

Kawahara, Koji

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Koji Kawahara

# NON-NEUTRALITY AND SETTING OF STANDARDS IN DEGREE OF CHANGE AND MOTION EVENTS\*

## ABSTRACT

*A variety of aspects have been the target of discussion in linguistic literature. Degree achievement verbs are ‘murky’ in that they cannot be classified as an appropriate type from the perspective of telicity. Japanese DAs are derived from adjectives with a derivational morpheme, receiving only a telic interpretation. Since their telicity can be uniformly determined, it is expected that they require a different analysis from English degree achievement verbs. On scrutiny, however, Japanese degree achievement verbs show several phenomena that can be captured by hypothesizing the ontology of degree that is applied to the analysis of degree achievement verbs in English. The goal of this paper is, then, to show that a comprehensive analysis of Japanese degree achievement verbs can be provided based on a scalar semantics by hypothesizing standard’s setting.*

## KEYWORDS

*degree achievements; scale; motion events*

## 1. Introduction

A variety of aspects have been the target of discussion in linguistic literature. Degree achievement verbs (DAs) are ‘murky’ in that they cannot be classified as an appropriate type from the perspective of telicity. Japanese DAs are derived from adjectives with a derivational morpheme, receiving only a telic interpretation. Since

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their telicity can be uniformly determined, it is expected that they require a different analysis from English DAs. On scrutiny, however, Japanese DAs show several phenomena that can be captured by hypothesizing the ontology of degree that is applied to the analysis of DAs in English. The purpose of this paper is, then, to show that a comprehensive analysis of Japanese DAs can be provided based on a scalar semantics by hypothesizing standard's setting. I will also point out that standard's setting is active in motion events in Japanese, where goal phrases require verbs that encode a scale. My primary goal in this paper is to show that an ontology of degree is active both in DAs and motion events. The organization of this paper is as follows. Section 2 provides empirical data of DAs in English and shows that they show variable telicity. Section 3 discusses DAs in Japanese, showing that they receive a telic interpretation. Taking the empirical data in section 3 into account, section 4 provides a scalar analysis of Japanese DAs. Section 5 points out that the stable standard introduced in section 4 can also be applied to Japanese motion events. Finally, section 6 concludes the discussion.

## 2. Degree achievements

It is observed that variable telicity arises in degree achievement verbs (DOWTY 1979; KRIFKA 1987; TENNY 1994; JACKENDOFF 1996; HAY ET AL. 1999; RAMCHAND 1997; RAPOPORT 1999; KENNEDY – McNALLY 2005; KENNEDY – LEVIN 2008; WINTER 2005; KEARNS 2007; PIÑÓN 2008; KENNEDY 2012; BEAVERS 2013). In the following examples, both telic and atelic interpretations are available.

- (1) a. *The engine warmed {for, in} ten minutes.*  
b. *Sea surface temperature increased {for, in} 100 years.*

Atelic predicates are known to show entailment in their progressive forms, while telic predicates do not (VENDLER 1957; DOWTY 1979). Hence, the contrast below:

- (2) a. *John is singing. ⇒ John has sung.*  
b. *John is singing a song. ⇏ John has sung a song.*

Using the imperfective paradox as an empirical probe, it can be shown that not all DAs show variable telicity; some DAs are telic, while others are atelic (DOWTY 1979; HAY ET AL. 1999). Both *lengthen* and *straighten* are DAs, but their telicity is different.

- (3) a. *John is lengthening the rope. ⇒ John has lengthened the rope.*  
b. *John is straightening the rope. ⇏ John has straightened the rope.*

KEARNS (2007) also points out that some DAs receive only telic interpretations. According to Kearns, various telicity is due to the telos each verb possesses: the following verbs denote the onset of the maximal state or the onset of the state corresponds to the one, where the proposition that the positive form of the source adjective is true holds.

- (4) a. *The sky darkened (in an hour) (?but it wasn't dark.)*<sup>1</sup>  
 b. *The paint dried (??but it wasn't dry).*  
 c. *The tank emptied (??but it wasn't empty).*<sup>2</sup>

Modification by *almost* shows ambiguity depending on predicates. A telic predicate modified by *almost* is ambiguous between whether the described event is claimed to have occurred but it is not completely finalized or the described event has not occurred at all. An atelic predicate has only the latter type of reading. HAY ET AL. (1999) provide the following examples, in which the real world knowledge affects the telicity of different uses of *lengthen*. In (5a) *lengthen* is telic and thus is ambiguous, while *lengthen* in (5b) is atelic and it is asserted not to have occurred at all.<sup>3</sup> The additional example in (5c) from KEARNS (2007) shows that the atelic predicate does not give rise to ambiguity: Lee came close to reading *Eugene Onegin* but did not actually do so.

- (5) a. *The tailor almost lengthened my pants. (And it is not fully lengthened.)*  
 b. *The teacher almost lengthened the exam.*  
 c. *Lee almost read Eugene Onegin.*

1 For some speakers, *darken* receives an atelic reading:

(i) *The sky is darkening. ⇒ The sky has darkened.*

KEARNS (2007) suggests that the atelic reading implies that some parts of the sky have darkened but it does not lead to a reading, where the whole sky becomes completely dark. In fact, the perfective aspectual reading is possible if the endstate does not entail *x is completely A* as is pointed out by KEARNS (2007).

(ii) *The sky darkened in an hour but it wasn't completely dark.*

This is what KEARNS (2007) calls 'a comparative reading', where the endstate can be paraphrased using the comparative form of the base adjective *x is darker (than it was)*. Following KENNEDY - LEVIN (2007), I assume that *darken* is basically telic, not receiving a comparative reading here.

2 It does not seem that the verb *empty* always receives a telic reading. In the following example, where *empty* is used in the adverbial clause, the process reading or the atelic reading is possible even though the past tense form is used:

(i) *While the room emptied, I had a glass of wine.*

Nevertheless, the imperfective paradox shows that *empty* is telic:

(ii) *The sink is emptying. ⇒ The sink has emptied.*

I leave the matter for future research.

3 According to a British English speaker, these examples can be the butt of jokes: (5a) is possible, for example, in the situation, where the speaker asked the tailor to shorten his or her pants but the (probably stupid) tailor first tried to lengthen his or her pants. Later, the otherwise sad situation was somehow avoided. In that case, *almost* seems to modify the whole verb phrase, not just *lengthen*.

KENNEDY – LEVIN (2008) argue that the core meaning of gradable adjectives is encoded in deadjectival verbs, whereby the measure of change function denotes a degree of change with respect to a scale over the course of an event. According to KENNEDY – LEVIN (2008), all DAs denote change of degree between the beginning of an event and the end of an event. This leads to an atelic reading. In addition some DAs hold scalar structural properties of their adjectival bases or conventionalized standards, whereby the endpoint of an event is encoded, deriving a telic reading. Under KENNEDY – LEVIN'S (2008) analysis, telicity arises in (4) because of the scalar structure of their base adjectives that are evaluated with respect to a closed or upper-closed scale that corresponds to an endpoint of an event. The detailed analysis will be provided in section 4.

### 3. Telicity in Japanese degree achievements

In for-adverbials are compatible with telic predicates (e.g. achievement verbs) but for-adverbials are not. The examples in (6) show that the instantaneous and telic predicates are compatible with in-adverbials, not with for-adverbials.

- (6) a. *Enzin-ga* {*??jup-pun-kan*, *jup-pun-de*} *irekawat-ta*.  
 engine-NOM ten-minutes-for ten-minutes-in replace-PAST  
 'The engine was replaced {for, in} ten minutes.'
- b. *Kabin-ga* {*?juu-nen-kan*, *juu-nen-de*} *koware-ta*.  
 vase-NOM ten-years-for ten-years-in break-PAST  
 'The vase broke {for, in} ten years.'

DAs in Japanese show different behaviour in telicity. Japanese has a derivational morpheme *-maru* that is attached to an adjective (*i*-adjective) to turn it into an intransitive verb. *Atatamaru* 'warm' receives a telic reading and is compatible with in adverbials, but not with for adverbials (KAGEYAMA 1996).<sup>4</sup>

- (7) a. *Enzin-ga* {*??jup-pun-kan*, *jup-pun-de*} *atatamat-ta*.  
 engine-NOM ten-minutes-for ten-minutes-in warm-PAST  
 'The engine warmed {for, in} ten minutes.'

4 A reviewer asked about the telicity of DAs with a closed scale. Almost all Japanese *i*-adjectives, however, are open scale adjectives. One exception would be *ippai* 'full', but the derivational morpheme *-maru* cannot be attached for an unknown reason (e.g. *\*ippai-maru*). Instead, the morphemes *-ni* 'to' and *-naru* 'become' need to be used (e.g. *ippai-ni-naru*). For this reason, different scalar structural properties cannot be the target of discussion in Japanese DAs.

- b. *Kawa-(haba)-ga* {??*juu-nen-kan*, *juu-nen-de*} *hirogat-ta*.  
 river-(width)-NOM ten-years-for ten-years-in widen-PAST  
 ‘The river widened {for, in} ten years.’

Imperfective paradox also shows that Japanese DAs are telic; a progressive form does not entail its event being finalized.

- (8) a. *Enzin-ga atamatat-te iru.* ⇏ *Enzin-ga atamatat-ta*.  
 engine-NOM warm-TE IRU engine-NOM warm-NOM  
 ‘The engine is warming. The engine has warmed.’  
 b. *Kawa-(haba)-ga hirogat-te iru.* ⇏ *Kawa-(haba)-ga hirogat-ta*.  
 river-(width)-NOM widen-TE IRU river-(width)-NOM widen-PAST  
 ‘The river is widening. The river has widened.’

Japanese has a *tokoro-da* ‘place-copular’ phrase that corresponds to *almost*. The *tokoro-da* test shows that Japanese DAs modified by *tokoro-da* is ambiguous; one interpretation is that the described event does not occur at all and the other is that the event has begun but it is not terminated.

- (9) a. *Enzin-ga atamaru tokoro-da.* (*Mada tumetai kedo.*)  
 engine-NOM warm place-COP still cold though  
 ‘(Lit.) The engine almost warms. (It is still cold, though.)’  
 b. *Kawa-(haba)-ga hirogaru tokoro-da.* (*Mada semai kedo.*)  
 river-(width)-NOM widen.PAST place-COP still narrow though  
 ‘The river almost widens. (It is still narrow, though.)’

Since *hasiru* ‘run’ is an activity verb, not a DA, it is atelic and does not show ambiguity with a *tokoro-da* phrase: the described event does not occur at all yet.

- (10) a. *Enzin-ga* {*go-fun-kan*, ??*go-fun-de*} *hasit-ta*.  
 engine-NOM five-minutes five-minutes-in run-PAST  
 ‘The engine ran for five minutes, ??in five minutes.’  
 b. *Enzin-ga hasiru tokoro-da.*  
 engine-NOM run place-COP  
 ‘The engine almost runs.’

DAs take some time or are durative, not instantaneous, occurring in a situation that is conceived as lasting for a certain period of time (COMRIE 1976; SMITH 1997). Hence DAs are compatible with *yukkuri* ‘gradually’, while *irekawaru* ‘to be replaced’ is not.

- (11) a. *Enzin-ga yukkuri atatamat-ta.*  
 engine-NOM gradually warm-PAST  
 ‘The engine warmed gradually (it took time...).’
- b. *#Enzin-ga yukkuri irekawat-ta.*  
 engine-NOM gradually replace-PAST  
 ‘The engine is replaced gradually (it took time...).’

Since Japanese DAs are durative and bounded like accomplishment verbs, they give rise to ambiguity when modified by *kanari*:<sup>5</sup> one interpretation is that *kanari* indicates that the event is fully finalized and the other that it expresses an on-going process of the event. The instantaneous verb *irekawaru* ‘to be replaced’ in (12b) does not show ambiguity: the only interpretation available is that a large part of an engine or a large number of engines in some place are replaced.

- (12) a. *Enzin-ga kanari atatamat-ta.*  
 engine-NOM rather warm-PAST  
 ‘The engine warmed too much (and it was warm).’  
 ‘The engine rather warmed (but it was not warm).’
- b. *#Enzin-ga kanari irekawat-ta.*  
 engine-NOM rather replace-PAST  
 Intended: ‘The engine is replaced too much.’

It is concluded that Japanese DAs are telic even if the scalar structure of their base adjectives are open. Since gradable adjectives with an open scale do not hold their own endpoints, telicity in Japanese DAs needs some explanation.

### 3.1 Gradability

Assuming the dichotomy of scalar verbs and non-scalar verbs, RAPPAPORT HOVAV (2008) proposes three classes of scalar verbs: property scalar verbs (e.g. *open, warm*), path scalar verbs (e.g. *ascend, enter, go*) and extent scalar verbs (e.g. *read, build*). Path scalar is associated with boundedness, direction and deicticness and extent scalar is provided by incremental themes. Hence the former two verbs inherently encode scales, while the last one is due to elements other than verbs. The purpose of this subsection is to show that Japanese DAs are scalar verbs. If a verb encodes a scale, it is expected that it is available in degree constructions. As is expected, DAs are available in degree constructions and comparisons.

5 The word *kanari* is composed of two morphemes: *ka* meaning ‘possible’ or ‘okay’ and *nari*, a copular that used to mean ‘become’. The ambiguity is due to the meaning of the Japanese word *kanari* that is beyond the scope of this paper.



- (13) a. *Enzin-ga dorekurai atatamat-ta-no?*  
engine-NOM how.much warm-PAST-Q  
'How much did the engine warm?'
- b. *Kono enzin-ga ano enzin yori(mo) atatamat-ta.*  
this engine-NOM that engine than warm-PAST  
'This engine warmed more than that engine.'
- c. *Enzin-ga atatamari-sugi-ta.*  
engine-NOM warm-exceed-PAST  
'The engine warmed too much.'
- (14) a. *Kawa-(haba)-ga dorekurai hirogat-ta-no?*  
river-(width)-NOM how.much widen-PAST-Q  
'How much did the river widen?'
- b. *Kono kawa-(haba)-ga ano kawa(-haba) yori(mo) hirogat-ta.*  
this river-(width)-GEN that river(-width) than widen-PAST  
'This river widened more than that river.'
- c. *Kawa-(haba)-ga hirogari-sugi-ta.*  
river-(width)-NOM widen-exceed-PAST  
'The river widened too much.'

Intensifiers that are compatible with gradable adjectives with an open scale can modify DAs (TSUJIMURA 2001). The compatibility between *totemo* 'very' and the DAs shows that DAs in Japanese encode an open scale.

- (15) a. *Enzin-ga totemo atatamat-ta. Enzin-ga totemo atatakai.*  
engine-NOM very warm-PAST engine-NOM very warm  
'The engine warmed very much.' 'The engine is very warm.'
- b. *Kawa-(haba)-ga totemo hirogat-ta. Kawa-(haba)-ga totemo hiroi.*  
river-(width)-NOM very widen-PAST river-(width)-NOM very wide  
'The river widened very much.' 'The river is very wide.'

DAs can be modified by measure phrases, because they are measurable based on a scale. Note also that measure phrases receive a differential interpretation, whereby they denote the difference of degrees between the beginning of an event and the end of an event. (16c) is not grammatical, because *moeru* 'burn' is not measurable.

- (16) a. *Enzin-ga go-do atatamat-ta.*  
engine-NOM five-degrees warm-PAST  
'The engine warmed by five degrees.'
- b. *Kawa-(haba)-ga go-meetoru hirogat-ta.*  
river-(width)-NOM five-meters widen-PAST  
'The river widened by five meters.'



- c. \*Enzin-ga go-do moe-ta.  
 engine-NOM five-degrees burn-PAST  
 Intended: 'The engine burned by five degrees.'

### 3.2 Non-neutrality

DAs in Japanese receive a non-neutral interpretation, whereby the absolute degree an object possesses exceeds a contextually-derived standard. The propositions that the engine is warm and the river is wide are true in an absolute sense in (17).

- (17) a. Enzin-ga atatamat-ta. (#Mada tumetai kedo.)  
 engine-NOM warm-PAST still cold though  
 'The engine warmed (#but it is still cold).'
- b. Kawa-(haba)-ga hirogat-ta. (#Mada semai kedo.)  
 river-(width)-NOM widen-PAST still narrow though  
 'The river widened (#but it is still narrow).'

Non-neutrality is weakened in degree constructions; the propositions that the engine is warm and the river is wide are both not true in an absolute sense.

- (18) a. Enzin-ga dorekurai atatamat-ta-no?  
 engine-NOM how.much warm-PAST-Q  
 'How much did the engine warm?'
- b. Kono enzin-ga ano enzin yori(mo) atatamat-ta. (Mada tumetai kedo.)  
 this engine-NOM that engine than warm-PAST still cold though  
 'This engine warmed more than that engine. (But it is still cold).'
- (19) a. Kawa-(haba)-ga dorekurai hirogat-ta-no?  
 river-(width)-NOM how.much widen-PAST-Q  
 'How much did the river widen?'
- b. Kono kawa-(haba)-ga ano kawa-(haba) yori(mo) hirogat-ta. (Mada semai kedo.)  
 this river-(width)-NOM that river-(width) than widen-PAST still narrow though  
 'This river widened more than that river. (but it is still narrow).'

Non-neutrality in DAs disappears in measure phrase modification (cf. WATANABE 2013). The standards associated with *warm* and *wide* are not necessarily satisfied in (20).

- (20) a. Enzin-ga go-do atatamat-ta. Mada tumetai kedo.  
 engine-NOM five-degrees warm-PAST still cold though  
 'The engine warmed by five degrees but it is still cold.'
- b. Kawa-(haba)-ga go-meetoru hirogat-ta. Mada semai kedo.  
 river-(width)-NOM five-meters widen-PAST still narrow though  
 'The river widened by five meters but it is still narrow.'

## 4. Proposal

Slight differences aside, the proposal made by DOWTY (1979), ABUSCH (1986) and KEARNS (2007) is to hypothesize that the core meaning of DAs encode the meaning of their base adjectives. The semantics of DAs would be (21a), where  $G$  shows the meaning of gradable adjectives. (21b) is true of an individual  $x$  and an event  $e$  just in case  $pos(warm)$  is not true at the beginning of the event  $e$  and true of  $x$  at the end of  $e$ . Since the measure function  $warm$  uses an open scale,  $pos(warm)$  is evaluated with respect to a contextually derived standard.

- (21) a.  $\lambda x \lambda e. BECOME(pos(G))(x)(e)$   
 b.  $\lambda x \lambda e. BECOME(pos(warm))(x)(e)$

The meaning of the BECOME operator will be as follows, where  $init(e)$  and  $fin(e)$  are the initial and final parts/intervals of an event  $e$ :

- (22)  $BECOME(P)(x)(e) = 1$  iff  $P(x)(init(e)) = 0$  and  $P(x)(fin(e)) = 1$

Under the account, the variable telicity depends on what happens to the contextual argument of  $P$ . If  $c$  is fixed to the context of utterance ( $c_u$ ), a telic reading arises. By contrast, if it is existentially bound, an atelic reading arises.

- (23) a.  $\lambda x \lambda e. BECOME(warm(c_u))(x)(e)$   
 b.  $\lambda x \lambda e. \exists c [BECOME(warm)(c)(x)(e)]$

The analysis is criticized by KENNEDY – LEVIN (2008), because it wrongly predicts that all DAs are ambiguous between telic and atelic readings. As is pointed out in 2.1, variable telicity depends on the lexical semantic properties of DAs; some DAs receive both telic and atelic readings, some receive only telic and some receive only atelic readings. The proposed analysis, however, seems to be applicable to Japanese DAs, because the meaning of (23a) seems to be what is needed for Japanese counterparts. In case of *atatamaru* ‘warm’,  $pos(warm)$  denotes the property of having a warmth that exceeds the standard in the context of the utterance and its meaning corresponds to *become warm*, receiving a telic interpretation. In fact, BOCHNAK (2015) argues that the DOWTY’s (1979) style analysis of DAs is applicable to Washo. This is probable, because Washo DAs do not have a degree; DAs in Washo are not measurable and gradable.

There are, however, three reasons why I do not adopt the BECOME operator here. First, degree modifiers are available in Japanese DAs as shown in (15). Since *totemo* ‘very’ is compatible with adjectives with an open scale (KENNEDY – McNALLY 2005), it can modify the DA *atatamaru* ‘warm’. According to KENNEDY – LEVIN (2008),

telicity arises due to the closed scale some DAs hold (e.g. *empty*), but I claim that the stable standard leads to telicity in Japanese DAs. Assuming that gradable adjectives denote measure functions and the proposition that *pos(warm)* is true will stand out compared with a context-sensitive function **stnd** in the spirit of KENNEDY (2007), the meaning of *atatamaru* can be written as follows. Note that **stnd** here is stable, leading to a telic reading.

- (24) a.  $[[\text{atatamaru}]] = \lambda d \lambda x \lambda e. \mathbf{warm}(x)(e) = d$   
 b.  $[[\text{pos}_v]] = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(d)(G)(C) \wedge G(d)(x)(e)]$   
 c.  $[[\text{pos}_v]]([\text{atatamaru}]] = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(d)(G)(C) \wedge G(d)(x)(e)]$   
 $(\lambda d \lambda x \lambda e. \mathbf{warm}(x)(e) = d)$   
 $= \lambda x \lambda e. \exists d [\mathbf{stnd}([\mathbf{warm}])] \wedge \mathbf{warm}(x)(e) = d]$

The compatibility of *totemo* ‘very’ can be explained by implementing the analysis of *very* by KENNEDY – MCNALLY (2005). Under the analysis, the meaning of *totemo atatamaru* ‘(lit.) very warmed’ is true if the degree of warmness an object possesses is good enough even among warm things.

- (25)  $[[\text{totemo}]]^c = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(d)(G)(\lambda y. [[\text{pos}(G)(y)(e)]]^c) \wedge G(d)(x)(e)]$

Second, DAs in Japanese are possible in measure phrase modification. I argue that measure phrases denote degrees as shown in (26) and the meaning of the measure phrase modification in (20a) is illustrated as (27), where the measured degree corresponds to the difference of degrees between the beginning of an event and the end of an event and it is more than five degrees. The difference of degrees arises by participating in the event.

- (26)  $[[\text{five degrees}]] = \lambda G \lambda x \lambda e. \exists d [d \geq \mathbf{five\ degrees} \wedge G(d)(x)(e)]$   
 (27)  $[[\text{five degrees}]]([\mathbf{warm}]]$   
 $= \lambda G \lambda x \lambda e. \exists d [d \geq \mathbf{five\ degrees} \wedge G(d)(x)(e)] (\lambda d \lambda x \lambda e. \mathbf{warm}(x)(e) = d)$   
 $= \lambda x \lambda e. \exists d [d \geq \mathbf{five\ degrees} \wedge \mathbf{warm}(x)(e) = d]$

Since both measure phrases and *totemo* are treated as degree terms, it is expected that they are in complementary distribution. This prediction is borne out as shown below:

- (28) a. \*Enzin-ga go-do totemo atatamat-ta.  
 engine-NOM five-degrees very warm-PAST  
 ‘The engine warmed very much by five degrees.’  
 b. \*Kawa-(haba)-ga go-meetoru totemo hirogat-ta.  
 river-(width)-NOM five-meters very widen-PAST  
 ‘The river widened very much by five meters.’

Third, DAs in Japanese are usable in comparisons. Assuming comparative phrases headed by *yorī(mo)* ‘than’ denote degrees, the meaning of neutral comparisons denotes a degree relation between a target degree and a standard degree. To attain the goal, I hypothesize the verbal comparative degree morpheme *com* illustrated in (29), where  $d_c$  expresses a degree by a comparative phrase headed by *yorī(mo)*.<sup>6</sup>

$$(29) \quad [[com_v]] = \lambda G \lambda x \lambda e. \exists d [d > d_c \wedge G(d)(x)(e)]$$

By combining the comparative phrase *ano enzin yorī(mo)* ‘than that engine’ in (18b), the following result is obtained.

$$(30) \quad [[com_v]]([ano enzin])([yorī(mo)])([atatamaru]) \\ = \lambda x \lambda e. \exists d [d \geq \mathbf{d}_{that:engine} \wedge \mathbf{warm}(x)(e) = d]$$

Since measure phrases and *pos* are in complementary distribution, a neutral interpretation in measure phrase modification is derived due to the lack of *pos*.

To conclude, DAs in Japanese denote measure functions that encode degrees. The proposed analysis provides an explanation for the measurability and gradability of DAs by hypothesizing that the standard of Japanese DAs is stable that cannot be shifted. I argue that the stability is due to the peculiarity of Japanese that leads to the typological dichotomy of motion events by TALMY (1985).

## 5. Motion events

Manner of motion verbs in English, coupled with goal phrases, can express an agent reaching a goal by that action. By contrast, manner of motion verbs in Japanese cannot combine with goal phrases directly; manner of motion needs to be realized as an adjunct or the path verb *iku* ‘go’ must adjoin to the manner of motion verb as shown in (31b) and (31c). The contrast is well-known by the typological surveys by TALMY (1985, 2000): Verb-framed (V-framed) languages and Satellite-framed (S-framed) languages. In V-framed languages, path is encoded as a main verb and manner must be a subordinate adjunct. In S-framed languages, manner is encoded as a main verb and path must be a satellite.

- (31) a. \**John-ga koen-{ni, e} hasit-ta.*  
 John-NOM park-{to, to} run-PAST  
 ‘(intended) John ran to the park.’

6 I first assumed that the comparative phrase occupies the DegP, where *pos* arises, but I use the abstract degree morpheme *com* here. This is because *pos* is not obligatory in manner of motion verbs discussed in section 5. I owe a debt to a reviewer here.

- b. *John-ga hasitte koen-{ni, e} it-ta.*  
 John-NOM running park-{to, to} go-PAST  
 'John ran to the park.'
- c. *John-ga koen-{ni, e} hasitte-it-ta.*  
 John-NOM park-{to, to} run-go-PAST  
 'John ran to the park.'
- d. *John-ga koen-de hasit-ta.*  
 John-NOM park-in run-PAST  
 'John ran in the park.'

In V-framed languages, path can be encoded linguistically as a noun with manner of motion verbs (KUBOTA 2014).

- (32) *Ken-wa ugoku hodoo-o ({{go-fun-kan, go-fun-de}}) hantai-gawa-ni arui-ta.*  
 Ken-TOP moving walk-ACC ({{5-min.-for, 5-min.-in}}) opposite-direction-to walk-PAST  
 'Ken walked on the moving walk backwards ({{for five minutes/in five minutes}}).'

Manner of motion verbs receive atelic readings without a path expression. Without a goal phrase, variable telicity arises.

- (33) a. *Ken-wa ({{go-fun-kan, ??go-fun-de}}) arui-ta.*  
 Ken-TOP ({{5-min.-for, 5-min.-in}}) walk-PAST  
 'Ken walked ({{for five minutes, in five minutes}}).'
- b. *Ken-wa ugoku hodoo-o ({{go-fun-kan, gofun-de}}) arui-ta.*  
 Ken-TOP moving walk-ACC ({{5-min.-for, 5-min.-in}}) walk-PAST  
 'Ken walked on the moving walk ({{for five minutes/in five minutes}}).'

Directional motion verbs in Japanese encode path and an endpoint is somehow pre-supposed without a linguistic expression, receiving a telic interpretation.

- (34) a. *Kion-ga ({{go-zikan, go-zikan-de}}) {agat-ta, sagat-ta}*  
 temperature-NOM ({{5-hours-for, 5-hours-in}}) {rise-PAST, descend-PAST}  
 'The temperature {rose, fell} (to some point) ({{for five hours, in five hours}}).'
- b. *Kuruma-ga ({{go-zikan, go-zikan-de}}) {susun-da, modo-ta}.*  
 car-NOM ({{5-hours-for, 5-hours-in}}) {move.forwards-PAST, get.back-PAST}  
 'The car moved forwards/got back ??for five hours/in five hours.'

Following BEAVERS ET AL. (2010), I assume that the dichotomy is due to the fact that the verb is a root and single clause-lexical category that can encode either manner or path. I claim that directional motion verbs and DAs in V-framed languages encode an endpoint by convention or default. In Japanese an endpoint is encoded in directional motion verbs and path expressions, not in manner of motion verbs. Following RAPPAPORT HOVAV – LEVIN (2010) and BEAVERS – KOONTZ-GARBODEN (2012), I argue that the distinction between result and manner can be made based on scalar semantics; a result encodes some change measured along a scale while a manner does not. An important consequence of the dichotomy between result and manner is that path provides a degree in motion events. A path verb in Verb-framed languages is treated as a measure function with a stable standard, which selects a goal phrase that indicates the endpoint of an event. The goal phrase denotes degrees on a par with the comparative phrase hosted by *than*. Here, **stnd**( [[iku]] ) corresponds to *to the park* in (31b).

- (35) a.  $[[iku]] = \lambda x \lambda e. \exists d [\mathbf{stnd}(iku) \wedge \mathbf{iku}(x)(e) = d]$   
 b.  $[[pos,]]( [[iku]] ) = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(G) \wedge G(d)(x)(e)] (\lambda d \lambda x \lambda e. \mathbf{iku}(x)(e) = d)$   
 $= \lambda x \lambda e. \exists d [\mathbf{stnd}([iku]) \wedge \mathbf{iku}(x)(e) = d]$

Likewise, directional motion verbs, by convention, encode a conventionalized endpoint, receiving a telic reading.

- (36) a.  $[[agaru]] = \lambda d \lambda x \lambda e. \mathbf{rise}(x)(e) = d$   
 b.  $[[pos,]] = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(G) \wedge G(d)(x)(e)]$   
 c.  $[[pos,]]( [[agaru]] ) = \lambda G \lambda x \lambda e. \exists d [\mathbf{stnd}(G) \wedge G(d)(x)(e)] (\lambda d \lambda x \lambda e. \mathbf{agaru}(x)(e) = d)$   
 $= \lambda x \lambda e. \exists d [\mathbf{stnd}([agaru]) \wedge \mathbf{agaru}(x)(e) = d]$

The conventionalized standard derived by *pos* is not available for manner of motion verbs but *com* is available: manner of motion verbs denote a difference of degrees between the beginning of an event and the end of an event. The reading corresponds to a comparative reading but it lacks the end of an event, leading to an atelic reading. By combining with a comparative degree morpheme, a neutral interpretation for *hasiru* ‘run’ is derived as shown in (37), where an abstract *X yori* ‘than X’ indicates a degree at the beginning of an event.

- (37)  $[[com,]]( [[X]] [[yori(mo)]] [[hasiru]] )$   
 $= \lambda x \lambda e. \exists d [d \geq \mathbf{d}_c \wedge \mathbf{hasiru}(x)(e) = d]$

The analysis implies that the stable endpoint in Japanese DAs and motion events is due to its individual character, not a universal one.

## 6. Conclusion

This paper has shown that a degree based account is necessary in Japanese DAs. The analysis is based on the hypothesis that a standard is somehow stable in Japanese, leading to the uniform telicity. I have also shown that motion events can be analyzed in terms of scales, arguing that a standard that corresponds to an endpoint of an event is established in Japanese verbs that encode path. The analysis also shows that the stable standard leads to the typological dichotomy of motion events; whether an endpoint is encoded in predicates (V-framed languages) or not (S-framed languages).

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Koji Kawahara

Nagoya University of Foreign Studies

57 Takenoyama, Iwasakicho

Nisshin, Aichi 470-0197, Japan

kkoji@nufs.ac.jp



