The semantics of Japanese verbs
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This chapter is a review of some of the basic issues in the semantics of Japanese verbs, paying attention to certain general properties that classes of verbs exhibit in Japanese. I will first review proposals that have been made concerning the classification of verbs in Japanese, and then I will go on to consider the nature of noncausative/causative verb pairs in Japanese, followed by a discussion of various characteristics of noncausative (subject-change) verbs versus causative (object-change) verbs, with special attention to verbs involving a change of state.[1]

   The nature of verbs in Japanese has been studied from various perspectives. One line of research has approached verb meaning from a typological perspective, as represented by Ikegami's (1981, 1991) proposal to classify Japanese as a "become-type" language, in contrast with "do-type" languages such as English, based on a cognitive-typological view of language, a proposal that has attracted much attention in the literature. Also in this category may be mentioned Shibatani's (1973, 1976a, b, Shibatani and Pardeshi 2002) crosslinguistically oriented work on causative verbs and Jacobsen's (1992) work on transitivity. Yet another line of research has approached verb meaning from the standpoint of morphology and syntax, an approach seen in verb classifications based on aspect (e.g. Kindaichi 1950; Kudo 1995), and in various studies undertaken within the framework of Kageyama's (1996) Lexical Conceptual Structure (LCS). I will refer to these works as I go through the nature of Japanese verbs.

   I have two purposes in mind in reviewing the nature of Japanese verbs. One is to show the typological nature of Japanese verbs. It has been argued that Japanese is a language in which intransitive change-of-state verbs are used to describe a wider range of situations than in some other languages, while the use of transitive causative verbs tends to be limited (Teramura 1984; Ikegami 1981, 1991). This view is discussed in various ways, especially in Sections 2, 3, and 4.

   The other concerns how detailed the semantic descriptions should be. Studies that approach meaning from the standpoint of morphology and syntax (e.g. Kageyama 1993, 1996) tend to consider only schematic meanings, unlike studies that are more

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descriptively oriented or encyclopedic in their view of semantics (e.g. Momiyama 2009; Chen and Matsumoto 2018). Even when considering only verb meaning that is sensitive to morphology and syntax, however, how detailed semantic information is necessary to account for particular phenomena remains an issue (see Boas 2006). In this chapter, we will frequently see the necessity to look at a broad range of meanings to account for the behaviors of verbs and verb classes.

1. Verb classes

1.1 Aspect-based approach

There have been a number of influential attempts to classify Japanese verbs into semantic classes on the basis of their morphological and syntactic behavior. One particularly celebrated approach is the classification of verbs based on their aspectual behavior, an approach pioneered in the classic study by Kindaichi (1950). Although this approach developed independently of traditions of linguistic research outside Japan, important similarities can be seen between the results of research conducted in this tradition and the aspect-based classification of verbs proposed in the tradition of Vendler (1957) in the west (see Jacobsen 1982; Ogihara 1998 for the comparisons between the two traditions).

Kindaichi (1950) based his classification primarily on the meanings taken by the *-te iru* aspectual form, which is composed of the participial ending *–te* (glossed as TE) and the verb *i(-ru)* 'be'). This form is capable of expressing either a resultative or a progressive sense in the standard dialect (see Kindaichi 1950; Soga 1983; Kudo 1995; Ogihara 1998; Shirai 2000; Iwamoto 2008, etc.). Kindaichi (1950) classified Japanese verbs into four categories: stative verbs, durative verbs, punctual verbs, and a special category of verbs that he called "the fourth type." According to him, durative verbs (e.g. *yom(-u)* 'read') are interpreted in the progressive sense with the *-te iru* form, while punctual verbs (e.g. *sin(-u)* 'die'), are interpreted in the resultative sense. Stative verbs (e.g. *i(-ru)* 'exist') cannot be used with the *-te iru* form, and special verbs of "the fourth class" (e.g. *sobie(-ru)* 'tower over') can be used only in the *-te iru* form.[2] The first two are exemplified in (1).

(1) a. *Kare wa   hon o   yon-de i-ru*.
          he TOP   book ACC read-TE be-NPST

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[2] The claim that verbs like *sobie(-ru)* cannot occur in forms other than the *-te iru* form is not confirmed in a recent corpus study (Maekawa 2013).

'He is reading a book.'

  b. *Kare wa sin-de   i-ru.*

     He TOP die-TE be-NPST

     'He is dead.'

This classification encounters various problems. Fujii (1966) points out that the temporal distinction of durative vs. punctual has nothing to do with the difference in the interpretation of *-te iru*. Some punctual processes that do not involve a change of state, such as *itibetu-su(-ru)* 'glimpse', do not produce the resultative reading, while non-punctual change of state verbs like *tukare(-ru)* 'get tired' are interpreted as resultative in the *-te iru* form. He uses the term 'result verbs' to cover those that induce a resultative reading with *-te iru*, with the distinction of result/nonresult crosscutting the duration-based distinction of durative/punctual (see also Takahashi 1969[1976], Suzuki 1972). Okuda (1977[1985]) argued that what is crucial to the resultative vs. progressive reading of *-te iru* is whether the subject undergoes a change or not, proposing a distinction between subject-change verbs and subject-action verbs, in addition to stative verbs.

More refined aspect-based classifications have been proposed by Kudo (1995) and Nitta (1997). Here I will review Kudo's classification, which is partially based on Okuda's observations (see also Kudo this volume). Kudo proposes that verbs can be classified into three broad types based on their aspectual nature: (1) external dynamic verbs, (2) internal psycho-state verbs, and (3) stative verbs. She further classifies the first type into (1a) subject-change verbs, (1b) subject-action verbs, and (1c) subject-action/object-change verbs. She further classifies those into finer-grained subtypes, based on such factors as intentionality and the nature of the processes involved.[3]

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[3] The subclasses that Kudo proposes are the following:

I. Subject-action/object-change verbs:

a) change of object's state or location: *ake(-ru)* 'open', *otos(-u)* 'drop', *tigir(-u)* 'tear off', *tukur(-u)* 'make'; b) change in possessive relationship: *age(-ru)* 'give', *kaw(-u)* 'buy'.

II. Subject-change verbs:

a) subject-change/subject-action: *ki(-ru)* 'put (clothe) on oneself', *katug(-u)* 'put on one's shoulder'; b) volitional change of location or stance: *nobor(-u)* 'climb', *kagam(-u)* 'bend (one's body)'; c) involitional change of state or location: *atatamar(-u)* 'get warm', *oti(-ru)* 'fall'.

External dynamic	Subject-change	*ak(-u)* 'open_in', *ik(-u)* 'go', *ki(-ru)* 'put (clothes) on oneself'
	Subject-action	*aruk(-u)* 'walk', *ut(-u)* 'hit'
	Subject-action/ Object-change	*ake(-ru)* 'open_tr', *ire(-ru)* 'put in', *age(-ru)* 'give'
Internal psycho-state		*omow(-u)* 'think', *osore(-ru)* 'fear', *itam(-u)* 'hurt'
Stative		*i(-ru)* 'be', *kotonar(-u)* 'be different', *sobiete i(-ru)* 'tower over'

Table 1　The verb classification of Kudo (1995)

The category of internal psycho-state verbs is recognized to capture certain distinct behavioral characteristics of the verbs in that class, such as the fact that their aspectual character is partially dependent on the person of the subject (cf. Kuroda 1973). Stative verbs are verbs that do not have an aspectual contrast between the basic *-ru* form and the *-te iru* form: some are used only in one of those forms (as is the case with Kindaichi's stative verbs and the fourth-class verbs), while others are used in both

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III. Subject-action verbs:

a) subject-action/object-motion: *tobas(-u)* 'fly_tr', *kog(-u)* 'row'; b) subject-action/object-contact: *ut(-u)* 'hit', *kazir(-u)* 'bite'; c) human cognitive-linguistic and expressive activity: *kazoe(-ru)* 'count', *iw(-u)* 'say'; d) human volitional action: *asob(-u)* 'play', *hasir(-u)* 'run'; e) human long-term activity: *kayow(-u)* 'commute', *kuras(-u)* 'live one's life'; f) involuntary object movement or phenomenon: *nagare(-ru)* 'flow', *kagayak(-u)* 'shine'.

IV. Inner psycho-state verbs:

a) thinking: *omow(-u)* 'think', *utagaw(-u)* 'doubt'; b) feelings: *akogare(-ru)* 'long for', *akire(-ru)* 'get disgusted'; c) perception: *kanzi(-ru)* 'feel', *kikoe(-ru)* 'can hear'; d) sensation: *itam(-u)* 'hurt', *sibire(-ru)* 'get numb'.

V. Stative verbs:

a) existence: *ar(-u)* 'exist', *i(-ru)* 'exist'; b) spatial positioning: *sobiete i(-ru)* 'tower over', *mensite i(-ru)* 'face'; c) relation: *atehamar(-u)* 'fit, apply', *izon su(-ru)* 'be dependent on'; d) property: *niaw(-u)* 'match', *sugurete i(-ru)* 'be excellent in'.

forms without much semantic difference. Verbs belonging to this class are relatively few, testifying to the poverty of stative verbs in Japanese.

The distinction among the three subtypes of external action verbs is motivated by the meaning of their *-te iru* forms. The *-te iru* form of subject-change verbs is interpreted as resultative, while that of the other subtypes, as progressive. The distinction between subject-action and subject-action/object-change verbs is made on the basis of a difference in the interpretation of the *-te iru* form of their passive form: the passive form of the latter is interpreted (primarily) in the resultative, as in (2).

(2) *Garasu ga   war-are-te   i-ru.*
     glass NOM   break$_{tr}$-PASS-TE   be-NPST
     'The glass is broken (in the state of having been broken).'

Kudo (1995) does recognize intermediate types between subject-change verbs and subject-action verbs. Among them are verbs that encode both action and change of the subject, such as *ki(-ru)* 'put (clothes) on oneself'. These refer to actions directed to the agent himself/herself, and are often called "reflexive verbs" (Kudo 1995, Nitta 1982; see also Ka 2017). Kudo classifies these as subject-change verbs, given the resultative reading of their *-te iru* form, although she notes that they also allow a progressive reading in certain cases. It should be noted that the resultative reading arises also for subject-action/object-change verbs (e.g. *tuke(-ru)* 'attach') if the action is directed toward the subject, as when one attaches a badge to his/her own clothes (Kudo 1995). This suggests that it is not just the meaning of the verb but the meaning of the verb phrase that determines the reading of *-te iru*.

1.2 Aspect and component meanings

Kudo's classification is based on the idea that aspectual property of verbs is related to the meaning components they contain (e.g., change and action) (cf. Rappaport Hovav and Levin 1998). However, it is not clear whether a classification based on the components of meanings exactly match the classification based on the aspectual property of verbs. Let us first examine the relationship between the change of subject and the resultative interpretation. The resultative reading of *-te iru* does not seem to be sensitive only to the presence of a change undergone by the subject. There is an additional constraint that there must be no specification as to the cause of or process of the change. This can be seen in the contrast between *sin(-u)* 'die' and *zikosi su(-ru)* 'die

due to an accident', as noted by Takahashi (1985) and illustrated in the differing acceptability patterns between (1b) and (3).

(3) *Kare wa   {*ima wa/sakunen}   zikosi   si-te   i-ru.*
    he TOP   now CNT/last.year   accident.death do-TE   be-NPST
    'He is now dead due to an accident/died in an accident last year.'

Unlike (1b), (3) cannot be interpreted as a resultative reading in the normal sense in spite of the clear change of state entailed, presumably due to the presence of specification of the cause of the change. Instead, it is interpreted in a third reading possible with *-te iru*, a (present) perfect reading, which suggests that the event's occurrence in the past is recorded in memory. This is confirmed by the unacceptability of *ima(-wa)* 'now' and the acceptability of *sakunen* 'last year' in (3) (as opposed to the acceptability of *ima(-wa)* in the resultative (1b)).

        The required absence of mention of the process of the change accounts for why some subject-change verbs that express agentively executed durative actions may not have a resultative reading, as in (4).

(4) *Taroo ga   kaidan o   nobotte   i-ru.*
    Taro NOM   stairs ACC   climb-TE   be-NPST
    'Taro is climbing the stairs.'

The *-te iru* form of the verb *noboru* can be interpreted either as resultative or progressive, but the presence of the accusative marked path argument in (4) precludes the resultative reading, presumably due to the highlighting of the process of motion.

        Moreover, verbs must represent change to some specific, stable states in order for their *-te iru* form to be interpreted as resultative. Relevant examples come from some motion verbs, such as *toor(-u)* 'pass', *mawar(-u)* 'move around', *susum(-u)* 'proceed', and *nagare(-ru)* 'flow'. These verbs do represent a change in location, given that it is contradictory to say (5), in the case of *toor(-u)*.

(5) **Kare wa   soko o   toot-ta ga   ugok-anakat-ta.*
    He TOP   there ACC   pass-PST but   move-NEG-PST
    'He passed there, but did not move'

However, the *-te iru* form of these verbs is not interpreted in the resultative, as exemplified in (6), which is interpreted as progressive.

(6)   *Kare wa*   *sono*   *mise no*   *mae o*   *toot-te*   *i-ru*.
         He TOP   the   shop GEN   front ACC   pass.by-TE   be-NPST
         'He is passing in front of the shop.'

       The relationship between object change and aspect is not entirely clear, either. Kudo states that the passive forms of the subject-action/object-change verbs are interpreted as resultative, while those of subject-action verbs are not. However, the passive form of some subject-action/object-change verbs is primarily interpreted as progressive, as shown in (7a) (see Mihara 1997).

(7) a. *Miruku ga*   *atatame-rare-te*   *i-ru*.
       milk NOM   warm$_{tr}$-PASS-TE   be-NPST
       'The milk is being warmed.'
   b. *Miruku ga*   *80-do ni*   *atatame-rare-te*   *i-ru*.
       milk NOM   80-degree GOAL   warm$_{tr}$-PASS-TE   be-NPST
       'The milk is now warmed at the 80 degree.'

The nonresultative interpretation of (7a) may be related to the fact that this kind of degree change verb does not represent a change to a specific state. (7a) is in contrast to (7b), which can be interpreted as resultative.

       Conversely, the resultative reading is possible for the passive *-te iru* form of some subject-action verbs that do not *entail* a change of state, such as *kazir(-u)* 'bite' and *huk(-u)* 'wipe'.

(8)   a. *Ringo ga*   *kazir-are-te*   *i-ru*.
       apple NOM   bite-PASS-TE   be-NPST
       'The apple is (has been) bitten into.'
   b. *Teeburu wa*   *mattaku*   *huk-are-te*   *i-na-i*.
       Table TOP   at.all   wipe-PASS-TE   be-NEG-NPST
       'The table is not (has not been) wiped off at all.'

These are verbs that (only) typically suggest a change. Biting may or may not produce a result in the object bitten, but very often it does; similarly, wiping may or may not end

in a clean wiped object, but very often it does. The passivized *-te iru* form appears to be sensitive to such results that typically (but not always) occur. The issue that such examples raise is how rich the semantic descriptions of verbs should be. In the frame-semantic view of verb meaning (Boas 2006; Chen and Matsumoto 2018), such "typical" results are included as part of the verb meaning, accounting for why the resultative reading in (8) is possible.

1.3   Finer distinctions based on compounding and alternation

Verb classes can be studied in relation to phenomena other than aspect: morphological processes (Kageyama 1993) and syntactic constructions (Levin 1993; Boas 2006). In this section I will discuss finer-grained verb classes in Japanese in relation to these phenomena.

Subclasses can be recognized within subject-action/object-change verbs based on their meaning components, which exhibit different tendencies in terms of their participation in compounding and causative alternation. Kudo's subject-action/object-change verbs can be classified into two different types in terms of the additional specification of how the result is brought about. Some are pure change-of-state verbs, with no specification of actions by which the result is brought about: They include (9).

(9)   *tuke(-ru)* 'attach', *koros(-u)* 'kill', *das(-u)* 'make go out', *war(-u)* 'break', *kowas(-u)* 'destroy', *taos(-u)* 'topple'

Others have specification of actions by which the change is brought about, in addition to a change. These can be called means+change verbs, and include (10).

(10)   *sibar(-u)* 'tie down, bind', *musub(-u)* 'tie (a string)', *yude(-ru)* 'boil', *nage(-ru)* 'throw', *nur(-u)* 'paint'

The verb *sibar(-u)* requires the use of rope, for example. These two correspond to result verbs and manner+result verbs of Beavers and Koontz-Garboden (2017) (cf. Rappaport Hovav and Levin 2010).

These two types do not seem to differ crucially in terms of aspect, and Kudo does not make a distinction between the two. However, the two differ in two ways, in their morphological properties. First, almost all of the pure change-of-state verbs participate causative alternation, as we will discuss in the next section, while a limited

number of means+change verbs do so. While all except *koros(-u)* in (9) participate in causative alternation, only *yude(-ru)* does among those in (10) (see Section 2 below).

Second, the pure change-of-state type tends to be used as the second verb of a compound verb, while the means+change type can also be used as the first verb. In this respect these verbs behave in a way similar to subject-action verbs such as *tatak(-u)* 'hit'.

(11)   *musubi-tuke(-ru)* (tie-attach) 'tie up', *sibari-tuke(-ru)* (bind-attach) 'bind together', *tigiri-tor(-u)* (tear-take) 'tear off', *musiri-tor(-u)* (pluck-take) 'pluck off', *nage-age(-ru)* (throw-raise) 'throw upward', *tataki-tubus(-u)* (hit-crush) 'crush by hitting', *osi-taos(-u)* (push-topple) 'push down'

Kudo's subject-action verbs may also be divided into two types according to the compatibility with a result phrase. It has been observed that Japanese allows only a limited cooccurrence of verbs with a result phrase (Washio 1997). Washio argues that Japanese allows what he calls the weak resultatives, in which the verb has "a disposition towards certain states", indicating "a potential directed change" with a resultative phrase representing such a resulting state (Washio 1997:10, 16). From the standpoint of verb classes, this means that resultative phrase can occur with 1) a pure change-of-state verb, 2) a means+change verb with a specification of an action, and 3) an action verbs that do not entail a result but that typically suggest one, but not with other action verbs, as shown in (12).

(12) a.   *Kare wa   sara o   konagona-ni   wat-ta*.
            He TOP   plate ACC in.pieces   break-PST
            'He broke the plate to pieces.'
      b.   *Kanozyo wa   kabe o   akaku   nut-ta*.
            She TOP   wall ACC   red   paint-PST
            'She painted the wall red.'
      c.   *Hanako wa   teeburu o   kiree-ni   hui-ta*
            Hanako TOP   table ACC   clean   wipe-PST
            'Hanako wiped the table clean.'
      d.   **Taroo wa   boosi o   peshanko-ni   ket-ta*.
            Taro TOP   hat ACC   flat   kick-PST
            'Taro kicked the hat flat.'

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As is the case with the interpretation of passive *-te iru* form, verbs such as *huk(-u)* 'wipe' behave more similarly to object-change verbs.

2.   Noncausative/causative verb pairs
2.1   Basic facts

Many verbs belonging to Kudo's subject-change verbs and subject-action/object-change verbs are morphologically related, forming pairs like the ones commonly found in a wide variety of languages (Nedjalkov and Silnitsky 1973; Haspelmath 1993; Comrie 2006; Pardeshi, Kiryu and Narrog (eds.) 2015). In this section I will discuss the semantic nature of such pairs of verbs in relation to their morphology.

Japanese has more than 300 pairs of such morphologically related verbs (Jacobsen 1992; Narrog, Pardeshi, Kageyama and Akasegawa 2015; Matsumoto 2016). The nature of the relationship between the members of such verb pairs is an issue that has attracted substantial attention in the literature (Sakuma 1936; Okutsu 1967; Shimada 1979; Jacobsen 1992, 2016; Suga and Hayatsu (eds.) 1995; Kageyama 1996; Matsumoto 2000a, b, c, 2016; Maruta and Suga 2000; Narrog 2007a, b; Narrog, Pardeshi and Akasegawa 2015). Though commonly referred to as intransitive/transitive verbs pairs, for semantic purposes here we will refer to these as noncausative/causative verb pairs (Matsumoto 2016).

Noncausative-causative verb pairs in Japanese are exemplified in (13).

(13)   a. Noncausative verbs (subject-change verbs)
     Kabin ga   war-e-ru.
     vase NOM   break-DA-PST
     'The vase gets broken.'
   b. Causative verbs (object-change verbs)
     Kare ga   kabin o   war-u.
     he NOM   vase ACC   break-NPST
     'He breaks a vase.'

In many such pairs, one verb is morphologically more complex or more marked than the other. The causative verb *war(-u)* 'break' in (13b), for example, is morphologically unmarked, while the noncausative verb *war-e(-ru)* 'get broken' in (13a) is marked, suffixed by *-e,* one of a number of decausativizing affixes (DAs) in Japanese. Noncausative/causative verb pairs fall into one of four morphological types: a) noncausative-basic, where the causative member is marked with a causativizing affix

(CA); b) causative-basic, where the noncausative member is marked with a decausativizing affix (DA); c) equipollent, where the two members are related by an alternation of stem final segments; d) labile, where a single form functions as either member, as illustrated in (14)-(15). Several different affixes can be observed to mark causativity or noncausativity, and they all have limited productivity.

(14)   Noncausative-basic
      a. *tat(-u)* 'stand$_{in}$'   *tat-e(-ru)* 'stand$_{tr}$'
      b. *her(-u)* 'decrease$_{in}$'   *her-as(-u)* 'decrease$_{tr}$'
      c. *mi(-ru)* 'see'   *mi-se(-ru)* 'show'

(15)   Causative-basic
      a. *war-e(-ru)* 'get broken'   *war(-u)* 'break'
      b. *hasam-ar(-u)* 'be caught between'   *hasam(-u)* 'catch between'

(16)   Equipollent
      a. *toor(-u)* 'go through'   *toos(-u)* 'let through'
      b. *kuzure(-ru)* 'collapse$_{in}$'   *kuzus(-u)* 'collapse$_{tr}$'

(17)   Labile
      a. *tozi(-ru)* 'close$_{in}$'   *tozi(-ru)* 'close$_{tr}$'
      b. *mas(-u)* 'increase$_{in}$'   *mas(-u)* 'increase$_{tr}$'

Of these, labile verb pairs are quite limited, with less than a dozen found.

As noted, many of those pairs consist of a subject-change verbs and a subject-action/object-change verbs in Kudo's classification. However, there is not an exact match. Some subject-action verbs in Kudo's classification that do involve some change but do not provide the resultative sense of *-te iru* do participate in the alternation, as are true of *toor(-u)* 'pass by' and *nagare(-ru)* 'flow'. In addition, many change+means subject-action/object-change verbs do not participate, as noted above.

Some of those pairs are transitive/ditransitive pairs, such as *ki(-ru)* 'put on (clothes) on one's own body' and *kise(-ru)* 'dress, put (clothes) on other's body', with the former representing the change of subject, and the latter, the change of dative object (Matsumoto 2000b, c). (Note that *ki(-ru)* is a subject-action/subject-change verb.) In some cases, the presence of change may not be clear in the transitive member, as is true of the pair of *mi(-ru)* 'look at' and *mi-se(-ru)* 'show' in (8c). The verb *mi(-ru)* does not represent a clear change of state, and cannot be interpreted as the resultative in its *-te iru* form. However, looking at something involves the gaining of visual knowledge on the

part of the subject, and thus the verb involves some sort of change on the part of the subject.

Languages are known to be skewed in terms of their preference toward noncausative- or causative-basic patterns, with Japanese manifesting a slight preference toward the noncausative-basic patterns (Narrog 2007a, b; Matsumoto 2016). This tendency is in keeping with what we will see in Section 3, which shows a greater role given to the noncausative subject-change verbs in Japanese than in some other languages.

2.2.   Semantic correlates to morphological markedness

There are several issues concerning such pairs that have attracted the attention of semanticists. One is the semantic correlation of the morphological markedness. Morphological markedness in these pairs appears to be at least partially semantically motivated (Jacobsen 1992, 2016; Matsumoto 2016). Jacobsen (1992: 75) argues that many of the noncausative-basic pairs express "changes normally seen to occur either spontaneously or as being brought about by [the referent of the subject] in itself." Causative-basic pairs, on the other hand, involve "changes normally seen to occur under the influence of an outside agent." Matsumoto (2016) examines all currently used verb pairs and argues that there are two independent semantic motivations for selecting one as basic. This study found that processes necessarily requiring an external cause are typically causative-basic, as Jacobsen has claimed. These include changes requiring a strong external force (e.g. *war(-u)* 'break' and *kir(-u)* 'cut') and changes which are necessarily brought about by human beings, involving the use of tools (e.g. *tog(-u)* 'sharpen'), human body parts (e.g. *um(-u)* 'bear (a child)'), careful human effort or planning (e.g. *makur(-u)* 'tuck up'), human perception or cognition (e.g. *tok(-u)* 'solve'), or social rules (e.g. *ur(-u)* 'sell'). In contrast, changes that occur naturally, arising due to factors such as atmospheric change (e.g. *kawak(-u)* 'get dry'), gravity (e.g. *oti(-ru)* 'fall'), or the normal functioning of organisms (e.g. *sodat(-u)* 'grow'), etc. tend to be noncausative-basic. However, this study also found that there are some phenomena that cannot be accounted for by this factor alone. Those involving psychological and bodily changes, for example, are typically noncausative-basic, even though they require an external cause (e.g. *odorok(-u)* 'be surprised'). Matsumoto argues that these counterexamples and an abundance of other noncausative-basic pairs representing conditions of human beings or their body parts (e.g. *ne(-ru)* 'go asleep', *kuram(-u)* 'get dizzy') suggest the relevance of the factor of the humanness of an undergoer (Nichols et al. 2004). That is, changes with human/animate undergoers tend

to be noncausative-basic. This tendency is consistent with the widely-noted preference among Japanese verbs to take a human subject. Note also that Japanese psych-verbs are generally noncausative-basic, taking an experiencer subject, with the corresponding causative verb derived and very resistant to being used with an inanimate subject (see Ikegami 1981, 1991; Bando and Matsumura 2001; Taniguchi 2005; cf. Chamberlain's (1890) observation that it is not possible to say in Japanese *The heat makes me feel languid*)), as illustrated in (18).[4]

(18) a. *Taroo ga   sono   nyuusu ni   odoroi-ta*.
     Taro NOM   that   news DAT   be.surprised-PST
     'Taro was surprised at that news.'
  b. *{Hanako/?Sono   nyuusu} ga   Taroo o   odorok-asi-ta*.
     Hanako/   that   news NOM   Taro ACC   be.surprised-CA-PST
     '{Hanako/That news} surprised Taro.'

     In a separate line of research, Narrog, Pardeshi and Akasegawa (2015) found that in the majority of such pairs, the morphologically less complex verb occurs more frequently than its more complex counterpart (see also Haspelmath et al. 2014). Such a difference in frequency may well be a reflection of the way those processes of change "normally" occur.

3.   Semantics of noncausative/subject-change verbs

We turn next to a consideration of noncausative, subject-change verbs, most of which are intransitive. It has been observed that Japanese makes wider use of noncausative subject-change verbs, often describing situations that, crosslinguistically considered, are not commonly expressed by such verbs (e.g. Teramura 1984; Ikegami 1981, 1991; Luk 2014). This tendency can be seen in the several aspects of the semantic behavior of these verbs. We will take up two of them: the existence of subject-change verbs

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[4] The subject of causative psych verbs, such as *Hanako* in (18b), are more likely to be interpreted as an agent than a mere cause. The diversity of linguistic coding observed for psychological phenomena reflects the ambiguous nature of such phenomena, occurring as they do in response to outer stimuli, while at the same time involving some mental action directed toward the stimuli (Croft 2012). In Croft's (2012: 233) terms, they involve a "bidirectional transmission of force in mental events."

implying an external causer, and the use of subject-change verbs to represent some abstract change.

3.1   Subject-change verbs that imply the presence of an external causer

One unusual feature of intransitive subject-change verbs in Japanese is that they are sometimes possible even for processes in which the existence of an external causer is implied. As examples of this, Jacobsen (1992) cites sentences like the following (Jacobsen 1992: 130).

(19) a. *Keisatu ni   tukam-at-ta.*
     police DAT   catch-DA-PST
     '(He was) caught by the police'
  b. *Higaisya ga   zimoto no   hito ni   mituk-at-ta.*
     victim NOM   local GEN person DAT   find-DA-PST
     'The victim was found by local people.'

Further examples of such verbs are listed in (20).

(20)   *kim-ar(-u)* 'become decided', *mook-ar(-u)* 'be earned', *osow-ar(-u)* 'learn', *tasuk-ar(-u)* 'be saved/helped', *mituk-ar(-u)* 'become found', *uw-ar(-u)* 'be planted', *tukam-ar(-u)* 'be caught', *tamaw-ar(-u)* 'be granted', *sir-e(-ru)* 'be known', *ur-e(-ru)* 'be sold'.

The existence of such verbs is in marked contrast to what has been argued for English verbs (e.g. Levin and Rappaport Hovav 1995), although such verbs are frequently seen in South Asian languages (Pardeshi 2008).

It has been argued that such causer-implying subject-change verbs are possible only when derived from causative base verbs with a particular affix. Kageyama (1996) claims that decausativizing *-ar* and *-e* are associated with different semantic operations on the semantic structure of their base causative verbs, utilizing a representation called lexical causative structure (LCS), similar to the one adopted in Levin and Rappaport Hovav (1995). In his framework, the affix *-ar* triggers what he calls "decausativization," while the affix *-e* triggers "anticausativization." Details of Kageyama's representations are not of concern here (see Matsumoto 2000a for discussion), except to note that, in his treatment, an external causer argument distinct from the undergoer of change is present in the semantic structure of *-ar* verbs, even

though it is not always mapped onto a surface syntactic argument, while such an argument is totally absent in the semantic structure of *-e* verbs.

As evidence for this, Kageyama points to differing patterns of compatibility with the adverbial phrase *katte-ni* 'of one's own accord', taken as diagnostic of the absence of an external causer role. This adverb is allegedly compatible with *-e* verbs, but not with *-ar* verbs, as seen in (21).

(21) a. *Totte ga   katte-ni   tor-e-ta*.
          knob NOM   of.own.accord   take.off-DA-PST
          'The door knob came off of its own accord.'
     b. **Katte-ni   niwa   ni   ki   ga   uw-at-ta*.
          of.own.accord   garden LOC tree NOM   plant-DA-PST
          'The tree got planted in the garden of its own accord.'

However, the picture is not as clear as this analysis suggests (Matsumoto 2000a). Certainly there are some *-ar* verbs which necessarily entail the presence of an external causer. However, there are also many *-ar* verbs that do not necessarily involve an external causer and are able to occur with *katte-ni* (e.g. *ag-ar(-u)* 'go up', *atum-ar(-u)* 'gather$_{in}$', *ham-ar(-u)* 'fit into', *hazim-ar(-u)* 'begin$_{in}$', *kaw-ar(-u)* 'change$_{in}$', *hirog-ar(-u)* 'spread$_{in}$', *ow-ar(-u)* 'end$_{in}$', *sim-ar(-u)* 'close$_{in}$', *tam-ar(-u)* 'accumulate$_{in}$', *tom-ar(-u)* 'stop$_{in}$'). Also, there are certainly many *-e* verbs that represent a process that is clearly not instigated by an external agent, but alongside those there are some *-e* verbs that do represent a process necessarily caused by an external entity, not readily accepting modification by *katte-ni* (e.g. *sir-e(-ru)* 'get known', *ur-e(-ru)* 'be sold', *tok-e(-ru)* 'be solved', *yabur-e(-ru)* 'get torn, defeated', *mog-e(-ru)* 'be plucked off', *kosur-e(-ru)* 'be rubbed, scraped'). These observations show that both affixes *-ar* and *-e* give rise to semantic structures that either imply or do not imply an external causer, although the number of causer-implying verbs may be larger in the case of *-ar* (Matsumoto 2016).

A clearer contrast between *-e* and *-ar* can be seen in the phonological environments in which they occur (Matsumoto 2000a, 2016). The affix *-e* can only be suffixed to transitive stems that end in a consonant or in the vowel /i/ (though the latter case is rare), whereas *-ar* is not restricted as to the stem of the base verb on which it occurs, although in the great majority of cases it is suffixed to causative base verbs whose stems end in /e/ (which is dropped when suffixed), complementary in that

environment to *-e* verbs. Thus the choice between the two affixes are largely phonological.

Thus, Japanese subject-change verbs cover a broad range of change events including those changes that are brought about by an external causer, and this is not limited to those verbs created by a particular suffix.

The use of causer-implying intransitive predicates may in some cases be pragmatically motivated. Jacobsen (1992) argues that the choice of such a verb over its causative counterpart may be motivated by a desire to background or defocus an agent in discourse, typically when the speaker is culturally expected to downgrade his/her own role in the event reported, as in (21).

(21) *Otya ga   hairi-masi-ta*.
     tea NOM   enter-POL-PST
     'Tea is ready.' (referring to tea the speaker has prepared)

3.2.   The use of subject-change verbs to express non-actual change or to describe states

One may note one use of subject-change verbs in Japanese that shows the wide utility of those verbs in this language. Some intransitive subject-change verbs can be used on the basis of a "fictive" change, without any change occurring in the real world. Consider the verb *nar(-u)* 'become', a verb that normally describes the onset of a new state as the result of a change. This verb can be used when the change represented occur only in the mind of a conceptualizer. Sato (2005) notes the following use.

(22) *Buraziru-kokuseki na node   kare wa buraziruzin ni   nar-u*.
     Brazil-citizenship COP because he TOP Brazilian COP   become-NPST
     'Given that he has Brazilian citizenship, (we can now see that) he is a Brazilian.'

Sato argues that the verb *nar(-u)* in (22) is based on inferential calculation, by which a new state of the subject emerges in the conceptualizer's mind.

Perhaps even more extraordinary are sentences such as (23), in which a current state is described as if having resulted from a hypothetical change, even if it is obvious that no such change actually took place (Matsumoto 1996b).

(23) a.   *Sono sikaku wa   kado   ga   maruku   nat-te   i-ru*.
           that square TOP corner NOM   round   become-TE   be-NPST

'That square has rounded corners (lit., As for that square, its corners have become rounded).'

b. *Sono hantoo wa   umi ni   tuki-de-te   i-ru.*
    the peninsula NOM   sea GOAL   thrust-go.out-TE be-NPST
    'The peninsula sticks out to the sea (lit., The peninsula is in the state of having sticked out into the sea.)

Such expressions are said to be based on "resultative cognition" (Kunihiro 1985) or involving "subjective" or "fictive" change (Matsumoto 1996b), by which somewhat unusual states are felt to have occurred as a result of a change from a more normal state. Since such perception through vision is typically involved, examples like this are found with change-of-state verbs representing some physical change.

One background of such uses is the frequent use of change-of-state verbs to represent states, based on the process that can actually occur. The resultative use of *-te iru* to express stative meaning in effect acts as a compensatory mechanism to fill the gap created by a poverty of lexically stative verbs in the language. Meanings corresponding to English stative verbs such as *know* and *sit*, for example, are expressed by the *-te iru* form of the corresponding change-of-state verbs *sir(-u)* 'come to know' and *suwar(-u)* 'sit down'. The *-te iru* form is also used to represent a wide range of states that are in other languages expressed by adjectives. Compensating for the lack of adjectives such as 'fat' and 'old (person)', for example, there are the *-te iru* forms *hutot-te i(-ru)* (get.fat-TE be-NPST) 'be fat' and *tosi o tot-te i(-ru)* (year ACC take-TE be-NPST) 'be old').

4. Semantics of causative/object-change verbs

The nature of causative verbs or object-change verbs in Japanese has been the focus of extensive discussion in the literature (e.g. Shibatani 1973, 1976a, b; Ikegami 1985; Nishimura 1993; Kageyama 1996; Nishimitsu 2010; Matsumoto 2016, Hayatsu 2016, etc.). In the following subsections, we review some basic issues surrounding the semantics of these verbs.

4.1.   Morphological vs. lexical causatives

The semantics of causative verbs in Japanese can be brought into relief through comparison with another class of verbs with causative meaning, the two referred to respectively as lexical vs. morphological causatives. These are exemplified in (24) and

(25), involving the lexical and morphological causative forms of *tat(-u)* 'stand up' and *ki(-ru)* 'put (clothing) on (one's own body)' respectively.

(24) a. *Hon   o   tat-e-ta.*   (lexical causative)
       book ACC stand-CA-PST
       '(I) stood the book up.'

   b. *Seito o   tat-ase-ta.*   (morphological causative)
       student ACC   stand-CAUS-PST
       '(I) made the students stand'

(25) a. *Kodomo ni   huku   o   ki-se-ta.*   (lexical causative)
       child DAT   clothes ACC put.on.oneself-CA-PST
       '(I) put clothes on the child.'

   b. *Kodomo ni   huku   o   ki-sase-ta.*   (morphological causative)
       child   DAT   clothes ACC   put.on.oneself-CAUS-PST
       '(I) made the child put on clothes'

The verb *ki-se(-ru)* 'put on other person' is the causative version of *ki(-ru)* 'put on oneself' in that a causer causes the dative object to undergo a change into the state of wearing clothes.

      Morphological causatives contain a productive causative suffix *–(s)ase*, which gives rise to a syntactic biclausal structure at some abstract level of syntactic representation, with *-(s)ase* heading the main clause and the base verb the embedded clause (e.g. Shibatani 1973, 1976a; Inoue 1976; Matsumoto 1996a). Lexical causatives, which are our primary target of interest in this section, are related to the base verb by means of much less productive affixes, such as *-e* and *-as/-os* (Section 2), giving rise to a purely monoclausal structure. (These are called "lexical" since verbs with *-e* and *-as/-os* are not as transparently complex as those with *-(s)ase*, and their internal morphological structure is often disregarded.)

      It has been argued that lexical causatives are more limited in the types of causation they can represent in comparison to morphological causatives (Shibatani 1976a, b). Of the various ways in which causation can occur, Shibatani (1976a, b) argues that the distinction between manipulative vs. directive causation is relevant to distinguishing the meanings of the two causative types. Manipulative causation is where a causer physically manipulates a causee to bring about the caused event, while in directive causation both causer and causee are volitional agents and the causer directs

the causee to bring about the caused event. This distinction is also one referred to as direct vs. indirect causation, respectively.

Another type of causation that has been identified following the early work of Shibatani is a type intermediate between manipulative (direct) and directive (indirect) causation referred to by Shibatani and Pardeshi (2002) as sociative causation. There are three different subtypes of such causation: (a) joint-action, (b) assistive, and (c) supervisory, exemplified in turn by (a) a mother walking with a child holding the child's hand, (b) a mother helping a child to pee by holding the child, and (c) a mother supervising a child reading. Matsumoto (2016) furthermore posits an additional subtype of direct causation, cause-internal causation, in which the causer causes a change in his/her own body or body parts through neural networks internal to the body, as in bowing one's head and kneeling. The range of these causation types is summarized in (26).

(26)   Direct causation: causer-internal
                                          manipulative
         Sociative causation: joint-action
                                          assistive
                                          supervisory
         Indirect causation: directive

These are all forms of causation involving physical action. The causation of psychological change (e.g. surprising someone) and of natural processes (e.g. melting something) is done differently, the former by exerting influence in a way that involves no contact, and the latter either by exerting influence involving no contact or by withholding preventive action to stop occurrence of the change.

Shibatani (1976a, b) argues that lexical causatives typically express manipulative causation and particular kinds of directive causation that are executed by conventional or highly authoritative means (e.g. a policeman stopping a car, or a mother sending her children to bed), but that they cannot represent other kinds of directive causation. Lexical causatives can also represent causer-internal causation (Matsumoto 2016)[5] and the different subtypes of sociative causation (Shibatani and Pardeshi 2002).

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[5] Causer-internal causation has often been treated as a case of reflexive verb use (Muraki 1991, Hayatsu 2016).

These various meanings are exemplified in (27) with the verb *or-os(-u)* (go.down-CA-NPST) 'lower, bring down'.

(27) a. causer-internal causation

    Taroo ga   te o   orosi-ta.

    Taro NOM   hand ACC lower PST

    'Taro lowered his hand.'

  b. manipulative causation

    Taroo ga   tana kara   hon o   orosi-ta.

    Taro NOM shelf SRC   book ACC lower PST

    'Taro took the book down from the shelf.'

  c. sociative (joint-action) causation

    Taroo wa te o   tot-te   isu no   ue no   kodomo o orosi-ta.

    Taro TOP hand ACC take-TE   chair GEN top COP   child ACC lower-PST

    'Taking his hand, Taro took down the child who was on the chair.'

  d. directive (authoritative) causation

    Taroo wa   sizi o   dasi-te   inu o   isu kara   orosi-ta.

    Taro TOP   order ACC issue-TE   dog ACC chair SRC   lower-PST

    'Taro ordered the dog down from the chair.'

  e. directive (nonauthoritative) causation

    *Taroo wa kare ni onegai si-te   yane kara   orosi-ta.

    Taro TOP   he DAT request do-TE   roof SRC   lower-PST

    'Taro asked him to get down from the roof.'

Morphological causatives (e.g. *ori-sase(-ru)* (go.down-CAUS-NPST) 'cause to go down'), on the other hand, can represent non-authoritative, non-conventional directive causation like (27e). Shibatani states that morphological causatives may also express conventional or authoritative directive causation and manipulative causation in cases where there is no appropriate lexical causative available (see below for the case of *hak-ase(-ru)* 'put.on.lower.body-CAUS-NPST').

      Differences can be seen in individual lexical verbs in the range of causation they can represent. *Or-os(-u)* covers a wide range, as seen above, but some are restricted to causer-internal causation (e.g. *kagam-e(-ru)* 'bend one's own knees', or to causer-internal and manipulative causation (e.g. *tat-e(-ru)* 'stand$_{tr}$') (see Matsumoto 2016). Such cases require a more detailed specification of the meaning components of

causation than the generic "CAUSE" used in some semantic representations (e.g. Levin and Rappaport Hovav 1995, Kageyama 1996).

One complication in distinguishing between lexical and morphological causatives is the existence of certain *-(s)ase* causative verbs that syntactically and semantically behave as lexical causatives, often called lexical *-sase* causatives (Matsumoto 2000c), an example of which is given in (28).

(28) *Hahaoya wa   ningyoo ni   kutusita o   hak-ase-ta*.
     Mother TOP   doll   DAT   socks ACC   put.on-CAUS-PST
     'The mother put the socks on the doll's feet.'

The base verb *hak(-u)* 'put on one's lower body' refers to an action that results in the state of the actor having an item of clothing on his/her own lower body. The causative form *hak-ase(-ru)* in its lexical causative reading in (28) represents an action of the causer on an item of clothing with the result that the dative-marked entity has it on his or her lower body. *Hak-ase-ru* can of course have a directive causative reading as well, but given the impossibility of an agentive interpretation of the *ni*-marked NP in (28), such an interpretation is ruled out in this example. This type of *-sase* causative is formed on the basis of transitive base verbs, such as *hak(-u)* 'put ... on one's own lower body', *tabe(-ru)* 'eat', *nom(-u)* 'drink', *sir(-u)* 'come to know', *kik(-u)* 'hear', and *mot(-u)* 'come to have'.[6] These are all verbs implying some change on the part of the subject in a broad sense (note that eating, drinking, and hearing result in some change of the state of the subject). These *sase* verbs are a case of morphological causative forms covering lexical causative meanings in the absence of appropriate lexical causative forms. It is important to note, however, that these verbs are syntactically different from usual morphological causatives in that they exhibit no syntactic evidence for biclausality (see Matsumoto 2000c), setting them apart as a class of predicates distinct from other morphological causatives.

4.2   Lexical causative affixes
Another issue often discussed concerns the semantics associated with the various affixes functioning as causative markers. Kageyama (1996) argues that differing causative affixes are associated with different semantic operations, just as he argues for differing

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[6] See also Suzuki (1972:287) for an early observation about the lexical nature of *sir-ase(-ru)* and *kik-ase(-ru)* (see also Hayatsu 2016).

decausativizing affixes (3.1). He claims, for example, that causativizing *-e* and *-as/-os* have distinct semantic structures, as follows.

(29) a. *-e*: [x CONTROL [$_{\text{EVENT}}$ ...]]
      b. *-as/-os*: [[$_{\text{EVENT}}$ x ACT] CAUSE [$_{\text{EVENT}}$ ...]]

However, the causative meanings of *-e* verbs and those of *-as/-os* verbs in fact vary considerably within each verb group, and a single representation for each of these such as in (29) does not apply uniformly to all verbs with the same affix. Instead, Matsumoto (2000a) argues that the semantic classes (or conceptual domain) to which a verb belongs is a better predictor of its semantic structure. For example, causative psych verbs with *-as* such as *odorok-as(-u)* 'surprise' take an event subject, consistent with the structure in (29b), but this is true not just of psych verbs with *–as/-os* but also of causative psych verbs with *-e* (e.g. *kurusim-e(-ru)* 'torture'). Physical causation verbs such as *ak-e(-ru)* 'open' do not take an event subject, consistent with (29), but physical change verbs with *-as/-os* likewise cannot take an event as subject (e.g. *megur-as(-u)* 'surround, enclose', *tob-as(-u)* 'fly$_{\text{tr}}$', *d-as(-u)* 'take/put out', *kog-as(-u)* 'scorch').

    However, there do appear to be certain differences in the semantics of verbs derived with *-e* and those with *-as/-os*. In Section 4.1, I pointed out that causative verbs vary in the range of causative meanings they represent. Matsumoto (2016) argues that *-e* verbs tend to be more limited in this respect than *-as/-os* verbs. Some causative verbs are limited in their meaning to causer-internal causation (e.g. *kagam-e(-ru)* 'bend (one's own body)'), and such verbs are almost without exception *-e* verbs; those which are limited to Causer-internal or manipulative causation are also *-e* verbs (e.g. *tat-e(-ru)* 'stand$_{\text{tr}}$', *muk-e(-ru)* 'turn$_{\text{tr}}$/point$_{\text{tr}}$ toward'). No *-e* verbs can represent causation of the natural change kind.

    In addition to such semantic differences, there are also different phonological constraints governing the suffixation of *-e* and *-as/-os*, just as we saw in the case of decausativizing suffixes. Matsumoto (2000a, 2016) points out that suffixation of causativizing *-e* is restricted to base verb whose stem ends in a consonant or the vowel /i/ (i.e., base verbs whose stems do not end in /e/), while that of causativizing *-as* is not so conditioned. Either *-e* or *-as/-os* can therefore be suffixed to base verbs with stems ending in a consonant, the choice partially depending on the particular final consonant (Matsumoto 2016). Those ending in /r/, for example, take *-as* (e.g. *her-as(-u)* 'decrease$_{\text{tr}}$'), while those ending in /m/ predominantly take *-e* (e.g. *tizim-e(-ru)* 'shrink $_{\text{tr}}$').

4.3   Non-entailment of result with causative verbs

A number of studies have pointed out that many Japanese causative verbs do not necessarily entail the result intended by the action in question (Ikegami 1981, 1985; Miyajima 1985; Kageyama 1996; Tsujimura 2003; Sato 2005). English causative verbs exhibit the typical behavior of accomplishment verbs in that the result is entailed, as seen in (30).

(30) *I boiled the water, but it did not boil.

But this is not the case with many Japanese causative verbs, as observed by Ikegami (1981, 1985), who cites examples such as (31).

(31) *Sono   mizu o   wakasi-ta kedo   wak-anakat-ta.*
     The   water ACC boil$_{tr}$-PST but   boil$_{in}$-NEG-PST
     'I boiled the water, but it did not boil.'

This phenomenon is often treated as a case of "nonculminating accomplishment" (Bar-el, Davis and Matthewson 2005) or event cancellation (Tsujimura 2003). Ikegami argues that Japanese tends to focus on the action part of the meanings of these verbs, in contrast to English, which focuses on achievement of the intended goal.[7] He states that this is a reflection of Japanese transitive verbs having a weaker degree of directedness toward the patient. Such cancellation of result is by no means unique to Japanese, but is found among causative verbs in multiple languages (see Talmy 1991; Bar-el, Davis and Matthewson 2005, etc.).

Tsujimura (2003) applies tests for telicity to such sentences, such as co-occurrence patterns with telic and nontelic temporal phrases, with results such as the following.

(32) a. *Boku wa   otiba   o   {itizikan/itizikan-de}   moyasi-ta.*
        I TOP   fallen.leaves ACC   for.an.hour/in.an.hour   burn$_{tr}$-PST
        'I burned the fallen leaves {for/in} an hour.'

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[7] Ikegami's observations are not restricted to causative verbs that have noncausative counterparts; verbs like *damas(-u)* 'deceive, cheat', which have no noncausative counterparts, are also capable of a reading where the intended result is not realized.

b. *Otiba   o   {itizikan/*itizikan-de} moyasi-ta kedo   moe-nakat-ta.*
fallen.leaves ACC for.an.hour/in.an.hour   burn$_{tr}$-PST but   burn$_{in}$-NEG-PST
'I burned the fallen leaves {for/*in} an hour, but they didn't burn.'

The verb *moy-as(-u)* allows either a telic or atelic reading, as in (32a), but when the result is canceled, as in (32b), only the atelic reading is possible. Tsujimura argues that causative verbs such as this are in fact underspecified for telicity, and that the telic reading of an example such as (32a), where the result in question is realized, is due to a conversational implicature. On the basis of these observations, she calls into question the validity of simple LCS representations like [x CAUSE [y BECOME *BURNT*]] as a representation of the semantic structure of such verbs.

Nishimura (1998) makes the interesting observation that the result cannot be canceled when the subject of such a sentence is a nonvolitional entity, as in (33a). Nor is it available when a nonintentional reading is imposed on the causation by means of an adverb, as in (33b) (Sato 2005).

(33) a. *Kaze ga   doa o   ake-ta   kedo ak-anakat-ta.*
        wind NOM   door ACC open$_{tr}$-PST but   open$_{in}$-NEG-PST
        'The wind opened the door but it didn't open.'
      b. *Matigatte   zyuutan o   moyasi-ta kedo   mo(y)e-nakat-ta.*
         by.mistake   carpet ACC   burn$_{tr}$-PST but   burn$_{in}$-NEG-PST
         'I burned the carpet by mistake, but it didn't burn.'

If achievement of the result intended is a conversational implicature, the result should be cancellable in such cases as well. The unacceptability of (33) suggests that an alternative account is necessary.

The behavior of causative sentences with nonvolitional subjects suggests that what is at issue in sentences such as (31) is that the result is an *intended* one. One way to capture the semantics of such causative verbs is to say that the result in question can be either an intended one or an actual one, preferably both. This does not require treating such verbs as polysemous in meaning, but as having a single prototypical meaning with disjunctive conditions. The unmarked or prototypical case is where both conditions are satisfied, but contexts can force the cancellation of one or the other condition. The acceptability of sentences like (31) varies among speakers, and, furthermore, judgments are not black or white even for individual speakers, suggesting that an appeal to a prototype structure is indeed appropriate to such cases.

A question may arise as to whether the verbs exhibiting a nonentailment of results are the same as verbs like *huk(-u)*, and *kazir(-u)* 'bite', which do not entail a result but only suggests one. However, there is a clear difference between the two kinds of verbs. Unlike the result-cancelling verbs, those verbs that only implies a change do not entail a change even with a nonintentional event, as shown in (34).

(34) a. *Matigatte   medaru o   kazit-ta kedo   ato ga   nokor-anakat-ta.*
     by.mistake medal ACC   bit-PST but   trace NOM   remain-NEG-PST
     'By mistake I bit the medal but no trace was left.'

    b. *Matigatte   teeburu o hui-ta   kedo   kiree-ni wa   nar-anakat-ta.*
      by.mistake table ACC wipe-PST but   clean CNT   become-NEG-PST
      'By mistake I wiped the table but it did not become clean.'

4.4   Nonintentional causative sentences

A prototypical transitive event involves a volitional causer acting directly on an object to produce an immediate physical change (see Hopper and Thompson 1980). However, Japanese transitive verbs allow certain deviations from this prototype in ways different from other languages (Jacobsen 1992, 2016; Nishimura 1993; Kageyama 2002; Amano 2002; Taniguchi 2005; Nishimitsu 2010). The transitive sentences in (35), for example, involve experiencer-like subjects, and those in (36), location and source subjects.

(35) a. *Taroo ga   asi o   ot-ta.*
     Taro NOM   leg ACC   break$_{tr}$-PST
     'Taro broke his leg.'

    b. *Kare wa   kuusyuu de   ie   o   yai-ta.*
      he TOP   air.raid RSN   house ACC   burn$_{tr}$-PST
      'He had his house burnt down in an air raid.'

(36) a. *Torakku ga   hikkosi-nimotu o   tun-de   i-ru.*
     truck NOM   moving-package ACC load-TE   be-NPST
     'The truck has the packages to be moved loaded on it.

    b. *Kaoku ga   honoo o   age-ta.*
      building NOM flame ACC   raise-PST
      'The building emitted flames of fire.'

Sentences like (35) have attracted much attention and have been accounted for in different ways. Some argue that even in causative constructions such as these, the subject

is seen as being "responsible" for the event described, and therefore implicitly has control over it in some sense (Ikegami 1982, 1988; Nishimura 1993; Nishimitsu 2010). According to Ikegami, the subject in sentences like (35a) bears responsibility for the event in that s/he should have been in control over occurrence of an event and could have prevented it from occurring but did not. Nishimitsu (2010) argues that even in sentences like (35b) the object is under the control of the subject, who therefore bears responsibility for the event in question. This becomes clearer when sentences in (35) are contrasted with their intransitive counterparts (e.g., *Kuusyuu de ie ga yake-ta* 'The house burned in an air raid'), where no such sense of responsibility is implied (Yoshinari, Pardeshi and Chung 2010). Others find it difficult to account for examples like (35b) in this way. Amano (2002) observes that the subject and object in the sentences in (35) (as well as those in (36)) exist in a whole-part relationship and argues that the subject functions as the "possessor" of the situation represented. In any case, an account of the use of causative verbs in (35-36) requires more than mere reference to a schematic representation of the lexical meanings of the verbs used.

5. Conclusions

In this chapter, I have reviewed the semantic nature of Japanese verbs, paying special attention to general properties of major verb classes in Japanese. My discussion confirms one typological property of Japanese, in which a great role is given to the noncausative subject-change verbs. This is seen in the fact that there are more causative verb pairs with noncausative subject-change verbs as basic forms (Section 2). Such verbs are also used to describe a wide range of situations, used even to events implying external causer and situations in which no actual change is involved (Section 3).

   The present chapter also points to the kind of semantic representations needed to account for behaviors of various classes of verbs. The understanding of verb behavior very often requires a broader range of meanings to be considered than the schematic semantic structure often assumed in the literature. This is seen in the interpretation of *-te iru* (Section 1), the range of verbs that can be used in resultative construction (Section 1), the semantic range of causative meanings that an affix can indicate (Section 4), or the prototype structure of the semantics of nonentailment verbs (Section 4). The examination of Japanese verbs point to a semantic structure with a richer information than schematic semantic representations.[8]

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[8] Verb semantics is a broad topic and there are other interesting areas of study not treated in this chaper. For these topics, I refer the reader to the works cited below. Issues of semantics and

Abbreviations

ACC: accusative   CAUS: causative morpheme
CA: causativizing affix   CNT: contrast   COP: copula
DA: decausativizing affix   DAT: dative   GEN: genitive
in: intransitive   LOC: locative   NEG: negative
NOM: nominative   NPST: nonpast   PASS: passive
POL: polite   PST: past   RSN: reason
SRC: Source   TOP: topic   tr: transitive

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grammar have been discussed in relation to specific syntactic constructions such as the benefactive construction (Shibatani 1996; Yamada 2004; Sawada 2014), and the resultative construction (Washio 1997; N. Ono (ed.) 2007, 2009; Murao 2007). Another line of grammar-related semantic research has been that centered around the issue of unaccusativity (e.g. Tsujimura 1991; Kageyama 1993; Kishimoto 1996; Matsumoto 1998a; Kuno and Takami 2004). As for the study of verbs in specific semantic domains, the semantics of motion verbs has been the object of much research (see Matsumoto 2018 for a summary). Much attention has also been given to deictic verbs, which in the case of Japanese include not only verbs of coming and going (Ohye 1980; Sawada 2016; Matsumoto et al. 2017), but also verbs of giving (Kuno 1986; Sawada 2014). Such verbs are often discussed in relation to the general issue of subjectivity (Uehara 2006). V-V compound verbs also pose many interesting semantic questions (Kageyama 1993, 2013; Matsumoto 1996a, 1998a; Himeno 1999; Yumoto 2005; Chen and Matsumoto 2018), as do Sino-Japanese complex verbs (Kobayashi 2004). The semantics of mimetic verbs has recently gained a prominent position in the spotlight (Kageyama 2007; Tsujimura 2014; Akita 2017). For the semantics of verbal idioms, see Miyaji (1982) and Momiyama (1997). Semantic extension and polysemy in verbs are another area that has been extensively studied (e.g. Tanaka 1996; Momiyama 1999; Sumi 2002; Kunihiro 2006; Moriyama 2012) often in relation to issues of conceptual metaphor and metonymy (e.g. Seto 1997; Nishimura 2002; Matsumoto 2007; Nabeshima 2011). A special case of such extension is deverbalization of verb meaning into more grammatical and/or schematic ones (Takahashi 1994; Matsumoto 1998b; T. Ono 1992; K. Ono 2000; Kanasugi, Oka and Yonekura 2013).

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