GRAMMATICAL RELATIONS, LEXICAL RULES, AND JAPANESE SYNTAX

Alec Marantz
Massachusetts Institute of Technology

I would like to discuss some well-known and well-studied constructions in Japanese--the passive, the causative, and the adversity passive--within the framework of a particular theory of universal grammar. I hope to show that, for the most part, the syntax of these constructions follows immediately from universal grammar given properties of Japanese which we can fix independent of the constructions. The claim is that the only things peculiar to Japanese about passive and causative constructions are those things which are obviously peculiar to Japanese--that direct objects are marked with the particle o, for example, or that the causative -sase is a bound morpheme.

Before I present the theory and my analysis of Japanese, I think it is important to ask why most of the literature on Japanese syntax written in the 1970's is in the transformational generative grammar model of Aspects of the Theory of Syntax, published in 1965, and an outgrowth of Aspects, generative semantics, which is usually associated with the late 1960's. In particular, why hasn't more work been done within the so-called Extended Standard Theory?[1] I do not believe that the continued use of an Aspects-style model represents a resistence among Japanese linguists to new ideas. Rather, there are certain features of Aspects-style syntax which allow one to capture important facts about Japanese, and these features are apparently missing from more recent transformational theories.

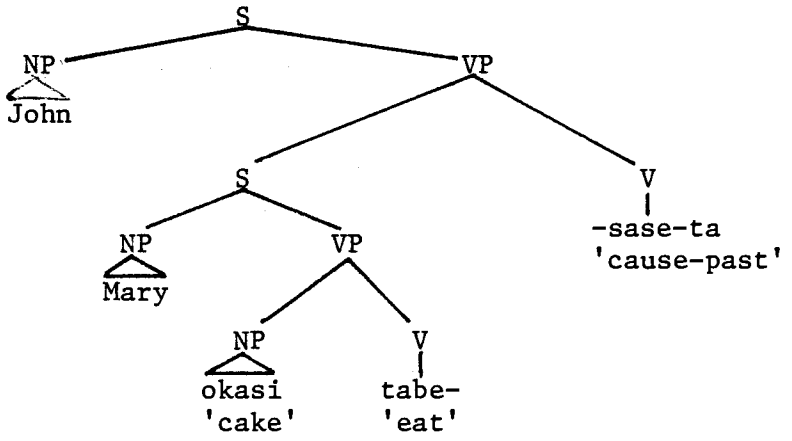
Consider the motivation for an Aspects model analysis of a causative sentence like (1).

(1) John-ga Mary-ni okasi-o tabe-sase-ta.
nom dat cake-acc eat-cause-past

'John made/let Mary eat the cake.'

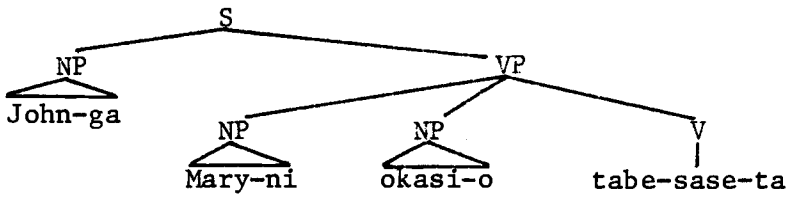
We may assume a deep structure for (1) something like (2).

(2)



Verb raising and case marking could yield a surface structure for (1) from (2) something like that shown in (3).

(3)



The deep structure in (2) seems right for semantic interpretation. It establishes the entire lower clause as the object of"causing." It represents the grammatical relations necessary to determine that, for example, it's Mary that is doing the eating and the cake that is being eaten and not vice-versa. The grammatical relations established by (2) allow case marking to proceed in a straightforward manner. Moreover, (2) establishes Mary as a subject, and, as has been reported repeatedly in the literature, the lower subject in a Japanese causative construction behaves like a syntactic subject, e.g., in being able to serve as an antecedent for the reflexive zibun.

If we adopt an Extended Standard Theory analysis of the causative construction, on the other hand, with semantic interpretation done off surface structure and with a surface rule establishing the connection between a reflexive and its antecedent, the analysis of sentence (1) becomes very complex, or so it seems. From a surface structure like (3), how do we read off the correct grammatical relations which enable us to connect tabe 'eat' with its arguments? How do we determine that Mary counts as a subject for purposes of the reflexive-antecedent connection?

We may conclude here that the reasons for retaining an Aspects-style analysis of Japanese appear reasonable and obvious: features of the Aspects model which captured important generalizations about Japanese, in particular, deep structure interpretation and a cyclic rule of reflexivization, are absent from more recent models of transformational generative grammar.

I will outline a theory of grammatical relations and lexical rules (developed in technical detail in Marantz 1981) which is easily incorporated, as a subcomponant, into current theories of grammar, both "extended lexical" grammars like that described in Bresnan (1981) and transformational grammars like that described in Chomsky (1981). This theory provides replacements for those features of Aspects-style grammars which proved particularly well-designed for describing Japanese. The theory also makes Japanese appear less idiosyncratic among the world's languages. Within this theory, we may say that the Japanese passive morpheme -rare has the same syntactic features as the English passive morpheme -en and the passive morphemes in most of the world's languages. The differences between Japanese and English passive constructions result from independent differences between the two languages. Similarly, we may say that the Japanese causative verb -sase has basically the same syntactic and semantic features as the English causative verb make. The differences in the behavior of English and Japanese causative constructions are attributable, for the most part, to the fact that -sase, unlike make, is a bound morpheme and, of course, to independent differences between the two languages.

1. The Theory

Verbs are associated with some number of semantic roles. These roles are, in some sense, implied by the verbs' semantics. For example, the verb give is associated with an agent--the giver--a theme--what is given--and a goal--the person to whom the theme is given.

(4) give's associated semantic roles: agent, theme, goal

I claim that a verb names a function from arguments bearing some of its inherent semantic roles to a predicate. The predicate may assign one of the remaining semantic roles, if there is one, to an additional argument. We are to view give, for example, as naming a machine--that's the function--which takes in a noun phrase bearing the theme semantic role and a noun phrase bearing the goal semantic role and produces a predicate which might be paraphrased as the open sentence, (x give theme-NP to goal-NP).

(5) give (theme-NP, goal-NP) = (x give theme-NP to goal-NP)

The predicate in (5) assigns the agent or 'giver' role to the noun phrase which binds the free variable, x.

It is important to note that the predicate returned by this function give names depends on the particular choice of NPs to bear the semantic roles we see inside the parentheses of (5). Thus for a sentence like Elmer gave a porcupine to Hortense, (6a), the predicate the give function returns is (x give a porcupine to Hortense), where a porcupine serves as theme and Hortense serves as goal. For a sentence like Elmer gave two aardvarks to Horace, (6c), on the other hand, the give function returns the predicate (x give two aardvarks to Horace). The predicates shown in (6b) and (6d) are clearly different and thus Elmer, which binds the free variable of the predicates, bears a different semantic role in (6a) from that it bears in (6c). Elmer is a 'giver' in both sentences, but a different sort of giver--a giver of a porcupine to Hortense in (6a) but a giver of two aardvarks to Horace in (6c).

(6) a. Elmer gave a porcupine to Hortense.
b. give (a porcupine, Hortense) = (x give a porcupine to Hortense)
c. Elmer gave two aardvarks to Horace.
d. give (two aardvarks, Horace) = (x give two aardvarks to Horace)

The noun phrase which is assigned its semantic role by the predicate, Elmer in (6a&c), is called the "logical subject" of the predicate.

As a representation of the function a verb names, we include within the lexical entry for a verb an object called a "predicate-argument structure." In (7) I have displayed give's predicate-argument structure. As place holders for the actual arguments which bear these roles in a sentence, I have placed within the parentheses of the predicate-argument structure the names of the semantic roles born by the arguments which go in each slot. So a theme NP goes in the first slot in (7), a goal NP in the second.

(7) give's predicate-agrument structure: give (theme, goal)

The crucial thing to note about this representation of a verb's semantics is the asymmetry between the semantic roles born by arguments which serve as input to the function the verb names and the semantic role assigned by the predicate which is the output of this function. Note in particular that the actual semantic role assigned to the logical subject of a predicate will depend on the choice of noun phrases to serve as input to the function which yields the predicate, while the semantic roles born by the input noun phrases will be independent of the choice of noun phrase as logical subject. We saw in (6) that the subject of give could bear the 'giver of a porcupine to Hortense' relation or the 'giver of two aardvarks to Horace' relation depending on the choice of theme and goal NPs. The theme and goal arguments of give, on the other hand, will bear the same theme and goal roles regardless of the choice of logical subject. Contrast my approach to verb semantics with the usual claim that give, for example, is a three place predicate, a claim which implies no asymmetry among the three arguments of the predicate. My whole theory of grammatical relations is built on this proposed asymmetry between the logical subject semantic role and the other semantic roles associated with a verb. There is considerable evidence for this asymmetry, both from an examination of sentential semantics and from the operation of certain syntactic processes. I summarize this evidence in Marantz (1981)[2] and will not take the space to repeat it here.

A language includes generalizations over classes of semantic roles which determine, in the unmarked case, which roles will fall inside the parentheses of predicate-argument structures and which roles will be assigned by predicates. In English, for example, themes and patients tend to fall within the parentheses while agents and experiencers are assigned by predicates.[3] The 'giver' role associated with give, being a sort of agent role, is expected to be assigned by the predicate the give function produces.

Within a sentence, arguments must receive their semantic roles from somewhere. We say they are assigned their semantic roles. Semantic roles are assigned by:

(8) 1. predicates 2. verbs, adpositions, nouns, adjectives
3. morphological case markings 4. certain structural positions

In sentence (6a), for example, give assigns the theme role to a porcupine, the preposition to assigns the goal role to Hortense, and the predicate (x give a porcupine to Hortense) assigns the agent or 'giver of a porcupine to Hortense' role to Elmer. Note that arguments do not receive semantic roles by virtue of occupying slots in predicate-argument structures; rather, they must bear the indicated semantic roles in order to enter the slots of the predicate-argument structures. In general, every argument noun phrase or embedded sentence within a sentence is assigned one and only one semantic role (cf. the "theta criteria" of Chomsky 1981).

And in general each of the items listed in (8) may assign only one semantic role. English allows underived verbs to assign only one role, but Japanese and several other languages seem to permit a verb to assign two roles. Within a predicate-argument structure for a verb, I underline the role or roles the verb assigns. An argument assigned its semantic

role by a verb is called the "logical object" of the verb. So a porcupine in (6a) is the logical object of give.

(9) give (theme, goal)

I have introduced the "logico-semantic" relations subject, object, and argument. These relations are clearly defined in terms of semantic role assignment and argument structures. In the present theory, grammatical relations are "grammaticalizations" in some sense of the logico-semantic relations. Just as every argument in a sentence is assigned a semantic role, so each argument must be assigned a syntactic role.[4] Syntactic roles are assigned by:

(10) 1. verbs and adpositions 2. morphological case markings
3. certain structural positions 4. tense/agreement

In our example (6a), a porcupine is assigned its syntactic role by gave and Hortense is assigned its syntactic role by to: What assigns Elmer its syntactic role is a matter for debate. Let us assume the past tense on give assigns the subject its syntactic role--if (6a) were tenseless, Elmer would need to be assigned its syntactic role by something else, say a preposition as in For Elmer to leave early would be nice for everyone. Each argument is the grammatical object (or OBJ) of the item which assigns it its syntactic role. Thus, just as each argument must be the logical object of something, the thing which assigns it its semantic role, it must also be a syntactic object of something, the thing which assigns it its syntactic role.[4] I am claiming that the concept "syntactic object" is a grammaticalization of the concept "logical object," i.e., that "assign a syntactic role" is a grammaticalization of the concept "assign a semantic role."

So the grammatical object or OBJ of a verb is the argument to which the verb assigns a syntactic role. What is the grammatical subject or SUB? A logical proposition is composed of a predicate and its logical subject--the predicate was represented above as an open sentence with a free variable; the logical subject binds the free variable to yield a proposition. The syntactic sentence--which is the grammaticalization of the logical proposition--is composed of a syntactic subject and a syntactic verb phrase. The notion "syntactic subject" is a grammaticalization of the notion "logical subject" while the notion "syntactic verb phrase" is a grammaticalization of the notion "predicate." So a SUB is something which combines with a verb phrase to make a sentence, and this definition is supposed to hold for all languages.

Now I am not claiming that all languages have verb phrases in their constituent structures, i.e., those structures generated by the phrase structure rules of the languages, but rather that all languages employ verb phrases in the syntactic analysis of sentences. We shall see exactly what that means presently.

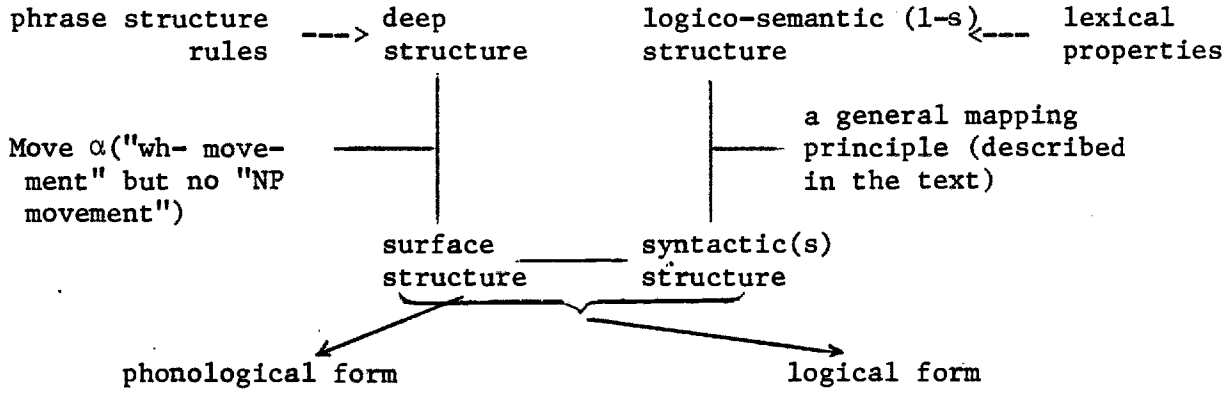
Note first that SUB and OBJ are quite different sorts of entities. In fact, in order for an overt SUB to appear in a sentence, it must be the OBJ of something, perhaps tense/agreement. Note also that although the concept "syntactic subject" derives from the concept "logical subject" and the concept "syntactic object" derives from the concept "logical object,"

the logical subject of a sentence need not be its syntactic subject, the logical object of a verb need not be its syntactic object, and so forth for the other direct correspondences. In sentence (11a), for example, the SUB, a porcupine, is the logical object of gave, while the logical subject of the sentence is the grammatical object of by. In (11b) the OBJ of believe, Elmer, is the logical subject of the lower sentence.

(11) a. A porcupine was given to Hortense by Elmer.
b. I believe Elmer to have given his last porcupine to Hortense.

The universal definition of SUB given above depends on the existence of syntactic verb phrases in every language. What does it mean to say that the verb phrase is a universal unit in the syntactic analysis of sentences but may not appear in the constituent structure of a given language? I will assume an organization of grammar as in (12), similar to that of Chomsky (1980b).

(12)



The phrase structure rules of a language generate deep structures into which lexical items are inserted. Crosslinguistically, the phrase structure rules may range from the "S ---> W* (words)" rule Hale (1980) suggests for languages with free word order to the highly specified rules normally assumed for English. Following Farmer (1980), I will assume that the phrase structure rules of Japanese specify that the head of a phrase appears in phrase-final position but do not further specify the identity or order of phrasal constituents. For example, the rule expanding S in Japanese would be S ---> X^{max*} V, where X^{max} is the maximal projection of X in the sense of the X-bar convention and where V is the head of S. Although nothing in this paper hinges on the treatment of the long distance dependencies captured by wh- movement in transformational grammars, I assume that a general trace-leaving movement and adjunction rule, Move α, generates surface from deep structures.

The logico-semantic or l-s structure of a sentence is a representation of the logico-semantic relations between sentential constituents, e.g., the logical subject and object relations. An l-s structure may be represented as a constituent structure tree in which only the dominance relations and not linear order are significant. Each phrasal constituent at l-s structure consists of a logico-semantic "operator," like a predicate or semantic role assigner, and its l-s dependents, like the subject of the predicate or the constituents to which the role assigner assigns semantic roles. The syntactic or s structure of a sentence displays the grammatical relations among constituents, such as the relation between a verb phrase and its SUB.

An s structure may also be represented as a constituent structure tree in which linear order has no interpretation. Each phrasal constituent at s structure consists of a grammatical "operator," e.g., a VP, and its grammatical dependents, e.g., the SUB of the VP. One general principle governs the mapping between l-s and s structures: If X bears an l-s relation with respect to Y, Y the "operator" in the relation, then the s structure counterpart of X must bear a grammatical relation with respect to the s structure counterpart of Y or with respect to a phrase headed by the s structure counterpart of Y.

There is some non-trivial mapping between surface structures and s structures, a mapping heavily mediated by information contained within lexical entries. I have called the level of syntactic analysis which displays the grammatical relations among constituents "syntactic" or "s structure" in (12) because it shares essential properties with what Chomsky (1980a) has called "S-structure." In particular, it is at s structure where one applies the conditions and principles related to the possibility and impossibility of co-reference among sentential constituents (the "binding theory" of Chomsky 1981). These are the conditions and principles which establish or sanction antecedent-anaphor relations. Rules of phonology map surface structures onto phonological forms. The "logical form" componant (see Chomsky 1980a) maps the pair consisting of the surface and s structure for a given sentence onto its "logical form."

The verb phrase is a universal unit in the syntactic analysis of sentences in the sense that verb phrases appear in the s structures of all languages regardless of whether they appear in the surface constituent structures of these languages. The s structure verb phrase "comes from" logico-semantic structure; it is the syntactic realization of the predicate.

Until recently, Chomsky (e.g., 1980a) had assumed that s structure is what results from applying Move α to the structures--deep structures--generated by the phrase structure rules of a language. For him, the mapping between surface constituent structure and the sort of representation needed for semantic interpretation and for the determination of antecedent-anaphor relations, among other things, was trivial. However, the analysis of languages like Japanese, for which the surface constituent structure one can motivate is too impoverished to serve as an s structure in the technical sense of diagram (12), persuaded Chomsky to adopt a model of grammar something like that in (12) (see Chomsky 1980b).[5] At least he adopts such a model for what he calls "non-configurational languages." Chomsky's position is that, for each sentence, the structure I have termed "surface structure" and the structure I have termed "s structure" together form a pair he calls "S-structure." He claims that in a "configurational language" like English, the relationship between the members of this pair is identity, while for a "non-configurational language" like Japanese, there is a more complicated relationship between the members of the pair, a relationship heavily mediated by lexical information. In these terms, my claim is that all languages are non-configurational; that is, the relationship between surface structure and s structure is always non-trivial.

Before returning to Japanese, I should sketch the treatment of lexical rules within the theory I just outlined. For the most part, what have been called "lexical rules" in other theoretical frameworks reduce to simple affixation in the present theory. That is, we add an affix with certain features in its lexical entry to a root with a set of features in its lexical entry to derive a complex word with a lexical entry combining the features of its subparts in predictable ways.[6] Consider the lexical rule of passivization, which is analyzed in the present theory as the affixation to the root of the passive morpheme. The English passive morpheme, -en, has the lexical entry shown in (13).

(13) -en, $[+\ ]_V$ ___$]_V$], [-transitive], [-Pred SR][7]

The first feature in entry (13) is the morphological subcategorization feature of the passive morpheme; it indicates that the affix attaches to the right of verb roots to create verbs (I have omitted from (13) the specification that the verbs -en derives are participles). The second feature, [-transitive], indicates that -en detransitivizes the verbs to which it attaches, i.e., it stops them from assigning a syntactic role. The last feature in (13), [-Pred SR], prevents the verbs -en derives from producing predicates which directly assign a semantic role at l-s structure; i.e., verbs affixed with -en will head predicates at l-s structure which are not sisters to logical subjects. English allows the preposition by to assign the semantic role that a predicate headed by a [-Pred SR] verb would have assigned if the verb were [+Pred SR]; see Marantz (1981) for a more detailed account of by in passives.

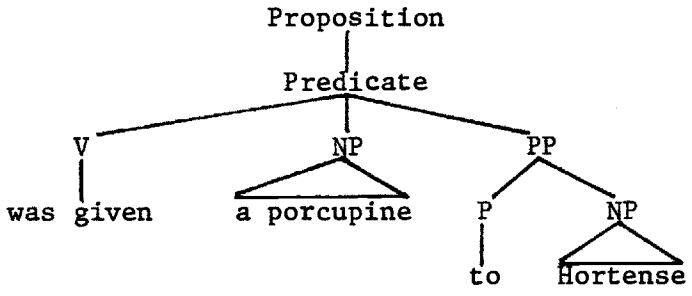
If we attach the passive morpheme in (13) to give, we derive the lexical entry in (14).

(14) $[[\text{give}]_V\text{en}]_V$ give (theme, goal) [-transitive], [-Pred SR]

An approximate l-s structure for sentence (15a), containing the verb in (14), is displayed in (15b). In accordance with the [-Pred SR] feature on the verb in (14), the predicate in (15b) has no logical subject.[8]

(15) a. A porcupine was given to Hortense.

b.



Since a porcupine is the logical object of given in (15b), according to the general principle which governs the mapping between l-s and s structures, it must bear some grammatical relation with respect to given at s structure or with respect to a constituent which given heads. If given were [+transitive], a porcupine could satisfy the general mapping principle by being the OBJ of given at s structure. However, since given is [-transitive], the principle

forces a porcupine to bear the SUB relation with respect to the VP which given heads at s structure (see Marantz 1981 for further discussion of this point). We do not specify the promotion of the (logical) object to (syntactic) subject in passivization; "promotion" is a necessary consequence, in most cases, of attaching the passive morpheme to a transitive verb. Crosslinguistically, we may view passivization as the affixation of a [-transitive], [-Pred SR] morpheme to a verb. Marantz (1981) reviews the evidence for this view of passivization. As we shall see shortly, Japanese itself provides support for analyzing passivization in this manner.

2. Japanese

I will assume that the reader is familiar with the basic facts of Japanese syntax; I will just emphasize those features of Japanese important to my analysis and motivate my interpretation of the data. The particle o marks the direct objects--the OBJs--of many transitive verbs. See (16), for example.

(16) Mary-ga okasi-o tabe-ru
nom cake-acc eat-pres

'Mary eats cake.'

However, as Kuno and others point out, direct objects of verbs like soodan su-(ru) 'consult' are marked with ni. In (17) we see that the ni marked object of soodan su-(ru) may passivize.

(17) From Kuno (1973: 347)

a. John-ga Mary-ni soodan si-ta.
nom dat consult do-past

'John consulted Mary.'

b. Mary-ga John-ni soodan s-are-ta.
nom dat consult do-passive-past

'Mary was consulted by John.'

Martin (1975) points out that the object of soodan su-(ru) may also trigger object honorification. In the theory I just outlined, that the ni marked logical objects of verbs like soodan su-(ru) 'consult' may passivize is sufficient evidence, in the absence of complicating factors, that they are OBJs, i.e., are assigned their syntactic roles by the verbs.

The goal or "indirect object" argument of verbs like atae-(ru) 'give' in Japanese is also marked with the dative ni. Since the goal argument of atae-(ru) 'give' as well as the theme argument, marked o, may passivize, both must be considered OBJs of active atae-(ru).

(18) From Kuno (1980: 103)

a. Yoshida-syusyoo-ga Tanaka-tuusandaizin-ni kunsyoo-o atae-ta
prime-minister-Yoshida-nom minister-Tanaka-dat medal-acc give-past

'Prime minister Yoshida awarded minister Tanaka a medal.'

b. Tanaka-tuusandaizin-ga Yoshida-syusyoo-ni kunsyoo-o
minister-Tanaka-nom prime-minister-Yoshida-dat medal-acc

atae-rare-ta.
give-pass-past

'Minister Tanaka was awarded a medal by prime minister Yoshida.'

From Ostler (1980: 78)

c. Sono dorei-wa Taroo-ni Hanako-ni atae-rare-ta.
the slave-top Taro-dat Hanako-dat give-pass-past

'The slave was given to Hanako by Taro.'

In the present theory, for both the theme and goal arguments of atae-(ru) to be OBJs of the verb in (18a), both must be assigned their semantic roles by the verb, i.e., be logical objects of the verb as well. The lexical entry for atae-(ru) in (18a) is shown in (19). The feature [2 transitive] indicates that the verb assigns two syntactic roles--takes two OBJs.

(19) atae, V, 'give' (theme, goal) [2 transitive], [+Pred SR]

Although either o or ni may be used to express direct objects in Japanese, only one o is available for expressing the OBJs of a given surface structure verb. That is my version of the well-known "double o" constraint, and I believe there is good evidence for this way of stating it (see Poser 1981 for a discussion of the issues). The decision as to which OBJ in (18a) receives the o marking and which the ni is made on the basis of the semantic roles which these objects express. To say that both the theme and the goal arguments of atae-(ru) 'give' are OBJs is to say that they are indistinguishable to any rule or process which refers to grammatical relations and is blind to semantic roles or surface cases, for the only way to distinguish the two OBJs of atae-(ru) is by reference to their semantic roles or case markings.

Given the reasonable assumptions about Japanese verbs made above, we may safely assume that the Japanese passive affix -rare has the same features as the English passive morpheme -en: it attaches to verbs to derive verbs and transmits to these derived verbs the features [-transitive], [-Pred SR].

(20) -rare, $[+\ ]_V$ ___$]_V$], [-transitive], [-Pred SR]

To satisfy the general principle governing the mapping between l-s and s structure in (12), that a constituent bearing an l-s relation with respect to Y must bear a grammatical relation with respect to Y or with respect to a phrase Y heads, the logical object of a passive verb will have to be the SUB of the VP the verb heads at s structure. For example, the logical object of passive soodan s-are in (19b) must bear some grammatical relation with respect to soodan s-are or with respect to the VP the verb heads at s structure. Since -rare carries the feature [-transitive], the derived passive verb soodan s-are is [-transitive], i.e., it does not take an OBJ. Therefore, the logical object may not be an OBJ of soodan s-are and must become the SUB of the VP the verb heads.

There is some question about what it means to detransitivize a ditransitive lexical entry like (19) in a language which allows a verb to assign two syntactic roles. For present purposes, we shall assume that when we add -rare to a ditransitive verb like atae-(ru) 'give,' the [-transitive] feature of -rare reduces the transitivity of atae-(ru) to [1 transitive], permitting it to assign only one syntactic role. Either logical object may be the sole OBJ of the passive of atae-(ru); the other will have to be the SUB of the VP the passive verb heads in order to satisfy the principle governing the mapping between l-s and s structure.

The "adversity" or "indirect" passive construction in Japanese provides some evidence for separating passivization, i.e., the affixation to a verb of a morpheme carrying the features [-transitive], [-Pred SR], from the "promotion" of the logical object to syntactic subject in passive sentences, which is the usual consequence of passivization. Suppose we modify the lexical entry given for -rare in (20) above by making the [-transitive] feature optional; -rare only optionally detransitivizes the verbs to which it attaches. When we attach the -rare without the [-transitive] feature to a verb, we prevent the predicate the verb heads from having a logical subject at l-s structure. However, since the verb is transitive, its logical object may be its syntactic OBJ as well. Therefore, no semantic dependent of the verb need correspond to the SUB of the VP it heads at s structure. Adding the passive morpheme without the [-transitive] feature to a verb, then, may leave the SUB position of the sentence headed by the passive verb vacant of any semantic dependent of the verb--it may semantically vacate the SUB position.

Compare the effects of adding the -rare unspecified for transitivity to a verb in Japanese with the effects of adding the passive morpheme to intransitive verbs in Dutch. We may assume that the Dutch passive affix, like the English, carries the features [-transitive], [-Pred SR]. Unlike the English affix, the Dutch passive morphology may attach to intransitive verbs. The [-Pred SR] feature of the passive affix prevents the predicate that the passivized intransitive verb heads from having a logical subject. However, since inherently intransitive verbs have no logical objects, no semantic dependent of the passive verb must correspond to the SUB of the VP it heads at s structure. Dutch fills the SUB slot semantically vacated by the passivization of an intransitive verb with a dummy noun phrase, as shown in (21).

(21) Er wordt hier door de jonge lui veel gedanst.
it is here by the young people a lot danced-pass

'It is danced here a lot by the young people.'

In contrast to the situation in Dutch, Japanese exploits the semantically vacated SUB slot of a sentence containing a passive verb derived with the -rare which does not carry the [-transitive] feature. The SUB NPs of such sentences are interpreted as a person (usually adversely, but sometimes beneficially) affected by what the rest of the sentence expresses. This is the source of the adversity passive readings of sentences like (22).

(22) a. Taroo-ga doroboo-ni zitensya-o nusum-are-ru.
Taro-nom thief-dat bike-acc steal-pass-pres

'A thief steals his bike, and Taro is adversely affected.'

b. John-ga ame-ni hur-are-ta.
nom rain-dat fall-pass-past

'It rained, and John was adversely affected.'

c. Hanako-wa musuko-ni sin-are-ta.
Hanako-top son-dat die-pass-past

'Her son died, and Hanako was adversely affected.'

As has been noted repeatedly in the literature, the passive sentences in (22) have no active counterparts; the adversely affected NP is an "extra" argument not present in sentences without the passive morpheme. Clearly the SUBs in (22) are not promoted logical objects. Rather, the passive morpheme in (22), as in a direct passive like (17b), indicates that the SUB of the sentence headed by the passive verb will not be the logical subject of the predicate headed by the verb--that's the effect of the feature [-Pred SR], which the passive morpheme carries in all its uses. The passive morphology in an adversity passive leaves open the SUB position for an argument which is not a semantic dependent of the passive verb.

So Japanese employs the passive morphology to allow the addition of an argument to a sentence as its subject. Similarly, Chichewa, a Bantu language, uses a straightforward combination of the causative and passive morphemes to indicate the addition of an instrumental argument as subject of the sentence headed by the verb to which the morphemes are attached. Again, the passive morphology, carrying the feature [-Pred SR], effectively vacates the SUB position of the sentence, leaving it open to express the added argument, the instrumental.

(23) From Trithart (1977)

a. Khásu lí-ma-(li-)lim-its-ídw-a chi-manga ndi Jóni.
hoe it$_i$-habit-(it$_i$-)farm-cause-pass-indic corn by John

'The hoe is farmed corn with by John.' i.e.,

'John uses the hoe to farm corn with.'

b. *Jóni á-ma-(yi-)lemb-éts-a pêni.
John$_i$ he$_i$-habit-(it$_j$-)write-cause-indic pen

'John writes with a pen.'

The ungrammatical (23b) and similar sentences demonstrate that passive sentences like (23a), just like the Japanese adversity passives, have no active counterparts. The causative affix without the passive affix may be used only in causative, not instrumental, constructions.[9]

In the first part of this section on Japanese syntax, I demonstrated that it is reasonable to treat Japanese passivization as we treat passivization in every language that exhibits the process. In the second part of the section, I will show that the syntactic theory outlined above takes us directly from the semantics of causative constructions to the correct analysis of Japanese causatives.

It seems reasonable to assume that in a Japanese causative construction like (1), the subject is causing something which may be expressed as a sentence. In (1) John is causing that Mary eat the cake.

(1) John-ga Mary-ni okasi-o tabe-sase-ta.
nom dat cake-acc eat-cause-past

'John made Mary eat the cake.'

Suppose then we give the Japanese causative affix -sase the predicate-argument structure shown in (24a); i.e., -sase names a function from a proposition bearing the 'caused' role to a predicate, which will assign the 'causer' role to its logical subject. The predicate-argument structure for -sase in (24a) is just that required for the English causative verb make--see (24b).

(24) a. -sase 'cause' (caused)

b. make 'cause' (caused)

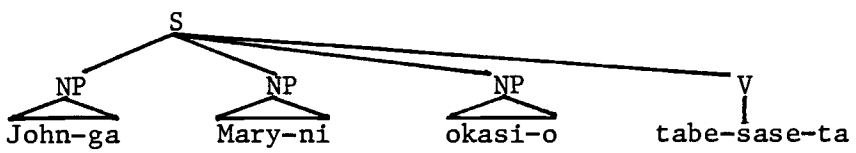
Both -sase and make take propositional logical objects at l-s structure, assigning the 'caused' role to their predicate-argument structure internal arguments. Aside from phonological features, the one important observational difference between -sase and make is that the former, but not the latter, is a bound morpheme. Suppose we say that this is the only syntactic or (syntactically relevant) semantic difference between -sase and make. What implications does the affixal status of -sase hold for the analysis of Japanese causative constructions?

I will assume, with Farmer (1980), that the appropriate phrase structure rule for the Japanese sentence is as given in (25), where X max stands for a phrasal category of any sort (the "maximal projection" of lexical category X) and the star indicates that the rule generates an arbitrary number of these categories.

(25) $S \longrightarrow X^{max*}V$

Recall that, according to the model in (12), verbs are inserted from the lexicon into deep structure trees generated by the phrase structure rules. If -sase is an affix, i.e., if it attaches to verbs in the lexicon, the derived causative verb tabesase- in (1) must be inserted whole under the V node in a structure generated by (25) Such lexical insertion yields the tree shown in (26) as an approximate surface structure for sentence (1).

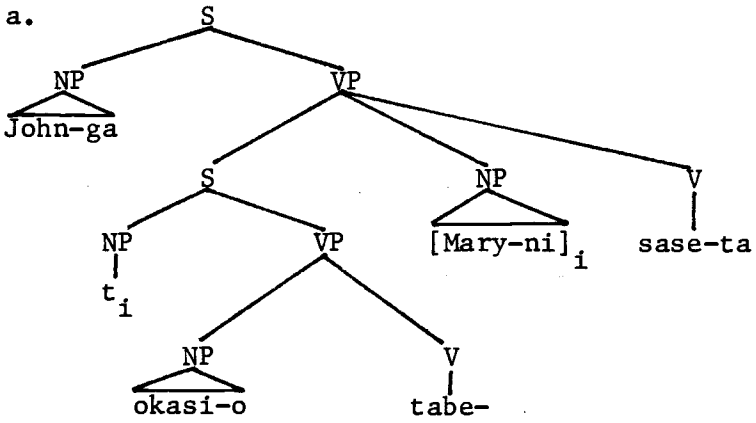
(26)



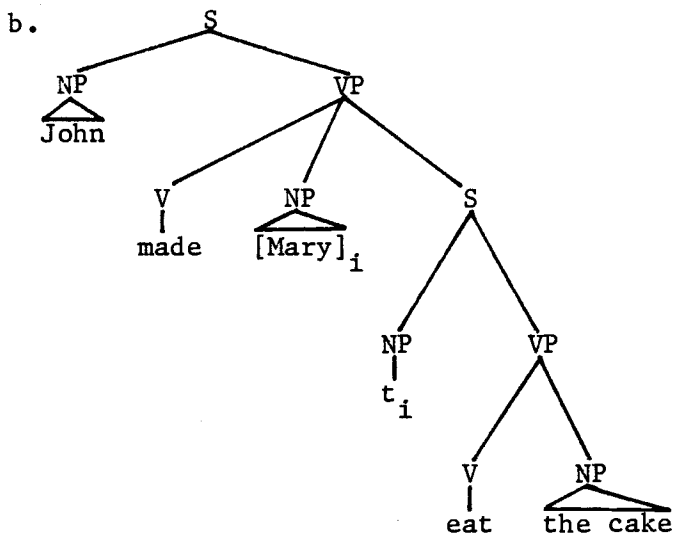
The affixal status of -sase insures that two logico-semantic verbs, -sase and tabe- in (1), correspond to a single surface structure verb, tabesase-. Thus, "verb merger" takes place somewhere between l-s and surface structure in the syntactic analysis of (1), but this merger is not the result of a grammatical rule in the usual sense. Rather, verb merger is the correspondence between two distinct verbs at one level of structure in (12) and a single verb at another level of structure, where the correspondence is dictated by affixation in the lexicon.

Although -sase and tabe- in (1) must be separate verbs at l-s structure--they have their own predicate-argument structures and are thus distinct logico-semantic constituents--and a single verb at surface structure-- -sase is bound morpheme--the theory does not determine whether or not they are separate verbs at s structure. In fact, as I show in Marantz (1981), some languages keep the causative affix and root verbs separate at s structure while others have them form a single s structure verb. I shall return to this point below. Japanese displays all the properties of languages which keep their causative affixes and root verbs apart at s structure. Recall that we made the simple assumption that Japanese -sase has all the syntactic and (syntactically relevant) semantic properties of English make. If -sase and tabe- are distinct s structure verbs in (1), the s structure of the Japanese sentence should therefore be structurally identical to that of its English gloss with make. Simplified versions of these s structures are given in (27).

(27) a.



b.



The causative make is a "raising" verb; i.e., the SUB of its clausal complement at s structure is also its OBJ. Since, by assumption, -sase shares syntactic features with make, -sase too is a raising verb. The exact analysis of raising is unimportant here; I use the trace notation in (27) for convenience (see Marantz 1981 for an account of raising phenomena within the present theory).

The biclausal s structure in (27a) must map onto the monoclausal surface structure (26). Both Mary-ni, the "causee," and okasi-o, the "lower object," are OBJs, one of -sase, the other of tabe-; however, only one is marked o. I demonstrated above that Japanese uses ni to mark OBJs outside of causative constructions. The case marking on the OBJs in (27a) is simply a reflection of the constraint described earlier against two o marked OBJs of a single surface structure verb. Just like atae-(ru) 'give' in (18a), tabesase- may have only one of its OBJs marked with o. I have no principled explanation for why the lower object in causative constructions receives the o marking over the causee.[10] If the lower object is the OBJ of a verb like soodan su-(ru), which, as we saw in (17) above, demands that its OBJs be marked ni, then the OBJ of -sase, i.e., the causee, may be marked o without violating the "Double o" constraint. This is illustrated in (28).

(28) Bill-wa John-o Mary-ni soodan s-ase-ta.
Bill-top John-acc Mary-dat consult do-cause-past

'Bill made John consult Mary.'

The important claims of the present analysis of Japanese causatives can be read from the s structure in (27a) and understood through a comparison of (27a) with the English (27b). The causee, Mary in (27a), but not the lower object, okasi in our example, is the OBJ of the causative -sase. The causee as well as the causer, John in (27a), are SUBs. In support of this analysis, it should be pointed out that only the causee, not the lower object, may passivize in a causative construction when the passive morpheme is attached to the causative -sase. As should be clear from the English glosses in (29), the situation in Japanese is identical to that in English; only the causee passivizes when passive morphology is added to make.

(29) Farmer (1980: 105)

a. Taroo-wa Hanako-ni sasimi-o tabe-sase-ta.
top dat acc eat-cause-past

'Taro made Hanako eat sashimi.'

b. Hanako-wa Taroo-ni sasimi-o tabe-sase-rare-ta.
top dat acc eat-cause-pass-past

'Hanako was made to eat sashimi by Taro.'

c. *Sasimi-wa Taroo-ni Hanako-ni tabe-sase-rare-ta.
top dat dat eat-cause-pass-past

'Sashimi was made Hanako to eat by Taro.'

The data in (29) are what we expect if only Hanako--the causee-- is the OBJ of -sase in (29a). The ungrammaticality of the attempt in (29c) to passivize the lower object indicates that the lower object is not the OBJ of -sase in (29a). Of course, if we passivize the lower verb in a causative construction, the lower object will be the SUB of the embedded verb and thus the OBJ of the causative verb, which raises to object, as shown in (30) (apparently not all Japanese speakers accept "causatives of passives" like (30)).

(30) Mary-wa Taroo-o Ziroo-ni home-rare-sase-ta.
top acc dat praise-pass-cause-past

'Mary made Taro be praised by Jiro.'

Further evidence that the lower object in causative constructions is not an OBJ of the causative verb might be derived from the fact that only the causee, not the lower object, may trigger object honorification on the derived causative verb, or so my informants tell me. The evidence for the SUB status of both the causer and the causee in a causative construction is well-known. For example, both may serve as antecedent for the reflexive zibun, whose antecedents are generally restricted to syntactic subjects (see Shibatani 1977 for a discussion of the subject properties of the causee).

When a language keeps its causative affix and root verbs separate at s structure, its causative constructions have biclausal s structures like those shown in (27). The biclausal s structure simultaneously makes the causee a syntactic subject and prevents the lower object from being the OBJ of the causative verb (unless the lower verb is passivized, as in (30)). In languages which merge their causative affixes and root verbs at s structure, causative constructions have monoclausal s structures--one verb, one clause.[11] In such languages, only the causer, not the causee, should exhibit SUB properties and the lower object may be the OBJ of the derived verb. Principles described and motivated in Marantz (1981) predict the syntax of causative constructions in this second type of language. It turns out that the lower object is always the OBJ of the derived causative verb (in its active form) in such a language. If the language, like Japanese, allows a verb to assign two syntactic roles, both the lower object and the causee become OBJs of the derived causative verb. If the language only allows a verb one OBJ, the lower object will be the OBJ of the derived causative while the causee becomes an oblique argument at s structure.

Kinyarwanda, a Bantu language, is an example of a language which merges its causative affix and root verb at s structure and allows its verbs to assign two syntactic roles. Evidence that Kinyarwanda permits two OBJs per verb is provided in (31). Both the goal and theme arguments of haa 'give' may passivize, indicating that both are OBJs in (31a). Compare (31) with the Japanese sentences in (18).

(31) Data from Kimenyi (1980)

a. Umugabo y-a-haa-ye umugóre igitabo.
man he_i-past-give-asp woman book

'The man gave the woman a book.'

b. Igitabo cy-a-haa-w-e umugóre n'ûmugabo.
book it$_i$-past-give-pass-asp woman by-man
'The book was given to the woman by the man.'

c. Umugóre y-a-haa-w-e igitabo n'ûmugabo.
woman she$_i$-past-give-pass-asp book by-man
'The woman was given a book by the man.'

Since Kinyarwanda merges its causative affix and root verb at s structure, no clausal boundary prohibits the lower object from being the s structure OBJ of the derived causative verb. Since Kinyarwanda allows two OBJs per verb, both the causee and the lower object may be OBJs of the derived causative verb. As shown in (32), either the causee or the lower object may passivize when the passive affix is attached to the derived causative verb, indicating both are OBJs in (32a). Compare (32) with the Japanese sentences (29).

(32) a. Umugabo á-r-úubak-iish-a abákozi inzu.
man he$_i$-pres-build-cause-asp workers house
'The man makes the workers build the house.'

b. Abákozi bá-r-úubak-iish-w-a inzu n'ûmugabo.
workers$_i$ they$_i$-pres-build-cause-pass-asp house by-man
'The workers are being made to build the house by the man.'

c. Inzu í-r-uubak-iish-w-a abákozi n'ûmugabo.
house$_i$ it$_i$-pres-build-cause-pass-asp workers by-man
'The house is being made to be built by the workers by the man.'

In Japanese there is no way to make the lower object the SUB of a causative construction by attaching a single passive morpheme to a derived causative verb as in the Kinyarwanda example (32c). This difference between Japanese and Kinyarwanda is attributable to the difference between merging a causative affix and root verb at s structure, the Kinyarwanda strategy, and merging them at surface structure, the Japanese choice.

Recall that our analysis of causative constructions predicts a correlation between the SUB status of the causee and the OBJ status of the lower object: If the causee is a SUB, the lower object may not be the OBJ of the causative verb. If, on the other hand, the lower object is the OBJ of the causative verb (in the absence of passive morphology), the causee is not a SUB--the s structure is monoclausal. This predicted correlation is difficult to test in Kinyarwanda, but is confirmed in Malayalam, a Dravidian language described in Mohanan (1981), and in other languages. In (33b) we find the causative form of a transitive Malayalam verb.

(33) a. kutti aanaye nulli.
child-nom elephant-acc pinched
'The child pinched the elephant.'

b. amma kuṭṭiyekkoṇṭə aanaye nulliccu.
mother-nom child-inst elephant-acc pinch-cause-past
'Mother made the child pinch the elephant.'

Like Kinyarwanda, Malayalam merges the causative affix and root verb at s structure. Unlike Kinyarwanda, Malayalam restricts its verbs to one OBJ each. Thus the lower object is the OBJ of the derived causative verb in a causative construction like (33b). The causee is an oblique argument at s structure, expressed in an instrumental postpositional phrase.[12] As expected, the lower object passivizes when the passive morpheme is attached to the derived causative verb, indicating that the lower object is an OBJ of the causative verb in (33b).

(34) ammayaal aana nuḷḷik'k'apeṭṭu
mother-inst elephant-nom pinch-cause-pass-past

'The elephant was caused to be pinched by mother.'

According to our analysis, the OBJ status of the lower object in the Malayalam causative, as evidenced in (34), should correlate with the non-SUB status of the causee. Mohanan (1981) argues that the antecedent for the reflexive swa- 'self' is limited to syntactic subjects. As shown in (35), the causee may not serve as antecedent for swa- in a causative construction, indicating it is not a subject. Compare the situation in Malayalam with that in Japanese, in which a causee may serve as antecedent for the reflexive zibun 'self.'

(35) amma kuṭṭiyekkoṇṭə aanaye swantam wiiṭṭilweccə nuḷḷiccu.
mother-nom child-inst elephant-acc self's house-at pinch-cause-past

'Mother caused the child to pinch the elephant at mother's/*child's/
*elephant's house.'

One potential problem with my analysis of the Japanese causative construction involves the distinction between the "coercive" and "permissive" readings of the causative verb. When the lower verb in a causative construction takes an o marked object and the causee is thereby marked with ni, the resulting sentence is generally ambiguous between a permissive and coercive reading, the "let" and "make" readings respectively, as was indicated in the gloss of (1).

(1) John-ga Mary-ni okasi-o tabe-sase-ta.
nom dat acc eat-cause-past

'John made/let Mary eat the cake.'

When the "Double o" constraint permits the OBJ of the -sase to be marked with either ni or o, the ambiguity disappears: an o marked OBJ indicates a coercive causative, a ni marked OBJ a permissive causative.

(36) a. Taroo-ga Hanako-o hatarak-ase-ta.
nom acc work-cause-past

'Taro made Hanako work.'

b. Taroo-ga Hanako-ni hatarak-ase-ta.
nom dat work-cause-past

'Taro let Hanako work.'

The passive of a causative is also unambiguous; it has only the coercive meaning, as illustrated by (37).

(37) Farmer (1980:105-106)

Hanako-wa Taroo-ni sasimi-o tabe-sase-rare-ta.
top dat acc eat-cause-pass-past

'Hanako was made to eat sashimi by Taro.'

*'Hanako was let to eat sashimi by Taro.'

I propose that -sase is always potentially ambiguous between the permissive and coercive readings. When the case marking on its OBJ is forced by the "Double o" constraint, -sase retains this ambiguity, as evidenced in (1). However, where no independent principle dictates the case marking on the OBJ of -sase, Japanese exploits the choice in case marking to resolve the ambiguity between the permissive and coercive readings of -sase in many situations. In such cases a ni marked OBJ of -sase indicates a permissive causative, an o marked OBJ a coercive causative. Passivization also disambiguates the derived causative to the coercive reading. In short, I do not believe the facts support a structural difference between coercive and permissive causatives which might explain both the case marking and passivization data.

Some linguists argue for a structural difference between coercive and permissive causatives, having the differences in case marking and passivization follow from this structural difference. The appeal of such an analysis derives from the presumed strict correlation among coercive vs. permissive reading, o vs. ni case marking (where this is not forced by the "Double o" constraint), and passivizability vs. non-passivizability. However, Shibatani and others have given examples of causative constructions in which the OBJ of -sase is marked o but the causative has no coercive reading (-sase's OBJs are underlined in (38)).

(38) Shibatani (1976:255)

a. Kawaisoo dat-ta ga, yar-u miruku-mo nakat-ta node
pitiful be-past but give-press milk-too not-past since

sono-mama akanboo-o nak-ase-ta.
as-it-is baby-acc cry-cause-past

'I felt bad, but since I did not have even milk to give it, I just let the baby cry.'

b. Moo uma-o ture-te kaer-u zikan dat-ta ga,
already horse-acc take-ing return-pres time be-past but

amari yukaisòo-ni kakoi no naka-o hasit-te i-ru node
too joyously fence 's inside-acc run-ing be-pres since

Taro-wa sono-mama moo sibaraku uma-o hasir-ase-ta.
top as-it-is more while horse-acc run-cause-past

'The time had come for Taro to take the horse back, but, because the horse was running so joyously in the corral, Taro let the horse run for a little while more.'

My informants tell me that passive versions of permissive "o causatives" like those in (38) do not have a permissive reading. On an analysis which postulates a structural difference between permissive and coercive causatives, if we tried to explain the o marking on the causees in (38) by giving the causative clauses in these sentences the structure of coercive causatives, we could not explain why they do not retain their exceptional permissive reading under passivization; in an account which derives the difference in passivizability between permissive and coercive causatives from a difference in structure, a permissive causative with the structure of a coercive causative should passivize. If, on the other hand, we explained the failure of the sentences in (38) to passivize with their permissive reading by giving them the usual structure of permissive causatives, we would have to give up the generalization that case marking in causatives is predictable from the syntactic structure of the causatives. The only piece of the correlation which justifies a structural difference between permissive and coercive causatives that actually is true of Japanese is the fact that passives of derived causatives never have a permissive reading. But there is reason to believe that some independent principle prevents the passive of a derived causative from being interpreted as permissive crosslinguistically. Derived Turkish causatives are also ambiguous between a coercive and a permissive reading in the active. According to my informant, passives of derived causatives are unambiguously coercive in Turkish, just as in Japanese. I know of no indepedent evidence in Turkish suggesting a structural difference between coercive and permissive causatives. Note also that the English translation of the passive of a permissive causative with let is also ungrammatical for no known structural reason.

(39) a. Hanako was made to eat sashimi by Taro.

b. *Hanako was let (to) eat sashimi by Taro.

In this paper I have shown how a model of grammar compatible with current linguistic theories provides replacements for those features of the Aspects model which proved particularly well-suited for the analysis of Japanese. In this model the separation of a level of structure displaying the grammatical relations among constituents--the s structure--from surface constituent structure solves the problem that the surface constituent of Japanese is not sufficiently articulated to serve as an "S-structure" in the technical sense of Extended Standard Theory. The further postulation of a level of structure displaying the logico-semantic relations among constituents--the l-s structure--and a principle governing the mapping of l-s onto s structures both explains the source of grammatical relations and s structure and allows us to account for differences among causative constructions crosslinguistically. Recall that grammatical relations are grammaticalizations of logico-semantic relations and that the s structure of a sentence is strictly determined from its l-s structure and the general mapping principle. We supposed that the l-s structures of causative constructions crosslinguistically are (structually) identical. Syntactic differences among causative constructions follow from the assumption that Malayalam-type languages merge their causative and lower verbs at s structure while Japanese-type languages merge their causative and lower verbs at surface structure and English-type languages keep the causative and lower verbs separate at every level of structure. When verb merger occurs, it is an automatic consequence of the bound morpheme status of the causative verb.

FOOTNOTES

*This is a revised version of a paper delivered to the Arizona Conference on Japanese Linguistics in late January, 1981. Since writing the original version of the paper, I have completed work on Marantz (1981), which modifies and extends the ideas first developed for the paper. To rework the paper in the revised framework of Marantz (1981) would involve introducing a great deal of technical detail, which, in fact, obscures the major points of the work. In place of extensive rewriting, I have made minor changes and corrections in the January version of the paper. The present work, then, serves both as a record of the ideas I presented at the Arizona conference and as an introduction to Marantz (1981).

I would like to thank Noam Chomsky, Ken Hale, Yukio Otsu, and Bill Poser for their help with this paper. I would also like to thank the Departments of Linguistics and Oriental Studies at the University of Arizona for extending to me the invitation to their conference which inspired the present work and for organizing and conducting such a productive and enjoyable conference.

[1]For a description of Extended Standard Theory, see Chomsky (1980a) and the references cited there.

[2]N. Hasegawa informs me that the arguments I provide from English in Marantz (1981) for the semantic asymmetry among a verb's inherent semantic roles may be repeated with data from Japanese.

[3]The so-called "ergative languages" employ different generalizations for the construction of predicate-argument structures. See Marantz (1981) for discussion.

[4]The notion of "syntactic role" employed here differs from that developed in Marantz (1981). Here, the notion "bears a syntactic role" is roughly equivalent to the notion "is assigned (abstract) case" in Chomsky (1980a). It is not precisely the case that every argument must bear a syntactic role; only arguments with phonological content (including traces of wh- movement) must meet this condition.

[5]For Chomsky (1980b), the mapping between what I call l-s and s structures is accomplished by a rule "assume grammatical function." See his paper for details.

[6]Lieber (1980) provides a set of principles which determine precisely how the features of roots and affixes will combine in affixation. In Marantz (1980) I show how Lieber's independently motivated principles correctly predict the syntactic behavior of a variety of morphologically derived verbs, e.g., the derived causative and passive verb forms. The central principle in Lieber's theory states that the features of an affix take precedence over the features of a root in determining the features of a derived word. So, if an intransitive affix attaches to a transitive verb, for example, the derived form will be intransitive.

[7]According to the morphological principle, described in f.n. 6, that the features of an affix take precedence over the features of a root in determining the features of a derived word, the verbs produced by attaching the passive affix to verbs will be [-transitive], [-Pred SR].

The English passive morpheme must attach to root verbs which are [+transitive], [+Pred SR]. I did not state this fact explicitly in the lexical entry for the passive morpheme, (13), because it follows from an independent principle discussed in Marantz (1981). This principle explains the range of data accounted for by the "1 Advancement Exclusiveness Law" of Relational Grammar.

[8]The proper interpretation of a proposition, like that in (15b), consisting solely of a predicate is discussed in Marantz (1981). The node labels chosen for the 1-s structure in (15b) are somewhat arbitrary. See Marantz (1981) for a complete list of logico-semantic constituent types.

[9]For a full account of the Chichewa instrumental construction illustrated in (23a) see Marantz (1981).

[10]Data from other languages suggest no principled explanation for case marking of the OBJs in Japanese causative constructions is desirable. In the Bantu languages which exhibit the Japanese-style causative construction, it is the OBJ of the causative affix which receives the "canonical" direct object marking while the OBJ of the root verb receives the expression of "secondary" objects. Therefore, no universal principle should demand that the OBJ of the root verb in Japanese causative constructions be marked with the canonical or o object marking.

[11]These are the languages which exhibit the behavior characteristic of Comrie's (1976) "paradigm case" causative constructions. Because the ni case marking on the causee of a causative built on a transitive root is the case marking of "indirect objects" in Japanese, it is not generally recognized that Japanese causative constructions provide a striking counterexample to Comrie's theory of derived causatives.

[12]As illustrated in (34), the instrumental case is used to mark the "displaced subject" in a Malayalam passive. This instrumental case is not the same as the instrumental postposition used to mark the causee of a derived causative built on a transitive root verb, like the causee in (33b).