

On the Semantics of the Japanese Comparison Class Marker *-ni-shite-wa**

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1 Introduction

It is well known that the positive form of relative/open-scale gradable adjectives refers to contextual standards of comparison and these standards are determined based on comparison classes (i.e. sets of entities being compared; see e.g. Klein 1980, Kennedy & McNally 2005, Kennedy 2007b). Example (1a), for instance, contains the positive form of the relative gradable adjective *tall* and its truth conditions in (1b) refer to a standard of tallness based on a comparison class.

- (1) a. Taro is tall.
b. (1a) is true iff Taro's height is greater than a standard of tallness based on a comparison class.

Standards of comparison vary depending on members in comparison classes. For example, a standard of tallness based on a comparison class consisting of basketball players is higher than that based on a comparison class consisting of gymnasts. In many cases, comparison classes are left

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implicit and are identified based on contextual information. Thus, sentences with relative gradable adjectives are context sensitive.

In natural language, there is a way to reduce the above context-sensitivity of relative gradable adjectives. In English, for example, a comparison class is made explicit by a *for*-phrase (Klein 1980):

- (2) a. Taro is tall for a gymnast.
 b. (2a) is true iff Taro's height is greater than a standard of tallness based on a comparison class consisting of gymnasts.

In the above example, the PP *for a gymnast* serves as a comparison class marker. The comparison class is specified as a set of gymnasts and the standard of tallness is determined based on this set. Previous analyses on comparison class markers focus almost exclusively on the English *for*-PP and various findings on this phrase have accumulated in the literature (e.g. Fulst 2006, Kennedy 2007b, Solt 2011, Bylilina 2014). However, there have not been many previous attempts to analyze comparison class markers in other languages.

Against this backdrop, this paper focuses on the Japanese comparison class marker *-ni-shite-wa* in (3), which includes the contrastive topic marker *-wa* and explicitly indicates a comparison class:¹

- (3) Taro-wa [taisoo senshu]-ni-shite-wa se-ga takai.
 Taro-TOP [gymnastics player]-*ni-shite*-CT height-NOM tall
 'Taro is tall for a gymnast.'

In (3), the comparison class marker takes the NP *taisoo senshu* 'a gymnast' as its argument and specifies the comparison class as a set of gymnasts, and the standard of tallness is calculated based on this set, just like the English example in (2a). The purpose of this paper is to propose the semantics of the Japanese comparison class marker based on two observations made by Mizutani (2022): the norm-related restriction on its argument, and the peculiar behaviors it exhibits when combined with an individual-denoting NP of type *e*.

The structure of this paper is as follows. Section 2 introduces the two observations noted above. Section 3 proposes the semantics of the Japanese comparison class marker that accounts for these observations. Section 4 concludes this paper with a few remarks on some implications of the proposed analysis for the recent debate on the distinction between relative and absolute gradable adjectives.

2 Observations

2.1 Norm-Related Restriction

Mizutani (2022) observes that the Japanese comparison class marker *-ni-shite-wa* has norm-related restrictions on its argument:

¹ CT in the glosses is an abbreviation for 'contrastive topic'.

- (4) a. Taro-wa [taisoo senshu]-ni-shite-wa se-ga takai.
 Taro-TOP [gymnastics player]-*ni-shite*-CT height-NOM high
 ‘Taro is tall for a gymnast.’
- b. #Taro-wa [basuketto senshu]-ni-shite-wa se-ga takai.
 Taro-TOP [basketball player]-*ni-shite*-CT height-NOM high
 ‘Taro is tall for a basketball player.’

The above examples indicate that the comparison class marker can be combined with the NP *taisoo senshu* ‘a gymnast’ but not with the NP *basuketto senshu* ‘a basketball player’ when the predicate is the relative gradable adjective *se-ga takai* ‘tall’. Given our world knowledge that gymnasts and basketball players are usually considered to be short and tall, respectively, the contrast between (4a) and (4b) demonstrates that the comparison class marker must be combined with an NP whose referents have a low degree on a scale associated with a relative gradable adjective (e.g. the tallness scale). This observation is summarized as follows:²

- (5) Observation 1
 The comparison class marker *-ni-shite-wa* requires as its argument an NP whose referents are usually considered to have a low degree on a scale specified by a relative gradable adjective.

2.2 Individual-Denoting NPs and Available Interpretations of Subjects

Mizutani (2022) points out that the Japanese comparison class marker can take an individual-denoting NP of type *e* as its argument:

- (6) *pro* Taro-*ni-shite-wa* genki-da.
pro Taro-*ni-shite*-CT lively-COP
 ‘(Lit.) The referent of *pro* is lively for Taro.’

In (6), the comparison class marker takes the individual-denoting NP *Taro* as its argument and the covert pronoun is used in the subject position.³ Interestingly, available interpretations of the subject are different depending on whether relative gradable adjectives are stage-level or individual-level predicates (Milsark 1974, Carlson 1980).

² Sawada (2009) claims that the same norm-related restriction applies to the English comparison class marker.

- (i) a. Jim is tall for a gymnast.
 b. # Jim is tall for a basketball player. (Sawada 2009: 1101)

However, Bylinina (2014) cites a similar example as an acceptable one:

- (ii) John is tall for a basketball player. (Bylinina 2014: 155)

Thus, this paper sets aside the issue of whether the English and Japanese comparison class markers obey the same norm-related restriction.

³ According to Bylinina (2014), the English comparison class marker is incompatible with an individual-denoting NP:

In the case of stage-level predicates (SLPs), two interpretations are available. The first one is that the subject refers to the same individual as the referent of the individual-denoting NP. The following example includes the SLP *genki-da* ‘lively’.

- (7) a. Context
Ziro knows that Taro is a sickly boy and rarely plays outside. The following remark is made by Ziro when he sees Taro playing in the school yard:
- b. Kyoo-wa, *pro*_i Taro_i-ni-shite-wa genki-da.
today-TOP *pro* Taro-*ni-shite*-CT lively-COP
‘(Lit.) today, Taro is lively for himself.’
- c. Today, Taro_i is livelier than he_i usually is.

The covert pronoun in (7b), when uttered in the context in (7a), refers to the individual denoted by the argument of the comparison class marker (i.e. Taro). The resulting interpretation is (7c), which states that Taro’s current degree of liveliness is greater than his usual degree of liveliness.⁴

The second interpretation is that the subject refers to a different individual from the referent of the individual-denoting NP:

- (8) a. Context
Tom and Mary know that Taro is a sickly boy and rarely plays outside. The following is the conversation between Tom and Mary when they see a boy similar to Taro playing in the school yard.
- b. Tom: Is that boy Taro?
- c. Mary: Iya, *pro*_i Taro_j-ni-shite-wa genki-da.
No *pro* Taro-*ni-shite*-CT lively-COP
‘(Lit.) no, he_i is lively for Taro_j.’
- d. He_i is livelier than Taro_j usually is.

(iii) a. *He is tall for John.

b. *John is smart for that boy.

(Bylinina 2014: 155)

Bylinina (2014) claims that *for*-PPs have a covert clausal structure denoting a set of individuals relativized to a possible world, and that the positive morpheme takes a modalized comparison class based on this set. As indirect evidence for this claim, she points out the existence of the Japanese comparison class marker *-ni-shite-wa*, which includes the *renyoo*-form of the verb *su-ru* ‘do’ and has an overt clausal structure. However, the observation here seems to cast doubt on her claim because the two comparison class markers behave differently, although the thorough assessment of her analysis is left for another occasion.

⁴ Example (7b) is infelicitous in a context where conversational participants know that Taro is a very lively boy. Thus, the norm-related restriction also applies to cases where the comparison class marker is combined with an individual-denoting NP.

The covert pronoun in (8c), when uttered in the context in (8a), refers to a boy other than Taro and the resulting interpretation is (8d), according to which the boy's current degree of liveliness is compared with Taro's usual degree of liveliness, and the former is greater than the latter.

In the case of individual-level predicates (ILPs), the second interpretation is easily obtained, in which the covert subject refers to an individual other than the referent of the individual-denoting NP. The example below involves the ILP *se-ga takai* 'tall'.

- (9) a. Context
Tom and Mary know Taro's height. The following is the conversation between them when they see a boy similar to Taro playing in the school yard.
- b. Tom: Is that boy Taro?
- c. Mary: Iya, *pro*_i Taro_j-ni-shite-wa se-ga takai.
No *pro* Taro-*ni-shite*-CT height-NOM high
'(Lit.) No, he_i is tall for Taro_j.'
- d. He_i is taller than Taro_j.

In the above example, the covert pronoun refers to a boy other than Taro and the resulting interpretation is (9d), which states that the height of the boy is greater than that of Taro. To obtain the first interpretation, a special context is always required. The following example is a case in point:

- (10) a. Context
Tom knows Taro's height. Taro wears elevator shoes today. The following remark is made by Tom when he sees Taro:
- b. *pro*_i Taro_i-ni-shite-wa se-ga takai.
pro Taro-*ni-shite*-CT height-NOM high
'(Lit.) Taro is tall for himself.'
- c. Taro's current height is greater than his usual height.

In (10b), the subject of the gradable adjective *se-ga takai* can refer to the same individual as the referent of the individual-denoting NP, and the interpretation in (10c) is obtained, according to which the current height of Taro is greater than his usual height. As is clear from the context in (10a), however, the former height becomes different from the latter height due to the elevator shoes, which means that the gradable adjective is coerced into an SLP and no longer denotes a permanent property. This in turn indicates that the only interpretation available in the case of ILPs is the second one.

These observations are summarized as in (11):

- (11) Observation 2
The comparison class marker *-ni-shite-wa* can take an individual-denoting NP of type *e* as its argument and the interpretations of a subject NP differ depending on whether relative gradable adjectives are SLPs or ILPs:

- a. In the case of SLPs, the subject refers to the same individual as the referent of the individual-denoting NP or a different individual.
- b. In the case of ILPs, the subject can only refer to a different individual from the referent of the individual-denoting NP.

In what follows, the semantics of the comparison class maker will be proposed to capture the two observations in (5) and (11).⁵

3 Proposal

3.1 Assumptions

Following Kennedy (1999, 2007b), this paper assumes that gradable adjectives denote a measure function as in (12a):

- (12) a. $\llbracket \text{se-ga takai} \rrbracket^g = \lambda x. \lambda w. \text{HEIGHT}(x)(w)$
- b. The gradable adjective *se-ga takai* takes an individual x and a world w and returns x 's height in w .

⁵ Sawada (2007, 2012) observes that the Japanese comparative standard marker *kurabe-tara* 'compared to', which is used to express implicit comparison (Kennedy 2007a), induces two implicatures:

- (iv) a. Ziro-ni kurabe-tara Taro-wa se-ga takai
 Ziro-DAT compare-COND Taro-TOP height-NOM high
 'Compared to Ziro, Taro is tall.'
- b. Ziro is short.
- c. Taro is not definitely tall. (Sawada 2007: 1080)

As in (iv-b) and (iv-c), example (iv-a) implies that the standard of comparison, Ziro, has a low degree on a scale specified by the gradable adjective *se-ga takai*, and that the subject, Taro, does not definitely reach the standard of tallness. The existence of the first implicature is supported by the infelicity of the following example, where the standard of comparison is the NP whose referents usually have a high degree on the relevant scale:

- (v) #Basuketto senshu-ni kurabe-tara Taro-wa se-ga takai.
 basketball player-DAT compare-COND Taro-TOP height-NOM high
 'Compared to a basketball player, Taro is tall.' (Sawada 2012: 146)

Given this fact, the comparative standard marker *kurabe-tara* and the comparison class marker *-ni-shite-wa* have some similarity. However, they differ in that the former cannot be combined with an individual-denoting NP whose referent is the same as the subject:

- (vi) Taro_i-ni kurabe-tara kare*_{i/j}-wa {genki-da / se-ga takai}.
 Taro-DAT compare-COND he-TOP lively-COP / height-NOM high
 'Compared to Taro_i, he_j is tall.'

For this reason, Sawada's (2007, 2012) analysis of *kurabe-tara* cannot be applied to *-ni-shite-wa*. See Mizutani (2022) for a more detailed discussion on this point.

To deal with the positive form of gradable adjectives, the covert degree morpheme *pos* is adopted, which takes a comparison class *C* as one of its arguments and introduces a standard of comparison based on *C* (see e.g. Solt 2011):

- (13) a. $\llbracket pos \rrbracket^g = \lambda G_{\langle e, \langle s, \langle e, t \rangle \rangle} . \lambda C_{\langle s, \langle e, t \rangle \rangle} . \lambda x . \lambda w . G(x)(w) > \text{STANDARD}(G)(C(w))$
 b. The positive morpheme *pos* takes a gradable adjective *G* and a comparison class *C* and returns a set of individuals in *w* whose degrees of *G*-ness in *w* are greater than a standard of *G* based on *C* in *w*.

In addition, if a comparison class is not made explicit, the positive morpheme takes a contextual variable *C* of type $\langle s, \langle e, t \rangle \rangle$, whose referent is determined via assignment function *g* (von Stechow 1994, Stanley & Gendler Szabó 2000). The following example illustrates how these assumptions derive truth conditions of a sentence with the positive form of the gradable adjective *se-ga takai* ‘tall’.

- (14) a. Taro-wa se-ga takai.
 Taro-TOP height-NOM high
 ‘Taro is tall.’
 b. Simplified LF of (14a)
 $\llbracket \boxed{1} \rrbracket^g$ Taro-wa $\llbracket \boxed{C_1} \rrbracket^g$ $\llbracket \boxed{pos} \rrbracket^g$ se-ga takai
 c. $\llbracket \boxed{1} \rrbracket^g$
 $= \llbracket pos \rrbracket^g (\llbracket se-ga takai \rrbracket^g)$
 $= \lambda C_{\langle s, \langle e, t \rangle \rangle} . \lambda x . \lambda w . \text{HEIGHT}(x)(w) > \text{STANDARD}(tall)(C(w))$
 d. $\llbracket \boxed{2} \rrbracket^g$
 $= \llbracket \boxed{1} \rrbracket^g (\llbracket C_1 \rrbracket^g)$
 $= \lambda x . \lambda w . \text{HEIGHT}(x)(w) > \text{STANDARD}(tall)(g(C_1)(w))$
 e. $\llbracket \boxed{3} \rrbracket^g$
 $= \llbracket \boxed{2} \rrbracket^g (\llbracket Taro \rrbracket^g)$
 $= \lambda w . \text{HEIGHT}(Taro)(w) > \text{STANDARD}(tall)(g(C_1)(w))$
 f. Truth Conditions of (14a)
 (14a) is true in a world *w* iff the height of Taro in *w* is greater than a standard of tallness based on the comparison class *C*₁ in *w*.

Next, let us move on to the semantics of the contrastive topic marker *-wa*. According to Sawada (2007, 2022), the contrastive topic marker has a scalar contrastive usage, which introduces a scalar presupposition that the prejacent is the most likely among its alternatives. As one piece of evidence for this claim, Sawada (2007) provides the following contrast:

- (15) Context: Taro participated in an unofficial tennis tournament (= round robin). He competed with an amateur, a semiprofessional, and a professional.

- a. Taro-wa shirooto-ni-wa ka-tta.
Taro-TOP amateur-DAT-CT win- PST
'Taro beat the [amateur]_{cont.}'
- b. ??Taro-wa puro-ni-wa ka-tta.
Taro-TOP professional-DAT-CT win- PST
'Taro beat the [professional]_{cont.}'

(Sawada 2007: 284)

Given that the amateur but not the professional is the most likely opponent for Taro to beat among the three individuals in question, (15b) cannot satisfy the scalar presupposition introduced by the contrastive topic marker. Accordingly, the infelicity of (15b) arises. In what follows, it is assumed that the contrastive topic marker included in the comparison class marker is the scalar contrastive *-wa*.

Furthermore, this paper follows Tomioka's (2010a, 2010b) analysis of the contrastive topic marker and assumes that it is just a focus marker without any semantic content that introduces alternatives obligatorily interpreted by a covert operator in a higher position.⁶ As for the semantics of this covert operator, (16a) is adopted, which is based on Sawada's (2007, 2022) analysis of the scalar contrastive *-wa*.⁷

- (16) a. $\llbracket \text{CT} \rrbracket^g = \lambda p. \lambda w: \forall q [q \in \text{ALT}(p) \wedge q \neq p \rightarrow q <_{\text{likelihood}} p]. p(w)$
- b. The contrastive topic (CT) operator introduces a scalar presupposition requiring that its prejacent p is the most likely among its alternative propositions (= $\text{ALT}(p)$).

The following is an illustration of how these assumptions derive the scalar presuppositions of the examples above:

- (17) a. Simplified LF of (15a)/(15b)
[$\llbracket \text{CT} \llbracket \llbracket \text{Taro-wa shirooto}_F\text{-ni-wa/puro}_F\text{-ni-wa katta} \rrbracket \rrbracket$]
- b. $\text{ALT}(\llbracket \text{I} \rrbracket) = \left[\begin{array}{l} \text{Taro beat the amateur (= most likely),} \\ \text{Taro beat the semi-professional,} \\ \text{Taro beat the professional (= least likely)} \end{array} \right]$
- c. Scalar Presupposition of (15a)
The prejacent *Taro beat the amateur* is the most likely among its alternatives.

⁶ Following Krifka (2008), this paper uses the word 'focus' in the following sense:

(vii) Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions.
(Krifka 2008: 247)

⁷ In (16a), the colon/dot notation in Heim and Kratzer (1998) is used to indicate the scalar presuppositions of the CT operator. In addition, the contrastive part of the presuppositions in Sawada's (2007, 2022) analysis (i.e., an alternative proposition other than the prejacent is (possibly) false) is omitted for ease of discussion.

d. Scalar Presupposition of (15b)

#The prejacent *Taro beat the professional* is the most likely among its alternatives.

The alternative propositions in (17b) are obtained from replacing the focused parts with the contextually salient individuals. The CT operator introduces the scalar presuppositions as in (17c) and (17d), but the latter cannot be satisfied, which leads to the infelicity of (15b).

3.2 Observation 1

This paper proposes that the comparison class marker, when combined with a predicate P of type $\langle e, \langle s, t \rangle \rangle$, returns a set of distinct individuals satisfying P in the evaluation world w , and this set serves as a comparison class for relative gradable adjectives:

$$(18) \quad \llbracket \text{-ni shite} \rrbracket^g = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda w . \lambda x . P(x)(w)$$

The norm-related restriction of the comparison class marker arises from the scalar presupposition introduced by the CT operator. As shown below, the scalar presupposition cannot be satisfied if the argument of the comparison class marker denotes a set of individuals whose referents are considered to have a high degree on a relevant scale.

- (19) a. #Taro-wa [basuketto senshu]_F-ni-shite-wa se-ga takai.
 Taro-TOP [basketball player]-*ni-shite*-CT height-NOM height
 ‘Taro is tall for a basketball player.’

b. Simplified LF of (19a)

$$\llbracket \text{CT} \llbracket \text{Taro-wa} \llbracket \text{[basuketto senshu]}_F\text{-ni-shite-wa} \llbracket \text{pos se-ga takai} \rrbracket \rrbracket \rrbracket$$

 c. $\llbracket \boxed{1} \rrbracket^g$

$$= \llbracket \text{pos} \rrbracket^g (\llbracket \text{se-ga takai} \rrbracket^g) (\llbracket \text{[basuketto senshu]}_F\text{-ni-shite-wa} \rrbracket^g) (\llbracket \text{Taro} \rrbracket^g)$$

$$= \lambda w . \text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda x . x \text{ is a basketball player in } w)$$

d. Truth Conditions of (19a)

$$\llbracket \boxed{2} \rrbracket^g = \lambda w : \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$$

$$\text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda x . x \text{ is a basketball player in } w)$$

 e. $\text{ALT}(\boxed{1})$

$$= \left[\begin{array}{c} \lambda w . \text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda x . x \text{ is a gymnast in } w) \\ \vdots \\ \lambda w . \text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda x . x \text{ is a basketball player in } w) \\ \vdots \end{array} \right]$$

f. Scalar Presupposition of (19a)

The prejacent *Taro's height is greater than the standard of tallness based on a comparison class consisting of basketball players* is the most likely among its alternative propositions.

Suppose that a standard of tallness is equivalent to an average height of individuals in a comparison class (see e.g. Cresswell 1976, von Stechow 1984). In this case, the standard of tallness obtained from a comparison class whose members have a low degree on the tallness scale is lower than the standard obtained from a comparison class whose members have a high degree on the scale, and it is more likely for an individual to exceed the former standard than the latter. To satisfy the scalar presupposition, therefore, the comparison class marker must be combined with an NP that produces a lower standard of tallness than any other contextually relevant alternative NP does. However, this is against our world knowledge that unlike gymnasts, basketball players are usually tall, and the scalar presupposition of (19a) cannot be satisfied, which results in its infelicity.

The current analysis predicts that if the contrastive topic marker *-wa* is replaced by the scalar focus particle *-mo* ‘even’, the norm-related restriction is flipped, because *-mo* introduces the opposite scalar presupposition (i.e., the prejacent is the least likely among its alternative propositions). As the following contrast indicates, this prediction is borne out, and this supports the current analysis.

- (20) a. Taro-wa [basuketto senshu]-ni-shite-mo se-ga takai.
 Taro-TOP [basketball player]-*ni-shite*-even height-NOM high
 ‘Even considering that Taro is a basketball player, he is tall.’
- b. #Taro-wa [taisoo senshu]-ni-shite-mo se-ga takai.
 Taro-TOP [gymnastics player]-*ni-shite*-even height-NOM high
 ‘Even considering that Taro is a gymnast, he is tall.’

3.3 Observation 2

Now, let us move on to cases where the comparison class marker takes an individual-denoting NP as its argument. In these cases, the lexical entry in (18) does not work because the argument of the comparison class marker is not an element of type $\langle e, \langle s, t \rangle \rangle$ but of type e . To deal with these cases, this paper proposes that the comparison class marker can utilize another option to create a comparison class; when it is combined with an individual-denoting NP of type e , a comparison class is created based on not a set of distinct individuals but a set of temporal stages (Carlson 1980; see also Toledo & Sassoon 2011) of the referent of the NP in the evaluation world:⁸

- (21) $\llbracket -ni\ shite \rrbracket^g = \lambda x.\lambda w.\lambda y. y$ is a temporal stage of x in w

Let us illustrate how this proposal accounts for Observation 2. The truth conditions of the first interpretation of (22a) are derived as follows, where the covert pronoun refers to the same individual as the referent of the individual-denoting NP:

- (22) a. **pro*_i Taro_{i,F}-ni-shite-wa se-ga takai.
pro Taro-*ni-shite*-CT height-NOM high
 ‘(Lit.) Taro is tall for himself.’

⁸ As noted in Footnote 3, the comparison class marker has an overt clausal structure. In the proposed lexical entries in (18) and (21), however, it is only partially decomposed (i.e. *-ni-shite* and *-wa*). Hence, some refinements should be made to reflect the contributions of the component parts in a more transparent way, but this is left for future work.

- b. Simplified LF of (22a)
 $[\Box \text{CT} [\Box \text{pro}_i [\text{Taro}_{i,F}\text{-ni-shite-wa} [\text{pos} [\text{se-ga takai}]]]]]$
- c. $\llbracket \boxed{1} \rrbracket^g$
 $= \llbracket \text{pos} \rrbracket^g (\llbracket \text{se-ga takai} \rrbracket^g) (\llbracket \text{Taro}_{F}\text{-ni-shite-wa} \rrbracket^g) (\llbracket \text{pro}_i \rrbracket^g)$
 $= \lambda w. \text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda y. y \text{ is a temporal stage of Taro in } w)$
- d. Truth Conditions of (22a)
 $\llbracket \boxed{2} \rrbracket^g$
 $= \lambda w: \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$
 $\text{HEIGHT}(\text{Taro})(w) > \text{STANDARD}(\text{tall})(\lambda y. y \text{ is a temporal stage of Taro in } w)$
 $= \lambda w: \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$
 $\text{HEIGHT}(\text{Taro})(w) > \text{HEIGHT}(\text{Taro})(w)$

The truth conditions in (22d), however, are problematic. The comparison class consists of Taro’s temporal stages in the evaluation world. Crucially, every member in the comparison class has the same height, because the ILP *se-ga takai* ‘tall’ denotes a permanent property and the height of Taro’s temporal stages does not vary in the evaluation world. Coupled with the assumption that a standard of comparison is an average degree of members in a comparison class, the standard of tallness based on a set of Taro’s temporal stages becomes equivalent to Taro’s height.⁹ As a result, the above truth conditions require that Taro is taller than himself, which is contradictory. Thus, this interpretation is excluded.

On the other hand, no problematic truth conditions arise under the second interpretation, where the cover pronoun refers to a different individual from Taro (say, Ziro).

- (23) a. *pro*_i Taro_{j,F}-ni-shite-wa se-ga takai.
pro Taro-*ni-shite*-CT height-NOM high
 ‘He_i is taller than Taro_j.’

- b. Simplified LF of (23a)
 $[\Box \text{CT} [\Box \text{pro}_i [\text{Taro}_{j,F}\text{-ni-shite-wa} [\text{pos} [\text{se-ga takai}]]]]]$
- c. Truth Conditions of (23a)
 $\llbracket \boxed{2} \rrbracket^g$
 $= \lambda w: \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$
 $\text{HEIGHT}(\text{Ziro})(w) > \text{HEIGHT}(\text{Taro})(w)$

Unlike the previous case, the height of Taro is compared with that of an individual other than him (i.e. Ziro) and these two individuals can have different heights. Hence, contradiction does not happen, and this interpretation is not excluded.

Next, let us consider cases with SLPs. The truth conditions of the two interpretations of (24a) are derived as follows:

⁹ Note that the same result is obtained if a standard of comparison is a median value over a comparison class or if it is a range of degrees around a median value over a comparison class based on the median absolute deviation (see Solt 2011 for the arguments for the latter view).

- (24) a. *pro*_{i,j} Taro_{i,F}-ni-shite-wa genki-da.
pro Taro-*ni-shite*-CT lively-COP
 ‘Taro_i is livelier than he_i usually is. / He_j is livelier than Taro_i usually is.’
- b. Simplified LF of First Interpretation
 $[\Box \text{CT} [\Box \text{pro}_i [\text{Taro}_{i,F}\text{-ni-shite-wa} [\text{pos} [\text{genki-da}]]]]]$
- c. Truth Conditions of First Interpretation
 $\llbracket \boxed{2} \rrbracket^g$
 $= \lambda w: \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$
 LIVELINESS(*Taro*)(*w*) > STANDARD(*lively*)($\lambda y. y$ is a temporal stage of Taro in *w*)
- d. Simplified LF of Second Interpretation
 $[\Box \text{CT} [\Box \text{pro}_j [\text{Taro}_{i,F}\text{-ni-shite-wa} [\text{pos} [\text{genki-da}]]]]]$
- e. Truth Conditions of Second Interpretation
 $\llbracket \boxed{2} \rrbracket^g$
 $= \lambda w: \forall q [q \in \text{ALT}(\boxed{1}) \wedge q \neq \llbracket \boxed{1} \rrbracket^g \rightarrow q <_{\text{likelihood}} \llbracket \boxed{1} \rrbracket^g].$
 LIVELINESS(*Ziro*)(*w*) > STANDARD(*lively*)($\lambda y. y$ is a temporal stage of Taro in *w*)

Like the previous case, the comparison class consists of Taro’s temporal stages in the evaluation world. Importantly, however, different members in the comparison class can have different degrees of liveliness because the predicate is an SLP and Taro’s degree of liveliness varies in the evaluation world. As a result, the standard of liveliness based on Taro’s temporal stages can be different from his current liveliness and the truth conditions of the first interpretation in (24c) are not contradictory. Thus, this interpretation is not ruled out, unlike cases with ILPs. In addition, the current liveliness of an individual other than Taro (i.e. Ziro) can also be different from the standard. The truth conditions of the second interpretation in (24e), therefore, does not lead to any problem and this interpretation is not excluded, either.

4 Conclusion

This paper has proposed that the Japanese comparison class marker *-ni-shite-wa* creates two types of comparison classes depending on what kind of argument it takes. In the case of a predicate/NP of type $\langle e, \langle s, t \rangle \rangle$, the comparison class marker provides a comparison class consisting of different individuals satisfying the predicate. In the case of an individual-denoting NP of type *e*, it provides a comparison class consisting of temporal stages of the referent of the NP. This proposal, coupled with the scalar presupposition introduced by the contrastive topic marker *-wa*, captures the two observations of the comparison class marker in (5) and (11).

The current analysis has some implication for the recent debate on relative and absolute gradable adjectives. Since Rothstein and Winter (2004) and Kennedy and McNally (2005), several proposals have been made to differentiate these gradable adjectives. Kennedy (2007b), for instance, claims that relative gradable adjectives like *tall* refer to comparison classes while absolute gradable adjectives like *bent* and *straight* do not. Toledo and Sassoon (2011), on the other hand, claim that both types of gradable adjectives refer to comparison classes. According to this claim, relative

gradable adjectives utilize comparison classes based on extensional categories (i.e. those consisting of distinct individuals) and absolute gradable adjectives make use of those based on counterparts (Lewis 1986) and/or temporal stages of one individual. The current analysis indirectly supports the latter view because the Japanese comparison class marker is an overt element that is sensitive to the distinction between the two types of comparison classes.

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