

# Compounding-*meku* as a Degree Predicate of Stereotypicality\*

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## Abstract

Japanese has a large number of grammatical markers which can show stereotypicality (McCready & Ogata 2007a) such as *rashii*, *mitai*, *yoo*, or *meku*. This paper investigates the denotation of stereotypicality in *meku*, compared to that of *rashii*, *mitai*, and *yoo*. First, this paper shows that *meku* can function as a compound, and only this case denotes stereotypicality. Second, I suggest that Compounding-*meku* composes a degree predicate (Kennedy, 1997), even though it is not a gradable adjective. Finally, this paper provides a compositional semantics of the denotation of stereotypicality in Compounding-*meku*, proposing that Compounding-*meku* does not have any linguistic presuppositions which *rashii* or *mitai* / *yoo* have. In addition, this paper discusses the aspectual coercion effect on Japanese stative verbs including Compounding-*meku*.

**Keywords:** Japanese, prototypes, stereotypicality, degree predicate, comparison, aspectual coercion

## 1 Introduction

Japanese has many epistemic markers which can show stereotypicality. Stereotypicality is a concept that refers to the prototypical characteristics or properties of a class of object (McCready & Ogata 2007a). The following are examples from Japanese which indicate stereotypicality.

- (1) a. ICU-sei            rashii        iken  
ICU-student    RASHII        opinion  
'Lit. an opinion what a typical ICU student is likely to express'
- b. sensei    {mitai / -no    yoo}-na            hito  
teacher    {MITAI / -GEN.    YOO}-COP-PRES.    person  
'Lit. a person who looks like a typical teacher'
- c. [haru        meku]            yooki  
spring    MEKU-PRES.    weather  
'Lit. the weather which is typical in spring'

Example (1a) means something like this: whatever opinion the speaker refers to is an opinion which ICU students are most likely to say. As a possible context, a speaker may refer to a radical or unique opinion (what ICU students are known for). In (1b)<sup>1</sup>, whoever the speaker is talking about has the appearance of a typical teacher. Example (1c) illustrates the weather which is typical in spring.

This paper investigates (1c) *meku*, claiming that *meku* composes a degree predicate which can denote stereotypicality of its attached noun. The organization of this paper is as follows. Section 2 shows that the *meku* in (1c) functions as a compound, and only this case can show stereotypicality. Section 3 overviews a

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<sup>1</sup> It should be noted that *mitai* and *yoo* are semantically equivalent in terms of stereotypicality (McCready & Ogata 2007a). They are semantically different as evidential makers. (See McCready & Ogata, 2007b., Hara & Davis 2014.)

previous research on Japanese adjectives indicating stereotypicality. Section 4 analyzes Compounding-*meku* compared to (1a-b) *rashii*, *mitai* and *yoo*, and gives a compositional semantics to Compounding-*meku*. This section also discusses aspectual coercion effect on Japanese stative verbs including Compounding-*meku*. Section 5 concludes this paper.

## 2 Compounding-*meku*

As seen in section 1, *meku* can denote stereotypicality. However, there is a case where *meku* does not show stereotypicality. The following example (2a) illustrates the case where *meku* shows stereotypicality while (2b) is the case where it does not.

- (2) a. kono heya-wa byooin mei-te-iru<sup>2</sup>.  
       this room-TOP. hospital MEKU-ASP-PRES.  
       ‘Lit. this room exemplifies the stereotypical image of a hospital room’
- b. kono heya-wa zawa-mei-te-iru  
       this room-TOP. noise-MEKU-ASP-PRES.  
       ‘Lit. this room is buzzing’

*Meku* in (2a) shows stereotypicality since it refers to the stereotypical image of a hospital room which the speaker has, and describes the situation that the room is similar to that image. On the other hand, example (2b) does not show any stereotypicality; It is a plain description of a buzzing room. The crucial difference between these two examples is the preceding element of each *meku*. The element in (2a) *byooin* (‘hospital’) is a full noun while (2b) *zawa-* is a bound morpheme. Based on this observation, this section suggests that *meku* in (2a) functions as a compound, and only this type of *meku* can denote stereotypicality.

There are two pieces of evidence to consider that *meku* in (2a) functions as a compound. The first evidence is that this type of *meku* can attach to a modified noun as if it were a full noun.

- (3) koko-wa [[ ano Mitaka-ni aru byooin ] mei-te-iru]  
       LH H LH HHH H HH HHHH HH H LL  
       this place-TOP. that Mitaka-LOC. exist hospital MEKU-ASP-PRES.  
       ‘Lit. this place looks like the unique hospital room which exists in Mitaka’

Example (3) provides semantic and phonological evidence. Semantically, this example is felicitous in the following situation: A unique hospital is located in Mitaka (e.g., the interior of the hospital is gorgeous and artistic), and, for the speaker, the referred room looks like the particular hospital room. For this interpretation, it is necessary for the whole modified NP *ano Mitaka-ni aru byooin* to attach to the *meku*. As for the phonological evidence, the modified NP *ano Mitaka-ni aru byooin* has to be pronounced with the sequence of high tones shown in (3). If this modified NP is syntactically composed, the tone should go down after *aru* to indicate that there is the end of the modifying phrase. This sequence of high tones means that the NP *ano Mitaka-ni aru byooin* is considered to be a single word.<sup>3</sup> In addition, there is no prosodic down-stepping between the end of the NP and the *meku*. It implies that the NP and *meku* are also considered to be a single word. Therefore, this phonological evidence also supports that the *meku* attaches to a modified NP as if it

<sup>2</sup> This *-teiru* form denotes a reading of existential perfective aspect. This will be briefly discussed in section 4.4.

<sup>3</sup> This conversion from a phrase to a single word is often observed in Japanese as the following example (i) shows. (ia) is a NP which is considered to be a single word, while (ib) is modified NP which is syntactically composed. In (ia), no prosodic down-stepping occurs at the end of modifying phrase, while it does in (ib).

(i) a. [NP [moo benkyoo shitakunai] jootai] (Nominalized)  
       HH HH H HHHHH HLLL  
       b. [NP [moo benkyoo shitakunai] jootai] (Modified NP)  
       HH HH H HHHHL HHHH  
       ‘Lit. the situation that I do not want to study any more’

were a full noun, and behaves as a compound.

Another piece of evidence is that this type of *meku* can be used without the attached noun when its semantic content is given in the context. The following example illustrates this phenomenon.

- (4) A: koko-wa [[ano Mitaka-ni aru byoo-in] mei-teiru] ne  
           this place-TOP. that Mitaka-LOC. exist hospital MEKU-ASP-PRES. PT.  
           ‘Lit. this place looks like the unique hospital room in Mitaka’  
       B:  $\emptyset$ mei-teiru ne  
            $\emptyset$ MEKU-ASP-PRES. PT.  
           ‘Lit. yes, it is’

As seen in example (4), B can show his/her agreement with dropping the attached noun of *meku*. This noun-dropping operation in B’s utterance is similar to the Japanese light verb *suru* (‘do’) as shown in the following example.

- (5) A: kyoo-wa eigo-o benkyoo-shita no?  
           today-TOP. English-ACC. study-do-PAST. Q  
           ‘Lit. Did you study English today?’  
       B:  $\emptyset$ shita yo  
            $\emptyset$ do-PAST. PT.  
           ‘Lit. yes, I did.’

A’s utterance in (5) *benkyo-suru* (‘study’) is a compound verb since it takes a direct object *eigo* (‘English’). In this case, B can drop the attached noun *benkyo* (‘study’) similar to the *meku* in (4). This similarity of *meku* and a light verb *suru* (‘do’) supports the analysis that *meku* functions as a compound<sup>4</sup>.

This section has clarified that *meku* can function as a compound, and only this case shows stereotypicality. In the following sections, I will call this type of *meku* *C-meku*, short for Compounding-*meku*. This paper does not discuss the case where *meku* does not show stereotypicality shown in (2b) since the main focus of this paper is the stereotypicality of *C-meku*<sup>5</sup>.

### 3 Previous Research on Stereotypicality

This section overviews a previous research on Japanese adjectives which denote stereotypicality. McCready and Ogata (2007a) give a compositional semantics to the adjectives shown in (1a-b) *rashii*, *mitai*, and *yoo*. In this paper, I will call them S-adjs, short for Stereotypicality-adjectives. They propose that [NP-*rashii*] is a function that maps the individuals to the cardinality of non-determining features associated with the NP which the speaker believes that an individual *x* satisfies, while [NP-*{mitai/-no yoo}*-COP.] is a function mapping the individuals to the cardinality of any properties of the NP, which the speaker believes that an individual *x* holds. The following shows simplified version of their formalization. The symbol ‘#’ in (6)

<sup>4</sup> In this paper, I do not closely analyze the word formation process of this type of *meku*. For the future analysis, it might be possible to analyze this *meku* in the way of VN-incorporation because the Japanese light verb *suru* (‘do’) is analyzed in that way (See Kageyama, 1993).

<sup>5</sup> The *meku* in (2b), which does not denote stereotypicality, behaves different from *C-meku*. One crucial difference is that this *meku* does not allow the dropping operation of the attached element as the following example (ii) shows.

- (ii) A: kaijoo-ga zawa-mei-te-iru ne  
           this place-NOM. buzz-MEKU-ASP-PRES. PT.  
           ‘this place is buzzing.’  
       B: hontoo-ni {zawa-mei-te-iru ne / \*\* $\emptyset$ mei-te-iru ne}  
           really {buzzing-MEKU-ASP-PRES. PT. / \*\* $\emptyset$ MEKU-ASP-PRES. PT.}  
           ‘yes, it is really buzzing’

Based on this observation, the case of *meku* in (2b) is somehow different from *C-meku*. The observations that this type of *meku* cannot drop the attached element, and that the attached element is bound morpheme may suggest that this type of *meku* has suffixational nature rather than compounding.

means cardinality function, which denotes the number of elements in a certain set.

- (6) a.  $\llbracket rashii \rrbracket = \lambda P \in D_{\langle e,t \rangle}. \lambda x \in D_e : P(x). \# \{ p' \mid p' = \text{non-determining properties}^6 \text{ of } P \text{ that } x \text{ satisfies for an epistemic agent } a \}$

- b.  $\llbracket mitai / yoo \rrbracket = \lambda P \in D_{\langle e,t \rangle}. \lambda x \in D_e : \neg P(x). \# \{ p \mid p = \text{any property of } P \text{ that } x \text{ satisfies for an epistemic agent } a \}$

(McCready and Ogata, 2007a: (53) modified)

To summarize the formalizations in (6), *rashii* is a function that takes a non-determining property associated with its attached noun (namely,  $p'$ ) and returns a function from an individual  $x$  to the cardinality of the set of  $p'$ . In contrast, *mitai/yoo* is a function that takes any property denoted by its attached noun (namely,  $p$ ) and returns a function from an individual  $x$  to the cardinality of the set of  $p$ . In addition, *rashii* presupposes the individuals to be in the extension of its attached noun while *mitai/yoo*, requires the individuals to be out of the extension of it.

The formalizations in (6) capture S-adjs using the notion of cardinality. This is because McCready and Ogata (2007a) considers S-adjs to be degree adjectives (Kennedy, 1997, 2007). Kennedy (1997, 2007) proposes that the positive form of gradable adjectives (e.g., *is cute*, which differs from a comparative form *cuter*) are functions which take their argument and return a degree (namely, the type of a positive form of a gradable adjective is  $\langle e,d \rangle$ ). To compute the positive form of a gradable adjective, it is necessary to insert an abstract degree morpheme *pos(itive)* which composes a degree predicate with the adjective. A proposition with this degree predicate [ $_{\text{DegP}} \text{pos Adj}$ ] becomes true if and only if the degree of an individual  $x$  is beyond the standard degree determined by the context in the sense of the “adjectiveness”. For instance, a proposition “Mana is cute.” will be true if and only if the degree of cuteness of Mana is beyond the degree of cuteness determined by the context (e.g., among Mana’s classmates). The following shows the compositional computation of this example.

- (7) a. Mana is cute.

- b.
- $$\begin{array}{c}
 [3] \text{DegP}_{\langle e,d \rangle} \\
 \swarrow \quad \searrow \\
 [1] \text{Deg}_{\langle e,d,t \rangle} \quad [2] \text{Adj}_{\langle e,d \rangle} \\
 | \quad \quad \quad \triangle \\
 pos \quad \quad \quad cute
 \end{array}$$

$$\begin{aligned}
 [1] \llbracket \text{Deg pos} \rrbracket &= \lambda g \in D_{\langle e,d \rangle}. \lambda x \in D_e. g(x) \geq s(g) \\
 [2] \llbracket cute \rrbracket &= \lambda x \in D_e. cute(x) = 1 \\
 [3] \llbracket \text{DegP} \rrbracket &= \llbracket \text{Deg pos} \rrbracket (\llbracket cute \rrbracket) \\
 &= \lambda x \in D_e. cute(x) \geq s(cute)
 \end{aligned}$$

McCready and Ogata (2007a) consider that S-adjs also follow this proposal since S-adjs are gradable adjectives. This is substantiated by the fact that S-adjs allow to appear in a comparative construction as the following example (8) shows.

- (8) koko-wa                      Kyoto    ijoo-ni                      Kyoto- $\{ rashii / mitai-da \}$  /-no    yoo-da}  
       this place-TOP.           Kyoto    than                      Kyoto- $\{ RASHII / MITAI-COP. /-GEN. YOO-COP. \}$   
       ‘Lit. this place is more Kyoto-like than Kyoto’

(McCready and Ogata(2007a): (10) modified)

Based on this observation, they apply the notion of cardinality to S-adjs to illustrate the concept of degree in set theory. If the amount of non-determining properties, which an epistemic agent believes that an individual  $x$  has, is greater than the amount of non-determining properties assumed in the context, the stereotypicality is felicitously denoted.

Focusing on the differences between (6a) *rashii* and (6b) *mitai / yoo*, there are two crucial differences: (i) *rashii* presupposes that the individuals must be in the extension of its attached noun while *mitai/yoo* prohibit the individuals to be in the extension of it, and (ii) *rashii* denotes the non-determining features

<sup>6</sup> The term ‘non-determining property’ corresponds to what McCready and Ogata (2007a) call ‘Non-Core Property’. In this paper, I call it non-determining property.

associated with its attached noun, while *mitai/yoo* denote any property of its attached noun.

Let us look at the evidence for (i) and (ii). For (i), the difference of presuppositions between *rashii* and *mitai/yoo* are observed in the following examples.

- (9) a. ano hito-wa onna-rashii  
       that person-TOP. woman-RASHII  
       ‘Lit. that person (who is a woman) is feminine’
- b. ano hito-wa onna -{mitai /-no yoo }-da  
       that person-TOP. woman -{MITAI /-GEN. YOO}-COP-PRES.  
       ‘Lit. that person (who could be a man) is feminine’

(McCready and Ogata 2007a:(5) modified)

In example (9), the subject *hito* (‘person’) itself is ambiguous in terms of his/her gender. However, the person is interpreted as female in the case of (9a), while it could be interpreted as male in (9b)<sup>7</sup>. This observation indicates that, as a presupposition, *rashii* requires the individuals to be in the extension of its attached noun while *mitai/yoo* require the individuals to be out of the extension of its attached noun.

Let us move on to the evidence for (ii). The proposal that *rashii* denotes the non-determining properties of its attached noun is substantiated by the observation that example (10) cannot be contradictory.

- (10) ano onna-wa onna-rashiku-nai  
       that woman-TOP. woman-RASHII-NEG.  
       ‘Lit. that woman is not feminine’

(McCready and Ogata 2007a: (4a))

If the adjectival phrase *onna-rashii* in (10) refers to the determining properties which a female person has (e.g., biological femaleness), example (10) must be contradictory since it negates the determining property of the subject *onna* (‘women’). However, this example is felicitous as a statement of a woman who does not fit the stereotypical image of women. This observation indicates that the negative marker *-nai* negates not the determining properties of women but the properties associated with women. Therefore, it becomes clear that *rashii* denotes the non-determining properties of its attached noun. At this point, it seems that *mitai/yoo* also denote the non-determining properties of their attached noun. However, example (11) shows that *mitai/yoo* illustrate the actual properties of their attached noun rather than the non-determining properties of it.

- (11) a. ?? [akai kutsu] rashii mono  
       red shoe RASHII thing  
       ‘Lit. red shoe-like thing’
- b. [akai kutsu]-{mitai /-no yoo }-na mono  
       red shoe {MITAI /-GEN. YOO}-COP. thing  
       ‘Lit. red shoe-like thing’

(McCready and Ogata 2007a: (31))

In example (11), the attached noun of S-adjs is *akai kutsu* (‘red shoe’). In this example, McCready and Ogata (2007a) assume that, except for some special context, most people cannot imagine any stereotypical characteristics or properties of a red shoe in their mind. In other words, the set of the non-determining properties of a red shoe is empty. Based on this assumption, if *mitai/yoo* denote the non-determining properties of a red shoe, (11b) must be infelicitous same as (11a) since they cannot take any properties from the empty set. The observation that (11b) is felicitous indicates that *mitai/yoo* can refer not only to the non-determining properties but to the set of all the properties of the attached noun.

<sup>7</sup> According to McCready and Ogata (2007a), the interpretation of example (9b) seems to have dialectical difference. Some native speakers of Japanese can accept (9b) in the case where the referent person is female.

## 4 Compositional Semantics of C-meku

In section 3, I have overviewed a previous research on Japanese S-adjs. It has clarified the following three points: (a) S-adjs compose degree predicates and the denotation of stereotypicality is formalized with the notion cardinality of the set of non-determining properties, (b) As for presupposition, *rashii* requires the individuals to be in the extension of its attached noun, while *mitai/yoo* prohibit it, (c) *rashii* only refers to the set of non-determining properties of its attached noun, while *mitai/yoo* refer to the set of all the properties of it. These points raise the following questions to C-meku: (a') Does C-meku really shows stereotypicality? If it is the case, is it possible to consider C-meku as a degree predicate even though it is not a gradable adjective? (b') Does C-meku have any presuppositions for its denotation of stereotypicality? (c') Does C-meku only refer to the set of non-determining properties similar to *rashii*? Or does it refer to the set of all the properties of its attached noun similar to *mitai/yoo*? This paper gives answers to questions (a') and (b'). As for question (c'), see footnote 9.

**4.1 C-meku as a Degree Predicate of Stereotypicality** In this section, I focus on question (a'). The following example indicates that C-meku can refer to the set of non-determining properties of its attached noun.

- (12) ano onna-wa [NegP [onna mei-te ]-nai ]  
 that woman-TOP. woman MEKU-ASP -NEG.  
 'Lit. that woman is not feminine'

Example (12) is not contradictory, similar to what example (10) *rashii* demonstrates. If the NegP (*onna mei-te-nai*) negates the determining properties that a woman has, (12) will be contradictory. But in reality, example (12) is not contradictory at all. This means that C-meku refers to the set of non-determining properties of its attached noun. In other words, C-meku has ability to denote stereotypicality.

However, it is still unclear whether C-meku can be considered as a degree predicate even though it is not a gradable adjective. Generally speaking, C-meku is not an adjective because its conjugation is that of Japanese verbs<sup>8</sup>. To solve this question, take a look at example (13).

- (13) koko-wa Kyoto yori(-mo) [Kyoto mei-te-iru]  
 this place-TOP. Kyoto rather Kyoto MEKU-ASP-PRES.  
 'Lit. this place is more Kyoto-like than Kyoto'

Example (13) shows that C-meku also stands for a comparative constriction same as S-adjs. This observation suggests that C-meku also composes a degree predicate even though it is a verb but not an adjective. It should be noted that C-meku cannot be a degree predicate by itself. When it is attached to a NP, it becomes a degree predicate. Once it becomes a degree predicate, it is necessary to insert an abstract morpheme *pos* to interpret C-meku sentence.

**4.2 Presupposition in C-meku** As seen in section 3, each S-adj has a presupposition. *Rashii* requires the individuals to be in the extension of its attached noun while *mitai/yoo* require the individuals to be out of the extension of its attached noun. In this section, I analyze whether C-meku has such a kind of presupposition compared to S-adjs.

Consider example (14) in the following situation: There is a man who loves guitars made by Yamaha and has stereotypical images of them such as smooth touch of a neck, fine and rich sound, or strong construction of body, etc. Now, he is test-playing a new guitar made by Yamaha at a musical instrument shop, and he utters examples in (14). It should be noted that the adverb *jitsuni* ('truly') is inserted to exclude the evidential interpretations of S-adjs.

<sup>8</sup> Japanese canonical adjectives end with *-i*, nominal adjectives end with *-na*, and verbs end with *-u* or *-ru* in their basic forms. (Kaiser et al., 2013)

- (14) a. kono guitar-wa jitsuni [VP [NP Yamaha-no guitar] mei-te-iru ]  
 this guitar-TOP. truly Yamaha-GEN. guitar MEKU-ASP-PRES.  
 ‘Lit. this guitar is really Yamaha-like.’
- b. kono guitar-wa jitsuni [NP Yamaha-no guitar]-rashii  
 this guitar-TOP. truly Yamaha-GEN. guitar -RASHII-PRES.  
 ‘Lit. this guitar (which is made by Yamaha) is really Yamaha-like.’
- c. \* kono guitar-wa jitsuni [NP Yamaha-no guitar]- {mitai /-no yoo }-da  
 this guitar-TOP. truly Yamaha-GEN. guitar - {mitai /-GEN. YOO}-COP-PRES.  
 ‘Lit. this guitar (which is not made by Yamaha) is really Yamaha-like.’

In this situation, the determining property of the referent guitar is that the guitar is a production of Yamaha. Example (14b) *rashii* is felicitous since *rashii* presupposes that the referent guitar is made by Yamaha and the referent guitar in this situation satisfies this requirement. On the other hand, (14c) *mitai/yoo* is infelicitous since they do not allow the referent guitar to be made by Yamaha. Returning to (14a), it shows similar meaning to (14b) *rashii*, and it is more acceptable than (14c). Some native speakers of Japanese may feel that (14a) is unnatural, but the crucial difference is that (14a) is acceptable while (14c) is ungrammatical.

At this point, it seems that the presupposition of *C-meku* is similar to *rashii*. However, example (15a) demonstrates that *C-meku* can also show a similar meaning to *mitai/yoo*. Suppose the situation that the same man is test-playing another guitar, which is not made by Yamaha but similar to his stereotypical image of Yamaha’s guitar. In this situation, he can utter (15a) and (15c) but not (15b).

- (15) a. kono guitar-wa jitsuni [VP [NP Yamaha-no guitar] mei-te-iru ]  
 this guitar-TOP. truly Yamaha-GEN. guitar MEKU-ASP-PRES.  
 ‘Lit. this guitar is really Yamaha-like.’
- b. \* kono guitar-wa jitsuni [NP Yamaha-no guitar]-rashii  
 this guitar-TOP. truly Yamaha-GEN. guitar RASHII-PRES.  
 ‘Lit. this guitar (which is made by Yamaha) is really Yamaha-like.’
- c. kono guitar-wa jitsuni [NP Yamaha-no guitar]- {mitai /-no yoo }-da  
 this guitar-TOP. truly Yamaha-GEN. guitar - {MITAI /-GEN. YOO}-COP-PRES.  
 ‘Lit. this guitar (which is not made by Yamaha) is really Yamaha-like.’

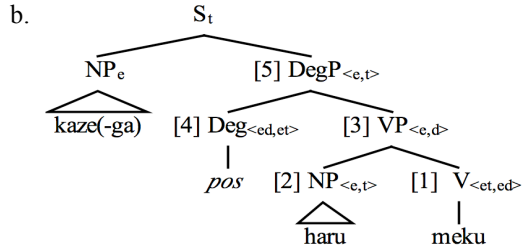
In this case, (15b) is infelicitous since the referent guitar is not made by Yamaha. In contrast, (15c) is felicitous because *mitai/yoo* presuppose that the referent guitar is not made by Yamaha, and this example satisfies the requirement. Looking at (15a), it denotes similar meaning to (15c) and is more acceptable than (15b).

The observations of (14) and (15) suggest that *C-meku* does not have any presuppositions for the denotation of stereotypicality which S-adjs have. If *C-meku* has a similar presupposition to *rashii*, (14a) must be infelicitous. In contrast, if *C-meku* has a similar presupposition to *mitai/yoo*, (15a) must be unacceptable. Based on these observations, I propose that *C-meku* does not have any presuppositions for the denotation of stereotypicality.

**4.3 Formalization of *C-meku*** This section provides a compositional semantics to *C-meku*. Section 4.1 has confirmed that *C-meku* is a degree predicate which can denote stereotypicality referring to the set of non-determining properties, even though *C-meku* composes a compounding verb. Section 4.2 has revealed that *C-meku* does not have any presuppositions for the denotation of stereotypicality. Integrating all the discussions above, (16) provides the formalization to *C-meku* and (17) shows how the formalization in (16) works. In (17), the attached NP of *C-meku haru* (‘spring’) is type <e,t> because it determines what property of the individuals can be interpreted as spring. On the other hand, the subject *kaze* is type <e> since it is the actual exemplar of typical spring for the speaker.

- (16)  $\llbracket C\text{-meku} \rrbracket = \lambda P \in D_{\langle e, t \rangle}. \lambda x \in D_e. \# \{ p' \mid p' = \text{non-determining property of } P \text{ that } x \text{ satisfies for an epistemic agent } a \}^9$

- (17) a.  $[_S [_{kaze\text{-}ga} [_{DegP} [_{VP} [_{NP} haru] meku]]]]$



- [1]  $\llbracket C\text{-meku} \rrbracket = (16)$   
 [2]  $\llbracket haru \rrbracket = \lambda x \in D_e. \text{Spring}(x) = 1$   
 [3]  $\llbracket VP \rrbracket = \llbracket meku \rrbracket (\llbracket haru \rrbracket)$   
 $= \lambda x \in D_e. \# \{ p' \mid p' = \text{non-determining properties of spring that } x \text{ satisfies for } a \}$   
 [4]  $\llbracket pos \rrbracket = \lambda g \in D_{\langle e, d \rangle}. \lambda x \in D_e. g(x) \geq s(g)$   
 [5]  $\llbracket DegP \rrbracket = \llbracket pos \rrbracket (\llbracket harumeku \rrbracket)$   
 $= \lambda x \in D_e. \# \{ p' \mid p' = \text{non-determining properties satisfying Spring}(x) = 1 \text{ for } a \}$   
 $\geq s (\# \{ p' \mid p' = \text{non-determining properties of spring} \})$

**4.4 Aspectual Coercion in C-meku** In the analysis of C-meku above, I put aside the reason why most of the C-meku examples in this paper have been shown in *-te-iru* form (see also footnote 2). Except for the case like (17), C-meku rarely appears in its basic form. This section briefly discusses the reason why C-meku should appear in *-te-iru* form but not in its basic form.

Japanese morpheme *-te-iru* has progressive, resultative, and existential perfective readings<sup>10</sup> (Kudo, 1995; Shirai, 1998, 2000; Nishiyama, 2006). Japanese stative verbs have to co-occur with the existential perfective *-te-iru* when they denote stative meaning as the following examples show.

<sup>9</sup> This paper tentatively formalizes the stereotypicality of C-meku in this way. However, this formalization abstract away question (c'), the referent set of properties of C-meku. Following to McCready and Ogata (2007a)'s analysis, C-meku seems to refer to the set of all the properties (including non-determining properties) of its attached noun as the following example shows.

- (iii) a. akai kutsu mei-te-iru mono  
           red shoe MEKU-ASP-PRES. thing  
       b. ?? akai kutsu rashii mono  
           red shoe RASHII-PRES. thing  
       c. akai kutsu {mitai/-no yoo}-na mono  
           red shoe {MITAI/-GEN. YOO}-COP.-PRES. thing  
           ‘Lit. a red shoe like thing’

Examples (iiib-c) are repetitions of example (11a-b). Following to McCready and Ogata (2007a)'s assumption that the set of non-determining properties of a red shoe is empty, the felicity of example (iiia) seems to indicate that the referent set of C-meku is the set of all the actual properties of its attached noun, similar to (iiic) *mitai/yoo*. However, this assumption is skeptical. Without any special context, if something is called ‘*akai kutsu rashii*’ (‘red shoe-like’), native speakers of Japanese might be able to imagine a shoe whose color is vivid red. This may imply that the set of non-determining property of a red shoe is not empty. Since further discussion is needed about this point, this paper tentatively proposes that the referent set of properties of C-meku is the set of non-determining properties.

<sup>10</sup> Resultative is defined as ‘a direct result of a past event still continues’ while existential perfective is defined as ‘the existence of past events’ (McCawley, 1971:104). Though it seems to be difficult to distinguish these two, one key is the durativity of the verb (Kudo, 1995, Shirai, 2000). Resultative *-te-iru* attaches to punctual verbs such as *taore-ru* (‘to fell’), while existential *-te-iru* attaches to durative verbs such as *aisu-ru* (‘to love’). Since C-meku is durative, all the *-te-iru* with C-meku in this paper are existential *-te-iru*.



(18) *shir-u* ('to know')

- a. ?Naomi-wa            Kota-o            shi-ru  
      Naomi-TOP.        Kota-ACC.        know-PRES.  
      'Lit. Naomi is going to know Kota'
- b. Naomi-wa            Kota-o            shit-te-iru  
      Naomi-TOP.        Kota-ACC.        know-ASP-PRES.  
      'Lit. Naomi knows Kota.'

(19) *mots-u* ('to possess')

- a. ?Sayaka-wa            horun-o            motsu  
      Sayaka-TOP.        horn-ACC.        possess-PRES.  
      'Lit. Sayaka is going to possess her own horn'
- b. Sayaka-wa            horun-o            mot-te-iru  
      Sayaka-TOP.        horn-ACC.        have-ASP-PRES.  
      'Lit. Sayaka possesses her own horn.'

The verb *shir-u* ('to know') in (18a) is not felicitously interpreted as a stative verb since the interpretation of "be going to" appears. In contrast, it is felicitously interpreted as a stative verb in (18b). The verb *mots-u* ('to possess') in (19) behaves similarly. (19a) does not allow to be interpreted as a stative verb, while (19b) shows the interpretation as a stative verb<sup>11</sup>. C-*meku* also shows the same phenomenon as shown in (20).

- (20) a. ?kono    heya-wa    [<sub>VP</sub> byooin    meku]  
      this    room-TOP.        hospital    MEKU-PRES.  
      'Lit. this room is going to fit the stereotypical image of a hospital room'
- b. kono    heya-wa    [<sub>VP</sub> byooin    mei-te-iru]<sup>12</sup>  
      this    room-TOP.        hospital    MEKU-ASP-PRES.  
      'Lit. this room fits the stereotypical image of a hospital room'

These examples in (18-20) suggest that C-*meku* is also a stative verb since it has to co-occur with *-te-iru* to describe a certain situation. The reason why the basic form of a Japanese stative verb leads an odd interpretation such as "be going to" might be explained by the notion of aspectual coercion. Aspectual coercions are operations to prevent a mismatch between the aspect of a verbal expression and aspectual requirements of the context. (Henriette, 2000; Dölling, 2014). In the cases of (18-20), the stativity is an aspect of verbal expression, which requires the verb to co-occur with *-te-iru*, and the aspectual requirement of the context is to describe a certain situation. If *-te-iru* appears, the sentence will be interpreted felicitously since there is no mismatch between the aspectual requirements of the verb and the context. However, if *-te-iru* does not appear, the aspect of non-past tense marker (*-u* or *-ru*, which are the inflectional ending of basic form) forces the stative verb to be interpreted as an active or achievement verb, which leads the odd reading.

At this point, a question arises: why is example (17) [<sub>S</sub> *kaze-ga* [<sub>VP</sub> *haru meku*]], which I used to demonstrate how the formalization of C-*meku* in (16) works, felicitously interpreted without *-te-iru*? One possible reason is that the context requirement for (17) is not a mere description of properties that spring

<sup>11</sup> It should be noted that, if the verb *mots-u* is used as an active verb indicating movement (in this case, 'to bring up'), example (19a) does not denote the meaning of "be going to", and it is felicitous.

<sup>12</sup> If the *-te-iru* denotes the other meaning such as progressive, (20b) will be infelicitous as in below.

(20b)\* *kono heya-wa genzai kyuusoku-ni* [<sub>VP</sub> *byooin mei-te-iru*]  
      this room-TOP. now fast/radically hospital MEKU-ASP-PRES.  
      'Lit. this room is changing into the typical room in a hospital.'

holds but a description of transition from winter to spring. Example (17) is often uttered in the situation like this: the wind becomes warmer, cherry blossoms start to bloom, and the speaker feels the change of the seasons. In this case, the context focuses more on the achievement of transition from winter to spring rather than a plain description of typical spring. In this contextual requirement, *C-meku* does not have to co-occur with existential *-te-iru* since there is no conflict between the verbal aspect constraints and the contextual aspect constraints. Therefore, example (17) is felicitously interpreted without *-te-iru*.

## 5 Conclusion

This paper has investigated the stereotypicality of *C-meku* and provided a formalization to *C-meku*, proposing that (a) *C-meku* composes a degree predicate of stereotypicality and (b) *C-meku* does not have any linguistic presuppositions that S-adjs have. Section 3 has also considered the aspectual coercion in *C-meku*. As the main claim of this paper, *C-meku* is formalized in the following way:

$$\llbracket \text{C-meku} \rrbracket = \lambda P \in D_{\langle e, t \rangle}. \lambda x \in D_e. \# \{ p' \mid p' = \text{non-determining property of } P \text{ that } x \text{ satisfies for an epistemic agent } a \}$$

There are several issues remained in this study. First, it is still questionable that only the cardinality of non-determining properties is the way to formalize stereotypicality denoted by *C-meku*. Kennedy and McNally (2010) proposes another way to formalizing the degree predicate using the notion of quality and quantity. This might also be applicable to the formalization of stereotypicality denoted by *C-meku*. Second, further discussion about the referent set of *C-meku* is necessary (see footnote 9). This discussion might improve the formalizations of S-adjs by McCready and Ogata (2007a). The third is that the analysis of *C-meku* with aspect markers is not enough. As for the nature of *-te-iru*, Nishiyama (2006) might give an insight to the compositional analysis. Further research on *C-meku* with aspect markers is also needed.

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