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REVIEW ARTICLE

CAUSATIVE ALTERNATION IN ENGLISH AND JAPANESE: A CLOSER LOOK

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0. Introduction

Recent years have seen a rising interest in the role of verb semantics in accounting for the grammatical behaviors of verbs (e.g. Pinker (1989), Hale and Keyser (1993), Levin (1993), Levin and Rappaport Hovav (1995)). Linguistics in Japan has also witnessed an increased interest in this area, partially reflecting the developments in the United States. One influential figure in this line of research is Taro Kageyama, whose recent works have sparked much interest in the semantic aspects of morphological and syntactic operations (Kageyama (1993, 1996), Kageyama and Yumoto (1997)). The work under review in this article, Kageyama (1996, hereafter K), represents one of his major contributions to this area of study.

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In previous work Kageyama (1993) has utilized the notion of argument structure in accounting for certain aspects of syntactic and morphological patterning in Japanese. In the more recent work under review, his attention has shifted more to semantics. Utilizing a Lexical Conceptual Structure (LCS) similar to that used in Levin and Rappaport Hovav's (1995) and Rappaport Hovav and Levin's (1998) semantic template approach, he suggests certain lexical-conceptual schemas for the major verb classes in English and Japanese, and formulates those operations on such schemas which are associated with certain morphological and syntactic operations. The major phenomena discussed by K include the formation of perfective adjectives, causative alternation, and resultative constructions in English and Japanese. He further discusses the typological distinction between Japanese and English known as that between DO-type and BECOME-type languages (e.g. Ikegami (1981)) from the perspective of his theory of LCS.

In general the shift of attention K has shown in his works from argument structure to semantic structure is welcome. As argued in Matsumoto (1998), some of the phenomena discussed in his previous work in terms of argument structure can be better analyzed at the semantic level, and the phenomena discussed in this work certainly call for the kind of semantic treatment not possible if argument structure alone is utilized. The actual analyses proposed in K's work, however, leave much room for improvement, as I will argue in this article.

The purpose of the present article is to examine Kageyama's claims concerning causative alternation in English and Japanese. I will first present K's analysis of causative alternation in English and clarify some of his points. I will then point out some problems with his analysis, paying closer attention to the semantics of alternating verbs. I will then turn to intransitivization and transitivization in Japanese and show that some differences that K attributes to transitivizing and intransitivizing affixes are better analyzed as reflecting the semantics of the resulting verbs. Finally, on the basis of the findings of this paper a new overall picture of causative alternation in English and Japanese will be presented.

1. Causative Alternation in English

1.1. Causative Alternation and Kageyama's Analysis

Causative alternation in English is exemplified in (1). (I will term

the transitive version of such sentences ergative transitive, and the intransitive version, ergative intransitive.)

(1) a. John broke the glass. (ergative transitive)
b. The glass broke. (ergative intransitive)

This alternation in English has been studied by many researchers (e.g. Fillmore (1968), McCawley (1968), Lakoff (1970), Shibatani (1976), Smith (1978), Dowty (1979), Keyser and Roeper (1984), Guerssel, Hale, Laughren, Levin and White Eagle (1985), Hale and Keyser (1986), Pinker (1989), Jackendoff (1990), Langacker (1991), Davidse (1992), Van Voorst (1993, 1995), Levin and Rappaport Hovav (1995), Pustejovsky (1995), Bouchard (1995), Kageyama (1996), Lemmens (1998), Maruta (1998)). Many of the recent works have centered on the semantic properties of the verbs participating in the alternation and on the semantic operations involved in it.

One work that provides important background to K's account is that of Levin and Rappaport Hovav (1995; hereafter LRH). They argue that, contrary to McCawley (1968), Lakoff (1970), Keyser and Roeper (1984), Guerssel et al. (1985), etc., the direction of derivation is from ergative transitive to ergative intransitive (the case of detransitivization). As support they observe that ergative intransitive verbs are semantically more restricted than ergative transitive verbs. Note the contrast in (2).

(2) a. They broke {the glass/their promise}.
b. {The glass/*Their promise} broke.

Given this pattern, LRH argue, the transitive cannot be derived from the intransitive, since that would involve derivation from an ungrammatical intransitive verb.

They further observe that the ergative intransitive is possible only when a given externally caused event can be regarded as occurring spontaneously, without the intervention of the causer (pp. 105–106). Based on this characterization, they formulate the alternation in terms of a mapping from lexical conceptual structure to argument structure. Noting that the semantic characterization stated above can be captured by the nonspecification of a causing event, they argue that detransitivization is essentially a lexical binding of the causer, which prohibits the mapping of this entity onto a syntactic argument, as shown in (3).

(3) Derivation of ergative intransitive verbs (Levin and Rappaport Hovav (1995))

LCS	[[x DO-SOMETHING] CAUSE [y BECOME BROKEN]]
	↓
Lexical binding	∅
Linking rules	↓
Argument Structure	<y>

This formulation correctly predicts that those verbs which have some lexical specification for manner of causation cannot participate in the alternation. The verb *cut*, for example, has the specification of the use of an edged instrument in causation (Hale and Keyser (1986)), thereby presupposing an external causer, which makes lexical binding of the causer impossible. On the other hand, it is not clear how this analysis encodes the notion of spontaneity, which is claimed to be involved in the semantics of ergative intransitive verb. Some have claimed that an ergative intransitive subject is "active" in some sense (e.g. Smith (1978), Davidse (1992); see below), and this might not be identical to mere nonspecification of the causing event.

K accepts LRH's position on the directionality of derivation.[1] Unlike LRH, however, K highlights the "active" nature of ergative intransitive subjects; he claims that the intransitive subject plays the role of controlling its own change in a way identical to the ergative transitive subject. He formulates the alternation (anticausativization) in terms of an identification of the causer (controller) with the intransitive subject as described in (4) (see also Bouchard (1995) for a similar analysis). In this respect, his analysis can be termed the *internal self-control analysis*.

[1] LRH's and K's argument for the directionality of derivation in English is not without problems. There are some cases where intransitives have some uses that corresponding transitives do not have, as in (i).

(i) a. He {was boiling/exploded}.
b. *That {boiled/exploded} him.

See Kunihiro (1982: 230) and Nishio (1988) for similar problems in Japanese.

(4) Derivation of ergative intransitive verbs from ergative transitive verbs (Kageyama (1996: 145))
[x CONTROL [y BECOME [y BE AT-z]]]
↓
[x=y CONTROL [y BECOME [y BE AT-z]]]

The function CONTROL is defined as "directly influence the occurrence of" (p. 86). Note that the use of this function is a departure from Kageyama (1993: 69–72), in which CONTROL is found only in the semantic structure of verbs taking an external argument (unergative verbs and transitive verbs). K also claims that "pure" unaccusative verbs which do not exhibit causative alternation, such as *happen* and *disappear*, have a different semantic schema, shown in (5).

(5) [BECOME [y BE AT-z]]

There are two things to be clarified here. The first is the meaning of "x=y" as the first argument of CONTROL in (4). Clearly, K does not mean that an equation is to be the first argument of CONTROL; rather, he means that the first argument is y, which now replaces x of the corresponding transitive verb. In this respect, "x=y" in (4) should be more accurately written simply as "y," as K indeed does in some other parts of the book. What K tries to encode by the equation "x=y" seems to be that the external instigator (x), being replaced by the internal entity (y), does not play a role in controlling the caused event in the semantics of ergative intransitive verbs. K's representation can be interpreted as suggesting that such verbs represent events totally controlled by internal factors, and not by external factors.

The second point concerns the kind of ontological restriction imposed on the first argument of CONTROL. K initially "for the moment" leaves open the possibility of the first argument of CONTROL being either an entity or an event (p. 86). He in fact utilizes the latter option in the semantic structure of the unergative verb *run*, which is given in (6); here the first argument is the event [x ACT].[2]

(6) [[x ACT] CONTROL [x MOVE [$_{Path}$]]]

However, he later states that the first argument of CONTROL is an

[2] K does not actually give any schema for unergative verbs in general, and therefore it is not clear if he means that they always involve a clausal actional subject as in (6). If CONTROL indeed cannot take a clausal event as its first argument, it is unclear how K would distinguish between ergative intransitive verbs and unergative verbs.

entity, and that in this respect it differs from CAUSE, which takes an event as its first argument (p. 205). In what follows, I assume that this latter statement represents his final position.

1.2. Internal Control and External Instigation

One problem of K's internal self-control analysis concerns the issue of the semantic nature of intransitive subjects. In K's analysis, the intransitive subject is given the same role as the transitive subject (i.e. the first argument of CONTROL). However, this identity cannot be maintained, as already pointed out by Maruta (1998). If the subjects of (1a) and (1b) play the same role as described in (4), then these two sentences must be semantically incompatible.[3] However, this is clearly not the case. One can simultaneously affirm both intransitive and transitive sentences, as in Davidse's example in (7) (see Maruta (1998)).

(7) Look! The door is opening.—Yes, Lizzy's opening it!
(Davidse (1992))

In fact, an ergative transitive sentence semantically entails the corresponding intransitive sentence, as evidenced by the semantic anomaly of (8).

(8) #Mary opened the door but the door did not open.

This entailment cannot be explained if intransitive and transitive subjects play the same role.

This is not to deny that the ergative intransitive subject can play some important role in causation. When someone acts on a door and it opens, the external instigator provides the initial energy, but then the internal mechanism of the door reacts to the instigation, allowing (or not allowing) the door to move. Thus the door certainly "does" something, and in this respect it differs from the patient of the verb *hit*, for example (Davidse (1992)).

This suggests that the intransitive subject can (sometimes) play some causal role, but that this role is distinct from that of the external instigator and from that of the patient of verbs of hitting. This has been

[3] Strictly speaking, (i) is not incompatible with (ii).

(i) [John CONTROL [the glass BECOME [the glass BE AT-*BROKEN*]]]

(ii) [the glass CONTROL [the glass BECOME [the glass BE AT-*BROKEN*]]]

However, K's analysis of (1b) in effect entails the non-control of an external instigator, or the denial of (i), which (1a) asserts (see Section 1.1).

recognized by some researchers in the way they have named the semantic role of ergative intransitive subject. Davidse (1992) and Lemmens (1998) argue (based in part on Halliday's work) that intransitive subject (and transitive object) play the role of Medium, which is distinct from both Actor (transitive subject) and normal Patient (called Goal). Van Voorst (1993) argues that the intransitive subject plays the role of "responsible entity" (the same role played by the instrumental subject of verbs like *open*), which is distinct from that of the transitive subject (the instigator or energy source) and the normal Patient. Maruta (1998) argues that the intransitive subject plays the role of Effector, while the transitive subject plays the role of External/Volitional Instigator.[4]

One might note here, however, that the involvement of internal factors and an external instigator in ergative intransitive verbs varies according to the situation described. I have pointed out above that the ergative intransitive is compatible with external instigation (see (7)). At the same time, it can also be used when no external instigation is involved. This is true of (9a), in which *of itself* is used. Note that the addition of this phrase makes the ergative intransitive incompatible with external instigation, as shown in (9b).

(9) a. The door opened of itself.
b. *The door is opening of itself.—Yes, Mary is opening it.

Furthermore, the ergative intransitive subject sometimes does not seem to play any active role in causation. This is true of the sentences in (10).

(10) a. The wall blackened as years went by.
b. The lake deepens the further down you go.

(10b) is a subjective-change expression (Matsumoto (1996a), Sweetser (1997)), in which a change is noted by a conceptualizer as s/he moves his/her focus of attention. The change in such sentences is an abstract one; the subject does not play any causal role in the change, nor is any external instigator involved.

What we can say now is that ergative intransitive verbs are unspecified for causation (Davidse (1992)): their semantic structure has no information concerning the nature of the causation which brings about

[4] The term Effector is from Van Valin (1993); however, his more recent work (Van Valin and Wilkins (1996)) exhibits a departure from his original position in a way inconsistent with Maruta's use of the term.

the described process. Therefore these verbs are compatible with external instigation, as in (7), or with internal causation, as in (9), or with the lack of both, as in (10b). I will come back to the issue of why some ergative intransitive sentences involve a causally active subject later in Section 4.

1.3. Evidence for the Internal Self-Control Analysis Reexamined

K gives several pieces of evidence which he claims support the internal self-control analysis above. However, this evidence can be interpreted in other ways.

One piece of evidence K gives concerns imperatives. He claims that ergative intransitives can be used in the imperative form (*Ball, bounce!*), while pure unaccusatives cannot (**Earthquake, occur!*), suggesting that the former involves the function CONTROL while the latter does not. However, the imperative with ergative intransitives is different from normal imperatives (e.g., *Give it to me!*), in which the speaker, in order to achieve a certain causation, appeals to the will of the subject, who has controllability over the action; rather, it represents a wish of the speaker. The alleged differences K observes with ergative intransitives and pure unaccusatives are only accidents of his examples (e.g., the unacceptability of **Earthquake, occur!* is due to the pragmatic unnaturalness of making such a wishing statement to an entity like an earthquake which does not exist in the context of the utterance); imperatives of pure unaccusative verbs are indeed possible in appropriate contexts (e.g., *Cloud, disappear!*).

Another point that K raises concerns the interpretation of *won't* and *wouldn't*. K observes that with pure unaccusative verbs these auxiliaries are interpreted epistemically, as in (11a), whereas with ergative intransitive verbs they can be interpreted as indicating the will of the subject, as in (11b).

(11) a. Such a big earthquake wouldn't occur again.
b. The door wouldn't open no matter how hard I pushed or pulled.

However, the auxiliaries *won't* and *wouldn't* in sentences like (11b) are more appropriately characterized as indicating refusal by the subject to yield to external pressure to perform or undergo the expressed action or process (Talmy (1985)). Such a role of the internal mechanism of the intransitive subject is clearly different from the role of external instigator.

K also considers what he calls the semantic and cognitive constraints on anticausativization. As noted previously, some transitive verbs involving change of state, such as *cut*, do not participate in alternation. In addition, even with normally alternating verbs, anticausativization can sometimes be blocked, as is the case with *break* in (2). K attributes this prohibition to the absence of "intrinsic control": anticausativization is prohibited when the described eventualities cannot be interpreted as being intrinsically controlled by the intransitive subject. However, these cases can also be accounted for, like LRH, by appealing to the necessary involvement of an external instigator: the use of a specific instrument with the verb *cut* presupposes an external agent, and the breaking of a promise has to be done by the person who has made the promise. In fact, anticausativization is possible when the described event is externally instigated (and therefore not entirely controlled by internal factors) as long as it is not the kind of process *necessarily* brought about by an external instigator (see (7) above).

Next, consider the interpretation of phrases like *without any effort* and *with much difficulty*, as seen in (12).

(12) a. The wood split without { any/much } effort.
b. *A lot of accidents happened without { any/much } effort.

K claims that these phrases can be used with ergative intransitive verbs but not with pure unaccusative verbs, as shown. He accounts for this by saying that these phrases indicate the ease with which the transition from the causing event to the resultant change takes place (p. 150); thus the compatibility of this phrase with ergative intransitive suggests the inclusion of a CONTROL function, while the incompatibility with pure unaccusative verbs suggests the lack of such a semantic component. However, the noun *effort* clearly indicates effort on the part of the external causer, as can be seen in sentence (13).

(13) The wood split without { any/much } effort on his part.

Thus the behavior of *without { any/much } effort* in fact shows that ergative intransitives are semantically compatible with external instigation; it does not support an internal self-control analysis.

Finally, consider the phrase *all by oneself* and *of its own accord*, which K claims should be interpreted with respect to the entity which causes itself to undergo some process. He observes the difference between (14a) and (14b) (the judgments reflect those reported in K):

(14) a. The glass broke all by itself.
b. *The accident happened all by itself.

These phrases indicate that the process described occurs without the involvement of external factors (cf. *of itself* above). However, this does not have to mean that ergative intransitive verbs always exclude the involvement of an external instigator. It only shows that ergative intransitives can be used when there is no external instigation. In addition, it is not clear whether purely unaccusative verbs are really incompatible with these phrases, given the existence of examples such as (15) found in the COBUILD Corpus.

(15) ... many FDC members still believe that major political change is likely to occur of its own accord, after the death of the country's senior leader, ...

Thus, the data K gives do not (necessarily) support the internal self-control analysis. They are in fact consistent with an analysis in which the ergative intransitive subject plays a role different from the external instigator.

2. Intransitivization in Japanese

2.1. Intransitivization and Kageyama's Affix-based Analysis

In Japanese there are many lexically related transitive and intransitive verbs, which have been studied extensively in the literature (see Inoue (1976), Jacobsen (1992) and the papers collected in Suga and Hayatsu (1995)). Some intransitive verbs are morphologically derived from transitive verbs via the addition of an affix, either *-e* or *-ar*, as in (16a), with the stem-final vowel /e/ deleted, if present. In other cases, transitive verbs are derived from intransitive verbs by the addition of an suffix, either *-e* or *-as* (and other variants such as *-os* and *-akas*), as in (16b), with the stem-final vowel, if present, deleted. In still other cases, intransitive stem-final /r/ (or /ri/ or /re/) alternates with transitive stem-final /s/ (or /se/), as in (16c). (In what follows I will gloss the intransitivizing affix as IA, and the transitivizing one as TA.)

(16) a. kudak-*e*(-ru) 'crush$_{in}$' ← kudak(-u) 'crush$_{tr}$'
kir-*e*(-ru) 'get cut' kir(-u) 'cut'
hasam-*ar*(-u) 'be caught between' hasam(-u) 'catch in between, pinch'
ag-*ar*(-u) 'go up' age(-ru) 'raise, lift'

b. tat(-u) 'stand$_{in}$' → tat-*e*(-ru) 'stand$_{tr}$, build'
narab(-u) 'line up$_{in}$' narab-*e*(-ru) 'line up$_{tr}$'
ugok(-u) 'move$_{in}$' ugok-*as*(-u) 'move$_{tr}$'

	koge(-ru) 'be scorched'	kog-*as*(-u) 'scorch'
c.	toor(-u) 'go through'	toos(-u) 'pass through$_{tr}$'
	tao*re*(-ru) 'be toppled over'	tao*s*(-u) 'topple over'

Jacobsen (1992) points out that such morphological markedness is correlated with semantic markedness: transitive-based pairs tend to express externally caused events while intransitive-based pairs typically express internally caused events.

K's study is unique in explicitly formulating the operations on the semantic structure of those verbs, the operations that are triggered by transitivization/intransitivization. What is noteworthy in his treatment is that each of the four affixes—intransitivizing *-ar* and *-e*, and transitivizing *-as* and *-e*—triggers different semantic operations. (K is silent on the /r/-/s/ alternation.) In Section 2, I will focus on intransitivization, leaving transitivization to Section 3.

K claims that the affix *-ar* triggers what he calls "decausativization," while the affix *-e* triggers "anticausativization." The two processes are given in (17).

(17) a. *-ar* Decausativization

[x CONTROL [y BECOME [y BE AT-z]]]
↓
∅ ↓
<y>

b. *-e* Anticausativization

[x CONTROL [(y) BECOME [y BE AT-z]]]
↓
[x=y CONTROL [(y) BECOME [y BE AT-z]]]

Decausativization by *-ar* is essentially identical with LRH's analysis of English detransitivization, while anticausativization by *-e* is essentially identical with K's own analysis of English anticausativization discussed above.

2.2. Affix-Based Differences vs. Lexical Semantics-Based Differences

Several problems can be pointed out with respect to K's affix-based analysis. First, his internal self-control analysis of *-e* is subject to the same general difficulties pointed out for English causative alternations. Moreover, the alleged evidence for the internal self-control analysis of *-e* verbs (in contrast to *-ar* verbs) is weak. Consider, for instance, imperatives. K claims that *-e* verbs can be used in the imperative, suggesting that the subject has controllability over the change, in contrast

to *-ar* verbs. Some of his examples are given in (18).

(18) a. Roopu yo kir-e-naide kur-e.
rope Hort cut-IA-Neg give-Imp
'Rope, please don't get cut.'

b. *Ki yo uw-ar-e
tree Hort plant-IA-Imp
'Tree, get planted.'

However, the difference is not really clear. Note that (18a) is reinforced with the addition of *kur* 'give,' which is used to indicate the speaker's desire or wish. The addition of this improves (18b) (*Ki yo uwat-te kure* 'Tree, please be planted').

Also consider the semantic constraints on intransitivization. K claims that *-e* verbs are subject to the same kind of constraint as the analogous English verbs, while *-ar* verbs are not, giving sentences like the following.

(19) a. Taroo wa {posutaa/orinpikku-kiroku/yakusoku} o
Taro Nom poster/Olympic record/promise Acc
yabut-ta.
break-Pst
'Taro tore a poster/broke {an Olympic record/his promise}.'

b. {Posutaa/*Orinpikku-kiroku/*Yakusoku} ga
poster/Olympic record/promise Nom
yabur-e-ta.
break-IA-Pst.
'The poster was torn. / {An Olympic record / His promise} was broken.'

I have already pointed out that this kind of phenomenon need not be attributed to the self-controllability of the subject. Moreover, the same kind of constraint can in fact be observed with *-ar* verbs, thus blurring the distinction between the two affixes. Examples include *mag-ar*(*-u*) in (20).

(20) a. Taroo wa {supuun/hoo} o mage-ta.
Taro Nom spoon/law Acc bend-Pst
'Taro bent a spoon./Taro distorted the law.'

b. {Supuun/*Hoo} ga mag-at-ta.
spoon/law Nom bend-IA-Pst
'The spoon bent./??The law distorted.'

K's evidence for the relevance of an external instigator in *-ar* verbs

but not in *-e* verbs is not convincing, either. Consider his data on compatibility with the instrumental phrase. As has been pointed out by Inoue (1976, 1985) and others, Japanese ergative intransitive verbs can take an instrument phrase, unlike their English counterparts (cf. Fillmore (1968)). K states that such instrumental phrases are compatible with *-ar* verbs but not with *-e* verbs. Typical examples that he uses are in (21). (K's original sentence in (21b) contains the verb *hazure-ta* only. However, since this verb is in fact not an *-e* verb, a true *-e* verb *nuk-e-ta* is also given.)

(21) a. Sono kureen de nimotu ga ag-at-ta.
the crane Inst luggage Nom lift-IA-Pst
'The luggage went up with the use of the crane.'

b.?*Penti de tukan-de nezi ga
pliers Inst seize-Prt screw Nom
{hazure-ta/nuk-e-ta}.
come.off-Pst/pull.out-IA-Pst
'*Pinching it with pliers, the screw came off.'

K claims that this shows that only *-ar* verbs preserve the external agent of the base transitive verb in semantic structure. However, the unacceptability of (21b) can be attributed to the inappropriate use of a participle verb *tukan-de* (the unavailability of a semantically appropriate controller). With the use of instrumental *de* marking (and no participle) the sentence seems perfect to me (see also Inoue (1985)).

(22) Penti de nezi ga {hazure-ta/nuk-e-ta}.
pliers Inst screw Nom come.off-Pst/pull.out-IA-Pst
'The screw came off by means of the pliers.'

There appears to be no *-ar* or *-e* verb which does not allow an instrumental phrase (in the absence of some other semantic reason), suggesting that all such verbs at least optionally involve an external instigator.

Another of K's alleged differences between *-ar* verbs and *-e* verbs concerns the compatibility with the adverbial phrase *katte ni* in (23), which K interprets as indicating the absence of an external agent role.

(23) a. Totte ga katte ni tor-e-ta.
knob Nom of.itself take.away-IA-Pst
'The knob came off of its own accord.'

b. *Katte ni niwa ni ki ga uw-at-ta.
of.itself garden Loc tree Nom plant-IA-Pst
'The tree got planted in the garden of its own accord.'

The contrast does seem to exist between the above two sentences (and some of K's other sentences). However, there are *-e* verbs that behave like *uw-ar(-u)*, and there are *-ar* verbs that behave like *tor-e(-ru)*, as in (24).

(24) a.??Katte ni imo ga ni-e-ta.
of.itself potato Nom boil-IA-Pst
'The potato got boiled of itself.'
b. Doa ga katte ni sim-at-ta.
door Nom of.itself close-IA-Pst
'The door closed of itself.'

K's affix-based analysis seems to be motivated by his impression that *-e* verbs are semantically similar to verbs participating in the causative alternation in English, while *-ar* verbs are not. K even asserts that *-ar* verbs usually do not have corresponding intransitivized verbs in English (p. 184). However, this is clearly an overstatement. Certainly there are some *-ar* verbs which necessarily entail the presence of an external agent, unlike English ergative intransitive verbs. However, of the 79 *-ar* verbs listed in Jacobsen (1982), only ten are clearly of this type.[5] These are listed in (25). (Some of these are noncausative transitive verbs derived from causative ditransitive verbs. See Matsumoto (2000) for discussion.)

(25) *azuk-ar(-u)* 'be entrusted,' *kim-ar(-u)* 'become decided,' *mook-ar(-u)* 'be earned,' *osow-ar(-u)* 'learn,' *sazuk-ar(-u)* 'be endowed,' *tasuk-ar(-u)* 'become saved,' *mituk-ar(-u)* 'become found,' *uw-ar(-u)* 'become planted,' *tukam-ar(-u)* 'become caught,' *tamaw-ar(-u)* 'be granted'

These verbs certainly have one property which K claims to be typical of *-ar* verbs: they tend not to be compatible with *katte ni* 'of itself.' However, there are many *-ar* verbs that do not seem to necessarily involve an agent. Some of these are listed in (26).

[5] Jacobsen's list is not free from errors. For example, *sas-ar(-u)/sas(-u)* and *oyob(-u)/oyob-os(-u)* are misclassified in his "Miscellaneous class" rather than in the correct *-ar/-Ø* class and *-Ø/-os* class, respectively. Other mistakes include the following: *kie(-ru)/kes(-u)* (*-r/-s* class → miscellaneous class); *yure(-ru)/yur(-u)* (*-Ø/-e* class → *-e/-Ø* class); *kabur(-u)/kabuse(-ru)*, *nor(-u)/nose(-ru)*, *yor(-u)/yose(-ru)* (*-Ø/-se* class → *-r/-se* class). In this paper, when the count for a certain type of verb pair is cited, all forms listed by Jacobsen will be counted regardless of whether or not they are correctly classified by him.

(26) *ag-ar(-u)* 'go up,' *at-ar(-u)* 'touch, hit (against),' *atum-ar(-u)* 'gather,' *ham-ar(-u)* 'fit in,' *hazim-ar(-u)* 'begin,' *kaw-ar(-u)* 'change,' *maz-ar(-u)* 'mix,' *hirog-ar(-u)* 'spread,' *kasan-ar(-u)* 'pile up,' *mag-ar(-u)* 'bend,' *ow-ar(-u)* 'end,' *sim-ar(-u)* 'close,' *tam-ar(-u)* 'accumulate,' *tom-ar(-u)* 'stop,' *turan-ar(-u)* 'range, be strung together,' *tunag-ar(-u)* 'connect$_{in}$,' *hasam-ar(-u)* 'become caught between, lie between'

In addition to these verbs, all of the *-ar* verbs derived from scalar adjectival roots + /m/ (e.g. *takam-ar(-u)* 'heighten'; 19 verbs listed by Jacobsen) do not entail the existence of an external agent.[6] Thus, the pattern that K wants to establish is by no means a dominant one with *-ar* verbs.

There are certainly many *-e* verbs that represent a process not necessarily instigated by an external agent and that readily allow modification by *katte ni*, like *tor-e(-ru)* 'come off' above. Examples include the following.

(27) *hag-e(-ru)* 'become peeled off,' *hodok-e(-ru)* 'come untied,' *kir-e(-ru)* 'become cut,' *nug-e(-ru)* 'come off one's body,' *nuk-e(-ru)* 'come out'

However, there are also some *-e* verbs which do represent a process necessarily caused by an agentive entity. Among the 32 *-e* intransitive verbs listed by Jacobsen, the following are of this type. These tend not to occur with *katte ni*, like *uw-ar(-u)* 'get planted.'[7]

(28) *yabur-e(-ru)* 'get defeated,' *sir-e(-ru)* 'get known,' *tok-e(-ru)* 'be solved,' *mog-e(-ru)* 'be plucked off,' *ur-e(-ru)* 'be sold'

In addition, some *-e* verbs can have a resultative (or effectum) object (Kageyama (1996: 193)), as in (29), where a human agent is clearly involved.

(29) Hotto-keeki ga yak-e-ta.
hot.cake Nom burn-IA-Pst
'A hot cake got baked.'

[6] For certain reasons K treats each of these deadjectival *-ar* verbs as polysemous: in some cases they are derived from a transitive counterpart, and in other cases they are "pure unaccusative" verbs without a matching transitive form. In either case, my argument here holds as long as these *-ar* verbs do not involve any agent.

[7] In addition many *-e* verbs are derived from transitive verbs which cannot be intransitivized in English (e.g. *nug-e(-ru)* 'come off one's body,' and *tor-e(-ru)* 'come off'). These represent processes not necessarily instigated externally.

The above observations demonstrate that the affixes *-ar* and *-e* do not trigger different semantic operations as formulated by K. They both trigger decausativization (in its broad sense, not in K's) in essentially the same way, and the exact nature of the resulting verbs is somewhat indeterminate in both cases, allowing different possibilities for different semantic types of verbs (cf. Lieber and Baayen (1993)). The difference between the verbs that necessarily involve agent and those that do not simply depends on verb meaning—whatever the affix involved.

2.3. Morphophonological Properties of *-ar* and *-e* Verbs

The above conclusion is supported by morphophonological examinations of *-e* and *-ar* verbs. In fact, the choice between *-e* and *-ar* is largely phonological in nature. The affix *-e* can only be suffixed to transitive stems which end in a consonant other than /s/, or in the vowel /i/ (though this case is rare). (Note that transitive verb stems ending in /s/ have intransitive counterparts ending in /r/, /ri/ or /re/.) In contrast, in the great majority of cases *-ar* is suffixed to transitive stems ending in /e/ (complementing *-e* verbs), which account for 70 out of the 79 *-ar* verbs in Jacobsen's list. There are only 9 cases in which *-ar* is attached to a consonant stem (to which *-e* can be suffixed). In some cases there is a reason for the choice of *-ar* for these consonant stems: four of them (e.g. *hasam-ar(-u)* 'be caught between') have corresponding *-e* forms used as *transitive* verbs, with a meaning close to the transitive forms without *-e* (e.g. *hasam(-u)/hasam-e(-ru)* 'catch in between, pinch'); the choice of *-ar* for the intransitive forms thus helps avoid ambiguity.[8]

[8] Historical background to these synchronic patterns is provided by Kuginuki's (1996) description of causative alternations in the Nara Era. Three major intransitivization patterns, corresponding to the present-day *-ar* suffixation, *-e* suffixation, and /r/-/s/ alternation, were already active in Old Japanese. Using the terms of Japanese traditional linguistics, one can say that the suffixation of *-e* was in those days the reassignment of verbs belonging to the "yodan" conjugation class (now consonant verbs) to the "shimonidan" class (now verbs ending in /e/). This option apparently did not apply to yodan verbs ending in /s/, which participated in the /r/-/s/ alternation. (Some intransitive verbs ending in /r/ in those days now end in /re/ or /ri/). *-Ar* was suffixed to shimonidan verbs, which now end in /e/. This affix became more productive later, in the Heian Era. Transitivizing *-e* and *-as/-os* have a similar history.

Without this kind of difference in phonological environments, it would be difficult to see why a language should have two such affixes if they were not semantically distinct. The phonological nature of the distinction thus helps to understand the existence of these two affixes. (One may note another difference: *-ar* is a more productive and unmarked option. Miyachi's (1985) study suggests that new *-ar* verbs have sometimes been formed, even with consonant-final stems, so long as corresponding *-e* forms do not exist. Innovative *-e* forms, by contrast, are not known.)

One might still say that the two affixes could be different semantically even though they differ in terms of the phonological environments in which they occur. However, the patterns observed with intransitivization from transitive stems ending in a consonant (where both affixes are potentially possible) suggest that this is unlikely. If they were semantically distinct, one would expect "doublets"—the existence of both *-e* and *-ar* forms for a given stem to mark different meanings. However, there are no such doublets. The formation of *-ar* verbs with transitive stems ending in a consonant appears to be subject to "blocking" by the presence of *-e* verbs. Since blocking generally presupposes semantic synonymy (cf. Aronoff's (1976) Blocking Principle, Kiparsky's (1983) Avoid Synonymy Principle, and Pinker's (1983) Unique Entry Principle), one can conclude that *-e* and *-ar* do not create semantically distinct forms.

3. Transitivization in Japanese

3.1. Kageyama's Analysis of *-e* and *-as*/*-os* Verbs

Now let us turn to cases where transitive verbs are derived from intransitive verbs in Japanese. K claims that transitivizing *-e* and *-as*/*-os* introduce different semantic functions into the LCS of base intransitive verbs. The suffix *-e* introduces the function CONTROL, while *-as*/*-os* introduces the function CAUSE. The results are shown in (30).[9]

[9] K states on p. 197 that *-e* introduces the function CONTROL. However, on p. 198 he states that the operation triggered by the transitivizing *-e* is the reversal of that triggered by the intransitivizing *-e* in (17b) (i.e. a change from an internal self-control structure to an external control structure), as if the input intransitive verb already has the function CONTROL.

(30) *-e* [x CONTROL [EVENT ...]]
-as, -os [[EVENT x ACT] CAUSE [EVENT ...]][10]

K distinguishes between CONTROL and CAUSE in terms of the nature of the subject: CONTROL takes an entity (an agent) as its subject, while CAUSE takes an event or action. (In his actual examples of alleged "event subjects," however, K uses such non-event NPs as *kare no hutyuui* 'his carelessness' and *toppuu* 'gust.') The following contrast, he claims, supports the semantic distinction between the two affixes.

(31) a. {Kodomo/Hideri} ga hana o kar-asi-ta.
child/drought Nom flower Acc wither-TA-Pst
'The child/drought withered the flowers.'

b. {Kodomo/Toppuu} ga buranko o yur-asi-ta.
child gust Nom swing Acc sway-TA-Pst
'The child/gust swayed the swing.'

(32) a. {Kodomo/*Densya no sindoo} ga isi o
child trains Gen tremor Nom stone Acc
narab-e-ta.
line.up-TA-Pst
'The child/The vibration of the trains placed the stones in order.'

b. {Daikusan/*Kare no moti-ie-ganboo} ga ie o
carpenter/he Gen own-house-desire Nom house Acc
tat-e-ta.
stand-TA-Pst
'{The carpenter/His desire to possess his own house} built the house.'

Another difference K notes is that the subject of *-as* verbs can be paraphrased as a cause when the described event is expressed by the intransitive form, while this is not the case with *-e* verbs. This contrast is illustrated in (33).

[10] It is not clear to me whether K really means to say that the subject of CAUSE is restricted to action events.

(33) a. Hideri ga gen'in de hana ga kare-ta.
drought Nom cause Cop flower Nom wither-Pst
'The drought being the cause, the flowers withered.'
b. *Kodomo ga gen'in de isi ga naran-da.
child Nom cause Cop stone Nom line.up-Pst
'The child being the cause, the stones got placed in order.'

This contrast is not clear, however, since the human noun *kodomo* cannot be used as a subject in (33a), either.

3.2. Affix-Based Difference vs. Lexical Semantics-Based Difference

This affix-based analysis embodies problems similar to those seen above with respect to intransitivizing affixes. As above, I would like to argue that the distinction between *-e* and *-as/-os* that K stresses is only an accidental product of his examples, and that, again, the distinction comes from the semantics of the base verb rather than from the affix chosen.

Before proceeding to an examination of *-e* and *-as/-os* verbs, some clarification of the notion "cause" is in order. There are two different views as to the role of "cause" subject sentences like (31)–(32) above. Some scholars, like K, regard cases like *toppuu* 'gust' in (31b) as genuine causes distinct from agents (e.g. Vendler (1984)). Others regard them as agentive entities (e.g. Nishimura (1993)); entities like the wind have some power of their own (though they do not have will), and in this sense they are semi-agents, or less prototypical agents (see Davidse (1992) and Lemmens (1998) for concurring views; see also Van Valin and Wilkins (1996)). If this is true, then such a subject must be distinguished from a true cause subject.

Another complication is that some scholars view all causative verbs as having a clausal subject at a semantic level of representation, claiming that it is only an event (rather than an entity like an agent) which can cause an event (e.g. Dowty (1979), Van Valin and Wilkins (1996); see Jackendoff (1990) for a differing view). Such an analysis might be supported by the fact that causative verbs in English (in contrast to noncausative action verbs) allow clausal subjects syntactically (Talmy (1976), Davidse (1992), Nishimura (1993), Lemmens (1998)), as in (34a) and (34b).

(34) a. The fact that boiling water was poured into it broke the glass. (Davidse (1992))

b. Drinking too much killed Bill.
cf. *The fact that he aimed well hit the target.

(Davidse (1992))

Since such an event subject cannot be regarded as an agentive entity, sentences like (34a) and (34b) appear to support the semantic clausal subject analysis. In this view, English causative sentences always have an event as their subject at a semantic level, although an agent in the event can surface as the syntactic subject (see Van Valin and Wilkins (1996), Rappaport Hovav and Levin (1998)).

In Japanese, however, many causative verbs do not allow clausal subjects syntactically, as shown in (35), making the semantic clausal subject analysis implausible for them.

(35) a. {Kare/*Kare ga soo si-ta koto} ga doa o
{he/he Nom so do-Pst Comp Nom door Acc
ak-e-ta
open-TA-Pst
'{He/His doing so} opened the door.'

b. {Toppuu/??Toppuu ga hui-ta koto} ga
gust/gust Nom blow-Pst Comp Nom
zitensya o taosi-ta.
bicycle Acc topple-Pst
'{The gust/The gust blowing} toppled the bicycle.'

In (35b) the verb *taos*(*-u*) can take an entity like the wind as its subject but cannot take a clausal cause subject. This suggests that an NP like *toppuu* in (35b) is in fact a semi-agentive subject, not a cause subject. As a consequence, such NPs cannot be used as a test for (event) cause subjecthood. In what follows, I use the clausal subject frame as a test for the possibility of an event cause subject.

With this new test for event cause subjects, one can still find some *-as*/*-os* verbs that can have a cause subject. Clear examples include *hagem-as*(*-u*) 'encourage,' *odorok-as*(*-u*) 'surprise,' *magir-as*(*-u*) 'distract,' *zir-as*(*-u*) 'provoke,' and *kar-as*(*-u*) 'wither$_{tr}$.' These all represent the causation of a change in a psychological state or an internal condition. On the other hand, there are many *-as*/*-os* verbs which cannot take an event subject. Clear examples include *megur-as*(*-u*) 'surround, fence' *tob-as*(*-u*) 'fly$_{tr}$,' *d-as*(*-u*) 'take out,' *togar-as*(*-u*) 'sharpen,' *kog-as*(*-u*) 'scorch,' *hekom-as*(*-u*) 'dent,' *tar-as*(*-u*) 'drip,' *mak-as*(*-u*) 'defeat,' *mor-as*(*-u*) 'leak,' *tizir-as*(*-u*) 'curl,' *or-os*(*-u*) 'bring down,' *ot-os*(*-u*) 'drop,' and *mit-as*(*-u*) 'fill.' Examples of *megur-as*(*-u*)

and *tob-as*(*-u*) are given below.

(36) a. *Kare ga soo sita koto ga soko ni hee o
he Nom so did Comp Nom there Loc fence Acc
megur-asi-ta.
go.around-TA-Pst
'His doing so surrounded the fence there.'

b. *Kare ga soo sita koto ga hikooki o tob-asi-ta.
he Nom so did Comp Nom plane Acc fly-TA-Pst
'His doing so flew the airplane.'

Verbs that pattern this way include verbs indicating the causation of a physical change of location or other processes whose instigation requires a forceful action.

There are certainly many *-e* verbs which do exclude an event subject. However, there are also some *-e* verbs that can take an event subject, contrary to K's claim. This is true of *kurusim-e*(*-ru*) 'torment' and *nagusam-e*(*-ru*) 'comfort,' both indicating causation of psychological change, as in (37).

(37) Kare ga soo suru koto ga kanozyo o kurusim-e-ta.
he Nom so do Comp Nom she Acc suffer-TA-Pst
'His doing so tormented her.'

Furthermore, there are verbs that behave differently in this regard depending on their meaning. Many verbs have two senses, one indicating the causation of a physical change and the other the causation of a psychological (or other internal) change; these differ in their ability to take an event subject, as shown in (38).

(38) a. Kare ga soo sita koto ga {*sono isi/
he Nom so did Comp Nom the stone
kanozyo no kimoti} o ugok-asi-ta.
she Gen heart Acc move-TA-Pst
'His doing so moved {*the stones/her mind}.'

b. Kare ga soo sita koto ga {*oyu/kankyaku o}
he Nom so did Comp Nom hot.water/spectator Acc
wak-asi-ta.
boil-TA-Pst
'His doing so {*boiled hot water/excited the spectators}.'

c. Kare ga soo sita koto ga {*kare no karada/kare} o
he Nom so did Comp Nom he Gen body/he Acc
ok-osi-ta.
get.up-TA-Pst

'His doing so { *got him up to his feet/woke him up }.'

A similar contrast can be found among nonderived verbs, as shown in (39). (There are, however, very few nonderived transitive verbs for which a cause subject is possible in the verb's primary meaning.)

(39) a. Kare ga soo sita koto ga { *pedaru no takasa/
he Nom so did Comp Nom pedal Gen height
kare no hyooban } o sage-ta.
he Gen reputation Acc lower-Pst
'His doing so lowered { *the level of the pedal/his reputation }.'

b. Kare ga soo sita koto ga { *sono kami/
he Nom so did Comp Nom the paper
hutari no naka } o sai-ta.
two Gen relationship Acc tear-Pst
'His doing so { *tore the paper/destroyed the relationship between the two }.'

This suggests that the contrast seen here has nothing to do with the affix.

Thus, lexical semantics predicts the possibility of a clausal event subject better than does the choice of affix. In the view proposed here, *-e* and *-as*/*-os* are on a par: both trigger causativization in a similarly indeterminate way, allowing different possibilities for the nature of their subject. The kind of distinction seen above is a part of the regular semantics of each semantic type of verb. For example, psychological causative verbs in Japanese take a cause subject (rather than an agentive subject), irrespective of the morphology of the verb (see Pesetsky (1995) for a cause subject analysis of English causative psychological verbs).

The above conclusion is again supported by the morphophonological examination of *-e* and *-as* verbs. The choice between *-e* and *-as* is partly phonological in nature, in a way similar to intransitivizing affixes. The affix *-e* can be suffixed only to intransitive stems which end in a consonant. The affix *-as* is more productive, and is not limited in this way; it can be placed both on vowel-final stems (with the final vowel deleted) and on consonant-final verbs (e.g. *hagem-as*(*-u*)). (There are 38 *-as* verbs based on a consonant-final stem in Jacobsen, only 5 of which have an alternative *-e* intransitive form (e.g. *mor-as*(*-u*), cf. *mor*(*-u*)/*mor-e*(*-ru*) 'leak$_{in}$')). With consonant-final verbs there is a choice between *-e* and *-as*, but the choice is lexically determined for

each verb stem. In almost all cases, a single transitive form exists for a given intransitive stem, even when the resultant transitive verb has two senses that allow two different kinds of subjects (see (38) above). In Jacobsen's list there are two cases of doublets: *ak-e(-ru)* 'open$_{tr}$'/*ak-as(-u)* 'reveal' and *hikkom-e(-ru)* 'withdraw'/*hikkom-as(-u)* 'withdraw.' These pairs do not seem to differ in the way K suggests. (The first one is in fact dubious as a doublet.)

4. Causative Alternation in English and Japanese Reconsidered

4.1. The Semantic Structure of Ergative Intransitive and Transitive Verbs

How, then, can causative alternation in English and Japanese be more accurately characterized? Here I would like to sketch an analysis which captures important generalizations about the semantic structure of ergative intransitive and transitive verbs and about the causative alternation in the two languages.

(40) shows three of the major core semantic structures of transitive verbs in English and Japanese.[11] ("Cause" here can be an event and can allow a subpart, such as an Actor, to be realized as the grammatical subject. "Figure" represents the entity whose location or state is in question.)

(40) a. 'PRODUCE<Cause, Effect>'
|
'GO/BECOME<Figure, Path>'

b. 'AFFECT<Actor, Acted-upon, Effect>'
| |
| 'GO/BECOME<Figure, Path>'
|_____|

c. 'ACT-ON<Actor, Acted-upon>'

The Japanese verbs *kir(-u)*, *mage(-ru)*, *tob-as(-u)* and *narab-e(-ru)* have the structure seen in (40b), while verbs like *kurusim-e(-ru)*, *tanosim-as(-u)* (cf. (37)) and a certain use of *sage(-ru)* (cf. (39a)) have the struc-

[11] These structures are based partially on Lyons (1977), Pinker (1989), and Matsumoto (1996b). Note that Pinker treats verbs like *cut* as having the features [+effect] and [+contact], and verbs like *break* as having [+effect] and [−contact]. This feature of [+contact] requires an Actor acting on an Acted-upon, and therefore [+contact] verbs naturally fall into type (40b).

ture (40a). In English, a wider range of causative verbs appear to take the form of (40a) than in Japanese; verbs like *break* and *open* take the form of (40a), while verbs like *cut* and *murder* have the form of (40b) (see Nishimura (1998) for some hints on why there is this difference between English and Japanese).[12] Verbs like *hit* or *tatak(-u)* 'hit,' in contrast, have the structure (40c). Note that those verbs that contain information on the use of a specific instrument (e.g. *cut*) necessarily call for a human actor, and therefore are of type (40b) or (40c).

In (40b), the undergoer of the change specified in Effect must be identical with the upper Acted-upon argument. This ensures the Actor's involvement in the process described in the Effect. In (40a), on the other hand, there is no such Acted-upon argument necessarily mediating between the causing event and its effect. In this sense the Cause and Effect are relatively more independent in (40a). One might note, though, that Effect in (40a) is sometimes not totally independent of its Cause. This is true when Cause in (40a) is specified. (41) is an example.

(41) His leaving the country broke his { contract/promise }.
(Van Voorst (1995))

This sentence has a clausal subject and therefore can be regarded as a case of (40a). The subject clause, however, is specified: it must represent an action of someone who has made a contract or promise. Therefore the Effect cannot be said to be independent of the Cause. Only those verbs of the type (40a) with no specification on their subject

[12] In Japanese, one can observe the following difference in (i). A sentence of the type (40a) implies that the actual effect takes place, as shown by the anomaly of (ia), while a sentence of the type (40b) might not, as shown in (ib).

(i) a. *Kare ga soo shita koto ga kankyaku o wak-asi-ta ga
he Nom so did Comp Nom spectator Acc boil-TA-Pst but
kankyaku wa wak-anakat-ta.
spectator Top boil-Neg-Pst
'*His doing so excited the spectators, but they did not get excited.'

b. %Kare wa mizu o wak-asi-ta ga mizu wa wak-anakat-ta.
he Top water Acc boil-TA-Pst but water Top boil-Neg-Pst
'*He boiled the water, but the water did not boil.'

These examples show that in Japanese the Effect in (40b) (but not (40a)) might be more accurately termed "Intended Effect." In contrast, English verbs of the type (40b) generally imply the actualization of the effect, as can be seen in the meaning of *murder*.

can be said to have an Effect independent of their Cause and allow the resultant change to unfold on its own.

Decausativization in English and Japanese can be broadly characterized as the process of promoting the Effect substructure to the main semantic structure. The difference between the two languages lies in the constraints on this process (e.g. the types of semantic structures to which decausativization applies), and the details of the resulting semantic structures.

English allows decausativization from verbs of the type (40a) with no specification on the subject (e.g. *break* in the physical sense), but not from (40b) or (40c) (e.g. *cut*, *hit*), which necessarily involve an Actor. Japanese, on the other hand, allows decausativization from (40b) as well as (40a). (In fact, given that there are very few cases of nonderived transitive verbs having the structure (40a) in Japanese, verbs of the type (40b) are the major sources for decausativization.) This means that decausativization in Japanese can take place even when an agent is necessarily involved, as in verbs like *mog-e(-ru)* 'become plucked off' and *uw-ar(-u)* 'be planted,' or compound verbs like *uti-ag-ar(-u)* (hit-lift-IA) 'go up by being hit,' in which the means of causation is expressed in the first verb of the compound (Matsumoto (1996b)).[13]

Decausativized verbs in Japanese preserve information about their causation contained in the transitive counterparts of the type (40b), and in this respect differ from English decausativized verbs. Ergative intransitive verbs in Japanese, I propose, do not just have the semantic structure that appears in the Effect component of their transitive counterparts, but can also take a Cause adjunct describing the causative event of their transitive counterparts, as in (42).[14]

[13] K in fact denies the involvement of an agent in *uti-ag-ar(-u)*, saying that the first member of this compound indicates the manner of motion (the speed with which the ball goes up). However, this compound verb cannot be used to refer to fast upward motion unless this motion is caused specifically by the act of hitting, and in this sense it does represent the action which causes the motion. K's motivation for his treatment is hard to follow. He states that compounds like *uti-ag-ar(-u)* would be counterexamples to his analysis if they indeed involved agentive action. However, his analysis posits an agent in the semantic structure of *-ar* verbs (though not of *-e* verbs); therefore the existence of such examples should not be a problem for his analysis of *-ar*.

[14] Thus, decausativization in Japanese involves the "demotion" or "background-

(42) 'GO/BECOME<Figure, Path> (Cause)'

This Cause structure is optional for some verbs and obligatory for others. Incorporating the insights of Inoue (1976), one can claim the following. Most verbs such as *kir-e(-ru)* 'be cut' and *mag-ar(-u)* 'bend$_{in}$' optionally take Cause containing the predicate ACT-ON. This means that, though an external instigator is not necessarily involved, it may be involved—ensuring compatibility with an instrumental phrase, which occurs as an adjunct of ACT-ON. In verbs like *mog-e(-ru)*, *uw-ar(-u)* and *uti-ag-ar(-u)*, the Cause is obligatory, as in (43).

(43) 'GO/BECOME<Figure, Path>Cause'

'ACT-ON<Actor, Acted-upon> (Manner, Instr., ...)'

English ergative intransitive verbs, in contrast, cannot have a Cause adjunct. This means that such verbs do not entail anything about how the process is instigated, and that they cannot have an instrumental phrase.

This difference can be attributed to the general contrast between a BECOME-type language like Japanese and a DO-type language like English (Ikegami (1981)): Japanese favors the use of ergative intransitive verbs or BECOME-type expressions to such a degree that they can incorporate the specifications of the cause of a change, allowing transitive verbs of the type (40b) to be intransitivized, while English must use ergative transitive verbs to include information regarding the cause in a verb's meaning.

Causativization in Japanese can be characterized as embedding the semantic structure of ergative intransitive verbs in the Effect of (40a) or (40b). The choice depends on the semantic nature of the verbs, as pointed out above.

4.2. More on the Constraints on the Causative Alternation

A correct characterization of the constraints on decausativization in

ing" of the causing event from the upper main structure in transitive verbs to the subordinate (Cause) structure in intransitive verbs (cf. Langacker (1991), Pustejovsky (1995)).

English and Japanese calls for careful semantic and pragmatic considerations. Consider first English decausativization. I would like to argue that the various observations concerning the nature of ergative intransitive subjects boil down to the simple constraint that the resulting event must be conceptualized as unfolding on its own. (This is expressed in the fact that decausativization is possible only from the structure (40a) with no specification on the subject.) Some alleged constraints on decausativization are pragmatic corollaries of this constraint.

Earlier I pointed out that ergative intransitive subjects must sometimes (but not always) have internal properties facilitating the caused process. The contrast in (44) (Van Voorst (1993)) illustrates a case where such properties are necessary.

(44) a. John rolled { the ball/the square box } across the floor.
b. { The ball/*The square box } rolled across the floor.

The absence of facilitating properties in a square box in (44b) creates a problem because the process of rolling has to be forcibly caused and therefore cannot be regarded as unfolding on its own. The lack of such facilitating properties would not be a problem if the caused process did not have to be forcibly caused, and this is what is observed in (10) above. (Note also that a square box can be said to roll down a slope, in which case the motion is not so forcibly caused.) Thus, whether an ergative intransitive subject requires facilitating internal properties depends on how the resulting change can be conceptualized as unfolding on its own. (Note also that the processes described by the verbs in (10) can be conceptualized as unfolding on their own, but they cannot be said to be controlled by the subject. The present analysis and K's crucially differ in this respect.)

One generalization that appears to hold for all cases of alternation in English concerns the timing of the human involvement in the causation. When a human agent is involved, decausativization appears to be possible only if the agent is involved at the *beginning* of the caused process. This means that in most instances decausativization is restricted to cases where causation (of any kind) is applied only at the initial stage of the caused process (see Van Voorst (1993), Kiparsky (1997), Maruta (1998)) — the kind of causation variously called beginning-point causation (as opposed to extent causation; Talmy (1976: 70)), ballistic causation (as opposed to controlled causation; Shibatani (1976: 273)), or launching causation (as opposed to entraining causation; Jackendoff (1990: 138)). This is not, however, totally accurate: decausativization

is possible from extent causation, so long as human involvement is not present during the course of the resulting process. Sentences in (45) are examples.

(45) a. The rice cooked. b. The water boiled.

Here the human involvement typically occurs at the beginning of the causation, when the agent starts an appliance; the rest of the causation (the application of heat) is provided by the appliance. Interestingly, when the human involvement occurs over an extended time, such decausativization is not natural, as shown by (46).

(46) ??The fried rice cooked.

Note that the cooking of this kind of food typically requires constant ongoing work on the part of the human agent.

This constraint can also be regarded as a pragmatic corollary of the constraint that the caused process must be conceptualizable as unfolding on its own.

Japanese does not allow decausativization from the structure (40b) (or (40a)) freely. There seem to be two constraints. One concerns the focus on the result. Washio (1997) observes that Japanese *kir(-u)* 'cut' can be intransitivized, unlike English *cut*, but that decausativization is ruled out in certain cases, as shown in (47).

(47) {Kami/*Kippu} ga kir-e-ta.
paper/ticket Nom cut-IA-Pst
'The paper is cut/*The ticket has been clipped.'

Unlike English *cut*, Japanese *kir(-u)* does not specify the use of an edged instrument. However, the clipping of a ticket is necessarily done by a specific human agent with a specific instrument. Such information may seem to block decausativization. However, the sentence is much improved in the resultative form, where the agent is backgrounded and the result is in focus (even though the same specific manner of clipping is required to produce the resultant state), as in (48).

(48) Kono kippu wa kitin-to kir-e-te i-nai.
the ticket Nom properly cut-IA Asp-Neg
'This ticket has not been clipped properly.'

Also telling is the following contrast noted by Eijiro Tsuboi (personal communication) concerning the intransitive counterpart of *itame(-ru)* 'fry,' which involves a specific manner of causation (i.e. cooking), and hence the presence of a human agent.

(49) a. %Yasai ga itam-at-ta.
vegetable Nom fry-IA-Pst

'The vegetables got fried.'

b. Yasai ga yoku itam-ari-masi-tara, ...
vegetable Nom enough fry-IA-Pol-if
'When the vegetables were fried enough, ...'

The *-ar* intransitive form of this verb is normally not accepted, as in (49a). However, (49b) is acceptable; in this case the focus seems to be placed on the result of being fried enough (information about specific manner is backgrounded but not lost, given that this sentence cannot be used if the vegetables were cooked in some other way). Thus, the necessary involvement of a human agent does not block decausativization (with both *-ar* and *-e*), but the focus must be placed on the result of the change.

This constraint, however, does not seem to account for cases like (19) and (20) noted above. Another constraint might be recognized concerning the directness and/or concreteness of causation when a human agent is involved. When someone breaks a promise, for example, the actor does not actually act on a promise; s/he does something that results in a change in the abstract status of the promise (i.e., the promise is nullified). The exact nature of this constraint remains to be examined further.[15]

5. Conclusion

In this review article I have examined Kageyama's treatment of the causative alternation in English and Japanese. I have shown that there

[15] This constraint does not seem to be relevant with verbs like *kuzus*(*-u*) 'collapse' that do not necessarily involve a human agent. Note the following contrast between *yabur*(*-u*) and *kuzus*(*-u*).

(i) a. Kare ga gensoku o {yabut-ta/kuzusi-ta}.
he Nom principle Acc tear-Pst/collapse-Pst
'He broke an established principle.'

b. Kare ga soo sita koto ga gensoku o {*yabut-ta/kuzusi-ta}.
he Nom so did Comp Nom principle Acc tear-Pst/collapse-Pst
'His doing so broke an established principle.'

(ii) Gensoku ga {*yabur-e-ta/kuzure-ta}.
principle Nom tear-IA-Pst/be.collapsed-Pst
'The established principle was broken.'

As (ia) and (ib) show, *yabur*(*-u*) requires its subject to be a human agent, while *kuzus*(*-u*) does not. (ii) shows that when the resulting state is indirectly caused, decausativization is blocked with the former, but allowed in the latter.

are crucial problems with his internal self-control analysis of English ergative intransitive verbs and Japanese *-e* intransitive verbs, as well as his affix-based approach to the Japanese causative alternation in general. The examination above suggests that a successful treatment of this phenomenon calls for a more careful semantic (and phonological) analysis than is found in the work reviewed.

One needs to be reminded, however, that such a critical examination of Kageyama's analyses is possible because of the explicitness of his formulations. After all, a good linguistic work emerges from an examination of explicitly formulated hypotheses. In this sense, Kageyama has provided very important steps in the understanding of verb meanings in the work under review. However, further steps are clearly to be taken, in order to arrive at an accurate picture of the relationship between the lexical semantics and the morphosyntactic behavior of verbs.

REFERENCES

Aronoff, Mark (1976) *Word Formation in Generative Grammar*, MIT Press, Cambridge, MA.

Bouchard, Denis (1995) *The Semantics of Syntax: A Minimalist Approach to Grammar*, University of Chicago Press, Chicago.

Davidse, Kristin (1992) "Transitivity/Ergativity: The Janus-headed Grammar of Actions and Events," *Advances in Systemic Linguistics*, ed. by Martin Davies and Louise Ravelli, 105–135, Pinter, London.

Dowty, David R. (1979) *Word Meaning and Montague Grammar*, Reidel, Dordrecht.

Fillmore, Charles (1968) "The Case for Case," *Universals in Linguistic Theory*, ed. by Emmon Bach and Robert Harms, 1–88, Rinehart and Winston, New York.

Guerssel, Mohad, Kenneth Hale, Mary Laughren, Beth Levin and Josie White Eagle (1985) "A Cross-Linguistic Study of Transitivity Alternations," *CLS* 21, Part 2, *Papers from the Parasession on Causatives and Agentivity*, 48–63.

Hale, Kenneth and Samuel Jay Keyser (1986) "Some Transitivity Alternations in English," *Lexicon Project Working Papers* 7, Center for Cognitive Science, MIT.

Hale, Kenneth and Samuel Jay Keyser (1993) "On Argument Structure and the Lexical Expression of Syntactic Relations," *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, ed. by Kenneth Hale and Samuel Jay Keyser, 53–109, MIT Press, Cambridge, MA.

Inoue, Kazuko (1976) *Henkei-bunpo to Nihongo, Ge: Imi-kaishaku o Chuushin ni* (Transformational Grammar and Japanese, 2: Semantic Interpretation), Taishukan, Tokyo.

Inoue, Kazuko (1985) "On the Implicit Agent in Japanese," *Reports on Japanese Grammar*, ed. by Kazuko Inoue, International Christian University, Tokyo.

Jackendoff, Ray S. (1990) *Semantic Structures*, MIT Press, Cambridge, MA.

Jacobsen, Wesley M. (1992) *The Transitive Structure of Events in Japanese*, Kurosio, Tokyo.

Kageyama, Taro (1993) *Bunpoo to Gokeisei* (Grammar and Word Formation), Hituzi Syobo, Kasukabe.

Kageyama, Taro (1996) *Dooshi Imiron* (Verb Semantics), Kurosio, Tokyo.

Kageyama, Taro and Yoko Yumoto (1997) *Gokeisei to Gainen-Koozoo* (Word Formation and Conceptual Structure), Kenkyusha, Tokyo.

Keyser, Samuel J. and Thomas Roeper (1984) "On the Middle and Ergative Constructions in English," *Linguistic Inquiry* 15, 381-416.

Kiparsky, Paul (1983) "Word-formation and the Lexicon," *1982 Mid-America Linguistics Conference Papers*, ed. by F. Ingelmann, Department of Linguistics, University of Kansas, Lawrence, KS.

Kiparsky, Paul (1997) "Remarks on Denominal Verbs," *Complex Predicates*, ed. by Alex Alsina, Joan Bresnan and Peter Sells, 473-499, CSLI Publications, Stanford, CA.

Kuginuki, Tooru (1996) *Kodai Nihongo no Keitai Henka* (Morphological Changes in Old Japanese), Izumi Shoin, Osaka.

Kunihiro, Tetsuya (1982) *Imi no Shosoo* (Aspects of Meaning), Sanseido, Tokyo.

Lakoff, George (1970) *Irregularity in Syntax*, Holt, Rinehart and Winston, New York.

Langacker, Ronald (1991) *Foundations of Cognitive Grammar*, Vol. 2, Stanford University Press, Stanford, CA.

Lemmens, Maarten (1998) *Lexical Perspectives on Transitivity and Ergativity*, John Benjamins, Amsterdam.

Levin, Beth (1993) *English Verb Classes and Alternations: A Preliminary Investigation*, University of Chicago Press, Chicago.

Levin Beth and Malka Rappaport Hovav (1995) *Unaccusativity: At the Syntax-Lexical Semantics Interface*, MIT Press, Cambridge, MA.

Lieber, Rochelle and Harald Baayan (1993) "Verbal Prefixes in Dutch: A Study in Lexical Conceptual Structure," *Yearbook of Morphology 1993*, ed. by Geert Booij and Jaap van Marle, 51-78, Kluwer, Dordrecht.

Lyons, John (1977) *Semantics*, Vol. 2, Cambridge University Press, Cambridge.

Maruta, Tadao (1998) *Shieki-Dooshi no Anatomii* (Anatomy of Causative Verbs), Shohakusha, Tokyo.

Matsumoto, Yo (1996a) "Subjective-Change Expressions in Japanese and Their Cognitive and Linguistic Bases," *Spaces, Worlds, and Grammar*, ed. by

Eve Sweetser and Gilles Fauconnier, 124–156, University of Chicago Press, Chicago.

Matsumoto, Yo (1996b) *Complex Predicates in Japanese: A Syntactic and Semantic Study of the Notion 'Word,'* CSLI Publications, Stanford, and Kurosio, Tokyo.

Matsumoto, Yo (1998) "Nihongo no Goiteki-Fukugoo-Dooshi ni okeru Dooshi no Kumiawase (Combinatory Possibilities in Japanese V-V Lexical Compounds), *Gengo Kenkyu: The Journal of the Linguistic Society of Japan* 114, 37–83.

Matsumoto, Yo (2000) "*Osowaru/oshieru* nado no Tadooshi/nijuutadooshi-pea no Imiteki-seishitsu (Semantic Properties of Transitive/Ditransitive Pairs like *Osowaru* 'Learn' and *Oshieru* 'Teach'), *Nihongo — Imi to Bunpoo no Fuukei* (Japanese — The Landscape of Meaning and Grammar), ed. by Susumu Yamada, Yasuto Kikuchi and Yosuke Momiyama, 79–95, Hituzi Syobo, Tokyo.

McCawley, James D. (1968) "Lexical Insertion in a Transformational Grammar without Deep Structure," *CLS* 4, 71–80.

Miyachi, Koichi (1985) Aru-*gata Dooshi no Shosoo* (Aspects of *-ar* Verbs), Ofusha, Tokyo.

Nishimura, Yoshiki (1993) "Agentivity in Cognitive Grammar," *Conceptualizations and Mental Processing in Language*, ed. by Richard A. Geiger and Brygida Rudzka-Ostyn, 488–530, Mouton de Gruyter, Berlin.

Nishimura, Yoshiki (1998) "Kooisha to Shieki-Koobun (Actor and the Causative Construction)," *Koobun to Jishoo-Koozoo* (Constructions and Event Structure), Minoru Nakau and Yoshiki Nishimura, 108–203, Kenkyusha, Tokyo.

Nishio, Toraya (1988) *Gendai-goi no Kenkyuu* (Studies on Modern Vocabulary), Meiji Shoin, Tokyo.

Pesetsky, David (1995) *Zero Syntax*, MIT Press, Cambridge, MA.

Pinker, Steven (1983) *Language Learnability and Language Development*, Harvard University Press, Cambridge, MA.

Pinker, Steven (1989) *Learnability and Cognition: The Acquisition of Argument Structure*, MIT Press, Cambridge, MA.

Pustejovsky, James (1995) *The Generative Lexicon*, MIT Press, Cambridge, MA.

Rappaport Hovav, Malka and Beth Levin (1998) "Building Verb Meanings," *The Projection of Arguments: Lexical and Compositional Factors*, ed. by Miriam Butt and Wilhelm Geuder, 97–134, CSLI Publications, Stanford, CA.

Shibatani, Masayoshi (1976) "Causativization," *Syntax and Semantics* 5: *Japanese Generative Grammar*, ed. by Masayoshi Shibatani, 239–294, Academic Press, New York.

Smith, Carlota S. (1978) "Jespersen's 'Move' and 'Change' Class and Causative Verbs," *Linguistic and Literary Studies in Honor of Archibald A. Hill*,

Vol. 2: *Descriptive Linguistics*, ed. by Mohammad A. Jazayery, Edgar C. Palome and Werner Winter, 101–109, Mouton, The Hague.

Suga, Kazuyoshi and Emiko Hayatsu, ed. (1995) *Dooshi no Ji-ta* (Intransitive/Transitive Distinction of Verbs), Hituzi Syobo, Tokyo.

Sweetser, Eve (1997) "Role and Individual Interpretations of Change Predicates," *Language and Conceptualization*, ed. by Jan Nyuts and Eric Pederson, 116–136, Cambridge University Press, Cambridge.

Talmy, Leonard (1976) "Semantic Causative Types," *Syntax and Semantics* 6: *The Grammar of Causative Constructions*, ed. by Masayoshi Shibatani, 47–116, Academic Press, New York.

Talmy, Leonard (1985) "Force Dynamics in Language and Thought," *CLS* 21, Part 2, *Papers from the Parasession on Causatives and Agentivity*, 293–337.

Van Valin, Robert D., Jr. (1993) "A Synopsis of Role and Reference Grammar," *Advances in Role and Reference Grammar*, ed. by Robert D. Van Valin, Jr., 1–64, John Benjamins, Amsterdam.

Van Valin, Robert D., Jr. and David P. Wilkins (1996) "The Case for 'Effector': Case Roles, Agents, and Agency Revisited," *Grammatical Constructions: Their Form and Meaning*, ed. by Masayoshi Shibatani and Sandra A. Thompson, 289–322, Oxford University Press, Oxford.

Van Voorst, Jan (1993) "Against a Composite Analysis of Certain Causative Constructions," *Belgian Journal of Linguistics* 8, 145–165.

Van Voorst, Jan (1995) "The Semantic Structure of Causative Constructions," *Studies in Language* 19, 489–523.

Vendler, Zeno (1984) "Agency and Causation," *Midwest Studies in Philosophy* 9, 371–384.

Washio, Ryuichi (1997) "Tadoosei to Voisu no Taikei (Transitivity and the System of Voice)," *Voisu to Asupekuto* (Voice and Aspect), Ryuichi Washio and Ken'ichi Mihara, Kenkyusha, Tokyo.

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