MODALITY AND A CASE MARKING CONSTRAINT IN JAPANESE POTENTIAL CONSTRUCTIONS*

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1. Introduction

Japanese potential constructions (PCs) are derived with potential morpheme (PM) *-e* or *-(ra)re* attached to the verb, as exemplified in (1a, b).[1, 2]

(1) a. Taroo-wa huransugo{-o/ -ga} hanas-*e* ru.
Taro-Top French{-Acc/ -Nom} speak-PM Pres
'Taro can speak French.'

b. Hanako-wa nattoo{-o/ -ga} tabe-*(ra)re* ru.
Hanako-Top natto{-Acc/ -Nom} eat-PM Pres
'Hanako can eat natto.'

The object of a PC is marked either with accusative *-o* or nominative *-ga* (*o-ga* alternation). Henceforth I call the former type of PCs *o*-PCs and the latter type *ga*-PCs.

O-ga alternation is observed as well when a PC is past tensed. Either *o-* or *ga* -case is acceptable in (2a, b).

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* This is a refined version of Kobayashi (2009a). In this paper I tie up several theoretical loose ends of Kobayashi (2009a) (mainly relevant in sections 4 and 5) and add new pieces of supporting evidence (in sections 6 and 7). An earlier idea of this paper was presented at the poster session of ELSJ 4th International Spring Forum 2011 held at Shizuoka University, Hamamatsu Campus on April 24, 2011. I am indebted to the audience there for their invaluable comments and discussions. Thanks are also due to the informants of the data discussed in this paper, and to Cody Riedel for stylistic improvements. Needless to say, all remaining inadequacies are my own.

[1] *-e* attaches to a verb whose stem ends in a consonant as in (1a). *-Rare* or *-re* attaches to a verb that ends in a vowel as in (1b). The latter form is more colloquial.

[2] The following abbreviations are used in the glosses of examples cited in this article: Acc (Accusative), Dat (Dative), Gen (Genitive), Indet (Indeterminate word), Loc (Locative), M (Modal), Neg (Negative), Nom (Nominative), Top (Topic), Pass (Passive), Perf (Perfect), Pres (Present), Prg (Progressive), Pst (Past), Q (Question marker).

(2) a. Taroo-wa kodomo-no koro huransugo{-o/ -ga} hanas-e ta.
Taro-Top child-Gen time French{-Acc/ -Nom} speak-PM Pst
'Taro could speak French when he was a child.'

b. Hanako-wa kodomo-no koro nattoo{-o/ -ga} tabe-(ra)re ta.
Hanako-Top child-Gen time natto{-Acc/ -Nom} eat-PM Pst
'Hanako could eat natto when she was a child.'

The sentences above indicate that past tense morpheme *-ta* does not affect case frames.

There is a fact that has been unnoticed in the literature concerning case marking on the object in PCs.[3] Consider (3a, b), which are minimally different from (2a, b). Out of 27 native Japanese speakers who I consulted (mostly non-linguists), 14 of them sensed a degradation in grammaticality in the *o*-PCs in (3).

(3) a. (The speaker sees Taro speaking French and recognizes his ability for the first time;)
Are, Taroo-wa huransugo{??-o/ -ga} hanas-e *ta* none.
Oh Taro-Top French{-Acc/ -Nom} speak-PM *ta* M[4]
'Oh, (I didn't know) Taro can speak French.'

b. (The speaker gets surprised to see Hanako eating fermented soybeans;)
Uwa, Hanako-wa nattoo{??-o/ -ga} tabe-(ra)re *ta* nda.
eek, Hanako-Top natto{-Acc/ -Nom} eat-PM *ta* M
'Eek, (I didn't know) Hanako can eat natto.'

Notice that *-ta* in (3a, b) does not refer to past time. The speaker talks about the present ability/possibility. Of its several nonpast usages, *-ta* as in (3) is called

[3] It has been noticed that in some situations one case is favored over the other. To take one, Makino (1978, 1996) observes that only *ga*-marking is acceptable when the denoted possibility is actualized without the subject's conscious effort, as exemplified by (i).

(i)Sidaini Taroo-wa Morzart{*???-o/ -ga} hik-e ru yooninat ta.
gradually Taro-Top Mozart{-Acc/ -Nom} play-PM Pres become Pst
'Gradually Taro came to be able to play a Morzart.' (Makino (1978: 194))

Sidaini 'gradually' implies that the ability was achieved in the natural course of events. *O*-marking on the object is disfavored in non-volitional PCs like this. See Kuno (1973), Shibatani (1978), Irie (1991) and Aoki (2008) for other constraints.

[4] Japanese has a variety of modal particles, and they can be combined agglutinatively. Since they are not of the present paper's concern, all such particles (or, combinations of particles) are uniformly dubbed 'M' in the gloss.

hakken-no -ta '*-ta* of discovery'. It expresses "the speaker's surprise, when finding […] something" (Nishiguchi (2006: 152)). In (3a), the speaker, who has been unaware of Taro's linguistic ability, sees Taro speaking French and becomes aware of it. The use of *-ta* in this context is optional, but preferable when the speaker wants to express his/her surprise at the new discovery. The same holds for (3b). From the contrast between (2a, b) and (3a, b), it seems that a certain group of native Japanese speakers bears the following constraint:

(4) *-Ta* of discovery is compatible only with *ga*-PCs.

Several other PCs that exemplify (4) are given below:

(5) a. Nanto, kimi-wa whiskey{??-o/ -ga} nom-e *ta* no.
hey you-Top whiskey{-Acc/-Nom} drink-PM *ta* M
'Hey, (I didn't know) you can drink whiskey.'

b. Huun, Hanako-wa enka{??-o/ -ga} utaw-e *ta* nda.
hmm, Hanako-Top enka.songs{-Acc/-Nom} sing-PM *ta* M
'Hmm, (I didn't know) Hanako can sing enka songs.'

c. Are, John-wa hasi{??-o/ -ga} tukaw-e *ta* ndane.
oh John-Top chopstick{-Acc/-Nom} use-PM *ta* M
'Oh, (I didn't know) John can use chopsticks.'

The aim of this paper is to account for why (4) is the case. Admittedly, some native speakers do not sense any difference in acceptability between *o*-PCs and *ga* -PCs in (3) and (5). The following analysis holds only for those who sense deviance in *o*-PCs with *-ta* of discovery. I briefly consider the reason for the discrepancy in judgment between speakers later in the discussion (section 5).

The organization of this paper is as follows. In section 2 I present that *-ta* of discovery selects [+stative] phrases. Then it is suggested that *ga*-PCs are [+stative] in section 3, and that *o*-PCs are [-stative] in section 4. In section 5 I explain how (4) follows. Predictions and implications obtained from the suggested analysis are examined in sections 6 and 7. Section 8 is a conclusion.

2. *-Ta* of Discovery and a Stativity Constraint

It is well known that *-ta* does not always refer to past time. Researchers have presented various usages of nonpast *-ta*. They seem to agree that nonpast *-ta* is

a kind of modal, but the classifications are more or less different among them (cf. Mikami (1953 [1972]), Kunihiro (1967), Teramura (1984), Kudo (2001), Sadanobu (2004)). The following is a classification provided by Masuoka (2000):

(6) a. Aa, konna tokoro-ni at *ta*. [Discovery]
ah, like.this place-Loc be *ta*
'Ah, (I didn't know) it is here.'

b. Sooda, asu-wa yasumi dat *ta*. [Reminiscence]
oh tomorrow-Top holiday be *ta*
'Oh, (I remember) it is a holiday tomorrow.'

c. Kimi-wa tasika Okayama-no syussin dat *ta* ne. [Confirmation]
you-Top I.believe Okayama-Gen origin be *ta* M
'You are, I believe, from Okayama, right?'

d. Saa, it *ta*, it *ta*. [Imperative]
now go *ta* go *ta*
'You go now.'

e. Hayaku kaet *ta* hoo-ga ii yo. [Subjunctive]
soon go.home *ta* way-Nom good M
'You had better go home soon.'

f. Boku-ni zaisan-ga at *ta* nara, nandemo katte age rareru noni. [Counterfactual]
me-Dat fortune-Nom be *ta* if, anything buy give PM M
'If I had a fortune, I could buy anything for you.'(Masuoka (2000: 23))

Every sentence in (6) describes a nonpast situation. The situation that the speaker sees ((6a)), recalls ((6b)), or wants to confirm ((6c)) exists either at the speech time (S) or after S. The situations described in (6d-f) are expectations held by the speaker, who wants them to appear at S or after S. *-Ta*'s in these sentences hence do not express past time, but the speaker's attitude towards the described situations.

In the discussion below I focus on *-ta* of (6a) type, i.e. *-ta* of discovery. Inoue (2001) explains the meaning of *-ta* of discovery as follows:

(7) *-Ta* of discovery puts a denoted state p at a time immediately before S as

if it were distinct from the same state p that exists at S, by which it is implied that the speaker observed p at that time.

(Inoue (2001: 145), my translation)

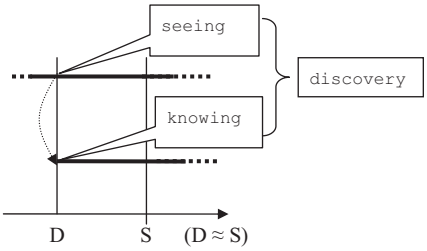
Take (6a) for example. Suppose that the speaker has been searching a room for a key and finally finds it under the table. The key must have been there for some time and it is there at S as well. The speaker can describe the situation in present tense since the key is there now. But by using *-ta*, s/he describes the situation as what existed at a time immediately before S. In this way the speaker hints that s/he has just noticed that the key is there. I call the time in which the speaker recognizes the denoted situation the *discovery time* (D) henceforth. Inoue claims that D can precede S only instantaneously. Maybe that is because *-ta* can have a discovery meaning only when we are sure that the situation must be the same at D and at S. Since situations may change in a course of time, we can be sure only when D and S are almost the same.[5]

To put it differently, the denoted situation is not in the speaker's cognitive world until D. *-Ta* indicates that the speaker gets the idea in his/her mind at D. I illustrate the relation between the denoted situation p in the outer world and p in the speaker's inner world as follows:

(8) p = [[the key is here]]

In the outer world:

In the speaker's cognition:



The arrow in the bottom expresses the flow of time. The thick solid lines express that p exists at that point of time. The broken parts mean that it is unknown (or irrelevant) whether p exists or not. In (8) p exists in the outer world for some time, but the speaker finds p for the first time by observing p at D. P then comes to exist as a fact in the speaker's mind. (Before D, the speaker may either have no idea of p, be unsure if p is true or not, or believe that p is false.) This seeing-

[5] I modify this idea in section 7.3. To be precise, D should be related to R (reference time), not to S.

knowing process makes up a discovery. When we are sure that p holds at S as well, the use of *-ta* signals the existence of a discovery time, by which the speaker conveys p as his/her new finding.

With this in mind, observe (3a, b) again. The discovery meaning of these examples is explained in the same line. In (3a), Taro's linguistic ability exists in the outer world, but the speaker has been unaware of it. *-Ta* signals the existence of the discovery time (D), at which the speaker discovers Taro's ability. A similar explanation holds for (3b). *-Ta* is used to express the time when the speaker gets surprised to see Hanako eating natto. Hence *-ta*'s in (3a, b) should be considered *-ta* of discovery.

Let us now consider a semantic constraint on *-ta* of discovery. It is well known that *-ta* of discovery appears only in [+stative] sentences (cf. Kamitani (1979), Iwasaki (2000), Masuoka (2000), Morita (2002), Kudo (2001)).[6,7] The sentences in (9) show that *-ta* of discovery can occur with [+stative] predicates of various types.

(9) a. A, at *ta*. (Masuoka (2000: 24))

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[6] Sadanobu (2004: 28) argues against this view, providing (i) as a counterexample.

(i) (The speaker sees the baby start smiling;)
A, warat *ta*.
ah, smile *ta*
'Ah, s/he started smiling.'

Sentence (i) can be used when the baby is smiling at S. Sadanobu maintains that *-ta* in this example expresses a discovery, and hence *-ta* of discovery can appear in [-stative] sentences as well. A similar remark is also found in Nishiguchi (2006).

A close inspection of (i), however, reveals that *-ta* in this example should not be regarded as *-ta* of discovery. As Inoue (2001) notes, the speaker of (i) does not talk about his/her new finding, but the *change* into a new situation. Namely, what is asserted is not the progressive state of smiling but the baby's change from not-smiling to smiling. Nishiguchi (2006: 155) provides an English translation of (i): "Oh, (the baby) is smiling." However, this is not an accurate translation. Suppose that the baby is smiling when the speaker enters a room. S/he sees the progressive state of the baby's smiling but not the inceptive point of the state. In this context, the speaker cannot say as in (i). *-Ta* in (i) signals that the speaker has seen the inceptive point of a new situation. Since the inceptive point is prior to S, there is no reason to regard *-ta* as something other than a past tense marker. See Masuoka (2000: 28-29) for a similar discussion.

[7] *-Ta* of reminiscence as in (6b) is subject to the same constraint, which I discuss in section 6.2.

oh, be *ta*

'Oh, here it is.'

b. Ara, atama-ga itakat *ta* ndesuka. (Kudo (2001: 21))
oh head-Nom sore *ta* M
'Oh, (I didn't know) you have got a headache.'

c. Are, ame-ga hut tei *ta* noka. (Ibid.)
oh, rain-Nom fall Prg *ta* M
'Oh, (I didn't know) it is raining.'

d. Nanda, konnna tokoro-de oyatu-o tabe tei *ta* noka.
oh like.this place-Loc snack-Acc eat Prg *ta* M
'Oh, (I didn't know) you are here eating snacks.'

The bases to which *-ta* attaches are underlined for ease of discussion. Obviously they are all [+stative]. The base is a copular in (9a), and an adjective in (9b). In (9c, d) the base is headed by progressive/resultative aspect morpheme *-tei*, which makes the aspect of the V-complex [+stative] (cf. Nihongo Kizyutu Bunpô Kenkyûkai (ed.) (2007: 27)).

When *-ta* appears in [-stative] sentences, on the other hand, it can never have a discovery meaning. The following examples are adapted from Kudo (2001: 45):

(10) a. Kono hon nara tyuugaku-no toki-ni yon *da*.[8]
this book if junior high-Gen time-Loc read *ta*
'{I/he/she/we/they} read this book in junior high.'

b. Kono hon nara moo yon *da*.
this book if already read *ta*
'{I/he/she/we/they} have/has already read this book.'

Kudo (2001) observes that *-ta* expresses either a simple past or a perfect meaning if it appears in [-stative] sentences. The sentences in (10a, b) never have an implication that the speaker is conveying a new finding of his/hers.

From the contrast between (9) and (10), it seems that *-ta* of discovery bears the following selectional constraint:[9]

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[8] *-da* is an allomorph of *-ta*, which appears when the underlying form of a verb stem ends with /n/, /m/, /b/ or /g/. *-Da* appears in (10a, b) since the stem verb *yom* 'read' ends with /m/.

(11) *-Ta* of discovery selects a [+stative] phrase.

Why is (11) the case, then? According to Sadanobu (2004), it is because the discovery time (D) is instantaneous:

(12) Microsearches occur instantaneously, and we do not get so much information from one instance of microsearch. When the speaker sees something at a moment immediately before S, s/he can get only basic information about it through the microsearch. […] The grammatical constraint [(11)] reflects this cognitive restriction. (Sadanobu (2004: 23), my translation)

"Microsearch" in (12) may correspond to the seeing-and-knowing process shown in (8). The process must be instantaneous. Hence the speaker can discover only what s/he can discover instantaneously. Such "basic" information can only be stative: something/someone x is somewhere, x has some characteristic, or x is in some state. In contrast, durative actions cannot be discovered instantaneously since they take time. (Progressive state of a durative action can be discovered instantaneously, as in (9c, d).) An achievement may be discovered instantaneously, but the achievement at D no longer exists at S since the achievement itself is instantaneous. Hence *-ta* in an achievement sentence receives a past interpretation. Consequently, *-ta* of discovery appears only in [+stative] sentences.[10]

From the discussion so far, we have identified the following two constraints.

(13) a. *-Ta* of discovery is compatible only with *ga*-PCs. (=(4))

b. *-Ta* of discovery selects a [+stative] phrase. (=(11))

In the rest of this paper it will be shown how they are related. To achieve this goal, we need a better understanding of the syntax of *ga*-PCs and *o*-PCs, which will be the topic in the following two sections.

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[9] Speaking precisely, (11) is not a constraint but a description of when the meaning of *-ta* of discovery matches with that of the phrase it has selected. This is along the line with Chomsky (2004), according to which "theta theoretic failures at the interface do not cause the derivation to crash; such structures yield "deviant" interpretations of a great many kinds" (p. 111). For the sake of simplicity, this paper treats (11) as a selectional constraint.

[10] This is not Sadanobu's conclusion. He states as in (12) to explain why *-ta* of discovery *typically* appears in [+stative] sentences. In his opinion *-ta* of discovery can appear in [-stative] sentences as well. See footnote 6 for a relevant discussion.

3. *Ga*-PCs Are [+Stative].

It has often been claimed that *o*-PCs and *ga*-PCs have different syntactic structures. In this section I present an analysis of *ga*-PCs. First, it is suggested, following Takano (2003), that aboutness predication is involved in *ga*-PCs (§3.1). Next, I consider two other constructions involving aboutness predicates. Observing the relevant data, it is induced that aboutness predicates must be [+stative] (§3.2). From the discussion in sections 3.1 and 3.2 it is concluded that *ga*-PCs are [+stative] (§3.3).

3.1. *Ga*-PCs and Aboutness Predication

Since Tada (1992) it has commonly been assumed that the *ga*-marked object occupies a syntactic position higher than the *o*-marked object. Evidence comes from the scope relation between the object quantifier and PM as exemplified in (14a, b).

(14) a. Taroo-wa migime-dake-*o* tumur-e ru.
Taro-Top right.eye-only-Acc close-PM Pres
'Taro can only close his right eye.'
(i) can > only (Taro can wink his right eye.)
(ii) ?* only >can (It is only his right eye that Taro can close.)

b. Taroo-wa migime-dake-*ga* tumur-e ru.
Taro-Top right.eye-only-Nom close-PM Pres
'Taro can only close his right eye.'
(i) * can > only, (ii) only > can (Tada (1992: 94))

In (14a) the *o*-marked object must be interpreted within the scope of PM, while in (14b) the *ga*-marked object must have scope over PM. Given that scope relation between the two syntactic objects reflects their structural relation, the *o*-object should occupy a position lower than PM, and the *ga*-object a position higher than PM.

Here arises a question concerning the *ga*-marked object. Since it is an internal argument of the base verb, it should also occupy COMP of V, which is lower than PM. How are the two positions related? Tada (1992) proposes a movement analysis. Under his analysis, (14a) and (14b) have the structures (15a) and (15b),

respectively.

(15) a. [Taroo-wa [$_{VP2}$ [$_{AGRoP}$ migime-dake-o_i [$_{VP1}$ t_i tumur] AGRo] e] ru]

b. [Taroo-wa [$_{AGRoP}$ migime-dake-ga_i [$_{VP2}$ [$_{VP1}$ t_i tumur] e] AGRo] ru]

The c-command (i.e. scope) domain of PM *-e* (V2) is shadowed for ease of discussion. PM as well as the base verb (V1) constitutes a VP. AGRoP appears either between VP1 and VP2 as in (15a) or above the two VPs as in (15b). The object, base-generated in COMP of V1, moves to SPEC of AGRo to receive Case. In (15a) the object is assigned accusative Case from AGRo-V1. Since SPEC of AGRo is within the scope of PM, the *o*-marked object receives a narrow scope interpretation. In (15b), the object receives Case from AGRo-V2. Since V2 is [+stative], the object is assigned nominative Case. Being outside the domain of PM, the *ga*-marked object receives a wide scope interpretation.

Apparently this analysis is simple and attractive, but not without problems. To point out one, which has been mentioned by several researchers (e.g. Takano (2003), Saito and Hoshi (1998)), Case movement usually allows reconstruction. The derived subject in (16), for example, can take either wide or narrow scope.

(16) Some politician$_i$ is likely [e]$_i$ to address John's constituency.

(i) some > likely, (ii) likely > some (Takano (2003: 784))

If the object in (14b)/(15b) moved out of VP2 for Case reasons, it should have a narrow scope reading as well.[11]

To overcome the difficulty, Takano (2003) proposes what he calls a prolepsis analysis. In his analysis the sentences in (14a) and (14b) are assigned the following structures:

(17) a. [$_{TP}$[$_{vP2}$ Taroo$_i$-wa [$_{VP2}$ [$_{vP1}$ PRO$_i$ [$_{VP1}$ migime-dake-o tumur] v] e] v] ru]

b. [$_{TP}$ [$_{vP2}$ Taroo$_i$-wa [$_{VP2}$ migime-dake$_j$-ga [$_{vP1}$ PRO$_i$ [$_{VP1}$ pro$_j$ tumur] v] e] v] ru] (adapted from Takano (2003: 800-801))

The scope domain of PM *-e* (V2) is shadowed. In both sentences PM takes a control structure: *Taroo* is base-generated as an external argument of PM and con-

[11] It is logically possible to assume that A-movement does not feed reconstruction in Japanese for some reason. This line of discussion is actually pursued by Hasegawa (1994, 2005) and Miyagawa (2005, 2007). However, their analyses are not free from conceptual or empirical problems. See Kobayashi (2009b) for discussion.

trols PRO in vP1. The structures in (17a) and (17b) differ as to whether PM also takes an object or not. In (17a) *migime-dake* 'only (his) right eye' is base-generated in VP1 as an object of the base verb (V1) and assigned accusative Case in VP1. The *o*-marked object is therefore interpreted within the scope of PM. In (17b), on the other hand, *migime-dake* is base-generated as a non-thematic object of PM and assigned nominative Case in VP2 (under Agree with T).[12] Since it occupies SPEC of V2, it takes scope over PM. The thematic interpretation of the *ga*-object is obtained through binding the null object (pro) in VP1. Takano refers to the *ga*-DP as in (17b) as "proleptic object," or, "object of anticipation" (p. 781). There is an aboutness relation between the proleptic object and its predicate phrase, i.e. vP1 in this case. Given the prolepsis analysis, the absence of a reconstruction effect in (14b)/(17b) follows straightforwardly: reconstruction into VP1 is impossible since the *ga*-object is base-generated in VP2.

Takano provides arguments for his prolepsis analysis. Here I present one of them: the *ga*-object may be non-subjacent to its thematic position. In (18), the thematic position for the *ga*-object *doitugo-ga* 'German-Nom' is in the relative clause (RC) adjoined to the *o*-marked object.

(18) Watasi-wa *doitugo-ga* hanasu hito-o sagas-e ru.
I-Top German-Nom speak person-Acc search.for-PM Pres
'I can search for a person who speaks German.' (Takano (2003: 809))

The *ga*-object should be in the matrix clause to receive nominative Case. Tada's Case movement analysis would wrongly rule out (18) since A-movement out of an adjunct is illegitimate. Takano's prolepsis analysis, on the other hand, accounts for the grammaticality of (18). The sentence is assigned the following structure under his analysis:

(19) [$_{TP}$ [$_{vP2}$ watasi-wa doitugo$_i$-ga [$_{vP1}$ [$_{RC}$ pro$_i$ hanasu]-hito-o sagas] e] ru]

The *ga*-object is base-generated in the higher vP as a proleptic object of PM, and assigned nominative *-ga* under Agree with T. Its thematic interpretation is obtained through binding pro in the RC. Since binding of pro is not subject to locality, (18)/(19) is correctly predicted to be acceptable.

[12] Tada (1992) and Takano (2003) assume that nominative is checked by [+stative] PM. I do not adopt this assumption because PM is not [+stative], as will be shown in section 4.

Given this much, this paper adopts Takano's prolepsis analysis. The *ga*-PC in (1a) is hence given the structure (20).

(20) [$_{TP}$ [$_{vP2}$ Taroo$_i$-wa [$_{VP2}$ huransugo$_j$-ga [$_{vP1}$ PRO$_i$ [$_{VP1}$ pro$_j$ hanas] v1] e] v2] ru]

Aboutness relation is established between the *ga*-object and the embedded vP (vP1). I will refer to the constituent to be predicated of a proleptic subject/object as *aboutness predicate* henceforth. Aboutness in *ga*-PCs is held between SPEC and COMP in VP2.

To recap section 3.1, we have obtained the following conclusion:

(21) *Ga*-PCs involve aboutness predication.

In the next section I examine two other constructions that involve aboutness predication, and point out that there is a semantic constraint on aboutness predicates.

3.2. A Stativity Constraint on Aboutness Predicates

This section takes up two constructions which involve aboutness predication. According to Mihara and Hiraiwa (2006: 190), aboutness predication is involved in the following two constructions:

(22) a. Multiple Nominative Construction:
Taroo-ga musume-ga kawaii.
Taro-Nom daughter-Nom cute
'Taro's daughter is cute.'

b. Perception Verb Construction:
Watasi-wa Hanako-o tensai da-to omot ta.
I-Top Hanako-Acc genius be-that think Pst
'I thought that Hanako was a genius.'

In Multiple Nominative Constructions (MNCs) as in (22a), the first nominative DP is a major subject about which the rest of the sentence is asserted. The sentence in (22b) is an example of Perception Verb Constructions (PVCs) in which the accusative-marked subject in the embedded clause serves as a major object, i.e. a topic of the embedded clause. In sections 3.2.1 and 3.2.2 I demonstrate that (i) either type of constructions indeed involves aboutness predication and (ii) the aboutness predicate of either type must be [+stative].

3.2.1. Multiple Nominative Constructions

Let us first consider MNCs. In (22a), the second DP *musume-ga* 'daughter-Nom' is a thematic argument of the lexical predicate *kawaii* 'cute'. The first nominative DP *Taroo-ga* 'Taro-Nom' is understood as a major subject, i.e. a topic for the rest of the sentence. Its thematic interpretation is obtained by relating itself to an empty position in the sentence. In this example *Taroo* is related to the possessor position in the subject as in (23).

(23) Taroo$_i$-ga [[e]$_i$ musume]-ga kawaii

Researchers have given different analyses on how the major subject and its thematic position are related. There have been two major analyses in the literature. One is a movement analysis according to which the major subject is moved from its thematic position (e.g. Kuno (1973), Tateishi (1994)). The other is a kind of prolepsis analysis which suggests that the major subject is base-generated outside the TP (e.g. Kuroda (1986), Heycock and Doron (2003)). Below I present a piece of evidence for the latter analysis, following Heycock and Doron (2003).

Let us compare the (a) and (b) examples in (24). In (24a) the italicized quantifier *minna* 'everyone', which is within the subject, takes either narrow or wide scope over *computer*. (A wide scope reading may be obtained by covert quantifier raising (QR).) (24b) is a multiple nominative counterpart, in which *minna* appears as a major subject. In this sentence *minna* can only take a wide scope (i.e. distributive) interpretation.

(24) a. [*Minna*-no computer]-ga kowarete simat ta (koto).
everyone-Gen computer-Nom break.down finish Pst (fact)
'Everyone's computer has broken down.'
(i) everyone > a PC, (ii) a PC > everyone

b. *Minna*$_i$-ga [[e]$_i$ computer]-ga kowarete simat ta (koto)
everyone-Nom computer -Nom break.down finish Pst (fact)
(i) everyone > a PC, (ii) *a PC > everyone

(Heycock and Doron (2003: 111-112))

If the major subject in (24b) were moved from the [e] position, it could be reconstructed to have a narrow scope reading. The absence of a narrow scope reading suggests that the major subject is not base-generated in its thematic position. It

should be a proleptic subject to be generated outside the TP, which establishes aboutness predication relation with the TP.

With this in mind, let us now consider a semantic constraint on the aboutness predicate, TP. Not a few researchers have pointed out that MNCs must be [+stative] (e.g. Kuroda (1986), Amano (1990), Heycock and Doron (2003)). Compare (22a) with the following example:

(25) *Taroo-ga musume-ga *warat* ta.
Taroo-Nom daughter-Nom laugh Pst
'Taro's daughter laughed.'

Example (25), which denotes one specific occurrence of [-stative] event, is not acceptable while example (22a), which describes a property of the major subject, is acceptable. The contrast indicates that the aboutness predicate (TP) in MNCs must be [+stative].

3.2.2. Perception Verb Constructions

Let us then consider PVCs, as exemplified in (22b). Perception verbs such as *omo(w)-u* (> *omot* in (22b)) 'think' and *sinzi-ru* 'believe' can take a clause as their internal argument. The subject in the embedded clause may be assigned either nominative *-ga* or accusative *-o*. I refer to the latter type as PVCs and the *o*-marked subject as a major object. *-O* in (22b) must be assigned by an element in the matrix clause since there is no accusative assigner in the embedded clause. The major object must therefore occupy a position visible from the matrix V-v.

The perception verb can embed a MNC as in (26), with its major subject marked with *-o*.

(26) Taroo-wa [$_{MNC}$ Hanako$_i$-o [[e]$_i$ seikaku]-ga warui]-to
Taro-Top Hanako-Acc personality-Nom bad-that
omot tei ru.
think Prg Pres
'Taro believes Hanako to be wicked.'
(adapted from Takezawa and Whitman (1998: 57))

This means that the major object position is not a theta position.

There have been two major analyses of PVCs. One is to analyze PVCs as

ECM constructions: the major object is raised from its thematic position to the matrix clause to receive Case (e.g. Kuno (1976)). The other is a prolepsis analysis in which the major object is base-generated in its surface position and somehow related to its thematic position (e.g. Takezawa and Whitman (1998)). Takano (2003) provides an argument for the latter analysis. Under his analysis, (22b) is assigned the following structure:

(27) [$_{TP}$ [$_{vP}$ watasi-wa [$_{VP}$ Hanako$_i$-o [$_{CP}$ [$_{TP}$ pro$_i$ tensai da] to] omot] v] ta]

(adapted from Takano (2003: 804))

Hanako is base-generated in SPEC of the perception verb as a proleptic object. It is assigned *-o* under Agree with v-V, and receives its thematic interpretation by binding pro in the embedded CP. Aboutness relation is established between the major object (SPEC) and the CP (COMP).

Takano provides evidence for his prolepsis analysis of PVCs. Before examining his evidence, however, I point out a problem with (27) and suggest a modification. Under Takano's analysis, the major object appears outside the embedded CP. However, there is evidence that the major object should be in the CP. It comes from licensing of indeterminate NPs such as *dare* 'who' and *nani* 'what' by quantificational particle *-mo*. Consider the following examples:

(28) a. Taroo-wa [$_{vP}$ *dare-mo* seme] nakat ta.
Taroo-Top Indet-*mo* blame Neg Pst
'Taro didn't blame anyone.'

b. Taroo-wa [$_{vP}$ *dare*-o seme]-*mo* si nakat ta.
Taroo-Top Indet-Acc blame-*mo* do Neg Pst
'Taro didn't blame anyone.' (Hiraiwa (2005: 96))

Indeterminate NP *dare* plus *-mo* functions as a negative polarity item (NPI) in (28a). They can be separated as shown in (28b). However, they must be in a certain structural relation. Following Kuroda (1965 [1979]), I assume that the following constraint must be satisfied at LF (C-I interface) for an indeterminate NP to be licensed as a NPI.

(29) An indeterminate NP must be contained within a phrase to which *-mo* attaches.

In (28b), *-mo*, which is sandwiched by the main V and the auxiliary verb, is

assumed to be associated with the vP (or the VP). Since the object indeterminate NP stays within the vP, it conforms to the constraint (29). The following example, on the other hand, is excluded by the constraint (29):

(30) * *Dare*$_i$-ga [$_{vP}$ t_i Hanako-o seme]-*mo* si nakat ta.
Indet-Nom Hanako-Acc blame-mo do Neg Pst
'No one blamed Hanako.' (Hiraiwa (2005: 98))

The subject indeterminate NP is moved to the subject position (SPEC of T) overtly or covertly. After the movement the indeterminate NP is no longer contained within the vP to which *-mo* attaches. Hence (30) is ill-formed.

With this in mind, observe the following PVC.

(31) Taroo-wa *dare*-o baka da-to-*mo* omowa nakat ta.
Taro-Top Indet-Acc stupid be-that-mo think Neg Pst
'Taro didn't think anyone to be stupid.' (Hiraiwa (2005: 101))

-Mo, which follows complementizer *-to* and precedes the matrix V, should be attached to the embedded CP. The indeterminate NP *dare*, which appears as a major object, is licensed by *-mo*. The grammaticality of (31) indicates that *dare* must be contained within the embedded CP. Takano's analysis would wrongly exclude (31) since it assumes that *dare* should be base-generated outside the CP.

To overcome the difficulty, I suggest that the major object of PVCs appear in SPEC of the embedded C. Under the modified analysis, the sentence (31) will be assigned the following structure:

(32) [$_{TP}$ [$_{NegP}$ [$_{vP}$ Taroo-wa [$_{VP}$ [$_{CP}$ *dare*$_i$-o [$_{TP}$ pro$_i$ baka da] to]-**mo** omowa] v] nakat] ta]

The CP domain to which *-mo* attaches is shadowed. The indeterminate NP, being base-generated in SPEC of C, conforms to the constraint (29), and hence the sentence is well-formed. Since the major object, occupying the edge position of the CP phase, is visible from the matrix V-v, it is assigned accusative *-o*.

Having presented a modification, let us now examine a piece of evidence for a prolepsis analysis provided by Takano (2003). Since a virtue of Takano's original analysis is retained after the modification, I analyze his data with the modified analysis. In the following example, the major object *Mary* is understood as a subject in the RC:

(33) Minna-wa Mary$_i$-o [$_{DP}$ [$_{RC}$ [e]$_i$ hanasu] kotoba]-ga zyoohin da to
everyone-Top Mary-Acc speak word-Nom graceful be that
omot tei ru.
think Prg Pres
(Lit.) 'Everyone thinks of Mary that the words that she speaks are graceful.' (adapted from Takano (2003: 809))

The grammaticality of this sentence would be hard to account for under a movement analysis since overt movement out of an adjunct violates a subjacency condition. Under the prolepsis analysis, on the other hand, no problem arises since no such movement takes place. The major object is base-generated in its surface position, and receives its thematic interpretation by binding [e] (pro) in the RC.

In sum, the major object in PVCs is base-generated as a proleptic object in SPEC of the embedded C. Aboutness relation is established between the major object (SPEC) and the TP (COMP) in the embedded CP.

Given that the embedded TP of a PVC is an aboutness predicate, let us now turn to a semantic constraint imposed on the embedded TP. According to Harada (2002) and Sasaki (2010), the embedded predicate of a PVC must be [+stative]. Compare (22b) and (26) with the following examples:

(34) a. * Taroo-wa [$_{CP}$ Hanako$_i$-o [$_{TP}$ pro$_i$ Tokyo-ni it ta] to] omot
Taro-Top Hanako-Acc Tokyo-Loc go Pst] that] think
tei ru.
Prg Pres
'Taro thinks that Hanako went to Tokyo.'

b. * Taroo-wa [$_{CP}$ Hanako$_i$-o [$_{TP}$ pro$_i$ asu Tokyo-ni ik u]
Taro-Top Hanako-Acc tomorrow Tokyo-Loc go Pres]
to] omot tei ru.
that] think Prg Pres
'Taro thinks that Hanako will go to Tokyo tomorrow.'

The deviance of (34) indicates that [-stative] predicates do not appear in the embedded clause of PVCs. It amounts to saying that the aboutness predicate (TP) must be [+stative].

To recapitulate section 3.2, we have considered two types of constructions that

involve aboutness predication: MNCs and PVCs. What we have discovered in common is:

(35) Aboutness predicates must be [+stative].

Is this a general constraint on aboutness predication or just a coincidence? I believe it is reasonable to pursue the former idea. As we will see in the next section, given (35) as a general constraint, we can provide a simple account for the main question of this paper: why *-ta* of discovery is compatible only with *ga*-PCs. If we considered (35) just a coincidence, we would then have to give separate explanations as to why the stativity constraint is imposed on each type of aboutness predicates and why (4) is the case.

3.3. Stativity of *Ga*-PCs

Based on the discussion so far, let us now consider the stativity of *ga*-PCs. The configuration of a *ga*-PC, (20), is repeated here as (36).

(36) $[_{TP}\ [_{vP2}$ Taroo$_i$-wa $[_{vP2}$ huransugo$_j$-ga $[_{vP1}$ PRO$_i$ $[_{VP1}$ pro$_j$ hanas$]]$ e$]]$ ru$]$

The *ga*-marked object and the vP1 are related under aboutness predication. Although we have concluded in the previous section that the aboutness predicate must be [+stative], the V1 *hanas* 'speak' is not lexically [+stative]. Some operation is therefore needed to shift stativity of vP1. I assume, following Chomsky (1977), that operator movement can serve the purpose. Specifically, the proleptic object is not directly related to its thematic position, but indirectly related by binding the operator which is raised to the edge position (i.e. SPEC of v1) (cf. Alrenga (2005)). The null object (pro), to be bound by the proleptic object, undergoes movement to SPEC of v1, making the vP1 [+stative]. The vP1 is then merged with PM *-e*. In section 4, I demonstrate that PM bears no stativity feature. The [+stative] feature of the vP1 then percolates up to the TP, rendering the whole *ga*-PC [+stative].

4. *O*-PCs Are [-Stative].

In the previous section I have claimed that the [+stative] feature of an aboutness predicate percolates up and renders the whole *ga*-PC [+stative]. If this is correct, *o*-PCs should be [-stative]. Since aboutness predication is not involved

in *o*-PCs, the [-stative] feature of the stem V should percolate up and make the whole *o*-PC [-stative].

One might suspect, however, that PCs should always be [+stative]. PCs denote ability or possibility, which is apparently a kind of state. If PM bears a [+stative] feature, *o*-PCs as well as *ga*-PCs should be [+stative].

However, there is evidence that PM does not have a stativity feature. Stativity of a predicate can be tested by state morpheme *-tei*. It is a suffix expressing a progressive or a resultative aspect of an event. As observed by Kindaichi (1950), *-tei* is associated only with [-stative] bases. (I consider this a morphological constraint on derivation.) The examples in (37) are all legitimate since the verbal bases (italicized for convenience) are [-stative]. The examples in (38), on the other hand, are excluded since the verbal bases are [+stative].

(37) *hatarai* tei ru 'to be working'; *ki* tei ru 'to have come'; *sit* tei ru 'to have noticed'

(38) **i* tei ru 'to be being'; **samuku* tei ru 'to be being cold'; **sizuka* dei ru 'to be being quiet'

With this in mind, let us consider the following *o*-PCs. (39a) shows that *-tei* can follow V+PM. (39b), on the other hand, shows that *-tei* cannot follow V+*tei* +PM.

(39) a. Cocco-wa kokonotokoro yoi kyoku-o *tukur* e tei ru.
Cocco-Top recently good song-Acc make PM Prg Pres
'Cocco has been able to make good songs recently.'

b. * Cocco-wa kokonotokoro yoi kyoku-o *tukut tei rare*
Cocco-Top recently good songs-Acc make Prg PM
tei ru.[13]
Prg Pres

[13] The deviance does not have to do with more than one occurrence of *-tei*. As the following examples show, a V-complex can contain more than one *-tei*.

(i) hatarai-*tei*-tuzuke-*tei* ru
work-Prg-continue-Prg Pres
'to have kept working'

(ii) hatarai-*tei*-hazime-*tei* ru
work-Prg-start-Prg Pres
'to have started working'

'Cocco has been able to be making good songs recently.'

The head of V+PM (*tukur-e*) in (39a) is the PM. If PM were lexically [+stative], *-tei* could not follow the V+PM and (39a) should be deviant. If PM were [-stative], on the other hand, *-tei* could follow V+*tei*+PM and (39b) should be acceptable. How can we rule in (39a) and also rule out (39b)? A straightforward explanation follows if we assume that (i) PM has no stativity feature, and (ii) the stativity of the base percolates and determines the stativity of the derived V-complex. Given these assumptions, the [-stative] feature of *tukur* 'make' percolates up, making the V-complex *tukur-e* 'make-PM' [-stative]. Hence in (39a) *-tei* can follow the V-complex. In (39b), the V-complex *tukut-tei* 'make-Prg' is [+stative] since it is headed by [+stative] *-tei*. When PM attaches to it, the [+stative] feature percolates up. Hence *-tei* cannot follow the derived V-complex.

If this is on the right track, it is entailed that *o*-PCs as in (1) and (2) are [-stative]. First, the stem V to which PM attaches are [-stative]. Second, since PM has no stativity feature, the [-stative] feature of the stem V percolates up. Consequently, the whole *o*-PCs are [-stative].

5. An Account

We are now in a position to answer the main question of this paper: why *-ta* of discovery is compatible only with *ga*-PCs ((4)). The conclusions given in the previous sections are repeated below:

(40) a. Section 2: *-Ta* of discovery selects a [+stative] phrase.
b. Section 3: *Ga*-PCs are [+stative].
c. Section 4: *O*-PCs are [-stative].

Now it is evident why the generalization (4) holds. Being a modal marker, *-ta* of discovery is considered to appear in C.[14] The *ga*-PC and *o*-PC in (3a) are therefore assigned the following structures:

(41) a. $[_{CP}\boxed{[_{TP}\,[_{vP2}$ Taroo$_i$-wa $[_{VP2}$ huransugo$_j$-ga $[_{vP1}$ PRO$_i$ $[_{VP1}$ pro$_j$ hanas] v1] e] v2] T]} ta]

ga-PC = [+stative]

[14] Following Chomsky (2007: 17), I use C as a cover term for the elements of left periphery, which include Focus, Topic, and various kinds of modals.

b. [$_{CP}$ [$_{TP}$ [$_{vP2}$ Taroo$_i$-wa [$_{VP2}$ [$_{vP1}$ PRO$_i$ [$_{VP1}$ huransugo-o hanas] v1] e] v2] T]] ta]

o-PC = [-stative]

Since the TP of *ga*-PCs as in (41a) is [+stative], it conforms to the selectional property of *-ta* of discovery ((40a)). On the other hand, since the TP of *o*-PCs as in (41b) is [-stative], it does not conform to (40a). In conclusion, *-ta* of discovery is compatible only with *ga*-PCs. Compatibility between *-ta* of discovery and PCs are thus accounted for in terms of stativity of PCs.

Before closing this section, I briefly consider discrepancy in grammaticality judgment. As mentioned in section 1, nearly half of the informants find *-ta* of discovery compatible with either *ga*- or *o*-PCs. I tentatively assume that these informants reanalyze *-ta* in (3) as something other than *-ta* of discovery. For example, *-ta* of confirmation (*kakunin no* -ta) can appear in [-stative] sentences like (42).

(42) Kirin-te tasika nai *ta* yone?
giraffe-Top I.believe make.sound *ta* M
'Giraffes, I believe, have a voice, right?' (Sadanobu (2004: 39))

Presumably, some informants may reanalyze the *o*-PCs as in (3a) as involving *-ta* of confirmation. The speaker, who was unfamiliar with Taro's linguistic ability, may not be able to believe his/her ears, and want to confirm it by addressing the hearer. In such a situation, *-ta* may be analyzed as *-ta* of confirmation, and hence compatible with [-stative] *o*-PCs.

6. Predictions

I have proposed that compatibility between *-ta* of discovery and *ga*-/o-PCs are accounted for in terms of the stativity constraint. In this section let us examine two predictions derived from this proposal.

6.1. [+Stative] *O*-PCs and *-Ta* of Discovery

In section 4 I have argued that stativity of *o*-PCs is determined by the base V to which PM attaches. Since most Japanese verbs are lexically [-stative], most *o*-PCs are [-stative]. Accordingly, *o*-PCs are incompatible with *-ta* of discovery.

However, the suggested analysis predicts that there is at least one case in which

-ta of discovery and *o*-PCs can cooccur. We have seen in section 4 that the progressive/resultative aspect marker *-tei* makes the derived V-complex [+stative]. It is therefore predicted that *o*-PCs involving V+*tei*+PM are [+stative] and hence compatible with *-ta* of discovery. This prediction is borne out, as illustrated by the following examples:

(43) a. Hee, Taroo-wa nihonzin-to nara ryuutyoo-ni huransugo-*o*
oh Taro-Top Japanese-with if fluently French-Acc
hanasi-tei-rare ta none.
speak-Prg-PM *ta* M
'(I didn't know) Taro can keep speaking French fluently with Japanese people.'

b. Are, konnna isogasii toki-ni terebi-*o mi-tei* *-rare* ta towa.
oh such busy time-Loc TV-Acc watch-Prg PM *ta* M
'(I'm surprised) you can keep watching TV in such a busy time.'

In either sentence the stem V is associated with *-tei*, which makes the complex V [+stative]. It is then merged with PM, which has no stativity feature. Hence the [+stative] feature of the base percolates up, rendering the whole *o*-PC [+stative]. *-Ta* of discovery is therefore compatible with the *o*-PCs in (43).

6.2. [-Stative] *O*-PCs and *-Ta* of Reminiscence (*Sooki-no* -Ta)

Let us now examine a second prediction. It concerns the compatibility of *o*-PCs and *-ta* of reminiscence (*sooki-no* -ta). *-Ta* can signal that it slipped the speaker's mind and s/he has remembered it at the speech time. Either (44a) or (44b), for example, talks about schedule for tomorrow, which the speaker has just remembered.

(44) a. A, sooda, asu-wa kaigi- dat *ta*.
oh I.remember tomorrow-Top meeting be *ta*
'(I remember) there is a meeting tomorrow.'

b. * A, sooda, asu-wa kaigi-ga hirak-are *ta*.
oh I.remember tomorrow-Top meeting-Nom open-Pass *ta*
'(I remember) a meeting will be held tomorrow.'

(Iwasaki (2000: 32))

Notice that the V in acceptable (44a) is a copular (*dat* 'be'), and the V in deviant (44b) is a passivized verb (*hirak-are* 'open-Pass'). The contrast in grammaticality indicates that *-ta* of this usage appears only in [+stative] sentences.

Given the fact above, it is predicted that *-ta* of reminiscence should also be compatible only with *ga*-PCs. The prediction is borne out, as shown by the following sentences:

(45) a. A, raisyuu-kara sake{??-o/ -ga} nom-e *ta* na.
oh next.week-from alcohol{-Acc/-Nom} drink-PM *ta* M
'Oh, (I remember) I can start drinking next week.'

b. Soo, soo, Hanako-wa rainen sabbatical{??-o/ -ga} tor-e
I. remember Hanako-Top next.year sabbatical{-Acc/-Nom} take-PM
ta kke.
ta M
'I remember, Hanako can take a sabbatical next year.'

(45a, b) indicate that *-ta* of reminiscence is compatible with *ga*-PCs but not with *o*-PCs. Under the suggested analysis, the compatibility has to do with the stativity of PCs: *-ta* of reminiscence can merge with [+stative] *ga*-PCs, but not with [-stative] *o*-PCs.

7. A Further Consequence

So far I have shown how modal *-ta* affects possible case frames of PCs. If the discussion so far is on the right track, it might bring an interesting implication regarding the distribution of past *-ta* and modal *-ta*. The tacit assumption in the literature is that modal *-ta* appears only in present tense sentences. This assumption, however, turns out to be problematic. The same case constraint as we have seen with present tense PCs is observed in past tense PCs as well. For the explanation of the data, we need to hold that *-ta* of discovery can appear in past tense PCs as well.

7.1. Case Restrictions in Past Tense PCs

As we have already seen in section 1, *o*- as well as *ga*-marked objects are allowed in past tense PCs. In certain past contexts, however, *o*-marking is hardly

acceptable. Compare (a) and (b) sentences in the following examples:

(46) a. Kinoo-wa tokubetu kookai-no hi datta kara…
('Since yesterday was a special open day…')
daredemo teien-no syasin{-o/ -ga} tor-e *ta*.
anyone garden-Gen picture{-Acc/ -Nom} take-PM *ta*
'Anyone could take pictures of the garden.'

b. Tenki-wa yoku nakat-ta ga…
('The weather wasn't good, but…')
igaini yoi syasin{??-o/ -ga} tor-e *ta*.
unexpectedly good picture{-Acc/-Nom} take-PM *ta*
'I was able to take unexpectedly nice pictures.'

(47) a. Wakai koro-wa esu size-no huku{-o/ -ga} ki-(ra)re *ta*.
young time-Top small size-Gen clothes{-Acc/-Nom} wear-PM *ta*.
'I could wear clothes in a smaller size when I was young.'

b. Kinoo tamesitemitara… ('Yesterday I gave it a try and ...')
nanto esu size-no huku{??-o/ -ga} ki-(ra)re *ta*!
surprisingly small size-Gen clothes{-Acc/-Nom} wear-PM *ta*
'I was able to wear clothes in a smaller size, to my surprise!'

All of the examples above talk about ability or possibility in the past. Whereas either *o*- or *ga*-marking on the object is allowed in the (a)-sentences, *o*-marking on the object is marginal in the (b)-sentences.

What is the difference between the (a)- and (b)-sentences? The (a)-sentences convey the subject's general ability which s/he could exercise at any time s/he wished, or general possibility for the situation to occur. In (46a), the special circumstance allowed the subject to take pictures of the garden at any time. Similarly, (47a) means that the subject was so thin that s/he could wear clothes in a smaller size whenever s/he wanted to. On the other hand, the (b)-examples talk about a one-time event in the past. The subject, who gave it a try to see if s/he could do it, realized the presence of the ability/possibility only after s/he saw it happen. In (46b), the speaker was not sure whether the subject (=the speaker) could take good pictures since the weather condition was bad. But after giving it a shot, s/he realized that the situation was not too bad to take good pictures. In

(47b), the speaker got surprised to see that clothes in a smaller size fitted him/her.

To generalize, either *o*- or *ga*-marking is possible when the PC describes a general ability or possibility in the past, while only *ga*-marking is allowed when the PC describes ability/possibility that the speaker noticed only after s/he saw it happen. How can we account for the contrast in possible case frames between (a)- and (b)-sentences in (46) and (47)? The suggested analysis gives a simple account for the observed fact. Particularly, I suggest the following:

(48) *O*-PCs are marginal in (46b) and (47b) because the sentences involve *-ta* of discovery.

Recall that in the (b)-sentences are uttered in the context where the speaker has been unsure of the presence of the denoted ability/possibility. S/he recognizes it only after seeing the subject give it a try and make it. This is what we have seen in section 2: *-ta* of discovery signals that the speaker has been ignorant of the presence/absence of the denoted situation, and recognizes it by observing the situation in the outer world. If *-ta*'s in (46b) and (47b) are *-ta* of discovery, it should be unable to select [-stative] *o*-PCs.

If this explanation is correct, we will need to reconsider the tacit assumption on the distribution of *-ta* of discovery. I briefly touch upon this in the next section.

7.2. Compatibility of *-Ta* of Discovery and Past Tense *-Ta*

Researchers have assumed that modal *-ta*'s appear only in present tense sentences (cf. (7)). The explanation as in (48) therefore seems to run in contradiction to this common assumption. I show in this section that it is reasonable to assume that modal *-ta*'s can appear in past tense sentences as well.

The common assumption in the literature seems to be derived in the following line of thought (cf. Takahashi (1985), Inoue (2001)). First, past tense marking is grammaticalized in Japanese. As shown by (49), a sentence that describes a past time situation must contain the past tense marker *-ta* or perfect aspect marker *-tei* (*ru*).[15]

(49) Taroo-wa kinoo keeki-o tabe {ta/ tei ru/ *ru}.

Taroo-Top yesterday cake-Top eat {Pst/Perf Pres/ Pres}

'Taro (has) had some cake yesterday.'

With this in mind, let us consider (46b) and (47b) again. The sentences evidently describe a past situation. They must therefore contain a past time marker, and there is only one candidate: *-ta*. The *-ta*'s that the (b)-sentences contain must therefore be a past tense marker, not modal *-ta*. If this were correct, the explanation as in (48) would be untenable.

However, the problem is only apparent. Thinking theoretically, since past tense *-ta* and modal *-ta* are distinct syntactic entities, nothing would prevent them from cooccurring. In syntax, therefore, (46b) should have a structure like the following:

(50) [$_{CP}$ [$_{TP}$ [$_{vP}$ igaini yoi syasin{??-o/ -ga} tor-e] [$_{T}$ ta]] [$_{C}$ ta]]]

Past tense *-ta* appears in T, and *-ta* of discovery in C. When (50) is uttered one of the iterated *-ta*'s is not pronounced. I assume that one of them is deleted at PF for phonological reasons.[16] Given that past *-ta* and modal *-ta* can cooccur, the explanation developed in section 7.1 is maintained with no problem.

This kind of PF-deletion process is necessary to deal with present tense sentences involving *-ta* of discovery. Consider (6a) again, which is repeated here as (51a).

(51) a. Aa, konna tokoro-ni at ta.
ah, like.this place-Loc be ta
'Ah, (I didn't know) it is here.'

b. [$_{CP}$ [$_{TP}$ [$_{vP}$ konna tokoro-ni ar] [$_{T}$ ~~u~~]] [$_{C}$ ta]]]

Since this sentence describes a present situation, it must contain a present tense marker. The apparent absence should be due to the deletion of present morpheme *-u* at PF, as shown in (51b).

There is also interesting data from a Tohoku dialect that seems to support the proposal. Yakame et al. (2005) report that a dialect spoken in a district in Miyagi Prefecture has a usage of "second past" *-ta/da*. As shown in the following example, a sentence in this dialect can contain two occurrences of *-ta*'s:

(52) Kinona kogo-sa gomi at *tat ta*

[15] Japanese perfect can occur with past adverbials like *kinoo* 'yesterday'.

[16] Kato (2009: 18) makes a similar proposal in his analysis of *-ta* of reminiscence.

yesterday here-Loc litter be *ta ta*

'(I saw) there was some litter here yesterday.' (Yakame et al. (2005: 54))

According to Yakame et al. (2005), one of the two *-ta*'s express pastness, while the other *-ta* expresses a modality meaning identified as Visual. With the use of this second *-ta*, the speaker asserts that s/he has seen the denoted situation by himself/herself at the denoted past time. If we assumed that past *-ta* and modal *-ta* are mutually exclusive, we would be unable to account for the grammaticality of (52). Under my proposal, (52) is assigned the following structure:

(53) [$_{CP}$ [$_{TP}$ kinona kogo-sa gomi at *tat*] *ta*]

The two *-ta*'s legitimately occupy distinct syntactic positions. What is unique in this dialect is that a PF deletion may not be applied.

To sum up, past *-ta* and modal *-ta* should be compatible from theoretical point of view, and there is indeed such a dialect. When the two *-ta*'s appear in a single sentence, one of them is obligatorily deleted at PF in standard Japanese, which makes them seem to be in complementary distribution.

Under this analysis, the PC in (46b) is assigned the following structure:

(54) [$_{CP}$ [$_{TP}$ igaini yoi syasin{??-o/ -ga} tor-e [$_{T}$ ~~ta~~]] [$_{C}$ ta]]

When the context requires the appearance of *-ta* of discovery, it appears in C. One of the two iterated *-ta*'s is deleted in PF for phonological reasons. Since *-ta* of discovery selects [+stative] phrase, it is compatible only with *ga*-PCs. *O*-PCs are therefore marginal in such contexts as the speaker reports his/her discovery at a specific past time.

7.3. The Discovery Time

In this final section I briefly reconsider the definition of *-ta* of discovery and make a slight modification. Recall that I have claimed in section 2 that *-ta* of discovery signals the existence of the discovery time (D) *immediately before S* ((7)). If the discussion in section 7.2 is correct, however, the explanation is no longer tenable. Consider (46b) again. The subject tried taking pictures at some time yesterday, and the speaker saw the outcome and found out the possibility for the first time. Obviously, the time when the speaker found the possibility (i.e. when s/he saw the outcome) is distant from S. We need to modify (7) so that it can also

deal with the occurrence of *-ta* of discovery in past tense sentences.

I propose that D should be immediately before the *reference time* (R), not S. R is the time on which the speaker sets his viewpoint in the time scale (Reichenbach (1947)). R is set at the same point as S (R=S) if the speaker is concerned about present situations. If the speaker is concerned about what happened in some specific past time, on the other hand, R is set at the past time (R_S). Therefore, (7) should be modified as in (55).

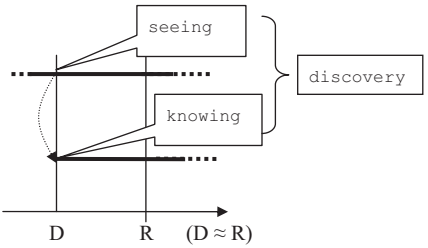
(55) *-Ta* of discovery puts a denoted state p at a time immediately before *R* as if it were distinct from the same state p that exists at R, by which it is implied that the speaker observed p at that time.

Let us consider what *-ta* of discovery in PCs expresses in the modified definition. The discussion remains virtually the same with present tense sentences since R is equal to S. In the case of past sentences as in (46b), R refers to a specific point in the past in which the speaker comes to know the denoted possibility. The speaker sees the outcome immediately before R, i.e. at D. Recall that (46b) involves two instances of *-ta*'s, as shown in (50). *-Ta* in T signals R_S, while *-ta* in C signals the existence of D, hence conveying that the speaker discovers the denoted possibility immediately before R for the first time. The relation between D and R is schematically illustrated in (56).

(56) p = [[I can take good pictures]]

In the outer world:

In the speaker's cognition:



To recapitulate section 7, *-ta* of discovery can occur either in present or past tense sentences. *-Ta* of discovery signals that the speaker comes to know the denoted possibility for the first time by seeing the actualized possibility immediately before R. R is on the same point as S in present tense PCs, and distinct from S in past tense PCs. Accordingly, past tense PCs contain two *-ta*'s, i.e. past tense *-ta* and *-ta* of discovery, one of which is obligatorily deleted for phonological

reasons. In syntax, both *-ta*'s are present, and *-ta* of discovery is compatible only with *ga*-PCs. Consequently, past tense *o*-PCs are marginal when they are used to convey the speaker's discovery of the denoted possibility.

8. Conclusion

This article has accounted for the fact that *ga*-marking on the object is favored in a PC when *-ta* of discovery appears. First, we have seen that *-ta* of discovery selects a [+stative] phrase for semantic reasons. Then I have suggested that *ga*-PCs are [+stative] and *o*-PCs are [-stative]. Consequently, *-ta* of discovery is compatible only with *ga*-PCs.

The suggested analysis correctly predicts that *-ta* of discovery can appear in *o*-PCs if the verbal base is made [+stative] by a [+stative] aspect marker. It is also predicted that compatibility between a modal of other usages and *o-/ga*-PCs is dependent on the selectional property of the modal. This is exactly what we have seen in the paper.

If the suggested analysis is correct, the syntactic distribution of modal *-ta* should be reconsidered. Certain case restriction in past tense PCs are well accounted for under the assumption that *-ta* of discovery can appear in the past sentences as well, contrary to what has been assumed in the literature. *-Ta* of discovery might be more prevalent than what we have thought.

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