On Japanese psych-verbs*

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The subject of non-derived Japanese psych-verbs is the experiencer. These basic psych-verbs are divided into two types depending on the object Case marker. One type consists of verbs that obligatorily take an o-marked object (O-psych-verbs), and the other consists of verbs that optionally take a ni-marked object (NI-psych-verbs). In order to form psych-verbs with theme subjects, the causative morpheme -(s)ase is suffixed to the stem of the latter type of psych-verb. Interestingly, these psych-verbs have amphibious characteristics of both unaccusatives and unergatives syntactically and semantically. The unaccusativity/unergativity of NI-psych-verbs cannot be determined lexically. It is this class of psych-verb that exhibits the classic phenomenon of experiencer-theme inversions. This syntactic peculiarity of psych-verbs has posed a problem for mapping cross-linguistically. In the case of Japanese, it will be explained by the operation of causativization and the adjunct status of the optional cause argument of NI-psych-verbs.

0. Introduction

Psych-predicates have attracted attention and have been studied cross-linguistically because of their syntactic peculiarities (Postal 1971, Belletti and Rizzi 1988, Grimshaw 1990, Croft 1993, Pesetsky 1995). In general, they are said to involve two thematic roles, experiencer and theme. Some psych-predicates take the experiencer as subject, and others take the theme as subject. The two sentences in (1) pose a problem for mapping regulations between a thematic argument and an initial syntactic position such as Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH):¹

1a. The children liked the dollar shops.
   Experiencer   Theme

b. The dollar shops pleased the children.
   Theme         Experiencer

There has been much discussion as to how the initial syntactic configurations of these sentences are to be determined (Akatsuka 1976, Belletti and Rizzi 1988, Grimshaw 1990, Pesetsky 1995).

* This paper is an interim report of my ongoing research supported by the Academic Relations Divisions of Foreign Affairs and International Trade Canada of the Canadian government. I would like to thank Diane Massam for her helpful comments and suggestions. I also would like to express my gratitude to Taro Kageyama, Yoshimitsu Narita, and Ron Smyth for their valuable advice on my research.

¹ "Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure" (Baker 1988: 46).
Japanese psych-verbs *prima facie* exhibit a similar inversion phenomenon.²

2a. Gakusei-wa sono nyuusu-ni odorok-ta.
   students-TOP that news-DAT get surprised-PAST
   Experiencer Theme
   'The students got surprised by that news.'

b. Sono nyuusu-wa gakusei-o odorok-ase-ta.
   that news-TOP students-ACC get surprised-CAUSE-PAST
   Theme Experiencer
   'That news surprised the students.'

Japanese psych-verbs, however, are different from English psych-verbs in that there are no non-derived causative psych-verbs with theme subjects such as *surprise* and *please.*³ The subject of non-derived psych-verbs in Japanese is always the experiencer.⁴ In order to make a causative psych-verb, the bound causative morpheme -(s)ase is suffixed to the stem of psych-verbs such as *odorok-* 'get surprised'. A bimorphic causative psych-verb *odorok-ase-* cannot be straightforwardly compared with an English causative psych-verb *surprise* with respect to syntactic behavior relating to issues such as unaccusativity (Belletti and Rizzi 1988, Grimshaw 1990), since all derived causative verbs will have the cause argument as external subjects.

In order to properly examine the behavior of Japanese psych-verbs, it is necessary to examine first the non-derived psych-verbs, particularly verbs to which the causative morpheme -(s)ase can be suffixed, since it is this class that exhibits the classic psych-verb alternative pattern shown in (1) and (2). Previous studies (Akatsuka 1976, Kuroda 1993, Pesetsky 1995, Katada 1996) have lacked this examination of basic Japanese psych-verbs. There are two types of psych-verbs as determined by Case marking. One type consists of verbs that obligatorily take an -o-marked object, and the other consists of verbs that optionally take a *ni*-marked object. In this paper, I will show that the causative morpheme -(s)ase suffixes to the latter type of verb, and not to the former. Interestingly, the latter type of psych-verb exhibits the characteristics of both unaccusative and unergative verbs syntactically and semantically. I will briefly discuss the problem of their ambiguous status in terms of the lexical entry of a verb.

Based on this basic examination of psych-verbs, I will claim that two structures describing psychological events that are considered to exhibit the mirror image phenomenon do

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² Japanese also has psych-adjectives whose stem corresponds to psych-verbs (cf. Teramura 1982), which I do not treat in this paper.
³ I can find one non-derived psych-verb with a theme subject, *karusime-* 'worry'. Its morphologically related psych-verb with an expeiencer subject is *karusim-* 'suffer from', which is listed in (6) in Section 1. In addition to *karusime-* Katada (to appear) lists the verbs *kanasime-* 'sadden' and *nayamas-* 'stress' as lexical causative psych-verbs with theme subjects. However, I consider *nayamas-* to be a short form for *nayam-ase-* which is the bimorphemic causative psych-verb with the causative morpheme -(s)ase (cf. Martin 1975, Teramura 1982). As for *kanasime-* it is an informal form for *kanasim-are-* which is the potential form of *kanasim-* and not a lexical causative verb. In this paper, I will use the term 'non-derived' rather than 'lexical' to avoid this kind of misunderstanding.
⁴ There are many psychological verbal nouns that can be compounded with the light verb -suru. The light verb constructions with psychological verbal nouns such as *koohun-suru* 'get excited' are also included in non-derived psych-verbs.
not pose any mapping problem for Japanese. In one structure, the cause role, rather than the theme, is adjoined to the intransitive VP node as an optional argument, and in the other the cause role is added to the event denoted by an intransitive psych-verb as an external argument through a causativization process.

In Section 1, I will introduce the two types of psych-verbs based on Case marking. Section 2 will examine the syntactic and semantic unaccusativity/ unergativity of the psych-verbs that optionally take a ni-marked object. In Section 3, I will explain the causativization of psych-verbs and the experiencer-theme inversion. Section 4 is a conclusion.

1. Two types of psych-verbs and case marking

Non-derived psych-verbs in Japanese take the experiencer as subject. They are divided into two groups depending on the Case marker and semantic role of the object. Some verbs take an o-marked object, and others take a ni-marked object. In this paper, I will call the former O-psych-verbs and the latter, NI-psych-verbs. In general, the particle o is an accusative Case marker, and the particle ni is called a dative Case marker. However, the distinction between Case makers and postpositions is sometimes not clear. In this section, based on the numeral quantifier test, it is shown that the o-marked object is a Case-marked NP, and that the ni-marked object is a NP within a Postpositional Phrase.

Let us look at some examples of the two types of psych-verbs. While the o-marked object refers to the target of emotion as in (3a), the object argument of NI-psych-verbs refers to the stimulus of emotion as in (4a) (cf. Teramura 1982):

3a. Kokumin-wa kareno si-o osim-ta
   people-TOP his death-ACC be sorry-Past
   'The people was sorry for his death.'

b. Kareno si-wa kokumin-ni/ kara osim-arc-ta.
   his death-TOP people-by/ from be sorry-PASSIVE-PAST
   'His death was regretted by the people'

4a. Kodomo-wa koomori-no nakigoe-ni obie-ta.
   children-TOP bat-GEN cry-DAT get frightened-PAST
   'Children got frightened by cries of bats'

   bats-GEN cry-TOP children-by/ from get frightened-PASSIVE-PAST
   'The cries of bats were feared by children'

Although the o-marked object does not have to be affected by the experiencer's psychological emotion or undergo any change, and O-psych-verbs are therefore not canonical transitives, these verbs can be passivized. In this respect, O-psych-verbs correspond to the English psych-verbs with experiencer subjects such as fear and love. When an o-marked object is externalized through passivization, the original subject can be marked by the preposition ni 'by' or kara 'from'
as in (3b) (cf. Teramura 1982). On the other hand, a ni-marked object cannot become the passive subject as in (4b). The lists of some psych-verbs from both types are as follows:

5. O-psych-verbs: nikum-u 'detest', itosim-u 'love', urayam-u 'envy', netam-u 'grudge', uram-u 'have a grudge against', natukasim-u 'miss', kiraw-u 'hate' suk-u 'like', konom-u 'like', nozom-u 'wish', kui-ru 'regret', sonkei-suru 'respect', ai-suru 'love'

6. NI-psych-verbs: odorok-u 'get surprised', wrotae-ru 'get bewildered', ikar-u 'get angry', ansin-suru 'feel relieved', kohin-suru 'get excited', gakkari-suru 'get disappointed', kurusim-u 'suffer from'

To show the differences between the two types, I will examine the status of their object arguments. According to Miyagawa (1989), a numeral quantifier and its host NP must c-command each other. An NP with a case marker can be associated with a numeral quantifier as in (7a), but an NP followed by a postposition cannot c-command a numeral quantifier because the first branching node is PP as in (7b).

7a. [ [NP ] NQ ]

b. *[ [PP [NP ] ] INQ ]

An obligatory argument of a verb is a Case marked NP, but an optional one is an NP within a PP. Let us look at the examples with numeral quantifiers:

   TOP book-ACC 3 (NQ) read-PAST
   'Paul read three books'

   TOP strange men-DAT 2(NQ) meet-PAST
   'Ruth met two strange men.'

   TOP friends-by 2 (NQ) hit-PASSIVE-PAST
   'Ruth was hit by two friends.'

   TOP stick-with 2 (NQ) cross-ACC make-PAST
   'Gail made a cross with two sticks.'

The o-marked NP in (8a) is object argument of the verb yom- 'read'. The ni-marked NP in (8b) is object argument of the verb aw- 'meet'. The particle o and ni in these examples are Case markers. Therefore, the numeral quantifier and its host NP c-command each other. In (8c), since the particle ni refers to the passive agent, this ni is considered to be a postposition. In (8d),

Sadakane and Koizumi (1995) use this numeral quantifier test to distinguish the Case marker ni from the postposition ni.
the particle *de* is a postposition of the instrument. The passive agent and the instrument NPs are optional arguments. The NP and the numeral quantifier cannot c-command each other because of the PP node between them.

With this numeral quantifier test, it can be determined whether or not *o*-marked NPs and *ni*-marked NPs are obligatory arguments of psych-verbs:

9a. Ruth-wa otoko-o sannin nikum-ta
   TOP men-ACC 3 (NQ) detest-PAST
   'Ruth detested three men.'

b. Neil-wa on'na-o hutari aisita.
   TOP women-ACC 2 (NQ) loved
   'Neil loved two women.'

c. *Gail-wa ayasii otoko-ni sannin obie-ta.
   TOP strange men-DAT 3 (NQ) get frightened-PAST
   'Gail got frightened by two strange men.'

d. *Paul-wa seito-ni hutari gekido-sita
   TOP students-DAT 2 (NQ) got furious
   'Paul got furious at two students.'

Since the sentences with O-psych-verbs are grammatical with a numeral quantifier as in (9a) and (9b), the *o*-marked object of psych-verbs is a Case marked NP, as expected. On the other hand, the sentences with NI-psych-verbs are ungrammatical with a numeral quantifier as in (9c) and (9d). The *ni*-marked NP of psych-verbs is a NP within a PP. Therefore the *ni* particle that appears with the object NP of NI-psych-verbs is considered to be a postposition, and the *ni*-marked object is optional. (Henceforce, the particle *ni* of the *ni*-marked object will be glossed as NI, not as DAT.)

To sum up, O-psych-verbs take two arguments: the experiencer for subject and the target of emotion for *o*-marked object. NI-psych-verbs optionally take a *ni*-marked object which refers to the stimulus of emotion.

2. NI-psych-verbs and unaccusativity/unergativity

In this section, I will examine exclusively NI-psych-verbs in terms of the unaccusative/unergative distinction. Since diagnostic tests for the unaccusative/unergative distinction do not always clearly classify verbs. I will show only four tests where the results are very clear: the light verb *-suru* construction and the causative-passive construction as a syntactic diagnostic test; and the causative construction and the aspect marker *-te/de-iru* as a semantic diagnostic test. The results are very clear, but are not consistent across all the tests. The NI-psych-verbs exhibit both unaccusative and unergative behavior.

I will introduce the constructions of the light verb *-suru* with a verbal noun such as *ryokoo*:
10a. Gail-ga New Zealand-e ryokoo-sita
    NOM to traveling-SURU-PAST
    'Gail took a trip to New Zealand.'

b. Gail-ga New Zealand-e ryokoo-o sita
    NOM to traveling-ACC SURU-PAST
    'Gail took a trip to New Zealand.'

The verb -suru as a light verb has an empty argument structure in its lexical entry, but has the ability to assign accusative Case (Grimshaw and Mester 1988). On the other hand, the verbal noun ryokoo has the agent and goal roles. In (10a), the verbal noun ryokoo is incorporated into the light verb -suru. In (10b), the theta roles of the verbal noun ryokoo are transferred to the light verb, and in this case the verbal noun can be assigned accusative Case by the light verb According to Miyagawa (1989) and Tsujimura (1990), when verbal nouns are unaccusative such as syoosin and gyooko, they are not assigned accusative Case:

    NOM manager-to promotion (*ACC) SURU-PAST
    'Paul was prompted to manager'

b. Mayonnezu ga gyooko (*o) sita
    mayonnaise-NOM solidification (*ACC) SURU-PAST
    'The mayonnaise solidified.'

Unaccusative verbal nouns do not have an external argument. According to Burzio's Generalization (Burzio 1986), if a given verb does not have an external argument, it will not assign accusative Case to its object. Therefore, in the construction of the light verb -suru with unaccusative verbal nouns, the unaccusative verbal nouns are not assigned accusative Case by the light verb.

I will take accusative Case assignment in the light verb construction as a syntactic diagnostic test for unaccusativity, since there are many psychological verbal nouns in Japanese. Some of them are shown below:

12. kohon 'excitement', situboo 'disappointment', dooyoo 'perturbation', gekido 'fury', kyootan 'surprise', kantan 'admiration', kyoki 'joy', rakutan 'discourage', kandoo 'impression', ansin 'relief'

None of these are marked by accusative Case in the light verb construction.

13. kohon (*o) suru, situboo (*o) suru, dooyoo (*o) suru, gekido (*o) suru, kyootan (*o) suru, kantan (*o) suru, kyoki (*o) suru, rakutan (*o) suru, kandoo (*o) suru, ansin (*o) suru

The verbs in (13) are the psych-verbs that optionally take a ni-marked object. Two examples from (13) are:
14a. Ruth-wa siken-no kekka-ni situboo-sita
   TOP exam-GEN result-NI disappointment-SURU-PAST
   'Ruth got disappointed by the result of the exam.'

b. Arisa-wa Hummingbird Center-deno baree-ni kando-sita.
   TOP at ballet-NI impression-SURU-PAST
   'Arisa was impressed by the ballet at Hummingbird Center.'

We can conclude that NI-psych-verbs in the light verb construction as in (13) are syntactically unaccusative, since the verbal nouns are not marked by accusative Case.

I will give another syntactic test for the NI-psych-verbs such as odorok-u and kurusim-u, which do not appear in the light verb construction. Japanese has a causative-passive construction, where -(s)ase-(r)are is suffixed to a verb stem. Although the syntactic structure of causative-passives has not been well discussed, one thing that can be said about this structure is that a subject of a transitive verb can be the subject of the causative-passive sentence as in (15b), but an object of a transitive verb cannot as in (15c) (cf. Kageyama 1993, Tsujimura 1996):

15a. Ruth-ga hon-o yom-ta.
   NOM book-ACC read-PAST
   'Ruth read a book.'

b. Ruth-ga hon-o yom-ase-rare-ta.
   NOM book-ACC read-CAUSE-PASSIVE-PAST
   'Ruth was made to read a book'.

c. *Hon-ga Ruth-ni(yottie) yom-ase-rare-ta
   book-NOM by read-CAUSE-PASSIVE-PAST
   'Somebody made the book be read by Ruth.'
   (*The book was made to read by Ruth.)

Let us consider two more causative-passive examples with intransitive verbs below:

16a. Ruth-ga utaw-ta.
   NOM sing-PAST
   'Ruth sang.'

b. Ruth-ga utaw-ase-rare-ta
   NOM sing-CAUSE-PASSIVE-PAST
   'Ruth was made to sing.'

17a. Hana-ga sak-ta.
   flower-NOM bloom-PAST
   'The flower bloomed.'
b *Hana-ga sak-ase-rare-ta
flower-NOM bloom-CAUSE-PASSIVE-PAST
'The flower was made to bloom.'

The causative-passive morpheme can be associated with unergative verbs such as *utaw- 'sing' in (16b), but not with unaccusative verbs such as sak- 'bloom' in (17b). Unergative verbs and transitive verbs have an external argument, while unaccusative verbs do not have an external argument. We can assume that NI-psycho-verbs do not have an external argument, if they do not undergo causative-passivation.

Contrary to the result of the light verb construction test, here it is concluded that the NI-psycho-verbs have an external argument, since they can undergo causative-passivation:

18a. Lillian-wa sono-situmon-ni urotae-ta.
    TOP that question-NI get bewildered-PAST
    'Lillian got bewildered.'

    b. Lillian-wa sono-situmon-ni urotae-sase-rare-ta
        TOP that question-NI get bewildered-CAUSE-PASSIVE-PAST
        'Lillian was made to get bewildered.'

    c. Lillian-wa tumi-no isiki-ni kurusim-ta
        TOP sin-GEN consciousness-NI suffer-PAST
        'Lillian suffered from the consciousness of a sin.'

    d. Lillian-wa tumi-no isiki-ni kurusim-ase-rare-ta
        TOP sin-GEN consciousness-NI suffer-CAUSE-PASSIVE-PAST
        'Lillian was made to suffer from the consciousness of a sin.'

NI-psycho-verbs in the light verb construction have been classified as unaccusatives. However, they are also associated with the causative-passive form:

19a. Ruth-wa sono-kyohoo-ni doyoo-sita
    TOP that bad news-NI perturbation-SURU-PAST
    'Ruth got perturbed by the bad news.'

    b. Ruth-wa sono-kyohoo-ni doyoo-sase-rare-ta
        TOP that bad news-NI perturbation-SURU-CAUSE-PASSIVE-PAST
        'Ruth was made to get perturbed by the bad news.'

From the test with the causative-passive construction, NI-psycho-verbs are considered to be unergative. This result is contradictory to the result from the test with the light verb construction.

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Some unaccusative verbs such as *wak- 'boil' and *oti-ru 'drop' do not causativize, and hence they do not have the causative-passive form.
What is needed next is an examination of the semantic characteristics of NI-psych-verbs. Agentivity and telicity are important semantic determinants of the unaccusative/ unergative distinction (Dowty 1991). It is assumed that a prototypical unergative verb will be an activity verb and have a volitional argument, and a prototypical unaccusative verb will be non-agentive and telic.

By using the causative construction I will test whether the experiencer subject of psych-verbs has volitionality. In the causative construction, the original subject of an intransitive verb which the causative morpheme -(s)ase suffixes to is marked by the accusative o or the dative ni. The choice of o entails that the causee, that is the original subject, is somehow forced to carry out an act, while ni entails that the causee has her or his own volition to carry out an act (Miyagawa 1989):

    patient-NOM walk-PAST
    'The patient walked.'

b. Isya-ga kanzya o/ni aruk-ase-ta.
    doctor-NOM patient ACC/DAT walk-CAUSE-PAST
    'The doctor made the patient to walk.'

Let us look at the causative sentences with NI-psych-verbs:

    NOM get bewilder-ED-PAST
    'Neil got bewildered.'

    exam-GEN result-NOM ACC/ *DAT get bewilder-ED-CAUSE-PAST
    'The result of the exam bewildered Neil.'

c. Arisa-ga odorok-ta.
    NOM get surprised-PAST
    'Arisa got surprised.'

d. Ootoo-ga Arisa o/ *ni odorok-ase-ta.
    brother-NOM ACC/ *DAT get surprised-ED-CAUSE-PAST
    'Arisa's brother surprised her.'

The original subject of NI-psych-verbs is marked by the accusative o, while the causative sentences are ungrammatical with the dative ni, as shown in (21b) and (21d). The experiencer subject of NI-psych-verbs does not show volitionality. Therefore, it is considered that NI-psych-verbs are non-agentive.

See also Tsujimura (1991). It is shown that the notions of inherent direction and lack of protagonist control are two significant semantic properties which point toward the characterization of unaccusativity.
The next diagnostic test for semantic unaccusativity is telicity of verbs under discussion. When the aspect marker -te/de-iru is suffixed to activity verbs such as hasir- 'run' and tabe- 'eat' as in (22), the construction denotes 'continuation' similarly to the English progressive form V-ing. Telic verbs such as sin- 'die' and kimer- 'decide', when formed with -te/de-iru as in (23), denote 'perfect', a state resulting from an event that has occurred at some prior time:

22a. Gail-wa kootei-o hasir-teiru.
   TOP school ground-on run-TEIRU
   'Gail is running on the school ground.'

b. Gail-wa gohan-o tabe-teiru
   TOP meal-ACC eat-TEIRU
   'Gail is eating the meal.'

    rat-NOM die-TEIRU
    'A rat is dead.'

   TOP at take part in COMP-DAT decide-TEIRU
   'Ruth has decided to take part in the speech contest.'

The preferred interpretation of an activity verb with -te/de-iru is progressive, but the perfect interpretation is also possible if an adverb such as moo 'already' is added to the context:

24a. Gail-wa moo 10-kiro hasir-teiru.
    TOP already kilometer run-TEIRU
    'Gail has already run 10 km.'

b. Gail-wa moo ohiru gohan-o tabe-teiru.
    TOP already lunch-ACC eat-TEIRU
    'Gail has already eaten her lunch.'

In the case of telic verbs, on the other hand, the progressive interpretation is not available with the -te/de-iru aspect marker. We can assume that if a verb formed with the aspect marker can allow the progressive interpretation, the verb is an activity verb.

The NI-psych-verbs formed with the aspect -te/de-iru can denote mental activity as shown below:

25a. Lillian-wa ikar-teiru.
    TOP get angry-TEIRU
    'Lillian is (being) angry.'
b. Paul-wa siken-no kekka-ni odorok-teiru.
   TOP exam-GEN result-NI get surprised-TEIRU
   'Paul is (being) surprised at the result of the exam.'

The construction also can denote a mental state resulting from a psychological event that has occurred at some prior time:

26. Ruth-wa kinoo-kara zutto gakkari-teiru
   TOP yesterday-from all the time get disappointed-TEIRU
   'Ruth has been disappointed since yesterday.'

Since the aspect marker -te/de-iru with NI-psych-verbs denotes the progressive interpretation, these verbs are considered to be activity verbs.

I will here summarize the results of the two syntactic tests and the two semantic tests for unaccusativity. The NI-psych-verbs in the light verb construction do not have an external argument. In the causative-passive construction, however, NI-psych-verbs are required to have an external argument. The syntactic position of the experiencer argument of NI-psych-verbs cannot be determined lexically. As a result of the Case marking exhibited by the causee in the causative construction, the experiencer argument of NI-psych-verbs is considered to be non-agentive. On the other hand, NI-psych-verbs are activity verbs as a result of the aspect marker test. NI-psych-verbs also cannot be classified as semantically unaccusative nor unergative. I will briefly discuss this issue in the next subsection.

2.1 A remark on the amphibious status of NI-psych-verbs

Japanese psych-verbs pose interesting questions for verb classification based on argument selection. NI-psych-verbs have amphibious characteristics of unaccusatives and unergatives. The unaccusativity/unergativity of NI-psych-verbs is not lexically determined. I assume that the information as to the syntactic position of the experiencer argument of these verbs is not contained in the lexical entries of these verbs.

According to Dowty's (1991) definitions of Proto-Agent and Proto-Patient, the distinction between them is not a discrete one determined by argument selection but rather one of degree. He speculates that among the Proto-Agent properties, volitionality is the most important for the unaccusative/unergative contrast, and among the Proto-Patient properties, whether or not a verb is telic is highly significant for the distinction. By using two entailments, agentivity and telicity, Dowty (1991: 607) gives four possible foci for a semantic boundary:

<table>
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<tr>
<th></th>
<th>Atelic</th>
<th>Telic</th>
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</thead>
<tbody>
<tr>
<td>Agentive</td>
<td>1 definitely unergative</td>
<td>2 ?</td>
</tr>
<tr>
<td>Non-agentive</td>
<td>3 ?</td>
<td>4 definitely unaccusative</td>
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</tbody>
</table>

The Japanese NI-psych-verbs, which are activity and non-agentive, belong to 3. If the most important distinction is between agentive and non-agentive, most verbs in 3 will be
unaccusative. If it is between telic and atelic, most verbs in 3 will be unergatives. Dowty speculate that the status of such verbs depends on which criterion a language takes as primary. Levin and Rappaport Hovav (1995) argue against this parametric variation between languages. In English, verbs of emission and the roll verbs are atelic and non-agentive. Based on the external/ internal causation and the Immediate Cause Linking Rule proposed by Levin and Rappaport Hovav (1995), however, verbs of emission belong to the unergative class, while the roll verbs belong to the unaccusative class.

Neither is the case for Japanese NI-psych-verbs, since it seems that NI-psych-verbs are lexically ambiguous between unaccusatives and unergatives without any syntactic and semantic context. Compare them with a verb such as run. The verb run by itself is unergative. When it takes the goal argument, it becomes unaccusative. However, NI-psych-verbs seem to be syntactically and semantically underspecified for verb classification. NI-psych-verbs have only one obligatory argument, experiencer. In the light verb construction, this argument of NI-psych-verbs is the internal one. On the other hand, NI-psych-verbs in the causative-passive construction are required to have an external argument. From these observations we can conclude that the lexical entries of NI-psych-verbs do not contain the information as to the syntactic position of this single argument. As shown above, thematically this single argument of NI-psych-verbs is also ambiguous between agent and patient, although we call it experiencer. In the causative construction, the experiencer argument does not exhibit volitionality, and hence it behaves like an patient. However, the experiencer argument can be an agent since NI-psych-verbs can denote activity events.

Cummins (1996) claims that in the unmarked case the lexical entry of a verb does not distinguish internal and external arguments structurally. NI-psych-verbs provide a good example for her assumption. NI-psych-verbs are also strong evidence for the Free Linking Hypothesis (Ghomeshi and Massam 1994) and the aspectually based event-structure model (Tenny 1994, Rosen 1996). They assume that arguments are not mapped from the lexicon by thematic principles. Although further studies are needed on this point, I will not pursue it further here.

3. Causativization and inversions of two thematic roles

In this section, I will explain causativization of Japanese psych-verbs, and claim that there are two ways of adding the cause role to the event denoted by a NI-psych-verb. The O-psych-verbs correspond to stative psych-verbs such as fear and like in terms of argument structure. However, there are no non-derived causative psych-verbs corresponding to the verbs such as please and annoy. I will discuss the fact that, to make a causative psych-verb, the causative morpheme -(s)ase suffixes to the stem of NI-psych-verbs, and not to the stem of O-psych-verbs. In previous studies of Japanese psych-verbs, the verb yorokob- 'rejoice' and its causative form yorokob-ase- 'please' have often been used, and have been compared with experiencer-theme inversions in English as in (1). I will show that the verb yorokob- is an exceptional psych-verb in Japanese in its Case marking properties, and hence it is not appropriate to use this verb as a typical psych-verb exhibiting the mirror image pattern.

Causativization is an operation that adds the cause argument to the event denoted by a verb. In the causative construction, the causee, the original subject of the verb, can be marked by the accusative o or the dative ni, as explained in Section 2. In the case of transitive verbs, the
original subject of transitive verbs can appear only with the dative \textit{ni} since a surface structure constraint in Japanese prohibits two occurrence of \textit{o} in a sentence. The experiencer subject of \textit{O}-psych-verbs such as \textit{kiraw}- 'hate' and \textit{urayam}- 'envy' cannot be marked by the dative \textit{ni}, i.e. they cannot be causativized:

\quad TOP\quad ACC\quad hate-PAST
\quad 'Ruth hated John.'

b. *John-no taido-ga Ruth-ni John-o kiraw-ase-ta
\quad GEN\quad behaviors-NOM\quad DAT\quad ACC\quad hate-CAUSE-PAST
\quad 'John's behaviors made Ruth hate him.'

28a. Ruth-wa Angela-o urayam-ta.
\quad TOP\quad ACC\quad envy-PAST
\quad 'Ruth envied Angela.'

b. *[Angela-ga siken-ni ukatta koto-ga] Ruth-ni kanozyo-o urayam-ase-ta
\quad NOM\quad exam-DAT\quad passed\quad COMP-NOM\quad DAT\quad her\quad envy-CAUSE-PAST
\quad 'That Angela passed the exam made Ruth envy her.'

The experiencer argument of NI-psych-verbs, as shown in Section 2, is marked only by the accusative \textit{o} in the causative construction:

\quad children-NOM\quad get frightened-PAST
\quad 'The children got frightened.'

b. Koomori-no nakigoe-ga kodomo-o/ \textit{ni} obie-sase-ta
\quad bat-GEN\quad cry-NOM\quad children-ACC/\textit{ni}\quad get frightened-CAUSE-PAST
\quad 'Cries of bats frightened the children.'

Notice that NI-psych-verbs can optionally take the stimulus of emotion as a \textit{ni}-marked object. The stimulus of emotion is an entity which causes the experiencer to experience a psychological state. What we have called the \textit{ni}-marked NP is in fact the cause role. The optional selection of a \textit{ni}-marked object is another way of adding the cause argument to the NI-psych-verbs:

\quad children-NOM\quad bat-GEN\quad cry-NI\quad get frightened-PAST
\quad 'The children got frightened by cries of bats.'

(29b) and (30) seem to exhibit the similar mirror image phenomenon as the two English sentences in (1). Various syntactic analyses have treated the thematic role assignment in these
examples, although none of them can apply to the Japanese case. Here I will repeat the sentences (1), and (29b) and (30) for convenience:

31a. (=1a)  [The children] liked [the dollar shops].
            Experiencer          Theme

31b (=1b)  [The dollar shops] pleased [the children].
            Theme                 Experiencer

32a. (=30) [Kodomo-ga] [koomori-no nakigoe]-ni obieta.
            Experiencer          Cause

b (=29b)  [Koomori-no nakigoe-ga] [kodomo-o] obie-sase-ta
            Cause                Experiencer

In the unaccusative analyses (Belletti and Rizzi 1988, Grimshaw 1990), the causative psych-verbs such as *please in (31b) have two internal arguments without an external one, while the stative psych-verbs such as *like in (31a) have the regular transitive structure. In (32b), however, the cause role added to the original argument structure through a causativization process is the external argument. The sentence (32a), on the other hand, has the intransitive structure with the optional cause role.

Backward binding (cf. Akatsuka 1976, Belletti and Rizzi 1988, Pesetsky 1995), where the object binds an anaphor contained in the subject as in (33a) and (33b), is one of the important syntactic peculiarities of psych-verbs:

33a. Pictures of herself,*pleased Ruth,

b Each other,’s stories annoyed [Paul and Gail],

c. *Each other,’s friends hit [Paul and Gail],

The unaccusative analyses account for this phenomenon under the assumption that Binding Principle A is an anywhere principle (Belletti and Rizzi 1988). In Japanese, backward binding is licensed by the causative morpheme -*wazato or (if the sentence is non-agentive), and not by the fact that the sentence contains a psych-verb (cf. Akatsuka 1976, Fujita 1993). Therefore, non-psych-verbs such as *waraw- as in (34b) as well as psych-verbs such as *nayam- as in (34a) allow backward binding:

             self GEN bad-students NOM Yamada-teacher ACC (intentionally) worry-PAST
             ‘Lit Self’s bad students (*intentionally) worried Professor Yamada.’

b Zibun, no kodomo-ga Yoshiko-o (*wazato) waraw-ase-ta.
             self GEN child NOM Yoshiko ACC laugh-cause-PAST
             ‘Lit. Self’s child (*intentionally) made Yoshiko laugh.’

(Fujita 1993)
It is not plausible that the cause role of causative psych-verbs is an internal argument, even if we assume that Japanese causative psych-verbs are lexical.

It is very important to notice, before discussing Pesetsky's (1995) analysis of psych-verbs, that the verb *yorokob-* 'rejoice,' and *nagek/- kanasim-* 'grieve' can take either an *o*-marked object or a *ni*-marked object. These verbs are causativized in the same way as NI-psych-verbs and they exhibit the mirror image phenomenon:

35a. Angela-wa sono sirase-o/ni yorokob-ta.
    TOP that news-ACC/NI rejoice-PAST
    'Angela rejoiced that news.'

b. Sono sirase-ga Angela-o yorokob-ase-ta.
    that news-NOM ACC rejoice-CAUSE-PAST
    That news pleased Angela

c. Angela-ga sono kyohoo-o/ni nagek-ta/ kanasim-ta.
    NOM that bad news-ACC/NI grieve-PAST
    'Angela grieved at that bad news.'

d. Sono kyohoo-ga Angela-o nagek-ase-ta/ kanasim-ase-ta
    that bad news-NOM ACC grieve-CAUSE-PAST
    'That bad news grieved Angela.'

Psych-verbs that take only the *o*-marked object cannot be causativized as shown in (27) and (28), nor can they exhibit the mirror image pattern:

36a. Ruth-wa zyazu-o konom-ta
    TOP jazz-ACC like-PAST
    'Ruth liked jazz.'

    jazz-NOM ACC like-CAUSE-PAST
    'Jazz pleased Ruth'

37a. Gerry-wa kanemoti-o urayam-ta.
    TOP the rich-ACC envy-PAST
    'Gerry envied the rich.'

    the rich-NOM ACC envy-CAUSE-PAST
    'The rich made Gerry envious.'

We can assume that a psych-verb that has the ability to take a *ni*-marked object can be causativized, and can show the mirror image pattern. There is one counter example to it in my

Some native-speakers consider that the *ni*-marked object with *nagek-u/ kanasim-u* is a little strange
mind. The verb *tanosim-u* can take only an *o*-marked object, but it is causativized and exhibits the mirror image phenomenon:

38a. Arisa-wa dansu-o/*ni* tanosim-ta.
    TOP dance-ACC/ *NI enjoy-PAST
    'Arisa enjoyed dance'

b Dansu-ga Ariso-o tanosim-ase-ta.
    dance-NOM ACC enjoy-CAUSE-PAST
    'Dance amused Arisa. '

Pesetsky (1995) bases his analysis on the Japanese morphologically complex causative psych-verbs. Using the numeral quantifier test, he claims that these verbs are not unaccusative. As explained in Section 1, a numeral quantifier and its host NP must c-command each other. According to Miyagawa (1988), since the subject NP of unaccusative verbs is moved from the D-Structure object position, its trace and the NQ satisfy the mutual c-command condition.9

39a. Rokka-ga [\[\text{vp kono kagi-de t, hutatu ak-ta}.\]]
    locker-NOM this key-with 2 (NQ) open-PAST
    'Two lockers opened with this key.'

b. Kyaku-ga [\[\text{vp hoteru-ni t, sanin tuk-ta}.\]]
    guests-NOM hotel-at 3 (NQ) arrive-PAST
    'Three guests arrived at the hotel.'

c. *[Tanossii koto]-ga Gail-o 3-tu yorokob-ase-ta.
    enjoyable things-NOM ACC 3 (NQ) be pleased-CAUSE-PAST
    'Three enjoyable things pleased Gail.'

The sentences (39a) and (39b) are grammatical, since the NP trace and the NQ mutually c-command each other. In (39c), the sentence with a bimorphemic causative psych-verb *yorokob-ase*- fails in this test, so that the verb is not unaccusative.

Pesetsky also points out that periphrastic causative construction with *make* shows backward binding:

40a. Each other’s remarks made John and Mary angry.
    b Pictures of each other make us happy.
    c. Those rumors about himself made John and behave more carefully
    d. *Each other’s stupid friends eventually killed John and Mary.

(Pesetsky 1995)

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9 The numeral quantifier is also used as a syntactic diagnostic test for unaccusativity. Since judgments of the sentences with a numeral quantifier whose host NP is the intransitive subject are often problematic, I did not use this test for unaccusativity in Section 2.
The verb *make* does not have the unaccusative structure that Belletti and Rizzi propose for the psych-verbs. Therefore, he assumes that causative psych-verbs such as *annoy* are not unaccusative. In this respect, he is right, since the cause role of the causative construction cannot be the internal argument. He postulates that the phonologically null causative morpheme is attached to causative psych-verbs such as *annoy*. To save the UTAH, he claims that the theme role in (31a) and the theme role in (31b) are different theta roles. He names the theme in the object position as in (31a), the object of emotion, and the theme in the subject position as in (31b), the causer. He assumes that the theta assignment for psych-predicates is made on the basis of the hierarchy, where the highest argument is mapped onto the highest D-Structure position in its clause:

41. causer > experiencer > object of emotion

Where his analysis fails is in the fact that he does not distinguish NI-psych-verbs from O-psych-verbs. The data he uses from Akatsu's (1976) are the verbs that can take either *o*- or *ni*- marked object such as *yorokob-u, kanasim-u, nagek-u*, and the exceptional verb *tanosim-u*. He considers that the causative morpheme is attached to O-psych-verbs. Therefore, he must encounter the problem of why the causer and the object of emotion cannot cooccur with the same predicate, in spite of the fact that they are two distinct theta roles. As explained above, the causative morpheme *-(s)ase* is attached to NI-psych-verbs, but not to O-psych-verbs. NI-psych-verbs take the cause role as an optional argument, while O-psych-verbs take the target of emotion as an obligatory argument.

I have argued that two structures describing psychological events that are often considered to exhibit inversions of two thematic roles do not pose any problem for mapping in Japanese. In one structure, the cause role, rather than the theme role, is adjoined to the VP node of a NI-psych-verb. In the other, the cause role is added to the event denoted by the NI-psych-verb as an external subject through the causativization process. O-psych-verbs do not exhibit any inversion of the two thematic roles.

4. Conclusion

The goal of this paper is to clarify the characteristics of basic Japanese psych-verbs with experiencer subjects. I have shown that there are two types of psych-verbs: O-psych-verbs obligatorily take an *o*-marked object, and NI-psych-verbs optionally take the cause argument. It has been shown that NI-psych-verbs have amphibious status between unaccusatives and unergatives syntactically and semantically. The unaccusativity/ unergativity of NI-psych-verbs is not lexically determined. I assume that the information as to the syntactic position of the single argument of these verbs is not contained in the lexical entries of these verbs. I have claimed that the causative morpheme *-(s)ase* is attached to the NI-psych-verbs, and not to the O-psych-verbs, and hence only NI-psych-verbs exhibit inversions of thematic roles. The verb *yorokob-* is ambiguous between NI- and O- psych-verbs. In this respect, the verb is an exceptional psych-verb, and should not be used as a typical Japanese psych-verb. The analyses of experiencer-theme inversions that have been discussed in the literature cannot apply to
Japanese psych-verbs, since Japanese has two different ways of adding the cause role to the event denoted by NI-psych-verbs.

References


