Lingua 64 (1984) 177–207. North-Holland

BLOCKING AND JAPANESE CAUSATIVES

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Received March 1984

A principle is proposed that organizes verbs in the lexicon according to their meaning and the number of arguments they require. This principle, which we call the Paradigmatic Structure, acts as a filter for the permanent lexicon, letting all verb stems into the lexicon but only some morphological derivatives. The effects of the Paradigmatic Structure are observed in blocking, in which some but not all morphological derivatives manifest processes regularly associated with verb stems. The Paradigmatic Structure is motivated on the basis of the causative construction in Japanese. The fact that the causative construction is subject to the Paradigmatic Structure demonstrates its word-like characteristic. However, the construction also behaves in a way that suggests that it is syntactically complex. To capture both the word-like and the syntactic behaviors, it is proposed that a parallel structure is projected from the verb, one simplex and the other complex.

At an earlier stage in the development of generative grammar, when morphology was largely ignored, the lexicon was simply viewed as an unstructured list of lexical items (Chomsky 1965). However, the Lexicalist Hypothesis (Chomsky 1970) brought about a renewed interest in word formation, and it is now clear that the lexicon has a rich, internal structure. Much of the recent work on morphology has focused on the principles governing the internal structure of words and the relationship of this to

* I am grateful to Adrian Akmajian, Ken Hale, Morris Halle, Richard Oehrle, Mamoru Saito, Susan Steele, and Yasushi Zenno for discussing the subject matter contained in this paper at various points in its development. The research for this paper was partially funded by NIMH 1F32NH08 24–01.

This paper is partially based on my 1980 University of Arizona doctoral dissertation. The dissertation was supervised by the late Adrian Akmajian, who died of illness in the summer of 1983. I wish to dedicate this paper to him.

syntax (e.g. Aronoff 1976; Lieber 1980; Williams 1981). A related and equally important issue which has not received as much attention is the question of how lexical items, both simple and complex, are actually listed in the lexicon. Are lexical items simply listed without regard to shared features, or are there organizing principles that group some but not other items together? An observation made by Aronoff (1976) indicates that lexical items are organized in the lexicon according to their meaning. He notes that when a morphologically complex word potentially shares the same *semantic space* as a simple one (e.g. *gloriosity*, *glory*), the former is *blocked* from occurring in the language. Clark and Clark (1979) have observed the same phenomenon (they name it *pre-emption*) with a wide range of denominal verbs. The idea of blocking presupposes a lexicon that is structured into groups of semantic slots. The slots grouped together share a significant semantic feature, and all lexical items that receive an entry must find an appropriate slot to enter. When a morphological derivative is produced from a base belonging to group X, the derivative must find a slot in X to enter in order for it to receive an entry; if the appropriate slot is already filled, the derivative is blocked from occurring in the language.

In this paper we will investigate how verbs are organized in the lexicon. It will be proposed that verbs are organized according to their meaning and the number of arguments they require. Every verb that receives an entry in the permanent lexicon must enter a slot in what we will term the Paradigmatic Structure (PDS); each PDS consists of three slots, Intransitive, Transitive, and Ditransitive. The PDS slots are first filled by verb stems which are morphologically the simplest form of the verb; at this point, a PDS can have one, two, or all three slots filled depending on the existence of verb stems that share the appropriate meaning. To this are added morphological derivatives made up of a verb stem plus one or more derivational suffixes. The morphological derivative can receive entry in the permanent lexicon if it is able to enter a PDS slot; such a slot, if vacant, is in the same PDS as the base (verb stem) of the derivative. If the appropriate slot is already filled by a verb stem, the derivative is blocked, and will never enter the permanent lexicon. The PDS thus acts as a filter for the permanent lexicon, letting some derivatives in while blocking others.

The PDS will be motivated on the basis of the causative construction in Japanese. There are two dependent causative morphemes in Japanese, *sas* and *sase*. We will show that the complex causative verb made up of either *sas* or *sase* manifests effects of blocking. Unlike the previously noted cases of blocking, however, blocked causative verbs occur freely in the language,

but they behave differently from unblocked ones. A causative verb that is not blocked by the existence of a corresponding verb stem enters a PDS slot. When this happens, the unblocked causative verb manifests characteristics normally associated with simple verb stems, thereby leading us to characterize the PDS as a filter for the permanent lexicon. The data we provide on causatives give a much more convincing argument for blocking than Aronoff's; our data are more comprehensive, and there are some disagreements in judgment even within the small set of data used by Aronoff (cf. fn. 3).

This paper is organized as follows: in section 1, relevant data involving the *sas* causative verb are given to motivate the PDS and to demonstrate effects of blocking. Data from Mitla Zapotec are also given for cross-linguistic evidence for the PDS. In section 2, we turn to the other causative morpheme, *sase*. It is shown that *sase* causative likewise participates in the PDS unless blocked. Those that enter the PDS exhibit lexical behavior commonly associated with simple verbs, thereby suggesting that the PDS acts as a filter for the permanent lexicon. Because both *sas* and *sase* causative can potentially enter the PDS, they are always competing for the same slot. The consequences of this are investigated in section 3. In section 4, we turn to the syntax of causatives. Previous accounts postulate a complex underlying structure, with *sase*/*sas* as the 'higher' verb. We propose instead that the causative verb is formed in the lexicon because of its clearly lexical characteristics vis-à-vis the PDS. To also account for the 'complex structure' behavior of this verb, we present an argument that a causative verb is associated with parallel structures, one simplex, the other complex, both projected directly from the lexicon.

1. The causative construction with *sas*

Sas and *sase*, the two causative morphemes in Japanese, attach to a verb stem or a complex verb to form a complex causative verb.[1] We will refer to such a verb as *V-sas* and *V-sase*. (*Sas* and *sase* appear as *as* and *ase* when attached to a consonant-ending verb; the vowel *i* is inserted after *sas* when a consonant-initial morpheme follows.)

[1] Historically, the *sas* form "gave rise to the *sase* form around the 12–15th century" (Shibatani 1973; Miyaji 1969).

(1a) Taroo ga Hanako ni hon o yom-*asi*-ta.
NOM DAT book ACC read-cause-past
'Taro made/let Hanako read the book.'
(1b) Taroo ga Hanako ni hon o yom-*ase*-ta.

Both morphemes are highly productive, and in many cases they have the analytical meaning of *CAUSE X TO V*. When they do not share this meaning, it is usually because *sas* has a lexical causative interpretation in addition to the analytical interpretation, while *sase* only has the analytical interpretation.

1.1. V-sas and V-sase

While many *V-sas* are synonymous with their corresponding *V-sase*, cases exist in which identity of meaning does not obtain. The following is taken from Shibatani (1973: 346–47).

(2a) Taroo ga isu o ugok-*asi*-ta.
NOM chair ACC move-cause-past
'Taro moved the chair.'
(2b) *Taroo ga isu o ugok-*ase*-ta.
(3a) Taroo ga yu o wak-*asi*-ta.
NOM (hot) water ACC boil-cause-past
'Taro boiled the water.'
(3b) *Taroo ga yu o wak-*ase*-ta.

In these examples, *V-sas* has a straightforward transitive (lexical causative) interpretation. The unacceptability of *ugok-ase* and *wak-ase* is due to the fact that the causee in the analytical causative must be animate and self-propelled (Shibatani 1973). The difference between lexical causative and analytical causative interpretation becomes clear if we replace *isu* 'chair' in (2) with an animate noun, making both causative morphemes possible.

(4a) Taroo ga boo o tukatte Ziroo o ugok-*asi*-ta.
NOM stick ACC using ACC move-cause-past
'Taro moved Jiro using a stick.'
(4b) Taroo ga boo o tukatte Ziroo o ugok-*ase*-ta.
'Taro made Jiro move using a stick.'

(4a) has the interpretation that Taro physically moved Jiro with a stick, but (4b) implies that Taro used the stick to direct Jiro to move. Shibatani gives the following pair that also illustrates the lexical/analytical distinction.

(5a) 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.'
(5b) Eiga kantoku ga motto umaku zyoyuu o odorok-*ase*-ta.
'The movie director made (directed) the actress be surprised better.'

(5a) is interpreted to mean the movie director literally surprised the actress, for example, by sneaking up to her. (5b) on the other hand has the director directing the actress to act surprised more convincingly.

1.2. Verbal paradigm and blocking

We have seen *V-sas* with lexical causative meaning which distinguishes it from the analytical *V-sase*. But there are many instances in which *V-sas* has only the analytical interpretation, making it indistinguishable from *V-sase*. Is there a way to predict when a *V-sas* has the lexical interpretation?

V-sas has the lexical meaning when there is no corresponding monomorphemic verb stem (Shibatani 1973: 348).[2] Take the intransitive verb *odorok* 'be surprised' in (5). This verb lacks a unique transitive form. As a result, the *V-sas*, *odorok-as*, acts as its transitive counterpart and is associated with the lexical causative meaning. The intransitive verbs *ugok* 'move' in (2) and *wak* 'boil' in (3) likewise lack a unique transitive counterpart, allowing *ugok-as* and *wak-as* to be associated with the lexical causative interpretation. To capture this, let us suppose that a verb stem is associated with a paradigmatic structure of the type illustrated below for *odorok* 'be surprised'.

(6)

INTR	TR	DITR
odorok		

[2] Shibatani (1973) states that the distinction in the meaning of *V-sas* he points out is applicable only to speakers from the Kanto (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 Kanto region.

Because the transitive slot for this verb is vacant, the *V-sas*, *odorok-as*, fills this slot and acquires the straightforward 'transitive' interpretation of lexical causative. We will assume that each and every stem fits into such a Paradigmatic Structure (PDS).

1.2.1. Blocking

Let us now see what happens to the interpretation of *V-sas* if a corresponding unique verb does exist. The transitive–intransitive pair *agar* 'rise' and *age* 'raise' is comprised of two 'unique' verbs in the sense that one cannot be morphologically derived from the other in any principled way. The PDS for this pair is given in (7).

(7)

INTR	TR	DITR
agar	*age*	

If we attach *sas* to the intransitive *agar*, the resulting *V-sas* can only be associated with the analytical interpretation. (8) and (9) illustrate this.

(8a) Taroo ga boo o tukatte kodomo o hako no ue ni age-ta.
NOM stick ACC using child ACC box top on raise-past
'Taro raised the child onto the box using a stick.'

(8b) Taroo ga boo o tukatte kodomo o hako no ue ni agar-*asi*-ta.
'Taro made the child go onto the box using a stick.'

(9a) Taroo ga hon o atama no ue ni age-ta.
NOM book ACC head top on raise-past
'Taro raised the book above his head.'

(9b) *Taroo ga hon o atama no ue ni agar-*asi*-ta.
*'Taro made the book be raised above his head.'

In (8a), the simple transitive verb *age* 'raise' has the lexical causative interpretation, implying thus that a stick was used to physically raise the child onto the box. (8b), with *agar-as* 'rise-cause', can only be associated with the analytical causative meaning; hence, the stick was used to direct the child onto the box. (9a), with the simple transitive, is fine with the inanimate causee *hon* 'book'. However, an inanimate causee is unacceptable with *agar-as*

'rise-cause' as shown in (9b), again showing that the *V-sas* here is associated with only the analytical interpretation which requires an 'animate and self-propelled' causee.

We will characterize the inability of *agar-as* to be associated with the lexical causative meaning as a case of *blocking*. A *V-sas* is blocked from filling a PDS slot if a simple verb stem already occupies that slot. As a result, the *V-sas* is incapable of taking on the lexical causative interpretation, leaving it with the analytical interpretation identical to *V-sase*.

Aronoff (1976) originally proposed the concept of blocking to explain certain gaps in English morphological derivatives. The following is taken from Aronoff 1976.

(10)	*Xous*	Nominal	*+ity*
	various	*	variety
	curious	*	curiosity
	glorious	glory	*gloriosity
	furious	fury	*furiosity

The *+ity* suffix attaches to a *Xous* adjective to form a nominal. While *variety* and *curiosity* occur, **gloriosity* and **furiosity* do not because they are blocked by the existence of the simple nominals *glory* and *fury*. Aronoff thus assumes that a blocked item is a nonoccurring item that otherwise follows a regular morphological rule.[3]

Our observation of *V-sas* shows that the process of blocking does not always entail nonoccurrence. A *V-sas* is blocked if it is unable to enter a PDS slot due to the existence of a simple verb stem already occupying that slot. Unlike **gloriosity* and **furiosity*, the blocked *V-sas* does occur, but it is incapable of taking on the lexical causative meaning. A universal characterization of blocking is then a process by which one item is blocked from entering a semantic slot due to the existence of another item already occupying that slot. Whether or not a blocked item will actually occur in the language is an independent issue, one that should not be specified as a necessary part of the process of blocking. Indeed, within one language, one finds both occurring and nonoccurring blocked items. While **gloriosity*

[3] There are some problems with Aronoff's data. For example, *furiosity* is listed as a bonafide word in *Walker's Rhyming Dictionary* (I am grateful to Morris Halle for this information).

does not arise in English, *cooker* does occur even though it is blocked from having the predicted agentive meaning due to the existence of *cook*; *cooker* as a result 'shifts' to have the meaning of a cooking utensil (Kiparsky 1982).

1.3. Further evidence

The establishment of the Verbal PDS together with the universal characterization of *blocking* predicts precisely when a *V-sas* is associated with the lexical causative interpretation. We now present data from Mitla Zapotec that give further support for the PDS.

In Mitla Zapotec, the causative prefix *s* attaches to an intransitive verb such as *niʔ* 'move' to form the transitive *s-niʔ* 'move'; this *s* can also attach to a transitive verb to form a ditransitive verb, as in *gidza* 'scold', *s-gidza* 'cause to scold'. This is a productive morphological process, but there are gaps in the occurrence of the derived causative verbs, gaps which are consistent with the PDS and blocking.[4]

(11a) niʔ 'move (intr)'
(11b) s-niʔ 'move (tr)'
(12a) gidza 'scold'
(12b) s-gidza 'cause to scold'
(13a) riʔ 'come/go out'
(13b) *s-riʔ
(13c) Læʔ 'take out'
(14a) yabtaʔ 'fall down'
(14b) *s-yabtaʔ
(14c) zæltaʔ 'knock down'
(15a) dauch 'eat'
(15b) *s-dauch
(15c) yaʔn 'feed'

The *s* derivatives occur in (11) and (12). But they do not in (13)–(15); in their place is a corresponding unique verb stem. The existence of the simple verb thus blocks the *s* derivative, resulting in its nonoccurrence. The PDS for these verbs are illustrated below.

[4] 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).

(16)

INTR	TR	DITR
niʔ 'move'	*s-niʔ* 'move'	

(17)

	gidza 'scold'	*s-gizda* 'cause to scold'

(18)

	riʔ 'come/go out'	*Læʔ* 'take out'

**s-riʔ* (blocked)

(19)

yabtaʔ 'fall down'	*zæltaʔ* 'knock down'	

**s-yabtaʔ* (blocked)

(20)

	dauch 'eat'	*yaæn* 'feed'

**s-dauch* (blocked)

Unlike the Japanese *V-sas*, a blocked *s-V* in Mitla Zapotec does not occur in the language. This is probably because *s* itself only carries the lexical causative meaning; the analytical causative is expressed by a periphrastic construction. Consequently, when *s-V* is blocked, it is prohibited from being associated with the only possible meaning it can have, and the derivative thus fails to occur in the language. *V-sas* on the other hand has the analytical causative meaning to 'fall back on' when it is blocked from a slot that would allow its association with the lexical causative interpretation.

2. The causative construction with *sase*

The PDS has been proposed to deal with the two possible interpretations of *V-sas*, a strictly analytical causative interpretation and a lexical causative

interpretation. We will now look at the other causative morpheme, *sase*. It will be shown that this causative verb also participates in the PDS. Because a *V* can usually take either *sas* or *sase*, this leads to the conclusion that a *V-sas* and the corresponding *V-sase* are always competing for the same PDS slot. We take up this problem in section 3. The lexical behaviors exhibited by *V-sase* vis-à-vis the PDS give further indication that the PDS functions as a filter for the permanent lexicon. We begin our discussion with the PDS.

2.1. The PDS

The PDS is a hypothesis about how verbs are organized in the lexicon. According to this hypothesis, verbs are arranged in the lexicon according to the meaning and the number of arguments they take. The PDS has three slots, Intransitive, Transitive, and Ditransitive; a verb, either simple or complex, is placed into an appropriate slot. A verb stem, being the morphologically simplest form, automatically enters a PDS slot. Before morphological derivation takes place, all PDS slots that are filled have only verb stems. At this point, a PDS may have only one of its slots filled, for example the Intransitive slot, as in the case of *odorok* 'be surprised', which has no simple transitive counterpart, or just the transitive slot filled, as in the case of *tabe* 'eat'; some PDS may have two slots filled, as in *ak* 'open (intr)' and *ake* 'open (tr)', or the Mitla Zapotec case of *dauch* 'eat' and *yaæn* 'feed'. These possible PDSs are illustrated below.

(21a)

INTR	TR	DITR
hasir 'run'		

(21b)

	tabe 'eat'	

(21c)

ak 'open'	*ake* 'open'	

(21d)

	dauch 'eat'	*yaæn* 'feed'

Henceforth, we will refer to any verb which enters a PDS slot as having *PDS status*.

All verb stems by nature are part of the permanent lexicon; by virtue of this, they are always available for any pertinent lexical processes such as semantic drift and nominalization. Verb stems are also automatically given PDS status since they are the morphologically simplest form of the verb. We propose that this relationship between the permanent lexicon and PDS is not an accident, but rather is a necessary condition. The PDS is a filter that allows some, but not all lexical items to enter the permanent lexicon. If a lexical item attains PDS status, it then becomes a candidate for the permanent lexicon, but if it is blocked by the existence of another lexical item, it will never become a member of the permanent lexicon unless another slot is found into which it can enter (cf. *cooker* in English). In the case of verbs, only one potential slot is available. Consequently, if a verb is blocked, it will never attain PDS status, in turn failing to enter the permanent lexicon. Languages differ on how they treat blocked items: in Mitla Zapotec, blocked *s-V* causative verbs simply do not occur, but in Japanese a blocked causative verb does occur in the language. What we observed for *V-sas* is that a *V-sas* that has PDS status may be associated with the lexical causative interpretation, but a blocked *V-sas* can only be associated with the analytical interpretation of '*X CAUSE Y TO V*'. A lexical causative interpretation is most commonly found among simple transitive verbs, as in *tome* 'stop (tr)' and *age* 'raise'. A *V-sas* that attains PDS status is thus used to fill a gap in the paradigm of verb stems. In so doing, the *V-sas* is treated as a simple verb, one which can enter the permanent lexicon.

2.2. *The causative morpheme sase*

We now turn our attention to the other causative morpheme in Japanese, *sase*. We will give three arguments to demonstrate that a *V-sase* does receive PDS status unless blocked. In so doing, we will give further support to the idea that the PDS is a filter for the permanent lexicon.

2.2.1. *Nominalization*

There is a large number of nominals that exhibit a simple verb stem in their form. The nominal may simply be a nominalized verbal infinitive, as in *hare* 'clear weather' (*hare* 'to clear up'), *tanomi* 'request' (*tanom* 'to request'), and *amari* 'remainder' (*amar* 'to remain'); or it can be a compound composed of a verbal infinitive and a noun, as in *tabe-mono* 'food' (*tabe*

'to eat', *mono* 'thing'), *nori-mono* 'vehicle' (*nor* 'to ride'), and *tate-mono* 'building' (*tate* 'to build'). Since all verb stems automatically receive PDS status, we can conclude from the existence of the large number of these nominals that this process of nominalization is a process available to verbs which enter the PDS, hence in the permanent lexicon.

Based on this, we can show that *V-sase* participates in the PDS if we find nominals that exhibit a *V-sase*. There are in fact such nominals:

(22a) sir-*ase* 'notice' (*sir* 'to know')
(22b) aw-*ase* 'garment lining' (*aw* 'to fit')
(22c) asob-*ase*-uta 'children's song' (*asob* 'to play', *uta* 'song')
(22d) kuw-*ase*-mono 'fake' (*kuw* 'to receive harm', *mono* 'thing')
(22e) iya-gar-*ase* 'harassment' (*iya-gar* 'to be bothered')

In each of these, the *V-sase* does not have a corresponding simple verb, e.g. there is no simple transitive counterpart of *aw* 'to fit' and *asob* 'to play'. The last nominal given above, *iya-gar-ase* 'harassment', is especially noteworthy. The *V* to which *sase* attaches is made up of an adjective/adjectival nominal (*iya*) and the verbalizer *gar*. This verbalizer regularly attaches to 'psych' adjective/adjectival nominal to form a verb, e.g. *tanosi* 'fun', *tanosi-gar* 'to enjoy', *uresi* 'happy', *uresi-gar* 'to be happy'. Now, along with the nominal *iya-gar-ase* 'harassment' we find *uresi-gar-ase* 'flattery' (*uresi-gar* 'to be happy'), but not **kanasi-gar-ase* (*kanasi-gar* 'to be sad') or **tanosi-gar-ase* (*tanosi-gar* 'to enjoy'). The PDS hypothesis predicts the gaps because of the existence of a simpler form corresponding to *kanasi-gar* and *tanosi-gar*; no such corresponding simple forms exist for *iya-gar* or *uresi-gar*.

(23)

Adj/Adj Nom	Verb	*V-sase*	Nominalized *V-sase*
iya 'bothersome'	*iya-gar* 'to be bothered'	*iya-gar-ase*	*iya-gar-ase* 'harassment'
uresi 'happy'	*uresi-gar* 'to be happy'	*uresi-gar-ase*	*uresi-gar-ase* 'flattery'
kanasi 'sad'	*kanasi-gar* 'to be sad'	*kanasi-gar-ase*	**kanasi-gar-ase*
	kanasim 'to be sad'	*kanasim-ase*	

tanosi 'fun'	*tanosi-gar* 'to enjoy'	*tanosi-gar-ase*	**tanosi-gar-ase*
	tanosim 'to enjoy'	*tanosim-ase*	

Note that, under the Verb column, the first two, *iya-gar* 'to be bothered' and *uresi-gar* 'to be happy' lack a corresponding simple verb; and, as shown under the Nominalized *V-sase* column, the *V-sase* counterpart of these occur in a nominal. The last two, *kanasi-gar* 'to be sad' and *tanosi-gar* 'to enjoy', on the other hand do have corresponding simple verbs, *kanasim* and *tanosim*. According to the PDS scheme, *kanasi-gar* and *tanosi-gar* are blocked from entering a PDS slot by the existence of the simple verbs. Since neither *kanasi-gar* nor *tanosi-gar* attains PDS status, their *V-sase* counterpart likewise fails to enter a PDS slot, leading to the prediction that no nominal exists that exhibits these *V-sase*. This is shown under the Nominalized *V-sase* column. The paradigm in (23) thus gives credence to the assumption that a *V-sase* does enter a PDS slot unless it is somehow blocked. While *iya-gar-ase* and *uresi-gar-ase* enter a PDS slot, making them available for nominalization, *kanasi-gar-ase* and *tanosi-gar-ase* do not (even though they occur) because *kanasi-gar* and *tanosi-gar* are blocked by the existence of corresponding simple verbs *kanasim* and *tanosim*. It is noteworthy that these simple verbs appear in a nominal, i.e. *kanasimi* 'sadness' and *tanosimi* 'pleasure', the existence of which gives further evidence that these, but not the *-gar* verbs, enter the PDS.

2.2.2. *Verb phrase idioms*

The second piece of evidence that *V-sase* is subject to the PDS involves one type of idiomatic expression. A large number of idioms exist that are composed of a transitive verb and direct object NP. Most of these Verb Phrase idioms contain a simple verb, but there are some that contain a *V-sase*. Zenno (1983) points out a clear pattern in the distribution of simple verbs and *V-sase*: when a simple verb occurs, the corresponding *V-sase* is never possible; conversely, when a *V-sase* does occur, it is always the case that a corresponding simple transitive verb is nonexistent. (24) and (25) exemplify this distribution.

(24) *VP idioms with a simple transitive verb*

(a) iki o nuk/*nuke-*sase* 'to relax'
breath ACC pull be: pulled-cause

(b) ago o das/ *de-*sase* 'to give up'
chin push:out come:out-cause
(c) me o toos/ *toor-*ase* 'read through'
eye go:through (tr) go:through(intr)-cause
(d) tenoura o kaes/ *kaer-*ase* 'to betray'
back:of:hand return(tr) return(intr)-cause

(25) *VP idiom with V-sase*
(a) hana o sak-*ase* 'to succeed'
flower bloom-cause
(b) hara o her-*ase* 'to be hungry'
stomach decrease-cause
(c) haba o kik-*ase* 'to make one's influence felt'
width be:effective-cause
(d) hana o ugomek-*ase* 'to try to sniff'
nose wiggle-cause
(e) kao o aw-*ase* 'to meet'
face meet-cause

None of the *V-sase* in (25) has a corresponding simple transitive verb.

An idiom by definition is associated with a meaning that cannot be derived from the composition of its parts. In each of the examples in (24) and (25), the phrase as a whole has undergone semantic drift to be associated with the noncompositional meaning; the idiom as a whole must thus be listed in the permanent lexicon with the noncompositional meaning. The point of interest for us is the complementary distribution of simple verbs and *V-sase*: a simple transitive in an idiom cannot be replaced by *V-sase*, and, more importantly, when a *V-sase* does appear, it always lacks a corresponding simple verb. This is a straightforward PDS effect: a *V-sase* in an idiom is one that attains PDS status, making it a member of the permanent lexicon, in turn making it available for idiomatization/semantic drift.

2.2.3. Adversity causative

Ochrle and Nishio (1981) point out that a simple transitive verb such as in (26) has (at least) two interpretations.

(26) Taroo ga ie o yai-ta.
NOM house ACC burn-past
= 'Taro burned his house (intentionally or otherwise).'
= 'Taro's house burned, and he was adversely affected by this event (he did not cause the burning, intentionally or otherwise).'

Oehrle and Nishio call this second interpretation 'adversity causative'. They point out that a *V-sase* can also be associated with this adversity causative interpretation, but there is a condition: a *V-sase* has this interpretation only if it lacks a corresponding simple verb (Oehrle and Nishio 1981: 168). For example, *kusar-ase* 'cause to rot' can be associated optionally with the adversity interpretation because there is no corresponding simple transitive for *kusar* 'rot'.

(27) Taroo ga yasai o kusar-*ase*-ta.
NOM vegetable ACC rot-cause-past
= 'Taro caused the vegetable to rot.'
= 'The vegetable rotted on Taro.'

But *sizum-ase* 'cause to sink', which has the corresponding simple transitive *sizume* 'sink (tr)', only has the analytical reading.

(28a) Taroo ga hune o sizume-ta.
NOM boat ACC sink-past
= 'Taro sank the boat.'
= 'The boat sank on Taro.'
(28b) Taroo ga hune o sizum-*ase*-ta.
= 'Taro caused the boat to sink.'
≠ 'The boat sank on Taro.'

We conclude that the adversity causative interpretation for *V-sase* is governed by the PDS.

Nominalization, semantic drift (idiomatization), and adversity causative reading are common phenomena observed for simple verbs. These are, in other words, phenomena commonly associated with PDS-status verbs, which are members of the permanent lexicon. The fact that, for example, a verb has undergone semantic drift, either by itself or in an idiomatic phrase, demonstrates that the verb is a member of the permanent lexicon. If it is not listed as such, it cannot take on the additional, noncompositional meaning. A *V-sase* can also be associated with the same set of phenomena,

but only if it has PDS status, i.e. those that are not blocked. This demonstrates that the PDS is a filter for the permanent lexicon, letting the unblocked *V-sase* through and, in turn, making it available for processes associated with the verbs of the permanent lexicon.

3. *V-sas* and *V-sase*

We have evidence to show that both *V-sas* and *V-sase* can enter the PDS unless blocked. Because *sas* and *sase* attach to virtually any *V*, this leads us to conclude that *V-sas* and *V-sase* with the same *V* compete for the same PDS slot; the one that successfully enters the PDS blocks the other from doing so. We will see that this is indeed the case. However, there are some cases in which both appear to have PDS status. This would be in violation of what we have been assuming all along, that only one item is allowed per slot. For these cases, we show that in fact only *V-sase* enters the PDS, and the *sas* here is a morphological variant of *sase*. This *sase/sas* morphological alternation is governed by the PDS in that only *V-sase* with PDS status can freely alternate with *sas*. This *sas* is simply an allomorph of *sase* (when *V-sase* attains PDS status), and is to be differentiated from the *sas* we have so far observed which is a full-fledged morpheme.

3.1. Where V-sas and V-sase compete

We now present evidence that either the *V-sas* or the *V-sase*, but not both, has PDS status. If *V-sas* has entered the PDS, its existence blocks *V-sase*, and vice versa.

3.1.1. VP idioms

There are VP idioms that contain *V-sas* but do not allow the corresponding *V-sase*. The data is taken from Zenno (1983).

(29) fuhei o nar-*as*/**ase* 'to complain'
complaint ACC sound:out-cause

(30) mimi o sum-*as*/**ase* 'to try to listen'
ear clear-cause

(31) saku o megur-*as*/**ase* 'to plan carefully'
fence circle-cause

(32) himitu o mor-*as*/**ase* 'to tell a secret'
secret leak-cause

In these cases, only *V-sas* has PDS status which allows it to undergo idiomatization. The *V-sase* is blocked from entering the PDS by the existence of the *V-sas*.

3.1.2. Nominalization

We saw in the previous section that nominalization is a process associated with PDS-status verbs. When we look at the various nominals that exhibit the causative morpheme, we note that they have either *V-sas* or *V-sase*; no nominal exists in which both *V-sas* and *V-sase* are possible. (33) gives nominals that exhibit *V-sas*; (34) gives nominals with *V-sase*.

(33) *Nominals with V-sas*
- (a) o-sum-*asi*/*o-sum-*ase* 'clear soup' (*sum* 'to clear')
- (b) megur-*asi*-bumi/*megur-*ase*-bumi 'palindrome' (*megur* 'to circle', *bumi* 'sentence')
- (c) waraw-*asi*/*waraw-*ase* 'a funny thing' (*waraw* 'to laugh')
- (d) wak-*asi*-tugi/*wak-*ase*-tugi 'welded connection' (*wak* 'to boil', *tugi* 'connection')
- (e) odorok-*asi*/*odorok-*ase* 'threat, scare' (*odorok* 'to be surprised')

(34) *Nominals with V-sase*
- (a) iya-gar-*ase*/*iya-gar-*asi* 'harassment' (*iya-gar* 'to be bothered')
- (b) aw-*ase*/*aw-*asi* 'garment lining' (*aw* 'to fit')
- (c) sir-*ase*/*sir-*asi* 'notice' (*sir* 'to know')
- (d) asob-*ase*-uta/*asob-*asi*-uta 'children's song' (*asob* 'to play')
- (e) kuw-*ase*-mono/*kuw-*asi*-mono 'fake' (*kuw* 'to receive damage')

In (33), only the *V-sas* has attained PDS status, making it possible, but not the *V-sase*, to undergo nominalization. (34) gives cases where *V-sase* has PDS status, thus blocking *V-sas* from appearing in a nominal.

It is noteworthy that the *V-sas* in (33a) (*sum-as*) and (33b) (*megur-as*) also appear in idioms that do not allow *V-sase* (cf. (30) and (31)). This is not surprising, and in fact predicted, since a *V-sas* with PDS status is subject to any process that applies to verbs in the permanent lexicon including nominalization and idiomatization. What we do not expect to find is a nominalized *V-sas* and its corresponding *V-sase* appearing in an idiom (or vice versa). If we find a *V-sas* in a nominal, this indicates that it has PDS status, and its existence blocks the corresponding *V-sase*. This *V-sase* would never appear in an idiom or any other phenomena associated with the permanent lexicon. We have not found any cases that counter-exemplify this prediction made by the PDS.

3.2. *Two types of sas*

There are cases in which both *V-sas* and *V-sase* appear to have PDS status in violation of the 'one-item-per-slot' assumption. For example, the VP idiom in (35) tolerates either *sase* or *sas*.

(35) me o kagayak-*ase*/-*as* 'to look with envy'
eye shine

Based on the assumption that a *V-sas* or *V-sase* can undergo idiomatization only if it has PDS status, we are here faced with the problem of having to admit both *V-sase* and *V-sas* into the same PDS slot. Once we allow this, however, our entire theory of PDS and blocking is put on questionable ground: if more than one item can enter a PDS slot, why aren't the 'blocked' *V-sase*/*V-sas* in our previous discussions allowed to enter the PDS along with the corresponding simple verb? What we propose instead is that cases such as (35) illustrate a second type of *sas*, one that is different from the regular dependent morpheme *sas*. This second type is simply an allomorph of *sase*, but there is a condition on when this allomorph can appear. The *sase* in *V-sase* can freely alternate with the allomorph *sas* only if the *V-sase* has PDS status. This then is another manifestation of the PDS effect. According to this, only the *V-sase*, *kagayak-ase*, in (35) enters the PDS, its existence thus blocking the corresponding *V-sas*; the *(V)-sas* that is also possible is the result of morphological alternation available to *(V)-sase* with PDS status. By this analysis, we are able to maintain the 'one-item-per-slot' assumption for the PDS.

Let us look at VP idioms again. We know that there are idioms that allow only *V-sas*. We have also seen idioms that contain a *V-sase*. What is crucial to note here is that, when a *V-sase* appears in an idiom, *sas* is *always* possible as an alternate form. Thus all of the *V-sase* idioms in (25) can be expressed with *sas* as well.

(36a) hana o sak-*ase*/-*as* 'to succeed'
(36b) hara o her-*ase*/-*as* 'to become hungry'
(36c) haba o kik-*ase*/-*as* 'to make one's influence felt'
(36d) hana o ugomek-*ase*/-*as* 'to try to sneeze'
(36e) kao o aw-*ase*/-*as* 'to meet'

These idioms mean exactly the same whether *V-sase* or *V-sas* is used. Con-

sequently, we can postulate one of the forms to be basic and the other as a morphological variant. The question is, which is the basic form, *V-sase* or *V-sas*?

We propose that the basic form is *V-sase*. First of all, there are idiomatic phrases with *V-sas* that do not allow *V-sase* as an alternative (cf. (29)–(32)). If *V-sas* were the basic form, then we would expect *V-sase* to also be possible. In contrast, when a *V-sase* does appear in an idiom, *sas* is always possible as well. Secondly, some *V-sase* that alternate freely with *sas* also appear in nominals.

(37)	*V-sase/-as*	Nominal
(a)	aw-*ase/-as* 'to join'	aw-*ase*/*aw-*asi* 'garment lining'
(b)	sir-*ase/-as* 'to notify'	sir-*ase*/*sir-*asi* 'notice'
(c)	asob-*ase/-as* 'to make/let play'	asob-*ase*-uta/*asob-*asi*-uta 'children's song'
(d)	iya-gar-*ase/-as* 'to harass'	iya-gar-*ase*/*iya-gar-*asi* 'harassment'

All of the *V-sase/-as* verbs lack a corresponding simple verb, making them candidates for the PDS; what we find in every case is that a nominal exhibits *V-sase* but not *V-sas*. Since nominalization is a sign of PDS status, we conclude that the *V-sase*, but not the *V-sas* has attained this status. We further conclude that *sas* is an allomorph of *sase* for *V-sase* with PDS status.

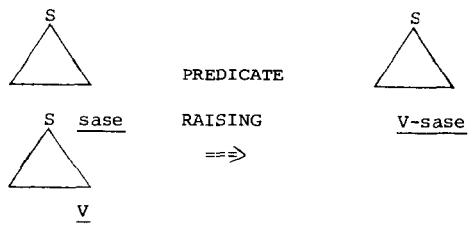
We can add this *sase/sas* alternation to the list of phenomena associated with PDS status *V-sase*. We also predict that this phenomenon should be found among simple verbs in the same manner as idiomatization, nominalization, and adversity causative interpretation. There are in fact two verb stems, *nek-ase/-as* 'make/let sleep' and *mak-ase/-as* 'entrust', that allow either *sase* or *sas* in their form without changing meaning. These are simple verbs because they cannot be derived from any regular morphological rule: the intransitive of *nek-ase/-as* is *ne* 'sleep'; *mak-ase/-as* lacks an intransitive in modern Japanese. Based on our previous discussion, we can conclude that *nekase* and *makase* are the basic forms listed in the lexicon; the *sas* forms arise from the morphological alternation available to all PDS status verbs that exhibit *sase*.

4. Derivation of *V-sase*

4.1. Standard analysis

Since Kuroda 1965, a great deal of work has been done on the causative construction in Japanese. Virtually all of the research has focused on the *sase* construction, in part on the wrong assumption that *sas* is only a morphological alternant of *sase*. With few exceptions, the various analyses regard *sase* as an independent verb, thereby postulating a complex underlying structure. A rule of Predicate Raising (Kuno 1973) collapses this structure to derive the surface form.

(38)



Among its merits, the analysis appropriately captures the highly productive nature of *sase*; there are only a handful of verbs to which *sase* cannot attach. Also, the analysis receives syntactic support from facts about reflexivization. The antecedent of the reflexive, *zibun*, is almost always a subject NP; the antecedent need not be in the same S as *zibun*. In the simplex sentence in (39) *zibun* only refers to the subject NP, but in the bisentential example in (40) it has ambiguous reference (cf. Kuroda 1965; Kuno 1973).

(39) Hanako$_i$ ga Ziroo$_j$ o zibun$_{i/*j}$ no uti de mi-ta.
NOM ACC 's house at see-past
'Hanako saw Jiro at her/*his house.'

(40) Hanako$_i$ ga Ziroo$_j$ ga zibun$_{i/j}$ o mita to omot-ta.
COMP think-past
'Hanako thought that Jiro saw her/him.'

The *V-sase* behaves as a complex structure in allowing ambiguous interpretation of *zibun*, as shown below.

(41) Hanako$_i$ ga Taroo$_j$ o zibun$_{i/j}$ no uti e ik-ase-ta.
go-cause-past
'Hanako made/let Taro go to her/his house.'

The complex structure hypothesis easily accommodates this by allowing for two subject NPs at some appropriate level of abstraction.

4.2. *Kuroda's proposal*

However, what we have observed in this paper about *V-sase* (and *V-sas*) suggests an alternative, nonsyntactic approach, one in which *V-sase* is formed in the lexicon by a word formation rule.[5] Phenomena such as nominalization, semantic drift, and morphological alternation are those associated with simple verbs. That is, they are phenomena on the word level, not those of syntax. If we are to account for these lexical facts about *V-sase* as part of an overall analysis of the causative construction, which surely we must, then a word-formation approach becomes a prime candidate, though we must of course explain the syntactic nature of *V-sase* in some fashion compatible with this approach. The single most crucial evidence for a word-formation approach is that the *V-sase* exhibits PDS effects. It is crucial because the PDS is a hypothesis about the lexicon, in particular, the permanent lexicon.

The PDS effects of *V-sase* need not necessarily lead us to a word-formation analysis given some modification in the theoretical apparatus. Indeed, Kuroda (1981) has proposed an alternative, syntactic approach that addresses both the PDS effects and the syntactic behavior of *V-sase*. Central to his approach is his rejection of a clear line of demarcation between the lexicon and the syntactic component. In essence, Kuroda proposes that 'words' produced in the syntax via Predicate Raising can return to the lexicon as input to lexical processes. He proposes two types of 'words', "S(urface) S(tructure)" words and "L(exicon)" words (Kuroda 1981: 117–8). SS-words are those that are produced only after the syntactic operation of Predicate Raising applies. Based on this distinction, he proposes the following principle which he calls "SS-W:LW" (ibid.).

(42) Any word is a potential candidate of a new L-word, whatever its 'generative' characteristics may be.

[5] See Farmer (1980), Miyagawa (1980), and Ostler (1980) for extensive discussions of the lexical approach to the Japanese causative construction.

Kuroda cautions us that this principle is possibly too general: "there must be some constraints as to what SS-words can become L-words ... [but] ... this is a good way to start, or even the right way to start" (ibid.). Whatever these constraints turn out to be, the proposal does account for the PDS effects exhibited by *V-sase* and still maintain a syntactic account of the complex verb, by allowing *V-sase* to re-enter the lexicon *after* it becomes an 'SS' word in the syntactic component.

4.3. Parallel structure

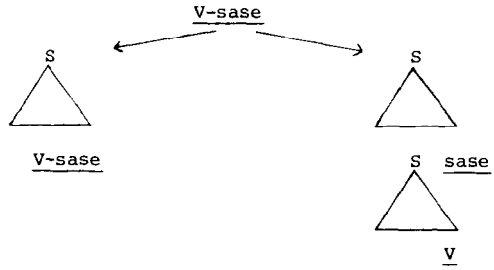
Kuroda's proposal, however tentative, addresses for the first time a basic fact about *V-sase*: the verb exhibits both word-like and syntactic characteristics. It is word-like because of the observable PDS effects; it behaves as a syntactic entity because, for example, it allows ambiguous interpretation of the reflexive *zibun*. Kuroda attempts to capture both by suggesting that the division between the lexicon and the syntactic component is not always clear-cut.

We will take this suggestion as a starting point, but from it develop a proposal different from Kuroda's. We will continue to assume that *V-sase* is produced in the lexicon to account for its clearly lexical nature. To also accommodate its syntactic behavior, we propose that a *V-sase* is associated in the syntax with parallel structures, one simplex, one complex.[6] Central to this 'parallel structure' hypothesis is the assumption that the D-structure is projected directly from the lexicon according to Universal Grammar principles, most notably the X-bar Theory and the Projection Principle (Chomsky 1981, 1982; Stowell 1981). The X-bar Theory ensures that all projected phrases are appropriately headed, and the Projection Principle requires that all thematic roles relevant to the predicate be categorically represented. The D-structure is thus in part a direct projection of the subcategorization feature of a predicate. An intransitive verb will not have an NP under VP; a transitive verb, by its subcategorization, will have an NP that it governs under VP.

Let us suppose that a *V-sase* is always associated with two subcategorization features, one with only NPs, the other which has an S in addition. Let us further suppose that both of these subcategorization features are projected into the syntax, one resulting in a simplex structure, the other complex.

[6] I am grateful to Mamoru Saito (personal communication) for pointing out the advantages of a parallel-structure approach to the *V-sase*. A similar proposal has been made for the French causative by Zubizarreta (1982).

(43)



The parallel-structure hypothesis can account for both the PDS effects and the syntactic behavior of *V-sase*. It is worthwhile noting that there is a one-to-one correspondence between this approach and the one proposed by Kuroda. The simplex structure on the left in (43) reflects what Kuroda calls 'L-word'; the complex structure on the right is comparable to his 'SS-word'. The difference of course is that: (i) in our approach *V-sase* is produced in the lexicon; (ii) once a lexical item leaves the lexicon, it cannot 'return' to the lexicon for further lexical processes. The two approaches share the view that the division between the lexicon and the syntactic components is not always clear-cut: in Kuroda's proposal, this is reflected in allowing SS-words to enter the lexicon; in our approach, it is reflected in the assumption that a complex syntactic structure can be directly projected from the lexicon. Our approach has the advantage that it allows us to maintain the traditional assumption that the syntax cannot produce inputs into lexical rules. What follows is an argument to support the hypothesis that a *V-sase* is simultaneously associated with both simplex and complex structures. The argument involves Condition B of the Binding Theory (Chomsky 1981) and Subject Honorification.

4.3.1. Condition B

We begin by showing that Condition B must apply after predicate raising, or, in the more recent terminology, 'restructuring'. This Condition pertains to pronouns, in particular, to disjoint reference.

Condition B (Chomsky 1981: 188)
A pronominal must be free in its governing category.

I have elsewhere shown using the Purpose Expression construction that this Condition must apply after restructuring in Japanese (Miyagawa 1984). Below, I will show that the same holds with causative constructions.

It has been noticed that a pronoun in the object position of *V-sase* can be coreferential with the subject NP (Inoue 1976; Oshima 1979).

(44) Taroo$_i$ ga Hanako$_j$ ni [$_{\bar{S}}$ PRO$_j$ kare$_i$ o hihans-]-ase ta.
NOM DAT he ACC criticize-cause-past
'Taro went to buy a book.'

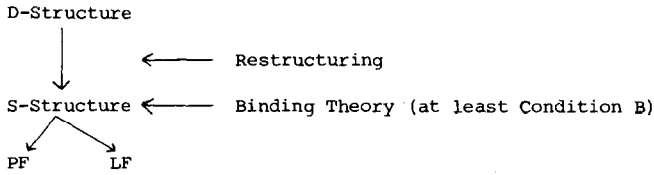
Let us suppose that $\bar{S}$ is a governing category in Japanese. In (45), the pronoun, *kare* 'he', can be coreferential with *Taroo* because this coreference leaves the pronoun free within the governing category of $\bar{S}$. This is evidence that the *V-sase* in (44) must be associated with a complex syntactic structure. Now, the fact that Condition B must apply *after* restructuring is illustrated in (45).

(45) Taroo$_i$ ga Hanako ni kare$*_i$ *ga* hihans-*ase*-*rare*-ta.
he NOM criticize-cause-can-past
'Taro$_i$ was able to make Hanako criticize him$_i$.'

The addition of the dependent desiderative morpheme *(rar)e* optionally allows the direct object to be marked with the nominative *ga*. However, this *ga* is possible only if the object NP and *(rar)e* are in the same clause. Hence, in (45), the object NP, *kare (ga)*, must be in the same clause as *(hihans-ase)-rare*, i.e. the sentence must have undergone restructuring. But restructuring has the effect of obliterating the lower $\bar{S}$, and if Condition B does apply after restructuring, then the pronoun in the object position can no longer be coreferential with the matrix subject NP. We see that this is indeed the case. It is the presence of the nominative *ga* in (45) that signals restructuring, in turn making it impossible for *kare* and *Taroo* to be coreferential. On the other hand, if the accusative *o* appears with the object NP, there is no reason to believe that restructuring has taken place, hence *kare* and *Taroo* need not be disjoint in reference. This is shown below.

(46) Taroo$_i$ ga Hanako ni kare$_i$ *o* hihans-*ase*-rare-ta.
'Taro was able to make Hanako criticize him.'

The occurrence of the accusative *o* is not dependent on restructuring, but rather is what we expect because of the transitive embedded verb *hihans* 'criticize'. Based on these observations, we conclude that Binding Condition B applies after restructuring. This is schematized in (47).



4.3.2. Subject Honorification and Condition B

We now turn to Subject Honorification. While Condition B gives evidence for a complex syntactic structure for *V-sase* as shown above, Subject Honorification (SH) requires *V-sase* to be associated with a simplex structure at some relevant level (Harada 1976). When we combine SH with Condition B, we are faced with a paradox: SH requires simplex structure, but Condition B requires complex structure. We propose to resolve this paradox by the parallel-structure hypothesis.

SH is made by adding the prefix *o* and *ni naru* to the verb; the verb in this construction is turned into an infinitive. The SH construction, *o-V ni naru*, is appropriate if the subject of the verb is socially superior to the speaker (Harada 1976).

(48) Tanaka sensee ga hon o *o*-yomi *ni naru.*
prof. NOM book ACC read
'Professor Tanaka will read a book.'

(49) *Watakusi ga hon o *o*-yomi *ni naru.*
'I will read a book.'

The SH, *o...ni naru*, can be placed on complex predicates such as the *V-sase*, but only if the subject of the complex predicate as a whole is socially superior.

(50) Tanaka sensee ga watakusi ni hon o *o*-yom-*ase ni nat-ta.*
prof. NOM I DAT book ACC read-cause-past
'Professor Tanaka made me read the book.'

Here, the SH is appropriate because *Tanaka sensee* is the subject of *V-sase*; in other words, SH can apply only after restructuring makes *V* and *sase* into a surface constituent (Harada 1976).

SH on *V-sase* thus indicates that the sentence has undergone restructuring. Given what we have said about Condition B already, we would

thus expect disjoint reference for a pronoun in the object position when SH occurs. However, this is not the case.

(51) Tanaka sensee$_i$ ga boku ni kare$_i$ o adana
NOM I DAT he ACC nick:name
de *o*-yob-*ase-ni natta.*
by call-cause
'Prof. Tanaka$_i$ made me call him$_i$ by his nickname.'

In (51), the fact that SH is possible shows that the sentence must have undergone restructuring, but, paradoxically, the pronoun can be coreferential with the matrix subject. The sentence is slightly awkward because the formal style of SH is incompatible with the use of *kare* which is informal. There are, however, no grammatical problems in construing the pronoun with the subject NP. This paradox cannot be resolved by postulating a complex structure to which first restructuring applies, then SH. This will correctly predict that the SH is appropriate since it applies after *V-sase* becomes a 'word' with *Tanaka sensee* as its subject. However, because Binding Condition B applies after restructuring, this incorrectly predicts disjoint reference between the pronoun and the subject NP.

This paradox is solved if we assume that a *V-sase* is associated simultaneously with parallel structures, one simplex, one complex, both projected directly from the lexicon. The complex structure meets the condition for pronominal coreference under Condition B, and the simplex structure allows SH on the *V-sase*. We can readily see that this analysis also accommodates facts about reflexivization: the ambiguous interpretation arises for *zibun* because a complex as well as a simplex structure is projected from *V-sase*.

4.4. Sas

With the exception of the *sase/sas* morphological alternation attributed to special cases of *V-sase*, *sase* and *sas* have independent existence in the lexicon. Now, if the parallel structure hypothesis is correct for *V-sase*, is it also correct for *V-sas*? The answer here must be 'yes' because they often share the analytical causative meaning and behave in the same manner in the syntax, for example, in allowing ambiguous interpretation of the reflexive *zibun*. The one problem here is that for some *V-sas*, it is difficult to detect any complex-structure traits.

(52) Taroo ga kodomo o ugok-asi-ta.
NOM child ACC move-cause-past
(i) 'Taro moved the child.'
(ii) ??'Taro made/let the child move.'

(53) Taroo$_i$ ga kodomo$_j$ o zibun$_{i/??j}$ no heya de ugok-asi-ta.
's room in
'Taro$_i$ moved the child$_j$ in his$_{i/??}$ own room.'

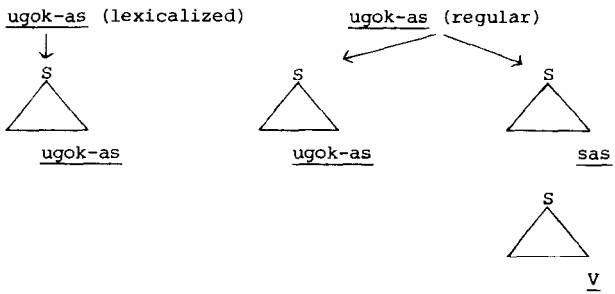
The causative verb here lacks a corresponding simple verb, thus it is able to attain PDS status, in turn becoming a candidate for the permanent lexicon. Indeed, the primary reading of *ugok-as* is intuitively a simple verb ('move'). On the basis of this observation, we can explain (52) and (53) in the following way. *Ugok-as*, having PDS status, has entered the permanent lexicon, in effect becoming a simple verb. Consequently, this 'simple' verb now occupies the transitive slot in the PDS that contains *ugok* 'move (intr)' in the intransitive slot. From this 'simple' transitive verb is projected only a simplex structure, just like any other simple transitive verb. It is this lone simplex structure associated with the lexicalized *V-sas* that we can observe in (52) and (53). In addition to this, however, the word formation rule that attaches *sas* to virtually any *V* can attach the causative morpheme to *ugok* 'move', thereby producing a second *ugok-as*. This *ugok-as* is blocked by the occurrence of the lexicalized *ugok-as*. The prediction for this second *ugok-as* is that: (a) it is only associated with the analytical causative interpretation; (b) the parallel structure, one simplex, one complex, is projected from the *V-sas*. There is nothing to prevent these predictions from being realized, hence we must assume that both hold for the second *ugok-as* despite what we have observed in (52) and (53). We suggest the following (informal) principle.

(54) Given two homophonous and potentially synonymous lexical items, one a member of the permanent lexicon, the other a product of a regular word formation process, the one in the permanent lexicon has primacy over the other.

'Primacy' here simply means that the lexical item in the permanent lexicon tends to overshadow any traits of the other item. We see just this in (52) and (53). In (52), the analytical causative interpretation for *ugok-as* is shown to be very awkward, but the point is that it is not impossible. Likewise, in (53), it is difficult to construe *zibun* as referring to the object

NP, but, again, it is not impossible. The upshot of this is that *ugok-as* is associated with three structures, one directly projected from the lexicalized *ugok-as* and the other two projected from the regular *ugok-as*.

(55)



We conclude that it is grammatical to associate an analytical interpretation with *ugok-as*, and to recognize an ambiguous interpretation of *zibun* with this verb. The reason why both are difficult to detect is an independent issue: the lexicalized *ugok-as*, which does not share these traits, virtually suppresses these characteristics because of its primacy due to its membership in the permanent lexicon. This 'primacy' looks very much like another case of blocking. However, we will not attempt to reduce it to such in this paper.

5. Summary and conclusion

It has been proposed in this paper that the PDS organizes verbs within the lexicon according to their meaning and the number of arguments they require. In so doing, the PDS acts as a filter for the permanent lexicon, in effect letting only 'simple' verbs into the permanent lexicon. Verb stems are morphologically the simplest form of the verb, and are automatically given PDS status and entry in the lexicon. With morphologically complex verbs, only those that can attain PDS status are given entry; when they do, they behave very much like a verb stem in being associated with processes normally reserved for simple verbs. Those that fail to attain PDS status are still bonafide words, but nothing unpredictable can be observed, hence not only are they unlisted in the lexicon, there is no reason to do so. Some of these blocked words occur in the language while others do not. We can predict to some extent whether a blocked item will actually occur.

For example, the Japanese causative morpheme *sas* can be associated with both lexical and analytical causative interpretation; if it is blocked, the lexical interpretation is impossible, but it has the analytical interpretation to 'fall back on', hence a blocked *V-sas* will freely occur in the language with the latter interpretation. On the other hand, the causative prefix *s* in Mitla Zapotec can only be associated with the lexical interpretation, hence if it is blocked from taking this interpretation, the *s-V* will not occur. In the case of the English nominal *cooker*, even though it is blocked by the occurrence of *cook* from taking on the predicted agentive interpretation, the word has managed to fit into another semantic slot which is for 'instrument to carry out *V*'. It remains to be seen if we can always predict whether a blocked item will occur. One thing that is certain is that this issue of occurrence is independent of the actual process of blocking.

The fact that the causative verb in Japanese manifests PDS effects led us to the parallel-structure hypothesis. The problem addressed by this hypothesis is that the *V-sase/-sas* manifests both word-like and syntactic characteristics. While the evidence for this hypothesis can potentially be used to also support Kuroda's L-/SS-word hypothesis, the parallel-structure hypothesis allows us to maintain the traditional assumption that a syntactic rule cannot produce input into lexical rules. One interesting consequence of our hypothesis is that a *V-sase/-sas* can appear in different forms and through different derivations. It always starts out as a complex word in the lexicon; however, the parallel-structure hypothesis, PDS, and restructuring render it different structures: (1) if it attains PDS status, it in essence becomes a simple verb, hence only a simplex syntactic structure is projected from it; (2) parallel structures, one simplex, one complex, may be projected, resulting in both 'lexical' and 'syntactic' structures attributed to *V-sase*; (3) restructuring can optionally apply to the complex structure, reconverting the *V-sase* into a 'word' at S-structure. There are, hence, some redundancies, but it is important to point out that the redundancies arise from 'modular' components that are independently needed, i.e. the PDS, parallel-structure, and restructuring. In a modular model of grammar, in which independent components work together to define the core grammar of a language, it would in fact be surprising not to find some redundancies such as those we have just observed. So long as each component is well motivated, the theory should tolerate some redundancy in the output. The PDS and restructuring are, I believe, well motivated, hence leaving the parallel-structure hypothesis as a 'weak link'. Kuroda proposed his L-/SS-word hypothesis with the qualification that major problems must still be solved, but nevertheless it

is the 'right' way to proceed. We propose the parallel-structure hypothesis in the same spirit. It faces some of the problems faced by Kuroda's proposal, but it is, I believe, a promising approach, one that must be verified through further research.

References

Aronoff, M., 1976. Word formation in generative grammar. Cambridge, MA: MIT Press.

Briggs, E., 1961. Mitla Zapotec grammar. Istituto Linguistico de Verano.

Chomsky, N., 1965. Aspects of the theory of syntax. Cambridge, MA: MIT Press.

Chomsky, N., 1970. Remarks on nominalization. In: A. Jacobs, S. Rosenbaum (eds.), Readings in English transformational grammar, 184–221. Waltham, MA: Ginn.

Chomsky, N., 1981. Lectures on government and binding. Dordrecht: Foris Publications.

Chomsky, N., 1982. Some concepts and consequences of the theory of government and binding. Cambridge, MA: MIT Press.

Clark, E.V., H.H. Clark, 1979. When nouns surface as verbs. Language 55, 767–811.

Farmer, A.K., 1980. Interaction of morphology and syntax. Doctoral diss., MIT.

Farmer, A.K., C. Kitagawa (eds.), 1981. Coyote papers, 2: Proceedings of the Arizona Conference on Japanese Linguistics: The formal grammar sessions. Tucson, AZ: University of Arizona Linguistics Circle.

Harada, S.-I., 1976. Honorifics. In: M. Shibatani (ed.), Syntax and semantics, 5: Japanese generative grammar, 499–562. New York: Academic Press.

Inoue, K., 1976. Henkei-bunpoo to nihongo [Transformational grammar and Japanese]. Tokyo, Japan: Taishukan.

Kiparsky, P., 1982. Lexical morphology and phonology. In: Linguistic Society of Korea (ed.), Linguistics in the morning calm: Selected papers from SICOL-1981. Seoul, Korea: Hanshin Publishing Company.

Kuno, S., 1973. The structure of the Japanese language. Cambridge, MA: MIT Press.

Kuroda, S., 1965. Generative grammatical studies in the Japanese language. Doctoral diss., MIT.

Kuroda, S., 1981. Some recent trends in syntactic theory and the Japanese language. In: Farmer and Kitagawa (eds.), 103–122.

Lieber, R., 1980. On the organization of the lexicon. Doctoral diss., MIT.

Miyagawa, S., 1980. Complex verbs and the lexicon. Doctoral diss., University of Arizona.

Miyagawa, S., 1984. Restructuring and the purpose expression in Japanese. Ms., Ohio State University.

Miyaji, H., 1969. *Seru, saseru* – shieki. In: A. Matsumura (ed.), Kotengo, gendaigo joshi, jodooshi shoosetus. Tokyo, Japan: Gakutosha.

Oehrle, R., H. Nishio, 1981. Adversity. In: Farmer and Kitagawa (eds.), 163–186.

Oshima, S., 1979. Conditions on rules: anaphora in Japanese. In: G. Bedell, E. Kobayashi, M. Muraki (eds.), Explorations in linguistics, papers in honor of Kazuko Inoue, 432–448. Tokyo: Kenkyusha.

Ostler, N.D.M., 1980. A non-transformational analysis of Japanese case-marking and inflexion. In: Y. Otsu, A.K. Farmer (eds.), MIT working papers in linguistics, 2: Theoretical issues

in Japanese linguistics, 63–91. Cambridge, MA: Department of Linguistics and Philosophy, MIT.
Shibatani, M., 1973. Semantics of Japanese causativization. Foundation of Language 9, 327–373.
Stowell, T., 1981. Origins of phrase structures. Doctoral diss., MIT.
Walker's rhyming dictionary, 1936. New York: Dutton.
Williams, E., 1981. On the notions 'lexically related' and 'head of a word'. Linguistic Inquiry 12, 245–274.
Zenno, Y., 1983. Verb phrase idioms and paradigmatic structures. Ms., Ohio State University.
Zubizarreta, M.-L., 1982. The relation of the lexicon to syntax. Doctoral diss., MIT.