PARADIGMATIC STRUCTURES AND WORD FORMATION*

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In this paper I will propose an organization of the lexicon in which all verb stems are arranged according to their meaning and the number of NP arguments they subcategorize. I will take data from Japanese to show that this organization, which I will refer to as paradigmatic structures, makes predictions about meanings associated with morphological derivatives. I will in particular look at the causative morpheme sas to illustrate this. I will further show that the paradigmatic structures are part of a larger system that provides a general constraint on all word formation processes.

1. Sas and Sase

Sas and sase, the two dependent causative morphemes in Japanese, attach to a verb stem or a complex verb to form a complex causative verb. (Sas and sase appear as as and ase when attached to a vowel-ending verb; the vowel i is inserted after sas when a consonant-initial morpheme follows.)

(1) a. Taroo-ga Hanako-ni eigo-o naraw-asi-ta.
nom dat English-acc learn-cause-past

b. Taroo-ga Hanako-ni eigo-o naraw-ase-ta.
nom dat English-acc learn-cause-past

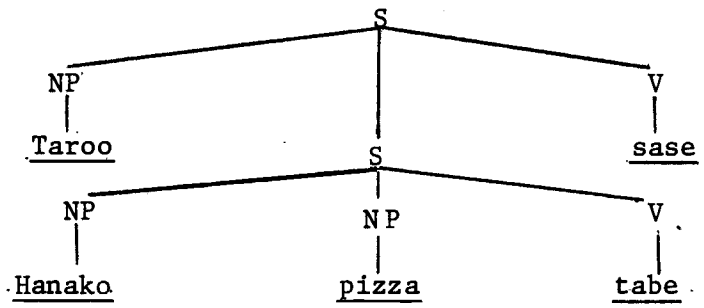
'Taro made Hanako learn English.'

Both morphemes are highly productive, and in many cases they both have the analytical causative meaning of CAUSE X to V. Historically, the sas form "gave rise to the sase form around the 12-15th century." (Shibatani 1973, Miyaji 1969).

1.1. Sase

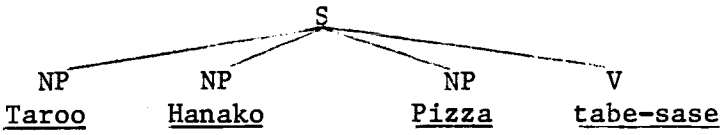
The complex verb containing sase (henceforth V-sase) has been extensively analyzed in the transformational approach to Japanese (e.g. Kuroda 1965, 1978, Kuno 1973). In the transformational analysis a sentence with a V-sase is associated with a complex underlying structure. The following represents the underlying structure for (1b).[1]

(2)



The embedded verb (tabe) and the matrix verb (sase) are "united" into a single unit via the transformational rule of verb raising which, together with tree pruning, collapses the complex structure into a simplex surface structure (Kuno 1972).

(3)



By syntactically analyzing sase, the transformational approach captures both the high productivity of the morpheme and the predictable analytical causative meaning associated with V-sase.

1.2 V-sas

Soga (1972) presents an analysis of V-sas that parallels V-sase, i.e. a sentence with V-sas is associated with a complex underlying structure. However, Shibatani (1973) offers observations about certain cases of V-sas that distinguish them from the corresponding V-sase, thus making Soga's analysis questionable.

1.2.1. Shibatani's Analysis

While many V-sas are synonymous with their corresponding V-sase, there are cases in which identity of meaning does not obtain.[2] The following is taken from Shibatani (1973:346-347).

(4) a. Taroo-ga isu-o ugok-asi-ta.
nom chair-acc move-cause-past

'Taro moved the chair.'

b. *Taro-ga isu-o ugok-ase-ta.
nom chair-acc move-cause-past

(5) a. Taroo-ga yu-o wak-asi-ta.
nom (hot) water-acc boil-cause-past

'Taro boiled the water.'

b. *Taroo-ga yu-o wak-ase-ta.
nom (hot) water-acc boil-cause-past

In both (4) and (5) the V-sas has the lexical-causative (direct-causation)/transitive interpretation. The unacceptability of ugok-ase and wak-ase results from the violation that the causee in a V-sase sentence must be animate and self-propelled (Shibatani 1973). The difference between lexical causative (V-sas) and analytical causative (V-sase) becomes clear if we replace isu in (4) with an animate noun.

(6) a. Taroo-ga boo-o tukat-te Ziroo-o ugok-asi-ta.
nom stick-acc using acc move-cause-past

'Taro moved Jiro using a stick.'

b. Taroo-ga boo-o tukat-te Ziroo-o ugok-ase-ta.
nom stick-acc using acc move-cause-past

'Taro made Jiro move using a stick.'

We can interpret (6a) as Taro moving Jiro by pushing him with a stick. In (6b) Taro used the stick to direct Jiro to another location. Shibatani gives the following pair that also illustrates the lexical-causative/analytical-causative distinction.

(7) a. Eiga kantoku-ga motto-umaku zyoyuu-o odorok-asi-ta.
movie director-nom better actress-acc surprise-cause-past
'The movie director surprised the actress better.'

b. Eiga kantoku-ga motto-umaku zyoyuu-o odorok-ase-ta.
'The movie director made (directed)the actress be surprised better.'

All V-sas that have the lexical causative, as opposed to analytical causative, meaning share the following trait. As Shibatani points out, V-sas "can be equated with transitive (lexical causative) verbs only when they are derived from intransitive verbs which do not have distinct . . . transitive verbs" (1973:348). That is, a V-sas comprising an intransitive V plus sas has the transitive/lexical-causative interpretation if the intransitive verb (V) lacks a monomorphemic transitive counterpart. This observation can be extended to V-sas comprising a transitive V plus sas; the V-sas has the lexical causative interpretation if the transitive verb (V) lacks a monomorphemic ditransitive counterpart.

Based on observations such as the above, Shibatani concludes that a V-sas that lacks a corresponding monomorphemic verb (e.g. odorok-as) is lexical in nature, while a V-sas that has a monomorphemic counterpart is "affixal" (analytical and syntactically analyzable).

1.2.2. A Problem with Shibatani's Analysis

Shibatani's conclusion that some V-sas have a lexical causative interpretation while others have the analytical causative interpretation is correct, but has an unfortunate consequence for the analysis of V-sas. Shibatani assumes the transformational, complex-structure analysis for the analytical causative V-sase. Because certain V-sas also have the analytical causative interpretation, these too should be syntactically derived. On the other hand a V-sas with the lexical causative meaning must be formed in the lexicon by a morphological process.

It is counterintuitive to view a V-sas as partly syntactically derived and partly morphologically derived. Given that we are dealing with one morpheme, sas, we should expect V-sas to be either syntactically or morphologically derived, but not both. To formulate a consistent analysis, then, we can choose between syntax and morphology. In reality, however, we must choose the latter if we are to capture the generalization given by Shibatani. The presence/absence of a monomorphemic verb that corresponds semantically to a V-sas governs the meaning of V-sas. To establish this relationship between a monomorphemic verb and V-sas, V-sas must be present in the lexicon. If V-sas were analyzed syntactically, no formal mechanism exists for associating analytical or lexical causative meaning to a V-sas on the basis of the presence of a corresponding monomorphemic verb in the lexicon.

In the next section I will present an analysis of V-sas that is consistent with the Lexicalist Hypothesis (Chomsky 1970). I will also propose an organization for verbs in which all verb stems are arranged within a paradigm. As we will see, this paradigm allows us to capture the generalization about the meaning of V-sas observed by Shibatani.[3]

2. Verbal Paradigm and Pre-emption

I will assume that all V-sas are derived in the lexicon by a morphological process that attaches the dependent morpheme sas to the right of V. I will refer to this analysis of V-sas as the "lexical analysis" of V-sas.

I will further specify that sas functions formally as a transitivizer in the technical sense that it converts an n-place verb (V) into an n+1 place verb (V-sas). This transitivizing function of sas is illustrated below.

(8) a. Isyii-ga warat-ta.
nom laugh-past
'Ishii laughed.'

b. Yamada-ga Isyii-o waraw-asi-ta.
nom acc laugh-cause-past
'Yamada made Ishii laugh.'

(9) a. Ziroo-ga susi-o tabe-ta.
nom acc eat-past
'Jiro ate sushi.'

b. Mariko-ga Ziroo-ni susi-o tabe-sasi-ta.
nom dat acc eat-cause-past
'Mariko made Jiro eat sushi.'

(10) a. Taroo-ga Ziroo-ni eigo-o osie-ta.
nom dat English-acc teach-past
'Taro taught Jiro English.'

b. Sensei-ga Taroo-ni eigo-o osie-sasi-ta.
teacher nom dat English-acc teach-cause-past
'The teacher made Taro teach English to Jiro.'

We can represent the "transitivizing" feature of sas as a redundancy rule that refers to the subcategorization features of V and the corresponding V-sas.[4]

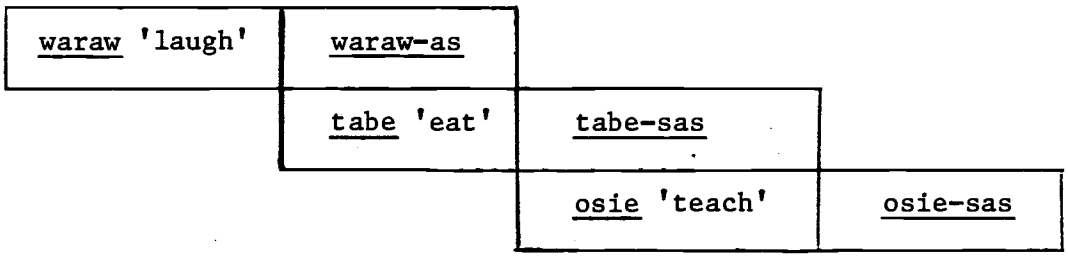
(11) $$[(NP)^{n} \underline{\quad}] \quad \longrightarrow \quad [(NP)^{n+1} \underline{\quad}]$$
V V-sas

This rule refers strictly to the number of NPs subcategorized, with no reference to the meaning of V or V-sas.

2.1. Paradigmatic Structure

The examples in (8) through (10) show that an intransitive V plus sas (waraw-as) is formally a transitive verb; a transitive verb V plus sas is formally a ditransitive verb (tabe-sas); a ditransitive verb plus sas is formally a four-place verb (osie-sas). This is represented in the following chart.[5]

(12)



From this chart we can extract the following structure.

(13)

I will refer to (13) as the Paradigmatic Structure (PDS). Later I will comment on the lack of a four-place verb slot in the PDS.

Below I will show that by arranging verb stems in the PDS, we can predict when a V-sas has either the lexical or the analytical causative meaning.

2.1.1. PDS and Verb Stems

I propose that all verb stems are arranged in the PDS according to their meaning and the number of NPs they subcategorize. An intransitive verb stem occupies the intransitive slot in the PDS; a transitive verb stem occupies the transitive verb slot; a ditransitive verb stem occupies the ditransitive slot.

(14)

	intr	tr	ditr
a.	waraw 'laugh'		
b.		tabe 'eat'	
c.			age 'give'

A semantically related intransitive-transitive or transitive-ditransitive monomorphemic pair occupies the slots in the same PDS.

(15)

a.	sin 'die'	koros 'kill'	
b.		naraw 'learn'	osie 'teach'

The slots in the PDS are thus semantic slots in that sin 'die' and koros 'kill' or naraw 'learn' and osie 'teach' can only be paired in the PDS by referring to their meaning.

2.2. V-sas and the PDS

As Shibatani points out, a V-sas has the lexical-causative/transitive meaning if it lacks a monomorphemic counterpart. If a monomorphemic counterpart does exist (e.g. sin, koros) the V-sas has the analytical causative meaning.

In our analysis a V-sas with the lexical causative meaning corresponds to an item that can fill an empty slot in the PDS. For example, the intransitive verb odorok 'surprise,' which lacks a monomorphemic transitive verb, has the lexical causative odorok-as 'surprise.'

(16)

intr	tr	ditr
odorok	odorok-as	

Any V-sas that enters the PDS is associated with the lexical causative meaning.

On the other hand, a V-sas that has a monomorphemic counterpart cannot enter a space in the PDS; this type of V-sas has the analytical causative meaning.

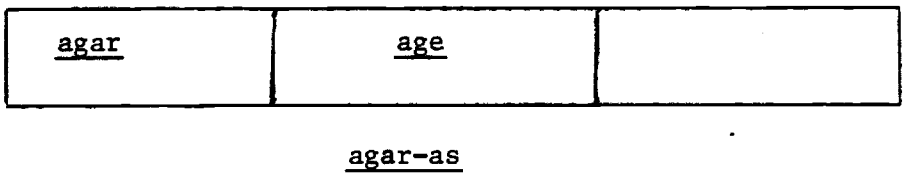
(17) a. Taroo-ga butai-ni agat-ta.
nom stage-to rise-past
'Taro rose onto the stage.'

b. Ziroo-ga Taroo-o butai-ni age-ta.
nom acc stage-to raise-past
'Jiro raised Taro onto the stage.'

c. Ziroo-ga Taroo-o butai-ni agar-asi-ta.
nom acc stage-to rise-cause-past
'Jiro made Taro rise onto the stage.'

The monomorphemic intransitive-transitive pair agar 'rise' and age 'raise' occupy the same PDS. Because of the existence of the monomorphemic transitive verb age, the V-sas verb agar-as does not enter the PDS, thus precluding its association with the transitive/lexical-causative meaning.

(18)



Any V-sas that does not enter the PDS is associated with the analytical causative meaning.

2.2.1. Pre-Emption

We have defined sas as a transitivizer. Indeed, from the previous discussion, we can see that the primary function of sas is to provide a transitive counterpart to an intransitive verb stem that lacks a corresponding monomorphemic transitive verb, or to provide a ditransitive verb to a transitive verb stem that lacks a corresponding monomorphemic ditransitive verb.

If sas functions primarily as a transitivizer, why shouldn't a V-sas that has a monomorphemic counterpart also have the lexical-causative/transitive meaning? Here, I invoke the notion of "pre-emption" proposed by Clark and Clark (1979).

In their study of nouns that can be used as verbs, Clark and Clark note that there are consistent gaps in the occurrence of nouns that may be used in this way. For example, it is acceptable to say John bicycled to school or Mary helicoptered to work, but it is unacceptable to say Henry airplaned to London or Mary cars to school. Airplane and car "appear to be ruled out because of the presence of the suppletive forms

drive and fly" (Clark and Clark 1979:798). On the basis of this kind of observation, Clark and Clark propose the following principle.[6]

(19) The Principle of Pre-emption by Synonymy

> If a potential innovative denominal verb would be precisely synonymous with a well-established verb, the innovative verb is normally pre-empted by the well-established verb, and is therefore considered unacceptable.
>
> (Ibid.)

V-sas as a lexical causative is pre-empted if the V-sas is synonymous with a well-established (monomorphemic) verb. Unlike the pre-empted English denominal verbs noted by Clark and Clark, a pre-empted V-sas is acceptable. However, it does not represent direct causation (lexical causative) but reflects the indirect causation interpretation associated with the analytical causative morpheme sase.

There are some V-sas that are unacceptable.

(20) a. Hon-ga ak-u.
book-nom open-present
'The book opens.'

b. Taroo-ga hon-o ake-ta.
nom book-acc open-past
'Taro opened the book.'

c. *Taroo-ga hon-o ak-asi-ta.

(21) a. To-ga simar-u.
door-nom close-present
'The door opens.'

b. Meerii-ga to-o sime-ta.
nom door-acc close-past
'Mary closed the door.'

c. *Meerii-ga to-o simar-asi-ta.

(22) a. Hiniti-ga kimat-ta.
date-nom decide-past
'The date has been decided.'

b. Yamada-ga hiniti-o kime-ta.
'Yamada decided the date.'

c. *Yamada-ga hiniti-o kimar-asi-ta.

As shown each of the transitive V-sas verbs in (20) through (22) has a monomorphemic transitive counterpart. At first glance the unacceptability of these V-sas appears to adhere to Clark and Clark's principle for pre-emption--a pre-empted item is judged unacceptable. If this were the

case, the V-sas verbs in (20) through (22) comprise counterexamples to our characterization of pre-emption for V-sas--a pre-empted V-sas occurs, but not as a lexical causative.

If we follow our version of pre-emption, the V-sas in (20) through (22) are associated with the analytical causative interpretation. As it turns out, the analytical causative V-sases that correspond to these V-sas are also unacceptable.

(23) *Taroo-ga hon-o ak-ase-ta.

(24) *Meerii-ga to-o simar-ase-ta.

(25) *Yamada-ga hiniti-o kimar-ase-ta.

If we follow Shibatani's analysis, these sentences are unacceptable because the causee of a V-sase must be both animate and self-propelling.

The V-sas in (20) through (22) are unacceptable not directly because they are pre-empted by a monomorphemic verb. The pre-emption leads these V-sas to be associated with the analytical causative interpretation, and, in the case of (22) through (23), the analytical causative interpretation turns out to be anomalous. We can thus maintain our version of pre-emption for V-sas, and explain the unacceptability of (20c) through (22c) as isolated cases of semantic anomaly.

2.3. Further Evidence for the PDS

So far I have only given V-sas in Japanese as evidence for the PDS. I will now briefly discuss data from Mitla Zapotec that give further evidence for the PDS. We will see that pre-emption in Mitla Zapotec reflects Clark and Clark's principle.

In Mitla Zapotec the causative prefix s attaches to an intransitive verb such a ni² 'move' to form s-ni² 'move'; the s also attaches to an intransitive verb to form a ditransitive verb, e.g. gidza 'to scold,' s-gidza 'to cause to scold.'[7] While this is a productive morphological process, there are gaps in the occurrence of these derived causative verbs.

(26) a. ri² 'come/go out'

b. *s-ri²

(27) a. yabta' 'fall down'

b. *s-yabta'

(28) a. dauch 'eat'

b. *s-dauch

The nonoccurring verbs do not violate any phonological restrictions (personal communication, Bruce Miller).

The unacceptability of (26b) through (28b) is traced to the existence of synonymous monomorphemic verbs.

(29) Lae^{2} 'take out' (*s-ri$^{?}$, ri^{2} 'come/go out')

(30) zælta^{2} 'knock down' (*s-yabta$^{?}$, yabta$^{?}$ 'fall down')

(31) ya^{2}n 'feed' (*s-dauch, dauch 'eat')

The unacceptable derived verbs are predicted by arranging the verb stems in the PDS.

(32)

intr	tr	ditr
ri^{2} 'come/go out'	La^{2} 'take out'	

*s-ri^{2} (pre-empted)

(33)

yabta$^{?}$ 'fall down'	za lta$^{?}$ 'knock down'	

*s-yabta$^{?}$ (pre-empted)

(34)

	dauch 'eat'	ya^{2}n 'feed'

*s-dauch (pre-empted)

In Mitla Zapotec, then, a derived causative verb can occur only if it is not pre-empted by a synonymous monomorphemic verb. This follows precisely the principle proposed by Clark and Clark.

2.4 A comment on Pre-emption

We have seen that a pre-empted V-sas occurs in Japanese, while a pre-empted s-V is judged unacceptable in Mitla Zapotec. Clark and Clark's principle must be modified in order to account for the occurrence of pre-empted V-sas in Japanese.

Whether or not a pre-empted item occurs is a language-specific issue. The following revised principle accounts for both Japanese and Zapotec (and also denominal verbs noted by Clark and Clark).

(35) Revised Principle of Pre-emption

When a morphological derivative or an innovative use of a word is synonymous with a well-established word, the

derivative/innovative word is removed from the semantic space of the well-established word.

A word can be removed from a particular semantic space either by making the derivative/innovative word unacceptable (Mitla Zapotec, English denominal verbs) or by shifting the meaning of the derivative/innovative word (Japanese). In either case the revised principle of pre-emption reflects what Clark and Clark point out: "As Bolinger (1977) and others have argued, language in general eschews complete synonymy . . . This tendency may reflect the general applicability of" pre-emption (Clark and Clark 1979:800).[8] Japanese avoids synonymy of V-sas and a monomorphemic verb by shifting the meaning of V-sas from lexical causative to analytical causative; Mitla Zapotec avoids it by not allowing the s-V derivative to occur.

3. Lexical Analysis: Some Speculations

In this section I will briefly discuss two topics concerning lexical analysis. In 3.1, I will present data that suggest that V-sase as well as V-sas should be morphologically derived. In 3.2, I will propose a general principle governing morphologically derived words. We will see that the PDS proposed in the previous section is crucial to this principle.

3.1. V-sase

The lexical analysis of V-sas assumes that all V-sas--both lexical and analytical causatives--are formed in the lexicon. The analytical causatives in various languages, including Japanese (V-sase), have been commonly analyzed syntactically because of their productivity and predictable meaning.

Once we allow V-sas with analytical causative interpretation in the lexicon, however, it seems both reasonable and consistent to assume that V-sase is also morphologically derived. I will not attempt to argue for this here, but I will simply present some examples that suggest that V-sase should be morphologically analyzed.

The complex-structure analysis of V-sase given in the transformational approach predicts that every case of V-sase has a compositional meaning, e.g. the meanings of V and sase. This is indeed the case for almost all V-sase. However there are certain V-sase that are associated with idiosyncratic as well as compositional meaning. (Example (36a) is due to Chisato Kitagawa.)

(36) kam 'bite'

a. Arii-ga Nooton-ni refuto fukku-o ago no sita-ni
Ali-nom Norton-dat left hook-acc chin 's under-loc

kam-ase-ta.
(bite-cause-past)

'Ali hit Norton under the chin with a left hook.'

b. *Nooton-ga refuto fukku-o ago no sita-ni kan-da.

(37) niow 'smell'

a. Taroo-ga zisyoku-o niow-ase-ta
nom resignation-acc (smell-cause-past)
'Taro hinted resignation, i.e. that he might resign.'

b. ?Zisyoku ga niot-ta.
'?Resignation smelled.'

Other examples of V-sase with idiosyncratic meaning are tukam 'hold,' tukam-ase 'bribe;' sir 'know,' sir-ase 'inform;' hiki-aw 'pull 'each other,' hikiaw-ase 'introduce;' nak 'cry,' nak-ase 'trouble.'

The idiosyncratic meaning associated with these V-sases cannot be analyzed as the composition of the meanings of V and sase; this is precisely why they are idiosyncratic. If we are to associate the idiosyncratic meaning with V-sase, these V-sase must have a lexical entry. That is, they must be processed in the lexicon.

If they are analyzed syntactically, as in the transformational approach, no V-sase is present in the lexicon, thus no allowance is made for idiosyncratic meaning.

In suggesting a lexical analysis for V-sase I am not suggesting that every V-sase should be listed in the lexicon. This would be counterintuitive given the high productivity of sase and the predictable analytical causative meaning associated with almost all V-sase. However, the existence of V-sase with idiosyncratic meaning suggests that some V-sase do get listed in the lexicon.

The point about not having to list every V-sase also applies to V-sas. We can predict when a V-sas has the lexical or the analytical causative interpretation on the basis of lexical analysis and PDS. Thus the necessary mechanism is already provided for automatically specifying the meaning--either lexical or analytical causative--for every V-sas. While the details need to be worked out, I speculate that most V-sas need not be listed in the lexicon.

3.2. Basic Patterning Principle

The formalism $[(NP)^{n}\_\_\_] \longrightarrow [(NP)^{n+1}\_\_\_]$ has been proposed to represent the morphological process of transitivizing with sas. Given this formalism, nothing prevents us from formulating a morphological process that converts an n-place verb into an n+5-place verb, or, for that matter, into an n+36-place verb. Some constraint must obviously be imposed on this formalism to avoid the formulation of these and other nonexisting morphological processes.

I propose a principle that provides a general constraint on all morphological processes.

(38) Basic Patterning Principle

Morphological processes cannot introduce a pattern into the language (e.g. case marking array) that does not already exist for basic verb stems.

According to this principle, a morphological derivative must conform to paradigms established for basic words. That is, a morphological derivative must be characterized by features established for characterizing basic words.

I will give three illustrations of the Basic Patterning Principle (BPP). The third illustration specifically concerns the problem of formalism noted at the beginning of this subsection.

3.2.1. Case Marking

One clear illustration of the BPP is the case marking array for NPs subcategorized by a verb. In Japanese, verb stems have one of the following two regular sets of case arrays for their NPs, depending on their class. Elsewhere I have called these two sets Canonical Nonergative Case Array and Ergative/Adjective Case Array (Miyagawa 1980).
(ga: nominative; o: accusative; ni: dative)

(39) Canonical Nonergative Case Array

a. NP-ga V

b. NP-ga NP-o V

c. NP-ga NP-ni NP-o V

(40) Ergative/Adjective Case Array

a. NP-ga V

b. NP-ga NP-ga V

c. NP-ga NP-ni NP-ga V

The following V-sase examples illustrate the Canonical Nonergative Case Array for NPs subcategorized by this derivative.

(41) a. Yamada-ga Koyama-o waraw-ase-ta.
nom acc laugh-cause-past

'Yamada made Koyama laugh.'

b. Taroo-ga Hanako-ni pizza-o tabe-sase-ta.
nom dat acc eat-cause-past

'Taro made Hanako eat the pizza.'

For waraw-ase in (41a), along with the regular case array illustrated, the following is also possible.

(42) Yamada-ga Koyama-ni waraw-ase-ta.[10]
nom dat laugh-cause-past

'Yamada had Koyama laugh.

This case array fails to adhere to the Canonical Nonergative Case Array, thus it is idiosyncratic. We note that the same idiosyncratic case array is found with verb stems.

(43) Hanako-ga sensei-ni nat-ta
nom teacher-dat become-past

'Hanako became a teacher.'

A regular case array for NPs subcategorized by a verb stem must therefore be regular for derivatives of the same class. If there are any idiosyncracies, the same idiosyncrasy must be found in the case array of NPs subcategorized by a verb stem.

The following illustrates the regular case array for two-place ergative verbs/adjectives.

(43) a. Hanako-ga hon-ga ir-u.
nom book-nom need-present

'Hanako needs a book.'

b. Taroo-ga Hanako-ga suki-da
nom nom like-copula

'Taro likes Hanako.'

The next example illustrates an idiosyncratic case array allowed for the NPs of the adjective suki 'like.'

(44) Taroo-ga Hanako-o suki-da.
nom acc like-copula

'Taro likes Hanako.'

Both the regular and the idiosyncratic case arrays are reflected in the case arrays of NPs with the derivative V-(rar)e 'V-can.'[11]

(45) a. Yamada-ga eigo-ga hanas-e-ru.
nom English-nom speak-can-present

'Yamada can speak English.'

b. Yamada-ga eigo-o hanas-e-ru
nom acc speak-can present

'Yamada can speak English.'

3.2.2. PDS: The Lack of a Four-Place Slot

The PDS is a structure with three slots--intransitive, transitive, and ditransitive. There are two reasons why a fourth place is unnecessary

in the PDS.

The first reason concerns the BPP. There are no verb stems that subcategorize four NP arguments. The maximum number we find is three, i.e. ditransitive. The fourth slot becomes necessary only with morphological derivatives (V_{ditr}-sas). According to the BPP, however, a morphological process cannot require something that does not already exist with basic verb stems.

Secondly, it turns out that four-place V-sas verbs are marginal in acceptability.

(46) Taroo-ga Ziroo-ni Hanako-ni eigo-o
nom dat dat acc

(a) ?osie-sasi-ta.
teach-cause-past

(b) osie-sase-ta
teach-cause-past

'Taro made Jiro teach English to Hanako.'

(47) Yamada-ga Isyii-ni Koyama-ni kunsyoo-o
nom dat dat medal-acc

(a) ?atae-sasi-ta.
give-cause-past

(b) atae-sase-ta.
give-cause-past

'Yamada made Ishii give the medal to Koyama.'

The reason why the four-place V-sas verbs are marginal in acceptability is as follows. These V-sas are obviously not pre-empted by a synonymous monomorphemic verb, because a monomorphemic verb that subcategorizes four NP arguments does not exist. The V-sas are thus associated with the basic, lexical causative interpretation. But when we consider the situations being described in (46) and (47), we note that they are not conducive to direct causation (lexical causative). The first NP is the causer of one action, the second NP the causee of this action and at the same time the causer of a second action, and the third NP the causee of this second action. What is being described, thus, involves indirect causation, one not expressible by a lexical causative. V-sase, on the other hand, is appropriate because its basic meaning is indirect causation.

3.2.3. The PDS and Morphological Processes

I will now discuss the problem of formalism noted at the beginning of section 3.2.

When we consider the possible arrangements of verb stems within a PDS, we note that only certain arrangements actually occur.

(48)

	intr	tr	ditr
a.	A		
b.		B	
c.			C
d.	E	F	
e.		G	H

While the arrangements in (48) can be found, we do not find the following.

(49) *

I		J

If a PDS includes more than one verb stem, the verb stem must differ by only one in the number of the subcategorized NPs. For lack of a better term, I will refer to this as the Next Door Principle.

I propose that this principle, which governs verb stem arrangement in the PDS, cannot be violated by morphological processes. In other words a morphological process must conform to the pattern established by the basic words, i.e. verb stems. Consequently, a morphological process that adds or subtracts an NP argument must be of the form: $[(NP^n \_\_\_] \rightarrow [(NP)^{n+1} \_\_\_]$ or $[(NP)^n \_\_\_] \rightarrow [(NP)^{n-1} \_\_\_]$. We can see that this restriction directly reflects the BPP. Without the principle, we cannot constrain even the most outlandish morphological processes.[12]

The BPP proposed in this section reflects a basic characterization of morphological derivatives such as V-sas. While morphologically complex, they are nothing but ordinary words in the language. This is indeed the most basic assumption behind the lexical analysis.

FOOTNOTES

*This paper is a revised and expanded version of a portion of my doctoral dissertation (Miyagawa 1980). I am grateful to Adrian Akmajian, my thesis director, Chisato Kitagawa, Susan Steele, and Dick Oehrle. I am also grateful for comments by Arnold Zwicky. The opinions expressed herein are strictly my own.

I received a number of excellent suggestions at the Arizona Conference on Japanese Linguistics, January 24,1981 and also at the Ohio State University Linguistic Colloquium, January 20, 1981. I will incorporate these into a future paper.

[1]In the transformational analysis two underlying structures are commonly postulated for a sentence with V-sase. I will only illustrate one of them here. See Kuno 1972, Kuroda 1978 among others.

[2]Shibatani (1973) states that the distinction in the meaning of V-sas he points out is applicable only to speakers from the Kantoo (Tokyo) region. Those from Kansai (Osaka) do not make the distinction. The analysis of V-sas in this paper will likewise reflect the use of V-sas in the Kantoo region.

[3]See Farmer 1980, Ostler 1980, and Miyagawa 1980 for a more extensive discussion of lexical analysis of Japanese verbs.

[4]See Jackendoff 1975 for comments on redundancy rules.

[5]The NPs relevant to the present study are those that take one of the following case markings: nominative ga, accusative o, dative ni. NPs that take a postposition (e.g. de 'at/in,' ni/e 'to') will not be considered.

[6]Clark and Clark list "entrenchment" and "ancestry" along with suppletion for pre-emption. See Clark and Clark 1979:798-80. See also "blocking" by Aronoff (1976) that parallels "pre-empting."

[7]Bruce Miller provided the Mitla Zapotec examples (personal communication). His phonological transcription is used for the examples. I have also taken two examples from Briggs 1961.

[8]Clark and Clark makes this statement for other principles as well as pre-emption (Clark and Clark 1979).

[9]See Miyagawa 1980, Chapter 4, for comments on V-sase and the lexicon.

[10]As shown in (41)a and (42), the second NP of a "transitive" V-sase is marked with either the accusative o or the dative ni. Many linguists have commented on the semantics of "o- and ni- causatives." See Kuroda 1965, Kuno 1973, Kitagawa 1974, Tonoike 1978 among others.

[11]See Makino 1975-76 for a discussion of a possible semantic difference between sentences such as (45a) and (45b).

[12]See Chapter 4 of my thesis for examples of detransitivization in Japanese.