PAS must have an 'S'. Thus, (23) must apply in (33) given that there is no 'S':

(33)            (( \_ \_ \_ atae) rare)  
                  Ø

Assign 'S' (23): (( \_ \_ \_ atae) rare)  
                  Ø   S

OR

Assign 'S' (23): (( \_ \_ \_ atae) rare)  
                  Ø     S

The PAS in (34) already has an 'S'; therefore, (23) will not apply. (35) becomes an impossible propositional argument structure:



(35) (( \_ ( \_ \_ yom) ase) rare)  
           ∅ (S) S

The above account obviates any necessity for a global condition, like (27), on passive.

Let us return to (33) and (34) and now apply the regular linking rule:

(36) (( \_ \_ \_ atae) rare)  
           S

Regular rule: GA: (( \_ GA \_ atae) rare)  
                           S

O: (( \_ GA O atae) rare)  
           S

NI: (( NI GA O atae) rare)  
           S

OR

(( \_ \_ \_ atae) rare)  
           S

Regular rule: GA: (( \_ \_ GA atae) rare)  
                           S

O: not applicable

NI: (( NI NI GA atae) rare)  
           S

(37) ( \_ ( \_ \_ yom) ase) rare)  
            $\emptyset$     S

Regular rule: GA: ( \_ ( GA \_ yom) ase) rare)  
                            $\emptyset$     S

O: ( \_ ( GA O yom) ase) rare)  
            $\emptyset$     S

NI: ( NI ( GA O yom) ase) rare)  
            $\emptyset$     S

Passive is completely disassociated from case; that is, we have abandoned the passive case linking rules. These rules assigned GA to either the rightmost argument or to the second argument. In my own thinking, the next stage in the evolution of characterizing passive involved assuming that it played a role in reassigning 'S'. It was pointed out by Chomsky (personal communication) that the presence of an independent principle of 'S' assignment obviates any need to incorporate this ability in the passive rule itself. This new account of passive makes a prediction similar to one made by the traditional account of passive (cf. Kuno). The prediction involves "possible zibun antecedents". The following example illustrates the prediction:

( \_ ( \_ ( \_ ik) ase) sase)  
       S    S    S

( \_ ( \_ ( \_ ik) ase) sase)  
        $\emptyset$     S    S

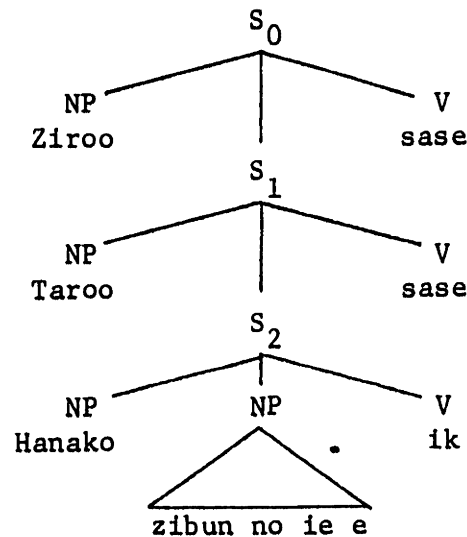
Regular rule: GA, O, NI: ( NI ( GA ( O ik) ase) sase)  
                            $\emptyset$     S    S

The prediction is that the above example will have an antecedent ambiguity:

Taroo<sub>i</sub> wa Ziroo<sub>j</sub> ni Hanako<sub>k</sub> o zibun<sub>i,\*j,k</sub> no ie e ikasasesaserareta.

'Taro was made by Ziro to make Hanako go to self's (i.e., Hanako's or Taro's) house.'

A theory that involves a syntactic derivation as in the example below makes the same prediction:



Passive cannot be ordered to bleed reflexivization on the  $S_2$  cycle as it can on the  $S_0$  cycle.

However, it is difficult to find out the facts, since speakers do not like multiple sase embeddings. If the prediction is shown to be false, then both theories have to come up with some kind of story. Thus, they are at least equal on this point.

Notice also that (26) is handled by the interaction of passive ('S' deletion), the principle of 'S' assignment and case assignment. The following illustrates this interaction:

- (38) ( \_ ( \_ ( \_ ik) ase) sase) rare)
- Assign 'S' (23): ( \_ ik)  
S
- Word formation, causative: ( \_ ( \_ ik) ase)  
S
- Assign 'S' (23): ( \_ ( \_ ik) ase)  
S S
- Word formation, causative: ( \_ ( \_ ( \_ ik) ase) sase)  
S S
- Assign 'S' (23): ( \_ ( \_ ( \_ ik) ase) sase)  
S S S
- Word formation, passive: (( \_ ( \_ ( \_ ik) ase) sase) rare)  
∅ S S
- Assign 'S' (23): not applicable
- Regular linking rule: GA: (( \_ ( GA ( \_ ik) ase) sase) rare)  
∅ S S
- O: (( \_ ( GA ( O ik) ase) sase) rare)  
∅ S S
- NI: (( NI ( GA ( O ik) ase) sase) rare)  
∅ S S

The rightmost 'S' marked argument can never be "passivized" ("subjectivized" or marked nominative) since it is only the leftmost 'S' that can be marked GA.

#### 1.4 NP ni (yotte) as an Antecedent:

We are almost ready to identify the possible antecedents for zibun. The preceding discussions have entailed utilizing the domain of the propositional argument structure of verbs to pinpoint "subject".

The PAS defines the minimal domain in which the principle of 'S' assignment is operative. When there are multiple embeddings of PAS's (one within another, etc.), then there is more than one 'S'. This situation gives rise to antecedent ambiguities. One of the points of discussing the passive phenomenon was to show its effect on the diacritic 'S' and ultimately on zibun. At this point, it appears to be accurate to say that the possible antecedents for zibun are marked 'S'. However, this seems not to be the case entirely. The following example is taken from Kitagawa (1980):

- (39) Sono messezi wa sensei, ni yotte go-zibun no sisetu  
 'that' 'message' 'teacher' 'honorific-' 'self' 's' 'private'  
  
 hoosookyoku-kara hassin s-are-ta.  
 'sending' 'from' 'send' 'do'-passive' tense, past  
 station'  
  
 'That message was sent off by the teacher from his own  
 private sending station.'

Sensei (ni yotte) is not marked with the diacritic 'S'; that is, the propositional argument structure = ( NI GA hassin s-are)).  
 Ø S 'send'

It could be claimed that the honorific prefix go- on zibun forces the antecedent anaphor relationship with sensei. But this is not sufficient. Notice the following example where the zibun does not have go- and the antecedent is not marked 'S':

- (40) Sono tegami wa Taroo<sub>1</sub> ni (yotte) zibun<sub>1</sub> no ie de mitukerareta.  
 'that' 'letter' 'self's' 'house' 'at' 'was found'  
 'That letter was found by Taro at self's (Taro's) house.'  
  
 (( NI GA mituke) rare)  
 Ø S

It appears that when the derived "subject" is inanimate zibun finds its antecedent elsewhere (the "demoted" subject). (41) is an example of two NP's that are not marked 'S' but are human. Zibun unambiguously takes Taroo ni yotte as its antecedent.

- (41) Sono kaado wa Taroo ni yotte Hanako ni zibun no heya de okurareta.  
 'that' 'card' 'self' 's' 'room' 'in' 'was sent'  
 'That card was given (handed over) to Hanako by Taro in self's room.'  
 ((NI NI GA okur) are)  
 Ø S

Hanako ni in (41) above cannot be an antecedent for zibun. In examples (39)-(41), the antecedent is marked ni yotte.<sup>4</sup> Examples like (42) rule out the possibility that yotte is playing some kind of role in the above examples. Only Taroo wa can be an antecedent for zibun and not tsuma ni yotte:

- (42) Taroo<sub>i</sub> wa tsuma<sub>j</sub> ni yotte zibun<sub>i,\*j</sub> no heya de tatakareta.  
 'wife' 'self' 's' 'room' 'in' 'was hit'  
 'Taro was hit by his wife in self's (Taro's) room.'

Also, yotte is optional in some cases (cf. (40) above).

For now let us say that there appears to be a general condition at work here. The antecedent for zibun must be: (i) human, (ii) normally the antecedent is a subject, and (iii) the antecedent for zibun may be a "demoted" subject if the subject is not human.

The 'S' argument is inanimate in (40) and (41), as represented in (43) a-b, respectively. Therefore, the remaining argument must be the antecedent.



"demoted" subject can be an antecedent.

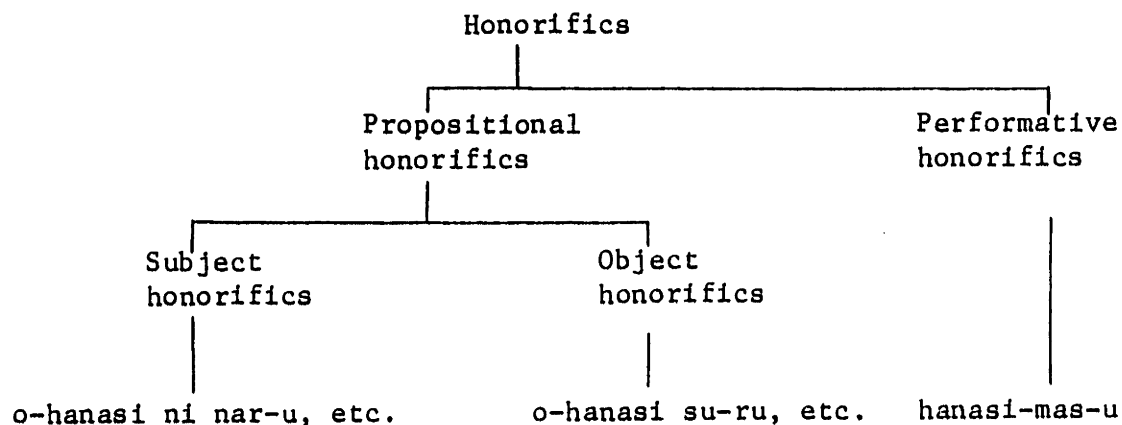
## 2. Honorification

The honorific system in Japanese is incredibly complex, to say the least. We will address a problem that has been well defined by such notable linguists as S.I. Harada, S. Kuno, M. Shibatani, et al. They have provided the data base with which we will be working.

### 2.1 Outline of Honorific System in Japanese

Harada<sup>5</sup>, in his paper "Honorifics" (1976) investigates the "grammatical system of honorifics". The honorific form in Japanese is conditioned not only by sociological factors (a social hierarchy) but by grammatical factors as well. For example, the formation of 'subject honorifics' (Harada's term) is dependent on: (i) the NP referring to "socially superior to the speaker", (SSS) person and (ii) this NP being a "subject".

Harada refers to three categories of honorifics: 'subject honorifics', 'object honorifics', and 'performative honorifics'. These categories are presented in the following diagram (1976:502):





Performative honorifics, unlike propositional honorifics, "do not require the presence of a SSS in the propositional content of the sentence" (p. 502). In addition, performative honorifics do not appear in clausal complements whereas propositional honorifics do:

(45) (Harada 1976:503, examples (7) a-b):

Propositional Honorific (Object)

a. Taroo ga [sensei no o-nimotu o o-moti su-ru] koto ni nat-te i-ru.

'We have arranged for Taro to carry the sensei's baggage.'

(46) Performative Honorific

b. \*Taroo ga [sensei no o-nimotu o moti-mas-u / o-moti si-mas-u] koto ni nat-te i-ru.

The performative honorifics, Harada notes, are used to talk "politely to the addressee, and to make one's speech 'milder'."

As for the propositional honorifics: subject versus object honorifics, according to Harada, are distinguishable based on the grammatical relation of the SSS. Harada offers the following chart to summarize the morphologically regular patterns of the honorific forms (1976:504):

(47)	Subject Honorifics	Object Honorifics	Performative Honorifics
Verbs	HP + INF ni nar-	HP + INF su-	INF + mas-
Adjectives	HP + ADJ	----	ADJ des-
Nouns	HP + N	HP + N	HP + N

where HP = the 'honorific prefix', i.e., O-/go-, and  
INF = the infinitive form, or ren'yoo-kei, of a verb.

We will be concerned with the honorification associated with verbs. The following are examples of subject and object honorification:

Subject Honorification (Harada, pp. 524-25):

- (48) a. Yamada sensei wa kono hon o o-yomi ni nat-ta.  
'Yamada sensei read this book.'
- b. Yamada sensei wa moo kono hon o o-yomi ni nari-masui-ta ka?  
'Has Yamada sensei read this book yet?'

Object Honorification (Harada, p. 526):

- (49) a. Watashi wa Yamada sensei ni sono koto o o-tazune si-masita.  
'I asked Yamada sensei about that matter.'
- b. De-wa, watasi ga sensei no o-nimotu o o-moti si-mas-yoo.  
'OK, then, I'll bring sensei's (or your) baggage.'

## 2.2 Subject Honorification

The issue that is of interest to us is the case of subject honorification. Harada, in his 1976 paper "Honorifics", proposes a cyclic account of honorification. He accounts for the contrast between (50) a-b and (51) a-b by rule ordering:

O-V-sase ni nat-ta:

- (50) a. Yamada sensei wa Taroo ni kono hon o o-yom-ase ni nat-ta.  
'Yamada sensei made Taro read this book.'

\*O-V-ni nara -ase:

- b. \*Yamada sensei wa Taroo ni kono o o-yomi ni nar -ase.

o-V ni nari -hazime-ta (Harada 1976:549):

- (51) a. Yamada sensei wa [hon o o-yomi ni nari] hazime-ta.  
'Yamada sensei began to read a book.'

o-V-hazime ni natta:

- b. Yamada sensei wa [hon o o-yomi] hazime ni natta.

(Harada, p. 550, example 114):

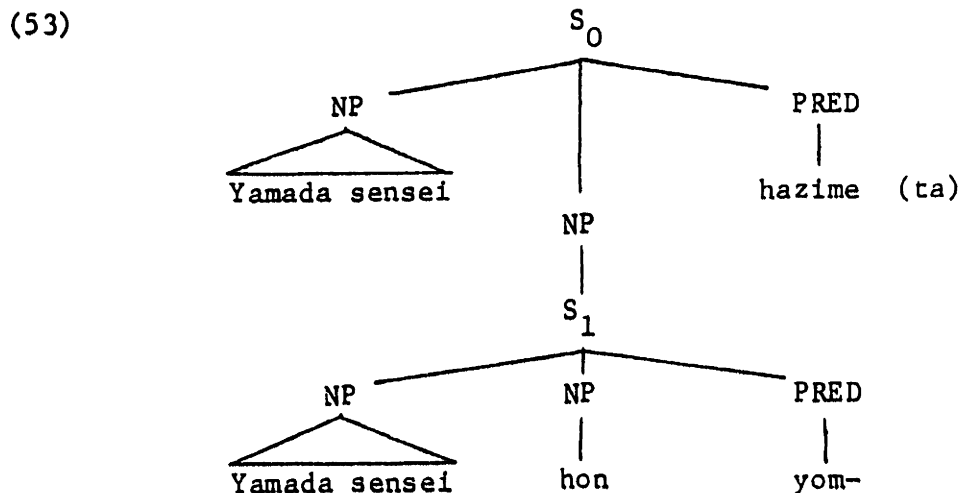
- (114) Subject honorification is a cyclic operation that follows predicate raising.

In order to rule out (52) Harada proposes (119):

- (52) a. \*Yamada sensei wa hon o o-yomi ni nari o-hazime ni nat-ta.  
 b. \*Yamada sensei wa hon o o-o-yomi ni nari-hazime ni nat-ta.

- (119) Subject honorification does not reapply to an item that contains an item that has already undergone subject honorification.

(53) below is the structure for (51) (Harada, p. 550):



The subject, Yamada sensei, is structurally defined (on two cycles). The lower occurrence of Yamada sensei eventually undergoes equi-NP deletion, but not before optionally triggering subject honorification.<sup>6</sup>

Shibatani (1978) in his paper "Subject in Japanese Grammar",

discusses subject honorification in the context of establishing the status of the notion 'subject' in Japanese. Shibatani notes that the process of sonkeigo-honorification is triggered by a particular NP and that case does not seem to play a role in deciding the trigger (1978:55, examples 5 a-b, 8 a-b, respectively):

- (54) a. Otooto ga sensei o tasuke-ta.  
           'My younger brother assisted the teacher.'
- b. \*Otooto ga sensei o o-tasuke-ni natta.
- c. Sensei ga otooto o o-tastuke-ni natta.
- (55) a. Yamada sensei ni syakkin ga takusan aru.  
                                 'debt'            'large'  
           'Professor Yamada has a large debt.'
- b. Yamada sensei ni syakkin ga takusan o-ari-ni naru.

Shibatani claims that reflexivization, like subject honorification (1978:56)"...calls for a special NP category defined independently from the case categories...not any kind of NP functions as a trigger for this (reflexivization) phenomenon". He goes on to note "...that the NP that functions as a trigger for reflexivization is exactly the same one that triggers the sonkeigo (i.e., subject honorification) process. That is, the NP that triggers the sonkeigo process also triggers reflexivization." Shibatani cites the following example (1978:57, examples (15)-(16)):

- (56) Yamada sensei<sub>i</sub> ga Hanako ga<sub>j</sub> zibun<sub>i,\*j</sub> no guruupu de itiban  
       o-suki da.  
       'Professor Yamada<sub>i</sub> likes Hanako<sub>j</sub> the best in self's<sub>i</sub>/\*self's<sub>j</sub>  
       house.'

- (57) Yamada sensei<sub>1</sub> no zibun<sub>1</sub> o o-sikari-ni naru toki no kao.  
 'The face Professor Yamada<sub>1</sub> makes when he scolds self<sub>1</sub>.'

He concludes that because there are two phenomena that seem to be "triggered" by the same NP, and since that NP cannot be identified by way of case marking or by word order, it should be referred to as 'subject'. Thus (p. 57), a "subject is an NP that functions as a trigger for the sonkeigo process and reflexivization". Shibatani suggests that the presence of the above two phenomena justifies characterizing the notion 'subject' independently of case.

### 3. On Questioning the Generalization 'Subject' as a Trigger for Reflexivization/Subject Honorification

Many of the arguments in Japanese syntax have been based on the generalization that 'subjects' can be identified by way of the reflexivization and subject honorification phenomena (cf. Shibatani 1978, Kuno 1973, 1978). This does appear to be a correct generalization as has been evidenced by the previous discussions in this chapter. Kitagawa, in his Review of Problems in Japanese Syntax and Semantics (to appear in Language) outlines the two assumptions that form the foundation of the above generalization:

Kitagawa (1980):

- (1) a. "The NP that functions as a trigger for reflexivization is exactly the same one that triggers SH."
- b. "Case particles that follow a subject NP belong to a restricted set composed of no more than a few specific particles, e.g., the nominative ga, the dative ni of the kind that appears in possessive, emotive, and potential constructions, and the no which can alternate with ga."

Kitagawa challenges these assumptions based on the existence of the following type of example (a counter-example to (1) b):

- (58) Kimi<sub>i</sub> kara kore o zibun<sub>i</sub> no te-de Naomi ni watasi-te kur-e  
 'you' 'from' 'this' 'self's hand-by' 'to' hand-ing give-Imp  
 'You give this to Naomi by our own hand.'

Even though the subject is marked by the particle kara, it can be an antecedent for zibun.

Kitagawa cites (59) as a counter-example to (1) a. The antecedent for zibun is the agent in a passive construction. The agent (sensei ni yotte) cannot trigger subject honorification.

- (59) Sono messeezi wa sensei<sub>i</sub> ni yotte go-zibun<sub>i</sub> no sisetu  
 hoosockyoku kara hassin s-are-ta.  
 'That message was sent off by the teacher from his own private sending station.'

### 3.1 A Comparison of Subject Honorification and Zibun

Kitagawa's observations question the traditional way of viewing the relationship of subject to the two phenomena always referred to as indicating its existence. There is certainly a large overlap between NP's that can be antecedents for zibun and NP's that trigger SH. Since we know well which NP's constitute the overlap, the problem now becomes how to define the NP's that fall outside the overlap cases. Once we begin to identify these NP's, the task becomes one of accounting for the discrepancy by way of discovering the principles that govern SH and reflexivization. It is at this level (i.e., level of governing conditions) that we hope to find the differing properties that ultimately

account for the non-overlap cases.

The following causative sentence is ambiguous with respect to zibun and its possible antecedents. However, the NP that triggers SH can only be Yamada sensei -- that is, the surface subject.<sup>7</sup>

- (60) Yamada sensei<sub>i</sub> wa Taroo<sub>j</sub> ni sono hon o zibun<sub>i,j</sub> no heya de  
o-yomase ni nat-ta.

'Y-sensei made Taro read the book in self's (Y-sensei or Taro's) room.'

### Subject Honorification

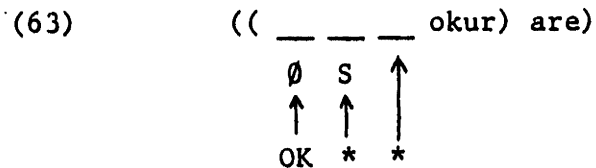
For the purposes of SH one can say that the trigger NP must be (i) "socially superior to the speaker" (SSS: cf. Harada 1976:501) and (ii) the leftmost 'S' as defined in the PAS (cf. the causative verb):

- (61) ( \_ ( \_ \_ yom) ase)  
           S      S  
           ↑      ↑  
           SH trigger not\*

### Zibun

The antecedent for zibun, on the other hand, can be any 'S' provided that it is human. This takes care of the non-overlap cases where not all 'S's can trigger SH. (59) is an example of a non-'S' being an antecedent for zibun. This antecedent is a "demoted" subject:

- (62) (( \_ \_ mituke) rare)  
           ∅  S  
           ↑      ↑  
           cannot be an antecedent for zibun  
           can be an antecedent



A possible reason for the above antecedents may lie in: (i) the requirement that the antecedent be human and (ii) that it is generally the case that zibun must have an antecedent in the same sentence.<sup>8</sup>

In the sentences where the demoted subject can be an antecedent for zibun, the derived subject is inanimate. It appears as if zibun, while preferring a 'subject' ('S') as an antecedent, will settle for a "demoted" subject (i.e., a leftmost argument-agent). Zibun must have an antecedent in the same sentence.<sup>9</sup>

This settling for a "demoted" subject is in contrast to the SH facts. The two phenomena clearly share the utilization of the diacritic 'S', but they differ somewhat because of the conditions that govern their respective relationships to the "triggering" NP's:

SH: The triggering NP must be: (i) a SSS, (ii) the leftmost 'S'.

Zibun:

- (i) The antecedent must be human.
- (ii) Zibun must have an antecedent in the sentence.
- (iii) The antecedent may be any 'S', provided it is human.
- (iv) If there is no human NP marked 'S', then any leftmost NP in a PAS can be an antecedent for zibun.

The primary aim of this chapter has been to identify the possible antecedents for zibun. We have postulated the existence of an 'S' diacritic to designate these antecedents. The principle of 'S' assignment has enabled us to reduce the passive rule to simply



stipulating that the highest (leftmost) argument cannot be a subject. The "detransitivization" property of passive is actually a result of the 'S' principle automatically reapplying. This approach has resulted in an automatic account of the nonsubjectivizability of the direct object in derived causatives. Now our grammatical linking rules merely consist of the regular linking rule and the stative linking rule.

## FOOTNOTES: CHAPTER 5

1. As in English



2. We abandon the approach of actually moving the 'S'. The prediction here in (13) would be that the rightmost argument can be an antecedent for zibun<sub>1</sub>, but this is not the case.

3. Cf. Williams (1980), Borer (1980).

4. Kuroda (1979) for an analysis of ni-yotte passives.

5. We will not discuss "titles and personal (pro)nouns." Cf. Harada (1976:508-512).

6. For a very interesting discussion concerning the structures involving the aspectual 'verbs' see: Shibatani (1973) (Gengo Kenkyu 64 1973) 65 96), "Where Morphology and Syntax Clash: A Case in Japanese Aspectual Verbs." For a fuller discussion of the interaction of subject honorification and these structures with the aspectual verbs, see Kuno (1975): "Notes on Japanese Sentence Patterns" in Harvard Studies in Syntax and Semantics.

7. I would like to thank Bill Poser for suggesting such an example.

8. Cf. Oshima (1978). Oshima "disregard(s) the 'military' usage, where zibun can also refer to the speaker." (Cf. Martin 1975:1077, "Before Japan's defeat in World War II, the word zibun '(one)self' was popular among military men as a first-person pronoun, the usage is still alive, and you will sometimes hear it from people who were not military men.")

9. Cf. Oshima for a case of a discourse antecedent for zibun.

## CHAPTER 6: THE OVERVIEW

In this final chapter, we will return to the initial questions raised in the Introduction of this thesis. Issues of theoretical import arose when we asked about the status of the word in Japanese syntax. In Chapter 2, we looked at recent proposals on the organization of the lexicon. In order to incorporate a theory of word formation we had to come to terms with the Japanese verbal system. For the purposes of our current investigation, we have assumed a particular type of interaction between the morphological and syntactic components -- that is, derivational word formation takes place before lexical insertion. Naturally, such an assumption involves dealing with other phenomena that touch on this issue tangentially, such as the PS component, "cyclic" subject, case marking. The process of coming to terms with these phenomena involved identifying the effects of our assumptions on them. With regard to the PS component, the question of interest here had to do with the problem of expressing certain dependencies (cf. Chapters 1 and 3). Briefly, should the PS rules delimit the number of arguments any (derived) verb can take? As for the notion "cyclic" subject, it has often been demonstrated by Kuno et al. that there is a special NP that seems to be identifiable only if some notion of the cycle is adopted. Given our assumptions, this "cycle" cannot be expressed syntactically. Another important issue involves case marking. It was shown (Lekach 1978) that the case arrays of causatives were not unlike the case arrays of simple sentences with morphologically simple verbs. In short, for the purposes of case marking, the

structure must be simplex, but for the purposes of reflexivization the structure must be complex. The thrust of this current work has been to reconcile this state of affairs.

## 1. The Investigation of These Questions

### 1.1. The Phrase Structure Component

In Chapter 3 we outlined a theory of the PS component that envisions defining this component as being composed of two independent dimensions (cf. Hale 1980, for the origin of this idea) i.e., a structural and a categorial dimension. Languages differ in how these dimensions interact. The proposal for Japanese amounts to removing the categorial dimension from the PS rules, leaving only the structural dimension. The PS rules project nodes unspecified for category. These rules only specify structure; that is, they stipulate where the head is in relation to its sisters and the depth of the structure.

$$(1) \quad \bar{X} \longrightarrow \bar{X}^* \quad X$$

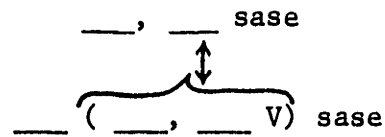
Since the above rule provides only the terminal node, X-lexical insertion must, by necessity, be context free. After lexical insertion the categorially unspecified X node is converted to specify the features of the lexical item it dominates. The  $\bar{X}$  node, in turn, acquires the features of its head, by virtue of the floating convention.

### 1.2 Developing a Theory of Case

In Chapter 4 we proposed and developed a theory of case linking. For Japanese this theory utilizes propositional argument structures whose argument positions correspond to thematic roles (cf. Ostler for

the original application of this idea for Japanese). Derived causatives are an example of the embedding of one propositional argument structure in another:

(2)



These propositional argument structures can become quite complex; that is, they involve multiple embeddings. The claim in Chapter 4 was that the grammatical case linking rules do not directly interact with this embedding process. Instead, the regular case linking rule does its work after word formation -- after the building of complex propositional structures. In Chapter 5, we suggested that a principle of 'S' assignment was operative at the level of the PAS. The above three phenomena, PAS embedding, 'S' assignment and grammatical case linking, interact indirectly. The output of the case linking rule is in part a function of the configuration of embeddings and subject diacritics in the maximal PAS.

### 1.3 Defining the Domain of "Subject"

The stipulation of the 'S' participle (cf. Chapter 5) was our response to the need for identifying the arguments that can be antecedents for zibun and trigger subject honorification. The domain for the application of this principle of 'S' assignment is the PAS. In section 11.2 below, we will detail the argument representations upon which 'S' is defined, which are associated with numerous types of verbs, such as simple verbs, verbs that take sentential complements,

bound verbalizing elements.

## 2. Results of PS Rules and Case Linking

A theory of phrase structure rules like the one developed in Chapter 3, coupled with a theory of case linking as developed in Chapter 4, offer several new accounts of some old problems.

### 2.1 Scrambling

Scrambling is now deducible from the interaction of the PS rules, which project nodes unspecified for category, and context free lexical insertion. The domain of this effect is also deducible. That is, there appears to be no scrambling outside of the clause because an NP can only evaluate an argument position of a given verb if that NP is a sister to that verb. In short, the theory does not need a rule of scrambling nor a condition constraining it.

### 2.2 Non-Subjectivizability of Some Direct Objects

In Chapter 5, section 1.3, we conclude that the "non-subjectivizability" of okasi-o in (3) below was, in fact, attributable to the interaction of embedding of PAS's, with 'S' assignment and grammatical case assignment. Recall the following sentences:

- (3) a. Taroo wa Mary ni okasi o tabesaseta.  
'Taro made/let Mary eat the cake.'
- b. Mary wa Taroo ni okasi o tabesaserareta.  
'Mary was made/let by Taro to eat the cake.'
- c. \*Okasi wa Taroo ni Mary ni tabesaserareta.  
'\*The cake was by Taro made Mary to eat.'

versus:

- (4) a. Yoshida-syusyoo ga Tanaka-tuusandaizin ni kunsyoo o ataetareta.  
           'Prime Minister'          'Minister'          'medal'  
           'Prime Minister Yoshida awarded a medal to Minister Tanaka.'
- b. Tanaka-tuusandaizin wa Yoshida-syusyoo ni kunsyoo o ataeta.  
           'Minister Tanaka was awarded a medal by Prime Minister Yoshida.'
- c. Kunsyoo wa Yoshida-syusyoo ga Tanaka-tuusandaizin ni ataerareta.  
           'A medal was awarded to Minister Tanaka by Prime Minister Yoshida.'

The propositional argument structures for (3) a and (4) a are represented in (5) a and b, respectively:

- (5) a. (        (               tabe) sase)  
           S      S
- b. (                      atae)  
       S

The passive rule amounts to saying that the leftmost agent cannot be a "subject":

- (6) a. ((        (               tabe) sase) rare)  
            $\emptyset$       S
- b. ((                      atae) rare)  
        $\emptyset$

The principle for assigning "subject" to a PAS is triggered only in (6) b above:

- (7) ((                      atae) rare)  
        $\emptyset$       $\swarrow \searrow$   
               S

It is not triggered in (6) a, because there is already a subject in the PAS of tabe. Thus, the rightmost argument in (6) a, which corresponds to okasi-o, will never be subjectivizable. Note that we do not need a constraint on the passive rule of word formation, or a global condition such as the one proposed by Kuno (cf. 5.1.3).

### 2.3 Possible Account for Non-Overlap Cases of Subject Honorification and Zibun

Chapter 5 focuses on the notion "subject" in Japanese. We have adopted this term from the vocabulary of previous linguistic work on Japanese syntax. Actually, what we have been concerned with is identifying those NP's that have a particular cluster of properties associated with the zibun cases and subject honorification. These NP's have been called "subject" NP's. We have identified them with a particular argument position in the propositional argument structures of verbs. Argument positions encode a hierarchical relationship among thematic rules. Thus, the subject is defined, albeit indirectly, in terms of thematic role. It has been noted (cf. Kitagawa, Chapter 5, section 3.2) that there is not a complete overlap between NP's that trigger subject honorification and reflexivization (i.e., zibun). We speculated in section 3.1 that the overlap cases result from the fact that both phenomena require some type of subject while the non-overlap cases can be attributed to other conditions that govern the two different phenomena. For example, zibun requires an antecedent in the sentence and subject honorification requires a subject that is "socially superior to the speaker."



### 3. Incorporation of Case Linking and PS Rules into the Word Formation Hypothesis

Below is a diagram which schematically outlines the incorporation of case linking and the PS rules into a theory based on the Word Formation Hypothesis:

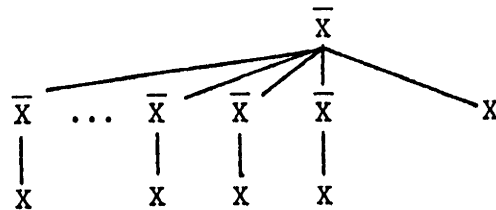
(8)

Base Component

Phrase Structure Rules

$$(\bar{X} \rightarrow \bar{X}^* X)$$

defines



Word Formation Component:

( \_\_, \_\_ V)  
S

Word Formation  $\rightarrow$  V+sase

( \_\_, \_\_ sase)  
S

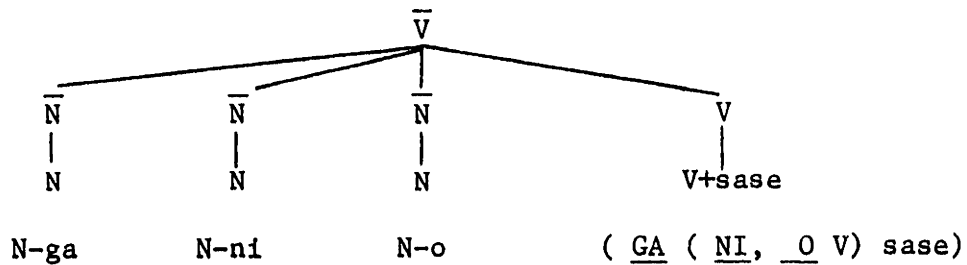
( \_\_ ( \_\_, \_\_ V) sase)  
S S

Grammatical Case Linking:

( GA ( NI, O V) sase)  
S S

(continued on next page)

Lexical Insertion (and climbing of features  
of case marked NP's)



#### 4. Disjoint Reference

In Lekach (1978) it was pointed out that given the disjoint reference (DR) rule of Oshima (1979) and the word formation hypothesis, we would have to introduce some type of structure building rules in logical form. These rules would convert the simplex structures of S-structure into complex structures in LF so that the DR rule would apply properly. Facts concerning the pronoun kare constituted one of the more interesting obstacles for the word formation hypothesis. The co-reference possibilities of kare are accounted for by Oshima using the DR rule. In section 4.1, we will outline Oshima's observation about and account of kare. Section 4.2 offers an alternative account within the general framework of this thesis.

##### 4.1 Oshima's Disjoint Reference Rule

In his paper "Conditions on Rules: Anaphora in Japanese", Oshima proposes a rule of disjoint reference which he calls SI-1 (= Semantic Interpretation). SI-1 rules are constrained by the Tensed-S Condition and the Specified Subject Condition (SSC).<sup>1</sup> Oshima also talks about zibun interpretation, which we will discuss later.

The following are Oshima's examples, illustrating the existence

of a rule of disjoint reference:

- (9) a. John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o bengosi-ta.

'he' 'defend'

'John<sub>i</sub> defended him<sub>\*i,j</sub>.'

[John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o bengosi-ta]

- b. John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o mi-ta.

'John<sub>i</sub> saw him<sub>\*i,j</sub>.'

[John<sub>i</sub> kare<sub>\*i,j</sub>-o mita]

- c. John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o seme-ta.

'he' 'blame'-tense, past

[John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o semeta]

- (10) Hazimeru 'begin':

John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o seme-hazime-ta.

'he' 'blame'-'begin'-tense, past

'John<sub>i</sub> began to blame him<sub>\*i,j</sub>.'

[John<sub>i</sub>-wa [<sub>S</sub> PRO<sub>i</sub>-ga kare<sub>\*i,j</sub>-o seme] hazime-ta]

- (11) Kokoromi 'try':

John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o bengosi yoto kokoromi-ta.

'he' 'defend' comp 'try' -tense, past

'John tried to defend him.'

[John<sub>i</sub>-wa [<sub>S</sub> PRO<sub>i</sub>-ga kare<sub>\*i,j</sub>-o bengosi yoto] kokoromi-ta]

(12) ta-gar 'want':

John<sub>i</sub>-wa kare<sub>\*i,j</sub>-o bengositagatta.

'he' 'defend' 'want'-tense, past

'John<sub>i</sub> wanted to defend him<sub>\*i,j</sub>.'

[John<sub>i</sub>-wa [<sub>S</sub> PRO<sub>i</sub>-ga kare<sub>\*i,j</sub>-o bengosi] tagatta]

The next examples were designed to "show that the rule, DR, is subject to the 'tensed-S condition'":

(13) John<sub>i</sub>-wa [<sub>S</sub> kare<sub>i,j</sub>-ga hirot-te ki-ta] koinu-o daizini sodate-ta.

'pick-up' 'puppy' 'carefully' 'bring-up'

'John<sub>i</sub> brought up carefully the puppy which he<sub>i,j</sub> had picked up on the road.' [Nakai (1976:16)]

Oshima states that since "the pronoun and its antecedent are separated by a tensed-S boundary...the tensed-S condition blocks DR. The pronoun can refer freely in principle: in particular, to its antecedent." Example (14) is a case where a specified subject blocks the DR rule.

(14) John<sub>i</sub>-wa Bill<sub>j</sub>-ni [PRO<sub>j</sub>-ga kare<sub>i,\*j,k</sub>-o sinyoos] ase-ta.

'he' 'trust' causative-tense

'John<sub>i</sub> made Bill<sub>j</sub> trust him<sub>i,\*j,k</sub>.'

According to Oshima, sase "takes a tenseless-S as a complement." It is the PRO-ga which is obligatorily controlled by Bill in (14); that is, the specified subject that is blocking the DR rule. Kare may refer to John, but not to Bill. Oshima must specifically exempt NP-PRO from the DR rule since this would contradict cases of obligatory control

(if, of course, he maintains the above structure for causatives):

(15)

control

┌──────────┐

John<sub>i</sub>-wa Mary<sub>k</sub>-ni [<sub>S</sub> PRO<sub>k</sub> kare<sub>i,j</sub>-denwa-o kake] sase-ta.

'John<sub>i</sub> made Mary<sub>k</sub> make a phone call to him<sub>i,j</sub>.'

(Note: the index, j, shows that kare may refer to a noun not in the sentence.)

Mary and PRO must be coreferential; therefore, this type of PRO must be exempt from the DR rule. This exemption, Oshima notes, can be expressed by way of a reanalysis of the structure in (15).

(15)' John<sub>i</sub>-wa [<sub>S</sub> Mary<sub>k</sub> kare<sub>i,j</sub> denwa-o kake] sase-ta.

The NP, Mary, is now in the place where PRO was before. The sentence 'John made him consent' originally analyzed as in (16) a would be reanalyzed as (16) b:

(16) a.

control

┌──────────┐

John<sub>i</sub>-wa kare<sub>\*i,j</sub>-ni [<sub>S</sub> PRO<sub>\*i,j</sub>-ga nattokus]-ase-ta.

b. John<sub>i</sub>-wa [kare<sub>\*i,j</sub>-ni nattokus]-ase-ta.

'John<sub>i</sub> made him<sub>\*i,j</sub> consent.'

Now, except when control overrides, PRO is subject to the DR rule.<sup>2</sup>

The following are taken from Oshima (1979):

(37) John<sub>i</sub>-ga PRO<sub>\*i,j</sub>-o mi-ta.

'John<sub>i</sub> saw PRO<sub>\*i,j</sub>.'

(38) John<sub>i</sub>-ga PRO<sub>\*i,j</sub>-o bengosi-ta.

'John<sub>i</sub> defended PRO<sub>\*i,j</sub>.'

(39) John<sub>i</sub>-ga PRO<sub>\*i,j</sub>-o seme-ta.

'John<sub>i</sub> blamed PRO<sub>\*i,j</sub>.'

(40) John<sub>i</sub>-ga PRO<sub>\*i,j</sub>-o nagusame-ta.

'John<sub>i</sub> comforted PRO<sub>\*i,j</sub>.'

(41)

control

John<sub>i</sub>-ga [<sub>S</sub> PRO<sub>i</sub>-ga PRO<sub>\*i,j</sub>- seme] hazime-ta.

'John<sub>i</sub> began to blame PRO<sub>\*i,j</sub>.'

Oshima generalizes his DR rule to include full NP's:

(17) DR assigns disjoint reference to a pair (NP, NP).

(57) John<sub>i</sub>-wa John<sub>\*i,j</sub>-o bengosi-ta.

'John<sub>i</sub> defended John<sub>\*i,j</sub>.'

Oshima distinguishes between SI-1 and SI-2 rules. DR is an SI-1 rule while zibun interpretation is an SI-2 rule. He claims that SI-1 rules are subject to the tensed-S condition,<sup>3</sup> the specified subject condition, and is governed by A/A.

Notice:

(66) John<sub>i</sub>-wa [<sub>NP</sub> kare<sub>i,j</sub>/John<sub>i,j</sub>-no hon]-o mot-te ki-ta.

's 'book' 'carry' 'come'

(67) John<sub>i</sub>-wa [<sub>NP</sub> kare<sub>i,j</sub>/John<sub>i,j</sub>-no kuruma] de tuukinsi-te i-ru.

'his' 'John's' 'car' 'by' 'commute'

'John commutes to work by his/John's car.'

Kare and John are not disjoint in reference. Oshima attributes this to A/A.

Zibun interpretation<sup>4</sup> is a rule that is not subject to tensed-S, specified subject or A/A:

(16) John<sub>1</sub>-wa zibun<sub>1,\*j</sub>-o seme-ta.

'John<sub>1</sub> blamed self<sub>1,\*j</sub>.'

(75) Tensed S 'to':

John<sub>1</sub>-wa [<sub>S</sub> zibun<sub>1,\*j</sub>-ga mi-ta to] it-ta.  
'see' 'say'

'John<sub>1</sub> said that self<sub>1,\*j</sub> saw (it).'

(76) Tensed S 'koto':

John<sub>1</sub>-wa [<sub>NP</sub> [<sub>S</sub> zibun<sub>1,\*j</sub>-ga mi-ta] koto]-o mitome-ta.  
'saw' 'the fact' 'admit'-tense,  
past

'John<sub>1</sub> admitted the fact that self<sub>1,\*j</sub> saw (it).'

(77) Tensed S

Relative clause (tensed):

John<sub>1</sub>-wa [<sub>NP</sub> [<sub>S</sub> zibun<sub>1,\*j</sub>-ga kai-ta] hon-o] mot-te kita.  
'write' 'book' 'brought'

'John<sub>1</sub>-wa brought a book which self<sub>1,\*j</sub> wrote.'

(78) Tensed S

Adverbial clause:

John<sub>1</sub>-wa [<sub>PP</sub> [<sub>S</sub> zibun<sub>1,\*j</sub>-ga siken -ni ukat-ta][node]]hottosi.  
P

'exam' 'pass' 'because' 'heave'

'John<sub>1</sub>-wa heaved a sigh of relief because self<sub>1,\*j</sub> passed the exam.'

(79) Specified subject: .

John<sub>i</sub>-wa Bill<sub>j</sub>-ni [<sub>S</sub> PRO<sub>j</sub>-ga zibun<sub>i,j,\*k</sub>-o nagur] ase-ta.  
'hit'

'John<sub>i</sub> let Bill<sub>j</sub> hit self<sub>i,j,\*k</sub>.'

(18) A/A:

Taroo<sub>i</sub>-wa Hanako<sub>j</sub>-o [zibun<sub>i,j</sub> no ie e] ikaseta.

'Taro made Hanako go to self's house (self = Taro or Hanako).'

4.2 A/A, The Specified Subject and Tensed-S Conditions in the WFH.

In the next section we will present a reinterpretation of the above facts within the general theory developed in this thesis.

### Specified Subject

Within our theory, we will claim that the rule of DR<sup>5</sup> operates on propositional argument structures. The reason for this is that it is in these structures that "subject" is defined.

(19) Taroo<sub>i</sub>-wa kare<sub>\*i,j</sub>-o butta.  
'hit'

a. ( GA O but )  
S

Taroo<sub>i</sub>-wa Ziroo<sub>j</sub>-ni kare<sub>i,\*j</sub>-o sinyoosasetta.  
'trust' cause

b. ( GA ( NI O sinyoo ) sase )  
S S

In (19) b above, the DR rule is blocked from applying to the arguments marked GA and O because of the intervening 'S': (NI). We



cannot simply say that the DR rule applies only in the inner PAS,  
 ( \_\_\_ sinyoo). It is insufficient to state that the 0 argument must  
 be "free" (not co-indexed with some other argument) only in the inner  
 PAS that contains it.

Consider the following examples:

- (20) Taroo<sub>1</sub>-wa Kare<sub>\*1,j</sub>-o ikaseta.  
 'Taro<sub>1</sub> made him<sub>\*1,j</sub> go.'  
 ( GA<sub>1</sub> ( 0<sub>\*1</sub> ik) ase)  
       S      S

Even though the 0 argument and the GA argument are not both in the  
 PAS of ik 'go', the pronoun is free in the maximal PAS  
 that contains it.

Thus, we are relying on the diacritic 'S' to block the disjoint  
 reference rule from applying to the GA and 0 arguments in (19) b. We  
 will adopt the following DR rule that designates as disjoint in  
 reference arguments within (maximal) PAS's.

#### Disjoint Reference Rule:

In a propositional argument structure of the form X Y Z, where  
 X and Z are argument positions, mark X and Z disjoint in  
 reference iff Y does not contain a S(ubject).

#### Examples:

- (21) Simple verb:

	a. ( <u>A</u> <u>B</u> V)
Disjoint	S
reference	
yields:	A ≠ B

b. ( A B C V )  
       S

Disjoint  
 reference  
 yields:

A ≠ B

A ≠ C

B ≠ C

Derived verb:

c. ( A ( B C V ) sase )  
       S       S

Disjoint  
 reference  
 yields:

A ≠ B

B ≠ C

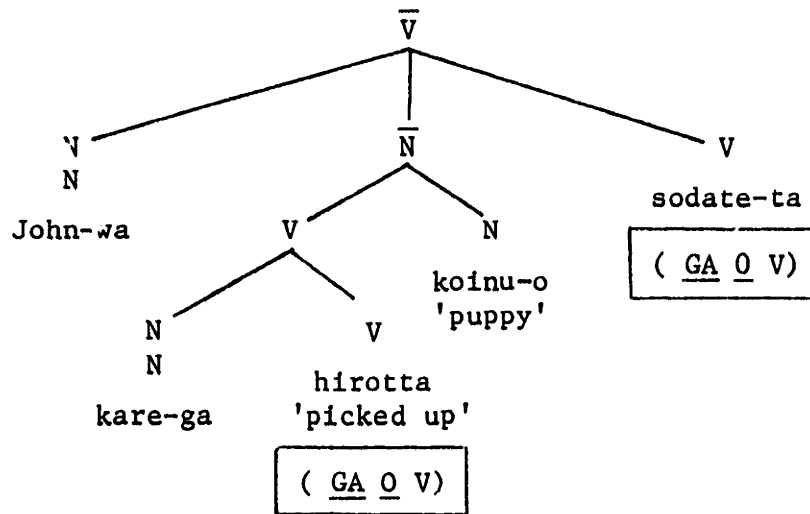
But, A can equal C.

We have, in essence, adopted Oshima's DR rule. The specified subject condition is incorporated in the rule itself. We have not yet accounted for the tensed-S condition that Oshima claims blocks the DR rule.

### Tensed-S

Earlier, we suggested that the DR rule operates on PAS's. One immediate consequence of this move is that we can derive the effect of tensed-S from the stipulation that the rule applies not in the domain of the sentence, but on the PAS representations. The following example demonstrates this result:

(22)



John wa kare ga hirotta koinu-o daizini sodate-ta.

'John brought up carefully the puppy which he had picked up.'

The PAS's that we have boxed are the domains for the application of the DR rule. The above syntactic structure has two PAS's. The DR rule applies within each (maximal) PAS:

(23)

a. ( A B sodate-ta)

Disjoint  
reference  
yields:

A  $\neq$  B

b. ( C D hirot-ta)

Disjoint  
reference  
yields:

C  $\neq$  D

The rule has designated that A and B are not coreferential and that C and D are not coreferential. It has not, however, marked A and C as disjoint in reference. Therefore, John, which equals A, and kare, which equals C, can be coreferent.

A/A

Just as in the case of tensed-S, where we did not specifically mention the condition, we will not explicitly mention the A/A principle. We can achieve the A/A effect by making a distinction between the head of an NP and its daughters. In example (24) below, kare-ga is a daughter in the NP which is headed by hon-o.

- (24) Taroo<sub>1</sub>-wa [kare<sub>1</sub> no hon o] yabutta.  
'tear up'-past  
'Taro<sub>1</sub> tore up his<sub>1</sub> book.'

The PAS which corresponds to (24) is shown in (25):

- (25) ( GA 0 yabur) 'tear up'  
S
- Disjoint  
reference  
yields: GA  $\neq$  0

The DR rule designates the GA and 0 arguments as non-coreferential. However, this does not mean that the daughters of the 0 argument are also disjoint in reference to the GA-marked argument. Oshima's DR rule

evaluates pairs of NP's in a sentence and designates them as disjoint in reference or not. The rule looks at the entire sentence for the purposes of this evaluation.

- (26)  $[_S \text{ NP-wa } [_S \text{ NP-ga } V_1] \text{ NP-o } V_2\text{-ta}]$   
 Disjoint  
 reference  
 yields: NP-wa  $\neq$  NP-ga: unless  $V_1$  is tensed  
 NP-ga  $\neq$  NP-o  
 NP-wa  $\neq$  NP-o

The specified subject and tensed-S constraints as well as A/A govern the rule. Both theories can handle the facts related to these conditions, though they go about doing this in different ways. Oshima's theory does not share an assumption of our theory and that is that the DR rule designates only arguments within the same domain, where by domain we mean the PAS as disjoint in reference or not.

## 5. Topic for Further Research

It is fairly clear that the reflexive zibun and the pronouns kare and kanozoyō, among others, have different properties. Oshima proposed to account for these differences by assuming that they belonged to different components of the grammar. He suggested that the DR rule is an SI-1 rule. SI-1 rules are subject to tensed-S and the SS conditions as well as A/A. On the other hand, he speculates that zibun interpretation (Z-1) is an SI-2 rule and is therefore not subject to these conditions. In order to characterize properly the differences between zibun and kare (kanozoyō), we must better understand each phenomenon. We have presented only the most commonly known facts

concerning zibun. This has led to an oversimplified view of the reflexive pronoun. There have been numerous studies of zibun (Kuno 1972, Kuroda 1973, N. McCawley 1976, Inoue 1976) that are far more comprehensive than I have been in this thesis. I would now like to discuss some of the observations made by the above linguists. I will rely most heavily on Kazuko Inoue's treatment (1976) of reflexivization.

## 5.1 Zibun

We have already mentioned several conditions that determine the class of possible antecedents for zibun. These are:

I      The antecedent must be +human<sup>6</sup>

- (27) Taroo<sub>1</sub> wa zibun<sub>1</sub> no gareezi no hoo e hasiridasita.  
'garage''of' 'towards''start to run'  
'Taro started to run towards his (self's) garage.'
- (28) a. \*Kuruma<sub>1</sub> wa zibun<sub>1</sub> no gareezi no hoo e hasiridasita.  
'The car started to run towards self's garage.'
- b. Kuruma wa gareezi no hoo e hasiridasita.  
'The car started to run towards the garage.'

II      The antecedent must be a S(subject)

- (29) a. Taroo<sub>1</sub> wa kodomo o zibun<sub>1</sub> no kutu de butta.  
'child' 'shoe' 'with' 'hit'  
'Taro hit the child with self's shoe.'  
b. \*Taroo wa kodomo<sub>1</sub> o zibun<sub>\*1</sub> no kutu de butta.

III The antecedent and the reflexive do not have to be clausemates  
(example from Inoue, 1976 (103), p. 163)



- (35) Taroo<sub>i</sub> wa tuma o zibun<sub>i</sub> ga kat-ta kusuri de sin-ase-te simat-ta.  
          wife      self<sub>i</sub>         buy-past medicine by die-cause-completive-past  
 'To his regret, Taro had his wife die because of the medicine he bought.'

**Indirect Passive:** Inoue, p. 130, examples (31) and (32)

- (36) Hanako<sub>i</sub> wa Taroo ni zibun<sub>i</sub> no kuruma ni nor-are-ta.  
self's car ride-passive-past  
'?Taro rode in Hanako's car on her.'
- (37) Hanako<sub>i</sub> wa Taroo ni zibun<sub>i</sub> no nouto o nakus-are-ta.  
self's notebook lose-passive-past  
'?Taro lost Hanako's notebook on her.'

## II Another Type of Ambiguity

In some cases of a passive of a causative, the dative marked NP ("demoted" subject) can be an antecedent. Inoue, p. 148, examples

- (73) a and b, (74) a and b
- (38) a. Oyazi<sub>i</sub> wa boku<sub>j</sub> ni zibun<sub>ij</sub> no kuruma o araw-ase-ta.  
Dad<sub>i</sub> I<sub>j</sub> self's<sub>ij</sub> car wash-cause-past  
'Dad<sub>i</sub> made me<sub>j</sub> wash self's<sub>ij</sub> car.'
- b. Boku<sub>j</sub> wa oyazi<sub>i</sub> ni zibun<sub>j(i)</sub> no kuruma o araw-ase-rare-ta.  
'I<sub>j</sub> was made to wash self's<sub>j(i)</sub> car by Dad<sub>i</sub>.'
- (39) a. Haha<sub>i</sub> wa Taroo<sub>j</sub> ni zibun<sub>ij</sub> no ryokoo-keikaku o tate-sase-ta.  
self's<sub>ij</sub> tour plans make-cause-past  
'Mother<sub>i</sub> made Taro<sub>j</sub> work out self's<sub>ij</sub> tour plans.'
- b. Taroo<sub>j</sub> wa haha<sub>i</sub> ni zibun<sub>j(i)</sub> no ryokoo-keikaku o tate-sase-rare-ta.  
'Taro<sub>j</sub> was made to work out self's<sub>j(i)</sub> tour plans by his mother<sub>i</sub>.'



### III Non-Subject as an Antecedent<sup>8</sup>

Psychological verb: Kuno 1972, example (113) a (taken from Inoue, p. 171)

- (40) Zibun<sub>i</sub> ga Mary ni karakaware ta koto ga John<sub>i</sub> o zetuboo e oiyatta.  
by was-made-fun-of that desperation to drove  
'That self (=he) was made fun of by Mary drove John to desperation.'

#### IV Matrix Subjects that Cannot be Antecedents

(Inoue, p. 134, examples (46), (47), (48) and (49))

- (41) \*John<sub>1</sub> wa, Mary ga zibun<sub>1</sub> ni ai ni kita toki  
self<sub>1</sub> with meet to come-past when  
moo sinde imasita.  
already dead be-past  
'John, when Mary came to see him, was already dead.'
- (42) \*John<sub>1</sub> wa Mary ga zibun<sub>1</sub> o miru toki wa itu mo kaoiro ga warui  
self<sub>1</sub> see when always complexion bad  
soo da.  
I hear  
'I hear that John looks pale whenever Mary sees him.'
- (43) \*John<sub>1</sub> wa zibun<sub>1</sub> ga sinda toki, issen mo motte imasen desita yo.  
self<sub>1</sub> died when a penny have not did  
'John didn't have a penny when he died.'
- (44) \*John<sub>1</sub> wa zibun<sub>1</sub> ga yopparatta toki dake, watasi ni yasasiku  
self<sub>1</sub> drunk-is when only I to kindly  
narimasu.  
become  
'John becomes tender to me only when he gets drunk.'

These are just some of the examples that Inoue (1976) discusses. Her attempt to incorporate all these facts includes doing away with any account based on using a cyclic transformation or a cyclic interpretive rule. Instead she offers a post-cyclic interpretive rule.<sup>9</sup> This rule has a number of properties that simulate the cycle. One has to do with



- (46) # // Hanako<sub>i</sub> ga zibun<sub>ij</sub> no heya o soozi-s-ase-ta //
- room      clean-cause-past
- gakusei<sub>j</sub> ga ryoo o de-ta. # [(a), (c)]
- student<sub>j</sub>          dormitory
- 'The student<sub>j</sub> who Hanako<sub>i</sub> made clean self's<sub>ij</sub> room got out of  
the dormitory.'

In example (45), the head of the relative clause -otoko- is an agent in the matrix sentence and a goal in the relative clause. In (46) -gakusei- is a primary argument in both the relative clause and in the matrix clause. This difference may account for why -otoko- in (45) does not behave like an antecedent for zibun. That is, otoko is in some sense disqualified because even though it is a primary argument of the matrix verb, it is still only a goal in the relative clause. This is, of course, entirely speculative, but possible directions of inquiry suggest themselves.

A comprehensive study of zibun must include an account of: (i) the preferred antecedent readings, (ii) effect of the "directional meaning of the verb" (Inoue, p. 193),<sup>10</sup> (iii) the non-identical object constraint,<sup>11</sup> (iv) the reportive/non-reportive style discussed by Yuroda and (v) the behavior of reflexives in pseudo-cleft constructions (cf. Inoue, p. 196, examples (181) and (182)).

Our approach to the zibun problem has been to try and characterize some possibly important governing factors which are operative at the sentence level. It was pointed out earlier in section 4.1 that Z-I violates tensed-S and the SSC. If this is in fact the case, as it does indeed seem to be, then it appears that zibun does not behave like other anaphors (cf. Chomsky 1980). We leave this discussion for now

and return to the question of recognizing the differences between zibun and kare.

## 5.2 Kare/Kanozyo

A few more facts concerning the pronouns kare and kanozyo should be made explicit before we can make any points about further differences between zibun and kare. The following examples show a contrast in coreference possibilities:

(47) Taroo<sub>i</sub> wa Ziroo<sub>j</sub> ni kare<sub>i,\*j,k</sub> o sinyoosasete.  
'Taro<sub>i</sub> made Ziroo<sub>j</sub> trust him.'

(48) Kare<sub>\*i,\*j,k</sub> ga Taroo<sub>i</sub> ni Ziroo<sub>j</sub> o sinyoosasete.  
'He made Taro trust Ziro.'

The PAS's of examples (47) and (48) correspond to (49).

(49) ( GA ( NI O sinyoo) sase)  
S S

Disjoint  
reference  
yields:

GA ≠ NI

NI ≠ O

But GA may be coreferential with O

In (47) the GA-marked argument may be coreferential with the O-marked argument as predicted. However, in (48) this coreference possibility does not exist. We can describe this by saying that because the pronoun kare in (48) is "higher" than the other arguments in the PAS, coreference is disallowed.<sup>12</sup> Thus, we are claiming that the DR rule itself does not establish the non-coreference of the GA and

0 marked arguments. This is dealt with by a precedence principle.<sup>13</sup>

The point that interests us here is illustrated in examples (50) and (51). The linear arrangement of the NP's in the sentence does not affect the coreference possibilities established by the DR rule in the PAS.<sup>14</sup>

- (50) a. Taroo<sub>i</sub> wa Ziroo<sub>j</sub> ni kare<sub>i,\*j,k</sub><sup>-o</sup> sinyoosasete.  
'Taro made Ziro trust him (Taro or some other person).'
- b. Taroo<sub>i</sub> wa kare<sub>i,\*j,k</sub><sup>o</sup> Ziroo<sub>j</sub> ni sinyoosasete.
- c. Ziroo<sub>j</sub> ni kare<sub>i,\*j,k</sub><sup>-o</sup> Taro<sub>i</sub> wa sinyoosasete.
- d. Kare<sub>i,\*j,k</sub><sup>-o</sup> Taroo<sub>i</sub> wa Ziroo<sub>j</sub> ni sinyoosasete.
- (51) a. Kare<sub>\*i,\*j,k</sub> ga Taroo<sub>i</sub> ni Ziroo<sub>j</sub> o sinyoosasete.  
'He made Taro trust Ziro.'
- b. Ziroo<sub>j</sub> o Taroo<sub>i</sub> ni kare<sub>\*i,\*j,k</sub><sup>-ga</sup> sinyoosasete.

This further indicates that the DR rule makes reference to the PAS, which is independent of the phonetic form of the sentence. In a theory such as Oshima's the same effect can be achieved by assuming a bifurcation model such as the one proposed by Chomsky (1977). The grammar is conceived of as being composed of autonomous levels with rules of one level only referring to structures defined and available in that domain.

### 5.3 Comparison of Kare and Zibun

We have just highlighted a particular property of antecedent possibilities of kare which indicates that the DR rule refers to the PAS independently of the syntactic string. Zibun-interpretation, on

the other hand, seems to be influenced by linear order. Many factors mediate the final outcome of possible zibun antecedents. Normally, zibun cannot precede its antecedent in the sentence. But, it appears that the condition that it be coindexed with some NP is so firm that the "precede" constraint is waived:

- (52) a. Taroo<sub>1</sub> wa zibun<sub>1</sub> o kagami de mitta.  
              'in the mirror' 'saw'  
              'Taro saw himself in the mirror.'
- b. Zibun<sub>1</sub> o Taroo<sub>1</sub> wa kagami de mitta.

(52) a and b contrast with (53) below:

- (53) a. Taroo<sub>i</sub> wa Ziroo<sub>j</sub> ni zibun<sub>i,j</sub> o sinyoosasete.  
b. Taroo<sub>i</sub> wa zibun<sub>i,\*j</sub> o Ziroo<sub>i</sub> ni sinyoosasete.

In (53) b, zibun no longer refers to Ziroo. Clearly, Z-I is to be differentiated from the DR rule. While Z-I utilizes information -- i.e., S(ubject) -- in the PAS for its purposes, it applies in a domain that is broader. Our way of characterizing Z-I's realm of application is more or less equivalent to Oshima distinguishing it as an SI-2 rule, as opposed to being an SI-1, like DR. These are speculations, of course. Eventually, though not in this thesis, we hope to be able to attribute particular properties of such entities as zibun and kare from properties of the domain in which they belong. It may be the case that the properties of the phenomena may in fact be the result of several domains interacting. We have suggested that the abstract level of the PAS coupled with the DR rule accounts for many of the cases of disjoint reference, but certainly not all of the cases

(cf. section 5.2).

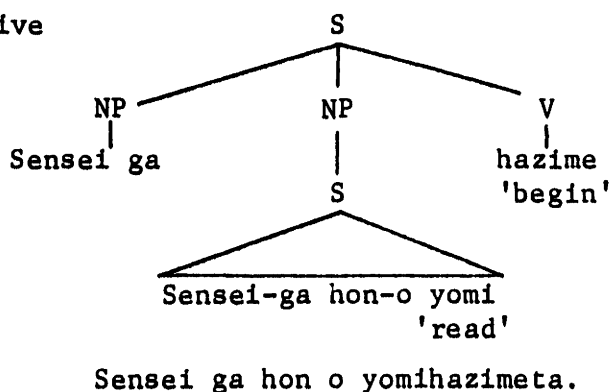
## 6. Other Topics

Among the issues that we must ultimately come to terms with include the aspectual verbs and relative clauses.<sup>15</sup> The following discussion is by no means intended to be comprehensive. We would simply like to recognize the topics and suggest a possible direction of inquiry.

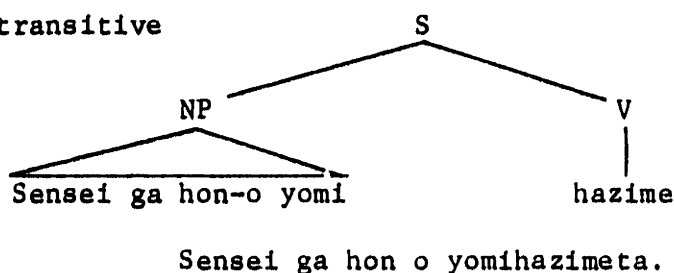
### 6.1 The Aspectual Verb Hazimeru

In his paper entitled "Where Morphology and Syntax Clash: A Case in Japanese Aspectual Verbs," Shibatani discusses the structure of sentences with aspectual verbs.<sup>16,17</sup> Shibatani speculates that these verbs often have both transitive and intransitive structures:

#### (54) Transitive



#### (55) Intransitive



These structures undergo several transformations, predicate (verb) raising being one of them. The transitive structure corresponds to the

reading: 'The teacher began the activity of reading a book', while the intransitive structure corresponds to: 'The activity of the teacher reading the book began'. Since the earlier accounts of the auxiliary verbs entail utilizing predicate raising we will take the liberty of assuming that this is recognition of the fact that yomi-hazimeta is a derived (compound) verb. In our theory, verbs of this type are built up in the word formation component before lexical insertion. Therefore, we would not have the complex syntactic structures of the type suggested by Kuno et al.<sup>18</sup> Rather, it is the PAS's which reflect the structural difference between the transitive and the intransitive aspectual verb. The following are the PAS's of the verb, V+hazime:

(56) a. Intransitive

(( \_ \_ V) hazime)

b. Transitive ( \_ ( \_ \_ V) hazime)

(56) corresponds to the intransitive reading while (56) a is the case of the agent actually being an overt argument of hazime which starts the activity. We have now introduced a new mechanism: the binding of an external argument with an internal one. Later in this chapter we will modify the stative linking rule based on this new process of binding (cf. next section of this chapter).

The grammatical linking rules would operate on the PAS's, (57) a and b, as follows:



(57) a. ((         V) hazime)  
          S

Grammatical  
linking rule:

GA: (( GA     V) hazime)  
      S

O: (( GA O V) hazime)  
     S

NI: not applicable

b. (     (         V) hazime)  
      S      S  
      └────┘

Grammatical  
linking rule:

GA: ( GA (         V) hazime)  
      S      S  
      └────┘

O: ( GA (     O V) hazime)  
      S      S  
      └────┘

NI: ( GA ( NI O V) hazime)  
      S      S  
      └────┘

In (57) b, we have an argument position linked: NI. There is no overt NP<sub>ni</sub> that corresponds to this bound NI argument.<sup>19</sup> This situation raises the following point: do we have a general condition that states that any argument that is bound by a case marked NP is itself considered marked for that case? For the purposes of our exposition, we will adopt just such a condition. (57) b, then, will have the following linking registers:

(57) b'

Grammatical  
linking rule:

GA: ( GA ( GA O V ) hazime )

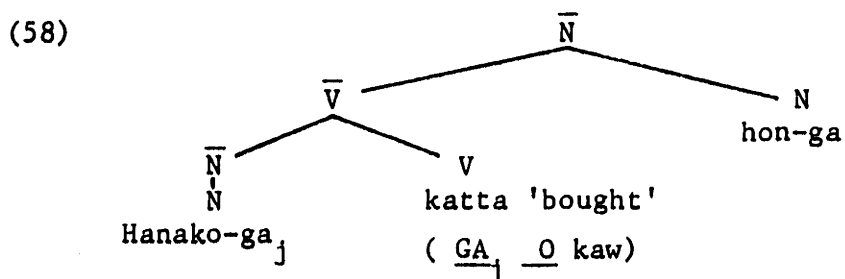
O: ( GA ( GA O V ) hazime )

NI: not applicable

The above discussion is intended to present suggestions that would be compatible with our theory. We leave this as a topic for further research.

## 6.2. Relative Clauses

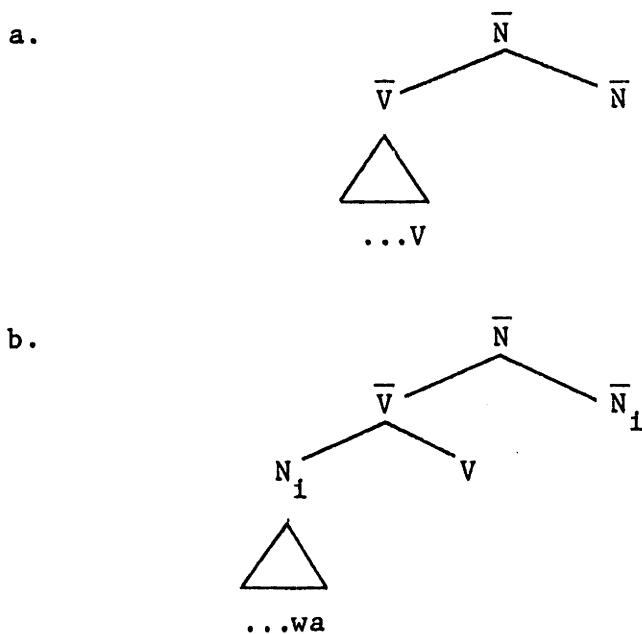
In light of relativization (a term borrowed from earlier accounts of the relative clause construction) we have to introduce a modification of the definition of sister. This modification is necessary for the purposes of evaluation. The following is an example of a relative clause in Japanese:<sup>20</sup>



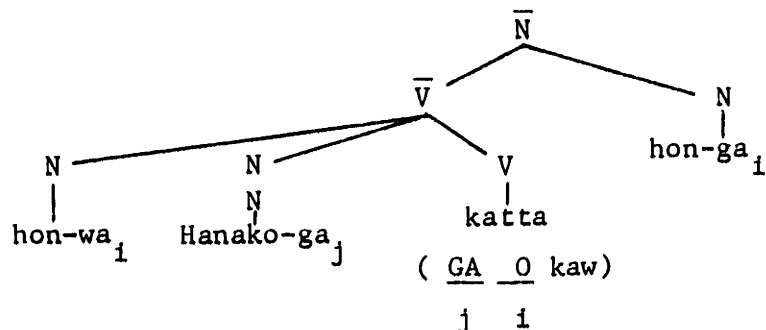
Hanako-ga is clearly a sister of the verb katta. How do we associate hon-ga with the open O-marked argument in kaw? Hale, in

his paper "Remarks on Japanese Phrase Structure" (1980), suggests that the head of a relative clause is the topic in the immediately adjacent clause. This suggestion entails utilizing "a rule of logical form which produces a copy of the head, marked as topic and bound to (coindexed with) the head, in the immediately adjacent sentence, where it will appear as a sister to the predicate"<sup>21</sup> (1980:198).

(22) Hale's example:



The structure in LF for Mary ga katta hon o 'the book which Mary bought' would be:



Evaluation is now complete.

## 7. The Stative Linking Rule Revisited

In section 6.1, we introduced a new device into the grammar. It entails the binding of an external argument with an internal argument:

$$(59) \quad \begin{array}{c} ( \quad ( \quad \quad V ) V ) \\ \quad \quad \quad \begin{array}{cc} S & S \\ | & | \\ \hline \end{array} \end{array}$$

In this section, we will explore the possibility of utilizing the above binding to account for the different case arrays associated with the derived potentials. We illustrate this in (60):

(60) V+eru (verb+potential)

NPga NPo

NPga NPga

NPni NPga

But not:

(61) \*NPni NPo

Earlier (see Chapter 5), we settled on the following linking rule that replaced the (a) part of the grammatical linking rule:

(62) The Stative Linking Rule:

a. Link rightmost argument GA.

b. Link leftmost argument either NI or GA.

Note: Only some verbs link the leftmost argument NI.

This rule seems rather cumbersome. Our next proposal is an effort to distinguish the parts of this rule so that they can be characterized as independent reflexives of other properties of the grammar. The suggestion amounts to stipulating that -rare ~ e is associated with two different PAS's. In the first case, rare ~ e adds an argument which then binds the adjacent argument of the internal PAS.

- (63) a. ((         V) rare ~ e)  
           S
- b. (     (         V) rare ~ e)  
       S      S  
       └───┘

(63) b corresponds to the transitive aspectual verbs discussed in section 6.1. The stative linking rule will be the following:

(64) Stative Linking:

- (1) Link leftmost S NI (optional)
- (2) Link rightmost argument GA (obligatory)

(63) a will never use the stative linking rule:

- (65) ((         V) rare ~ e)  
           S

Regular linking rule: GA: (( GA     V) rare ~ e)  
                           S

O: (( GA O V) rare ~ e)

NI: not applicable

(63) b, on the other hand, will always utilize either (b) or (a) and (b) of the rule. As we mentioned earlier (cf. Chapter 4), some

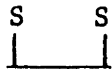
stative verbs have the array NPni NPga and some do not. Therefore, (1) is optionally used by some verbs to replace the (a) part of the regular linking rule. All stative verbs with the PAS in (63) b use (2). (2) is used to replace the (b) part of the regular rule. Now, instead of being one rule, the Stative Linking Rule has become two independent rules. Example (66) illustrates two case array possibilities for (63) b:

(66) a. (     (         V) rare ~ e)



Stative rule (1)

(optional) : ( NI ( NI     V) rare ~ e)



Stative rule (2)

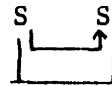
(obligatory) : ( NI ( NI GA V) rare ~ e)



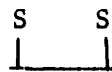
Example where (1) option is not taken:

(66) b.

Regular linking rule: GA: ( GA ( GA     V) rare ~ e)



Stative rule (2) : ( GA ( GA GA V) rare ~ e)



NI: not applicable

Now we have separated the Stative linking rule of Chapter 5 in

such a way so that the relevant parts replace either a. (GA) or b. (O) of the Regular linking rule. The Stative rule (1) assigns a linking register to subject just as does the rule it replaces does. Like b. of the Regular rule, the rightmost argument position is the target of rule (2).

We have made this move, in part, to see if the binding mechanism could be productively extended to other complex verbs. This extension has enabled us to distinguish structurally -NPga NPo V- statives from -NPga NPga V- statives just as the transitive/intransitive aspectual verbs are distinguished. In addition, we have managed to simplify, somewhat, the Stative linking rule. One immediate question is: is there independent justification for positing these structural differences? We predict that there is a difference between (67) a and (67) b:

(67) a. Taroo wa sashimi o taberareta.

b. Taroo wa sashimi ga taberareta.

roughly: 'Taro could eat sashimi.'

Informants tell me that there is indeed a difference, but that it is hard to characterize precisely what it is. Other examples of this problem would involve the verbal suffix -ta-i 'want':

(68) a. Watashi wa sashimi o tabetai.

b. Watashi wa sashimi ga tabetai.

roughly: 'I want to eat sashimi.'

(68) a would correspond to the PAS in (69):

(69)  $(( \underline{\quad} \underline{\quad} \text{tabe}) \text{ta-i})$   
           S

Regular linking rule: GA:  $(( \underline{\text{GA}} \underline{\quad} \text{tabe}) \text{ta-i})$   
                                   S

O:  $(( \underline{\text{GA}} \underline{\text{O}} \text{tabe}) \text{ta-i})$   
           S

NI: not applicable

The PAS of (68) b would be as in (70):

(70) a.  $( \underline{\quad} ( \underline{\quad} \underline{\quad} \text{tabe}) \text{ta-i})$   
           S      S  
           └───┘

Stative rule (1)  
   replaces a. :  $( \underline{\text{NI}} ( \underline{\text{NI}} \underline{\quad} \text{tabe}) \text{ta-i})$   
                   S      S  
                   └───┘

Stative rule (2)  
   replaces b. :  $( \underline{\text{NI}} ( \underline{\text{NI}} \underline{\text{GA}} \text{tabe}) \text{ta-i})$   
                   S      S  
                   └───┘

NI: not applicable

OR:

(70) b.  $( \underline{\quad} ( \underline{\quad} \underline{\quad} \text{tabe}) \text{ta-i})$   
           S      S  
           └───┘

Regular linking rule: GA:  $( \underline{\text{GA}} ( \underline{\quad} \underline{\quad} \text{tabe}) \text{ta-i})$   
                                   S      S  
                                   └───┘

Stative rule (2)  
   replaces b. :  $( \underline{\text{GA}} ( \underline{\text{GA}} \underline{\text{GA}} \text{tabe}) \text{ta-i})$   
                   S      S  
                   └───┘

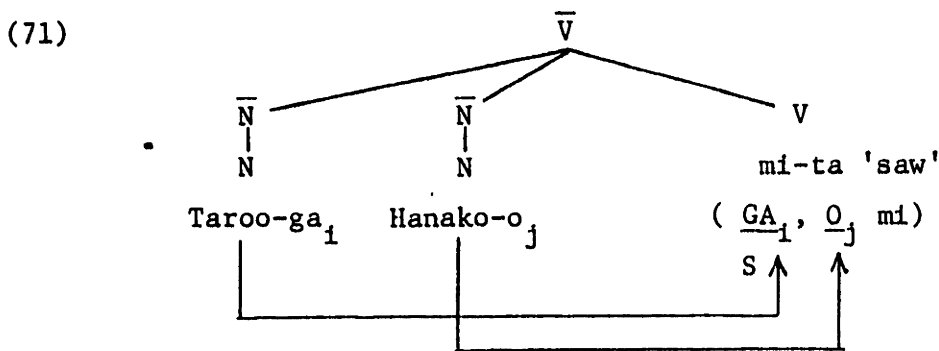
NI: not applicable



The prediction involved here -- if these examples are analogous to the treatment of the aspectual verbs -- is that the cases which use binding involve a special relationship between the subject and the verb. Perhaps the subject receives some kind of special focus.<sup>22</sup> We leave this topic open for further research.

#### 8. Pronominal Interpretation of Unevaluated Argument Positions

Up until now we have dealt, for the most part, with sentences where every position in the PAS of the verb has been associated with an overt noun phrase:



What we are concerned with here are the cases of unevaluated argument positions. Oshima provides some examples:

- (72) a. John-ga \_\_\_ mi-ta.  
'John saw.'
- b. John-ga \_\_\_ bengosi-ta.  
'John defended.'
- c. John ga \_\_\_ seme-ta.  
'John blamed.'

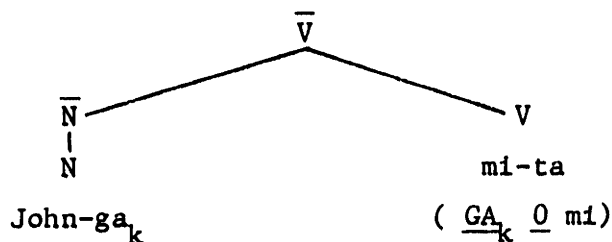
(72) a-c correspond to the following structures in (73) a-c:



occur in the sentences. Our theory automatically suggests that these "missing" NP's are subject to the DR rule, since the rule designates argument positions, disjoint or not.

(74) John-ga<sub>i</sub> (kare)<sub>\*i,j</sub> mi-ta.

'John saw (him).'



DR yields:  $GA \neq 0$

## 9. Preferred Word Order

So far, we have said nothing about preferred word order (PWO). The examples presented in this thesis have reflected, for the most part, the order that seems to be preferred. That is not to say that the "scrambled" versions are less acceptable, however. It should not be surprising that our suggestion for accounting for the PWO would be based on the order of the arguments in the PAS. Thus, we are saying that the arguments that are higher on the thematic hierarchy occur before arguments that are lower. This is accurate up to a point. The derived passive verbs are an exception. The PWO is NPga NPni NPo V and not NPni NPga NPo which is the order in the PAS. We could say that it is preferred that the subject occur first and the rest of the order is determined by the hierarchy.

NPga NPga

Something must be said about the "non-scrambling" of sentences like: John ga Mary ga suki da 'John likes Mary.' The sequence \*Mary ga John ga suki da is not possible under the same interpretation. Kuno (1980) engages Tonoike (1980) in a discussion of this very issue. Tonoike wants to account for the "non-scrambling" of these types of sentences by way of a bi-clausal structure and a condition on scrambling; i.e., NP's cannot be scrambled out of their clauses. Kuno, on the other hand, claims that a "cross-over" constraint is at work here. NP's that are identically case-marked cannot be scrambled with respect to each other. We will adopt a version of Kuno's analysis. Rather than the "cross-over" condition being a constraint on a rule of scrambling -- we do not have such a rule -- it is a condition on interpretation.

This is certainly not all that has to be said about preferred word order, but once again, we leave this for future research.

10. NI-Causative and Passive

In Chapter 4, we made reference to an observation by Kuno that the NI-causative cannot be passivized (cf. section 12):

- (75) a. Taroo ga Hanako ni zibun no ie e ikasasete.  
'Taro let Hanako go to self's house.'
- b. \*Hanako ga Taroo ni zibun no ie e ikasaserareta.  
'Hanako was allowed to go to self's house by Taro.'

We have yet to account for this observation. An examination of the PAS in (75) a may reveal a possible explanation of this problem.

(76) (     (     ik) sase)  
           S       S

Level I semantic linking

NI-causative: (     ( NI ik) sase)  
                   S       S

Level II word formation

passive: ((     ( NI ik) sase) rare)  
                $\emptyset$        S

Level III

Regular linking rule: GA: not applicable

O: not applicable

NI: (( NI ( NI ik) sase) rare)  
            $\emptyset$        S

We have opted to generate the above case linked PAS rather than sensitize any of the rules involved. We must rely, then, on some other independent principle of well-formedness to rule out (76). It is not sufficient to say that every PAS must have a GA-marked argument because of cases of semantic linking with kara:

(77) ( kara NI O okur) 'send'  
           S

Therefore, we still do not have an explanation for the distribution of data observed in (75) b.

## 11. Overall Structure of the Grammar

In this section, we will try to bring together all the various pieces that have been outlined in this dissertation. We will review the mechanisms that we have introduced into the grammar. Next, we will

discuss rules of interpretation, followed by the various principles and structures that have been used by the components of the grammar; i.e., the permanent lexicon, interpretive component.

### 11.1 Mechanisms

#### Case Linking Rules

We have examined two types of linking: semantic case linking and grammatical case linking. The semantic linking rules are employed by some verbs to link an argument with a case other than a grammatical one. These particular linking rules apply in the permanent lexicon. The grammatical case linking rules, on the other hand, apply after all word formation is completed. The following is a list of the linking rules discussed in this work:

(i) Semantic case linking rules:

Kara linking rule: link leftmost argument kara

e.g.: ( kara, \_\_, \_\_, okur)  
'send'

NI linking rule: link second argument NI

e.g.: ( \_\_ ( NI sin) are) : indirect passive  
'die'

: ( \_\_ ( NI ko) sase) : NI-causative  
'come'

: ( \_\_ NI aw) : simple verb 'meet'

(ii) Grammatical case linking rules:

The Regular Linking Rule:

a. Link primary 'S': GA

b. Link rightmost argument: 0

c. Link elsewhere: NI

Stative Rule (1): substitutes for (a) of the Regular Rule  
(optionally)

Link leftmost argument NI

Stative Rule (2): substitutes for (b) of the Regular Rule  
(obligatory)

Link rightmost argument GA

### Word Formation

The word formation component operates on elements which are available in the permanent lexicon. Lexical entries consist of stems and affixes. An entry includes information about category and about the propositional argument structure of, say, verbs. Word formation involves not only combining affixes with stems but also changing PAS's. The following are examples of lexical entries:

```

stem:    tabe 'eat'
          [v ___ v] (category)
          __, __ tabe (the PAS of the verb)

affix:    (s)ase (the causative)
          v] ___ v] (subcategorization)
          __, (___) sase
  
```

In order to make a causative of the verb tabe, the verbal suffix sase, is attached. The process of attaching sase to tabe also entails embedding the PAS of the stem into the position designated by the brackets (\_\_\_).

### Operations on Propositional Argument Structures

We have suggested that there are least three types of operations on argument structures: (i) the embedding of one PAS in another (cf. sase, rare, indirect passive), (ii) adding an argument (cf. also sase, rare) and (iii) binding an external argument with the adjacent argument of an internal PAS.

(i) Embedding:

$[[_{\text{v}} \text{tabe } _{\text{v}}] \text{tai}]$  operation on PAS:

TABETAI: (\_\_\_\_, \_\_\_\_ tabe)

((\_\_\_\_) tai)

((\_\_\_\_, \_\_\_\_ tabe) tai)

(ii) Adding an argument:

$[[_{\text{v}} \text{tabe } _{\text{v}}] \text{sase}_{\text{v}}]$  operation on PAS:

TABESASE: (\_\_\_\_, \_\_\_\_ tabe)

(\_\_\_\_ ( \_\_\_\_\_ ) sase)

( \_\_\_\_ ( \_\_\_\_ \_\_\_\_ tabe) sase)

(iii) Binding an external argument:

$[[_{\text{v}} \text{tabe } _{\text{v}}] \text{hazime } _{\text{v}}]$  operation on PAS:

TABEHAZIME: ( \_\_\_\_ \_\_\_\_ tabe)

( \_\_\_\_ ( \_\_\_\_\_ ) hazime )

( \_\_\_\_ ( \_\_\_\_ \_\_\_\_ tabe) hazime)



## Evaluation

This is the process that entails associating overt NP's in the sentence with argument positions in the PAS of the verb. An NP must be a sister to the verb in order to evaluate an argument position of that verb. We have used indices to associate overt NP's with positions in the PAS. Evaluation takes place in the interpretive component. We have adopted a condition<sup>23</sup> that would not allow an overt NP to be affiliated with more than one argument position in a PAS. The reciprocal is also the case: an argument position cannot be coindexed with more than one NP. In our first discussion of Evaluation we suggested that the process was only complete when all overt NP's and argument positions had been indexed. As further discussion has shown, this is not entirely correct. We have seen cases where an argument position has remained unindexed (cf. section 8). These arguments are interpreted as pronouns provided, of course, that there is an understood referent in the context of the conversation. There are cases of overt NP's that are not indexed: Watashi wa onsen wa Atami ga itiban suki da. ('As for spas, I like Atami best.') Onsen wa is not indexed. It is construed with Atami ga. Thus, the evaluation acts part way as a filter. If the unindexed NP's and arguments do not receive an interpretation by some other means, then the sentence is ruled out.<sup>24</sup>

### 11.2 Some Rules of Interpretation

We have discussed several rules of interpretation: the DR rule, Zibun-interpretation and Subject Honorification. The following is a brief summary of each.

### Disjoint Reference

The domain of application is the PAS:

In a propositional argument structure of the form X Y Z, where X and Z are argument positions, mark X and Z disjoint in reference iff Y does not contain a S(subject).

e.g. ( GA NI 0 age)  
          S

GA  $\neq$  NI, GA  $\neq$  0, and NI  $\neq$  0

e.g. ( GA ( NI 0 sinyoo) sase)  
          S      S

GA  $\neq$  NI, NI  $\neq$  0, but GA can be coreferent or not with 0 because NI, which equals Y in the above rule, is marked 'S'.

### Zibun-Interpretation

The domain of application is the entire sentence. The rule of Z-I interprets an NP as coreferent with zibun if:

- (i) The noun is +human.
- (ii) The noun is an 'S'.
- (iii) Zibun does not command the clause in which the noun appears.

We have discussed some of the counter-examples to (i)-(iii) previously in this chapter, so we will not go into them here. Just which of the counter-examples are evidence to the effect that the Z-I rule is incorrect and which of the examples can be accounted for by other principles of interpretation has been left open for further speculation.

Zibun is problematic in many respects. If it is an anaphor, then its behavior is unlike other anaphors such as 'each other' in English. 'Each other' is clause bounded while zibun is not. So, it is not at all clear just what kind of entity this "reflexive" pronoun is.

### Subject Honorification

The domain of the application of subject honorification (SH) is the PAS. This rule construes the honorific morphology on the verb with an NP in the PAS. An NP is eligible if:

- (i) The NP is "socially superior to the speaker".
- (ii) The NP is the leftmost 'S' in the PAS.

Complex questions arise when one investigates the interaction of SH and the embedding of PAS's (cf. Kuno, Harada, Shibatani). Once again, we leave this as a topic for further investigation.

## 12. The 'S' Principle

In order to identify potential antecedents for zibun we incorporated a principle to assign the diacritic 'S' to the primary argument<sup>25</sup> of both minimal and maximal PAS's. We suggested that this principle be based on the requirement that every PAS has to have a subject. Given the type of phrase structure rules we have adopted, there is no way to identify subject NPs in the syntactic tree before evaluation. Our 'S' principle is not unlike the phrase structure rule  $S \rightarrow NP \dots$  for English, where [ NP S ] is the subject; that is, every S(entence) has a subject. We have made the PAS the domain for this generalization.<sup>26</sup>

## 13. Structures

We have relied on two levels of structure: (i) structures defined by the PS rules and (ii) structures defined by the argument requirements of the verb (i.e., PAS's). In a sense, the autonomy of these types of structures actually constitutes the bifurcation of the model in Chomsky and Lasnik (1977; cf. also the footnote in the Introduction). Below is a comparison of the two models:

## Bifurcation I

PS rules  $\rightarrow$  D.S.

## S.S.

simple structure	complex structure
phonetic representation	LF
scrambling	disjoint reference rule
filter: <sup>27</sup> NP* V	

## Bifurcation II

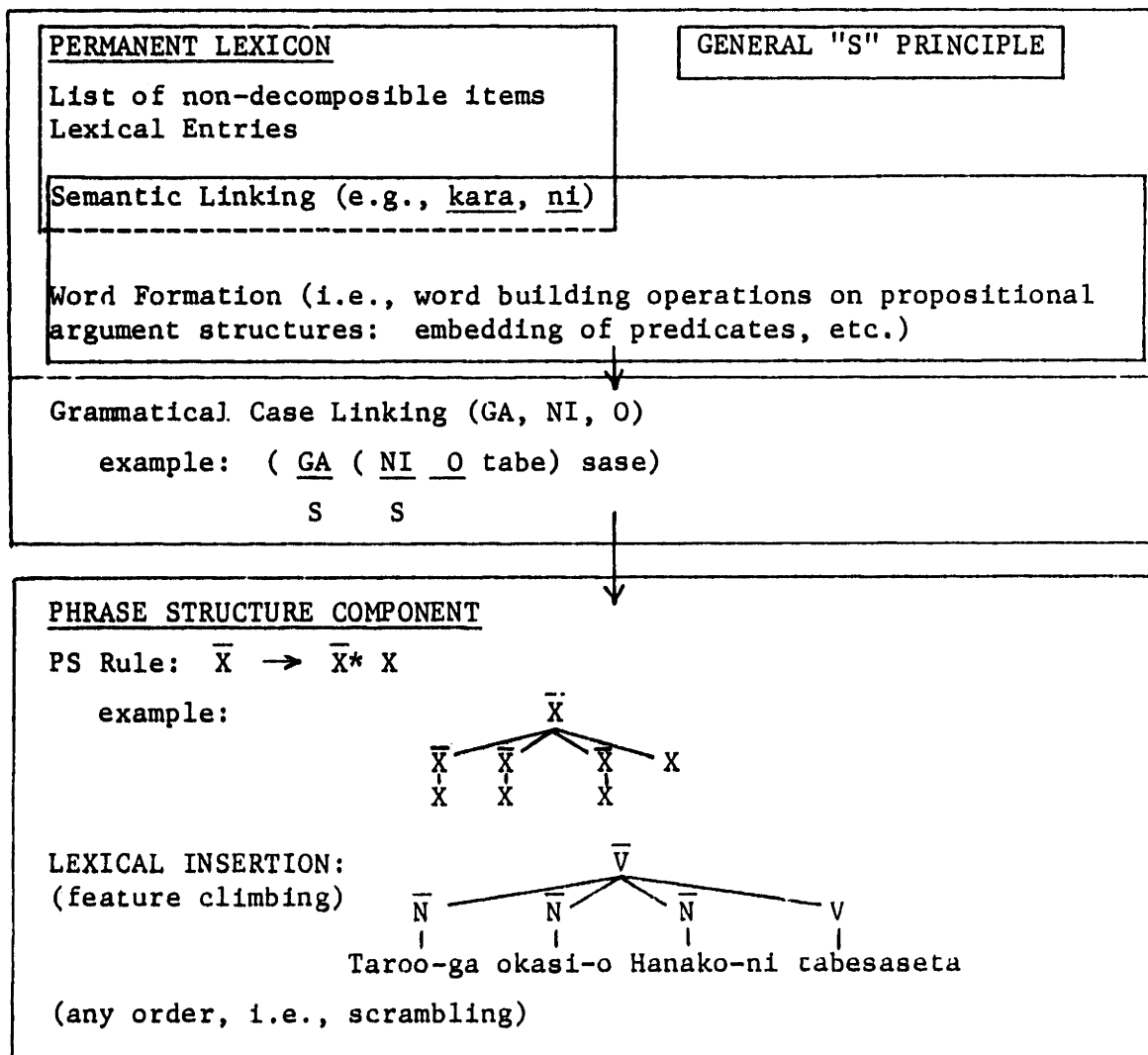
Permanent Lexicon

simple structures	complex structures (i.e., PAS's)
PS rule: $\bar{X} \rightarrow X* X$	case linking
context-free lexical insertion (yields: scrambling)	evaluation
	disjoint reference

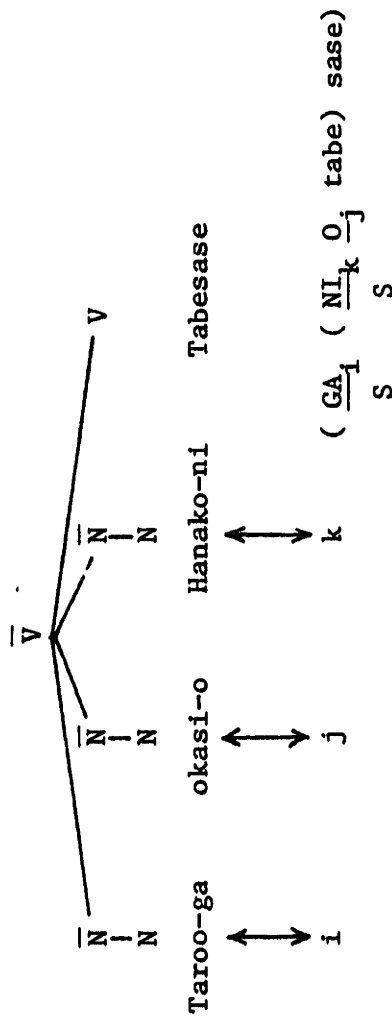
The NP\* V filter of Bifurcation I is similar to our phrase structure rule  $\bar{X} \rightarrow \bar{X}^* X$ . In Bifurcation I, the Disjoint Reference rule operates on the complex structures of LF while in Bifurcation II, the rule operates on the complex representations called Propositional Argument Structures. Thus, we have accomplished the bifurcation effect and have managed to do away with the rule of scrambling.

#### 14. The Overall Picture

The following is a general picture of the organization of the grammar we have arrived at:



## INTERPRETATION



### EVALUATION:

## Coindexing

**Disjoint Reference :** GA can be coreferent with 0.

(general rule which defines antecedent

possibilities in NI cannot be coreferent with 0.  
the PAS)

### CONTINUATION OF INTERPRETATION:

- (1) Non-indexed Argument Positions: interpreted as some pronoun: kare, kanozyo ...
- (2) Unevaluated (overt) NPs: TOPIC or head of a Relative Clause (or can't be interpreted).
- (3) Zibun-interpretation: (domain is the entire sentence) Requirements: NP is +human  
Any 'S' etc.
- (4) Subject Honorification: (domain is the PAS)  
superior to the speaker" and must be the primary 'S'. Requirements: Must be "socially

**PHONETIC REPRESENTATION:** Spelling out of case features.

## 15. Concluding Remarks

To sum up, I would like to stress that it was not our intention to give a comprehensive account of the grammar of Japanese. We hoped to accomplish a pulling together of various ideas about the role of lexical items, their related structures and how these structures interact with other components of the grammar. We have oriented this work toward defining highly restricted autonomous components. Our efforts have led to some interesting results. First, we now have a quite simple account of passive and the non-subjectivizability of the direct objects of causatives; second, a rule of scrambling is no longer needed; and third, we may have a possible account for why some "demoted" subjects can be antecedents for zibun.

While the specific details of our characterizations may turn out to be incorrect, we hope that this line of inquiry will prove inspiring to others.

## FOOTNOTES: CHAPTER 6

1. Conditions on rules: "In a structure of the form ...X... [ $\infty$  ...Y...]...X..., no rule (of an appropriate kind) can involve X and Y where  $\infty$  is a tensed-S (the tensed-S condition) or where  $\infty$  contains a subject not containing Y and not controlled by X (SSC)."

2. This runs into problems, however:

(45) Watasi<sub>i</sub> -ga PRO<sub>i,j</sub> -ni tyuusya-o ut-ta.

'I gave an injection (to myself).'

Oshima speculates that "this exceptional behavior of PRO may be explained by the possibility that the node of "NP-ni" is literally absent (i.e., it is not obligatory as compared to that of direct object NP-o). If so, there will be no PRO and no application of the DR rule. A pragmatic interpretation outside of the grammar will allow for a reading of "giving an injection to oneself."

3. Oshima eventually replaces the tensed-S condition with the PIC. His reasons are not important here.

4. Oshima: "This rule assigns coreference to a pair (NP, zibun in accordance with the following conditions: if NP and zibun are both Human and further (i) if NP satisfies the subject-antecedent condition, i.e., the antecedent of zibun must be the subject of a sentence and command the zibun or (ii) if NP satisfies the highest N<sub>i</sub>' condition, i.e., the antecedent of zibun must be the highest NP which is not commanded by zibun." Since zibun-interpretation is not subject to the conditions on SI-1 (construal rules), he concludes that it is not an SI-1 rule but a rule of discourse (SI-2). We will discuss this in



the next section.

5. It is not so clear that the facts covered by this rule can be translated directly into conditions on binding, as defined in Chomsky (1980).
6. Sometimes higher animals like inu 'dog' qualify as being +human.
7. Inoue (1976, footnote 22) says that "some speakers who are not very restrictive in the use of reflexives allow ambiguous readings to examples (27) and (28), but they prefer the readings indicated by the same indexes over possible readings."
8. Cf. Kuno (1972).

9. The following is Inoue's zibun-interpretation rule (p. 161):

(97) SD:

$$\begin{array}{cccccccccccccccc}
 \left\{ \begin{array}{c} \# \\ // \end{array} \right\} & X & \left( \begin{array}{c} [+H] \\ [NP] \end{array} \right) & X & \left( \begin{array}{c} [+H] \\ [NP] \end{array} \right) & X & \left[ \begin{array}{c} +Ref1 \\ [NP] \end{array} \right] & X & V & \left\{ \begin{array}{c} \# \\ // \end{array} \right\} & X & \left( \begin{array}{c} [+H] \\ [NP] \end{array} \right) & X & \# \\
 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 & 13 & 14
 \end{array}$$

Conditions: (i)  $\begin{array}{c} +H \\ NP \end{array}$  commands  $\begin{array}{c} +Ref1 \\ NP \end{array}$ .

(ii) 3 = Subj, 5 ≠ Subj.

(iii) 2, 4, and 11 do not contain  $\begin{array}{c} +H \\ NP \end{array}$ .

Interpret (optional):

- $$7 = \left\{ \begin{array}{ll}
 3. & (a) \\
 5. \text{ Condition: } 9 \text{ has } [-\text{Like Subj}]. & (b) \\
 12. \text{ Conditions: } 11 = \emptyset \left[ \begin{array}{c} +Ref1 \\ [NP] \end{array} \right] \neq \text{Subj unless bounded by more} & \\
 \quad \text{than one pair of // 's, } 3 = \emptyset \text{ unless } 5 = \emptyset \text{ and} & \\
 \quad 9 = [-\text{Like Subj}]. & (c) \\
 12. \text{ Condition: If } 11 \text{ contains Subj-conj, } 11 \text{ contains no NP.} & (d) \\
 3. \text{ Conditions: (i) does not hold, and } 6 = Y \left\{ \begin{array}{c} \# \text{ Co-conj } \# \\ // \text{ Co-conj } \end{array} \right\} & \\
 \quad Z, \left( \text{where } Z \neq \left[ \begin{array}{c} +H \\ NP \end{array} \right] \right). & (e)
 \end{array} \right.$$

10. Examples of the influence of "directional meaning" are (taken

from Oyakawa (1973): example (15) a; Inoue example (169), p. 193:

- (1) Yamada-si<sub>1</sub> wa musuko<sub>(j)</sub> ga zibun<sub>1(j)</sub> no zimusyo ni  
son self's office to  
ku-ru no o iyagat-ta.  
come-non-past that dislike-past  
'Mr. Yamada<sub>1</sub> did not like that his son<sub>(j)</sub> comes to self's<sub>1(j)</sub>  
office.'

**Yamada-si is the preferred antecedent.**

11. An example of this constraint is taken from Inoue (p. 194) who says that there is a "case in which the verb does not permit the subject and the object to be identical."

Example (129) b      \*Mary<sub>1</sub> ga zibun<sub>1</sub> no hinansita.

'Mary accused herself.'

12. Oshima (1978) assumes "a semantic rule (probably an SI-2 rule) which says for an intra-sentential case...that a non-zero pronoun cannot precede its antecedent (cf. Reinhart (1976)) for an alternative approach."

13. See also example (6) from Kuno (1980:128):

- (6) Kare wa [[ sono ie ni John o kakumatta<sub>s</sub> ] Bill<sub>NP</sub>] o uragita.  
'he' 'the house in' 'sheltered' 'betrayed'  
'He betrayed Bill, who sheltered John in that house.'

14. Not all speakers find all the possible permutations good.

15. We will not detail the other cases that involve the so-called "raising" of a downstairs subject into the matrix sentence. Orou 'think' is an example of a problematic and therefore interesting case of subject to object raising. Orou takes a sentential complement with the complementizer to:

(i) Mary wa [[John ga kinoo wa sukosi hen da] to] omotte iru.

'Mary believes that John is acting a bit odd today.'

There is a "raised" version of (i) where John is case marked o:

(ii) Mary wa John o kinoo wa sukosi hen da to omotte iru.

In our system, a raising analysis will not work since an NP must be an argument of the verb in order to be affiliated with a case. The following analysis throws a raising-type analysis into question:

(iii) Mary wa John o kare ga kinoo wa sukosi he da to omotte iru.

'Mary thinks of John he is acting a bit odd today.'

We would have to say that John o is evaluated as the theme argument (position) of omou.

16. The following is a list from Shibatani 1973:

#### Aspectual verbs

	Transitive	Intransitive
'begin'	hazime-	hazimar-
'continue'	tuzuke-	tuzuk-
'stop'	oe-	owar-

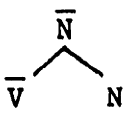
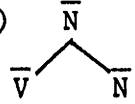
In his paper, Shibatani (1973) notes that it is sometimes, though not always the case, that (p. 63) "...that the surface morphological indication correlates with the underlying syntactic structure (transitive or intransitive) in the case of verbs of terminative aspect..."

Martin (1975:441-454) provides an extensive list of "infinitive-attached auxiliary verbs."

17. These "aspectual verbs" occur as independent verbs as well.

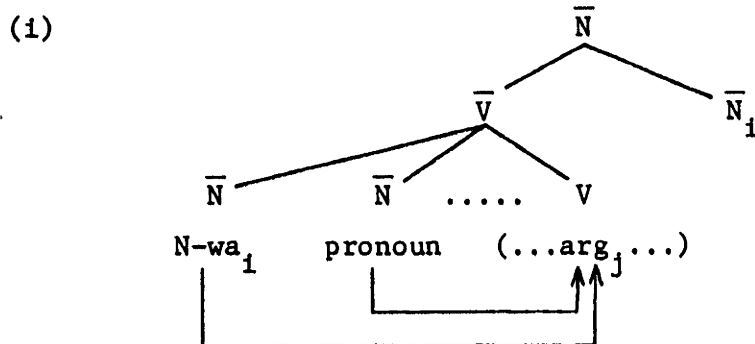
18. Cf. Also Shibatani (1973), Akmajian and Kitagawa (1977), among others.

19. Or we could say that bound argument position, the righthand argument of the bound pair, receives no case at all.

20. We are not sure if the relative clause should be (i)  or (ii) 

. For purposes of exposition, we will adopt the structure in (ii).

21. Hale's suggestion accommodates a very nice account of the non-occurrence of resumptive pronouns in relative clauses. To quote Hale: "Ungrammaticality results if two overt arguments compete...for the same argument position, as would be the case if a resumptive pronoun were used in the problematic cases (1980:196):



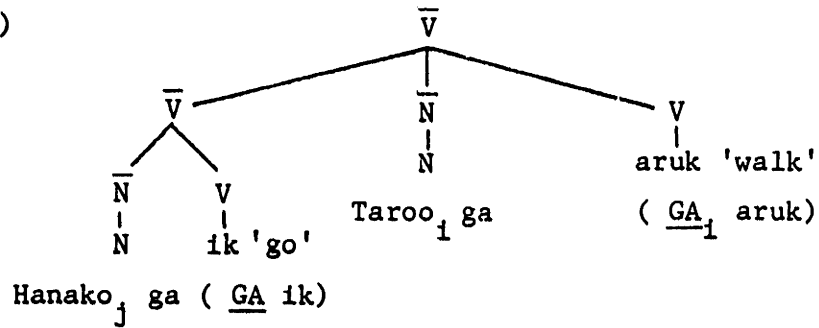
It is not possible to have two overt NPs evaluating the same argument position.

22. I am unable to pursue this point here. Saburo Oye and Kazuko Inoue have written on this topic.

23. Cf. also Freidin (1978) and Chomsky (1980b).

24. There is another example that we have not yet talked about and that involves cases where all the NP's are indexed and all the arguments are indexed but the sentence is ungrammatical:

(78)



Hanako ga iku Taroo ga aruku.

\*'Hanako goes Taro walks.'

This structure is not ruled out by any condition based on indexing. It must, instead, be ruled out by some other principle that renders the above structure uninterpretable.

25. If the primary argument is marked  $\emptyset$  (because of passive) then, roughly, 'S' goes anywhere else.

26. The same suggestion has been made for configurational languages in Wehrli (1980).

27. This filter would rule out strings that do not conform to NP\* V.

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## BIOGRAPHICAL NOTE

The author was born in Oakland, California on March 13, 1951. She graduated from Berkeley High School in June 1969. She attended the San Francisco Art Institute 1969-1970, majoring in photography. The next years were spent abroad. Upon return, she enrolled at the San Francisco State University (1972). In 1974, she enrolled at the State University of New York, Stony Brook, from which she graduated in December 1975. In the interim, she studied Japanese at U.C. Berkeley (1975). In the fall of 1976, she began graduate work in Linguistics at MIT. During her final year at MIT she was supported by an AAUW dissertation fellowship. In the fall of 1980, she will become a visiting assistant professor for one year at the University of Arizona.