

A Judgment Study on Aspectual Diagnostics in Japanese

Durative and terminative adverbials

Since Vendler (1957), aspectual properties of predicates have been extensively studied using various syntactic diagnostics. Among them, the temporal adverbial attachment tests have been the most utilized: the predicates compatible with durative adverbials (such as *for 30 minutes*) are regarded as atelic, while those compatible with terminative adverbials (such as *in 30 minutes*) are regarded as telic. The judgments, however, are not as straightforward as one may want them to be, particularly in the case of durative adverbials. The aim of the present study is to perform fine-grained analyses of the implications of these diagnostics through a rating study. While it has been claimed in the literature that telic interpretations are associated with pragmatic inferences (Smolett, 2005; Piñón, 2008; etc.), we further argue that durative interpretations are also often pragmatically motivated. Based on our results, we also conclude that contrary to the arguments made by some researchers (Verkuyl, 1972; Egg, 1995; etc.), the distinction between accomplishments and achievements should be maintained (Dowty, 1979; Piñón 1997; Martin, 2010)

Telicity cancellation

A less studied diagnostics related to aspect is telicity cancellation (Ikegami, 1985; Kageyama, 1996; Tsujimura, 2003; etc.), which is exemplified in a sentence like *moyasi-ta-kedo moe-nakat-ta* 'I burnt it but it didn't burn.' On the basis of the fact that telicity cancellation is possible in Japanese, Tsujimura (2003) argues that telicity is not lexically entailed but is conversationally implicated in Japanese. Aoki and Nakatani (2012; henceforth A&N) have examined the cancellation phenomenon in Japanese through a rating study, and found that Tsujimura's cancellation examples were rated lower than the cancellation of the result events derived from "true" conversational implicature (such as *te-o aratta-ga kirei-ni nara-nakat-ta*. 'He washed his hands but they didn't become clean.'), but higher than the cancellation of the telicity of the achievements (such as *mizu-o mitasi-ta-ga, hanbun-sika haira-nakat-ta* 'She filled it with water but it was filled only halfway'). A&N thus conclude that telicity is actually entailed in examples like *moyasita* 'burnt', while the strength of the process component in the semantics of the predicates affects the acceptability of the cancellation. This conclusion, however, is rather speculative. The present study attempts to further investigate the correlation between adverbial diagnostics and the cancellation phenomenon.

Methods

48 native speakers of Japanese, all of whom were undergraduates, participated. 35 sentences were prepared with transitive predicates, where 31 were taken from A&N's study (with slight modifications). For each item, two versions were constructed, one with a durative adverbial (e.g., 3 分間 'for 3 minutes') placed between the direct object and the verb, and the other with a terminative adverbial (e.g., 3 分で 'in 3 minutes') in that position. The total of 35x2 items were evenly distributed into 2 lists, so that the two conditions of each item, which we call **D (durative adverbials)** and **T (terminative adverbials)**, were separately put in the two lists, with each list including the same amount of D and T. The participants were asked to judge the naturalness of each sentence on a 5-level scale, where 5 in the scale corresponded to "the most natural" and 1 to "the most unnatural". They were asked to rate one list first, and then, roughly one hour later, were asked to rate the other list.

Results and Discussions

The data from the three subjects who incompletely rated the lists were excluded from the analyses. The data points from one item were also excluded due to a typographical error in the item. The grand mean of the 68 items was 3.37. The mean of condition T was 3.96, and the mean of D was 2.77.

We conducted a regression analysis of the ratings of our D items and A&N's cancellation ratings, to test the hypothesis that the cancellability is a function of the strength of the process component. Because cancellation is unacceptable when telicity is absent, independent of the process factor, we excluded the data from 8 items whose T versions were rated lower than 3.5. A regression analysis of the cancellation ratings and the ratings of our D items revealed a significant correlation ($R^2=.39$; $p < .005$) in such a way that the higher the D condition was rated, the higher the cancellation

rating of the corresponding item was. The correlation was even stronger for certain sets of items, shown in (2a-c) and (3a-d) below. Overall, these results support A&N's hypothesis that the process component in the predicate influences the acceptability of cancellation.

Below are sample mean ratings of the two poles of telic predicates shown: those which are compatible with durative adverbials and those which are not. This clear contrast suggests that the distinction between accomplishments and achievements is real (Piñón 1997; Martin, 2010).

Accomplishment	T	D	Achievement	T	D
1a 手を洗った 'washed hands'	4.2	4.7	1d 部屋を綺麗にした 'cleaned the room'	4.8	2.5
1b 肉を焼いた 'grilled the meat'	4.1	4.4	1e 商談をまとめた 'finalized the deal'	4.6	2.3
1c ビールをジョッキに注いだ 'poured beer into the jug'	4.2	4.0	1f 演奏を終えた 'finished the performance'	4.4	1.7

An interesting contrast was found between the three instances of *toita* 'solved' with different objects (*sono rensyuumondai* 'the exercise' vs. *sono nanmon* 'the hard problem' vs. *gokai* 'misunderstanding'), as is shown in the table below.

Three items with <i>toita</i> 'solved'	T	D	A&N's cancellability
2a その練習問題を解いた 'solved the exercise'	5.0	3.6	3.6
2b その難問を解いた 'solved the hard problem'	5.0	2.9	2.8
2c 誤解を解いた 'resolved the misunderstanding'	4.0	1.8	1.8

Here, the ratings of the T condition clearly show that the three types of *toita* predicates are strongly telic. What is interesting is that the compatibility with durative adverbials varies depending on the direct object. The contrast between (2a) and (2b) can probably be accounted for in terms of the contrast in the divisibility of these objects into subparts (Martin's 2010 Condition of Iterativity; cf. also Krifka, 1992, 1998): *an exercise* can be divided into subparts (i.e., smaller questions), while *a hard problem* resists such division, which leads to the lower acceptability of the durative reading, as it requires iteration. The contrast between (2b) and (2c), however, is difficult to account for compositionally, because *the hard problem* and *the misunderstanding* are both indivisible into subparts. We thus propose that the difference stems from the strength of the concrete process that can be *pragmatically inferred* from the event denoted by the predicate. As for (2b), it is easy to assume that tackling a hard problem is associated with a specific interval devoted to the activity, whereas it is harder to suppose such a concrete activity in (2c). This difference, we assume, led to the contrast found in the table below. If this hypothesis is correct, Martin's Condition of Iterativity is not needed.

The "pragmatically inferred process" hypothesis is further supported by the results from the following Tsujimura examples (cf. the D ratings show a strong correlation with A&N's cancellability ratings: $R^2=.94$, $p < .01$):

Three items with <i>toita</i> 'solved'	D	A&N's cancellability
3a スイカを冷やした 'chilled the watermelon'	4.1	3.8
3b 落ち葉を燃やした 'dried the laundry'	3.9	3.5
3c 洗濯物を乾かした 'dried the laundry'	3.5	3.2
3d 氷をとかした 'melted the ice'	3.2	3.0

What is notable here is that although (3a,c,d) are all degree achievement verbs (Kennedy and Levin, 2008; among others), (3a) is better rated with a durative adverbial than (3c,d) ($ps < .05$). We assume that this contrast stems from the strength of the pragmatically inferred process. That is, it is very easy to suppose what is happening when one is chilling a watermelon: one usually puts it in a fridge.

We will show that this hypothesis accounts for the wider range of data obtained from this rating study.

Selected references

- Aoki, Natsuno and Kentaro Nakatani. 2012. "Process, Telicity, and Event Cancellability in Japanese: A Questionnaire Study." Paper presented at ELSJ 5th International Spring Forum. / Krifka, Manfred. 1998. "The Origin of Telicity." / Martin, Fabienne. 2010. "Revisiting the distinction between accomplishments and achievements." / Piñón, Christopher. 2008. "Aspectual composition with degrees." / Smollett, Rebecca. 2005. "Quantized Direct Objects Don't Delimit After All." / Tsujimura, Natsuko. 2003. "Event Cancellation and Telicity."