

## CROSS-LINGUISTIC VARIATIONS IN INCREMENTAL THEMES

### 1. Verbs of variable telicity

Numerous studies have been made on verbs of variable telicity; **incremental theme verbs (IT verbs)** (such as *drink* and *write*) in (1) and **change of state verbs (COS verbs)** (such as *warm* and *widen*) in (2) (and also directed motion verbs (such as *ascend* and *fall*)).

- (1) a. John ate applesauce {for / #in} ten minutes. *atelic*  
b. John ate an apple {#for / in} ten minutes. *telic*
- (2) John warmed/cooled the soup {for / in} ten minutes. *atelic/telic*

IT verbs describe events where the internal argument undergoes an incremental change (Dowty 1991, Tenny 1994). Crucially, as is clear from the contrast between *applesauce* and *an apple*, IT verbs are sensitive to the mass/count distinction of the nominal argument.

Kennedy and Levin (2008) argue that all verbs of variable telicity describe events in which some argument changes along some dimension as a result of participation in the event. Kennedy (2012) further shows that there is a fundamental difference between IT verbs and COS verbs in that nominal reference makes a difference with IT verbs, but not with COS verbs. In this paper, I show that unlike in English, IT verbs in Japanese are insensitive to nominal reference, and argue that there is a cross-linguistic variation that may be tied to the existence of mass/count distinction.

### 2. The Semantics of COS Verbs (Kennedy and Levin 2008)

As shown in (2), COS verbs can have both telic and atelic interpretations. However, unlike in (1), the atelic/telic distinction is not linked to the mass/count distinction of the internal argument. Instead, Kennedy and Levin (2008) argue that the telicity of COS verbs is sensitive to the semantic properties of the gradable adjective that provides its lexical source. More specifically, the adjectival core of a COS verb is a **measure of change function  $m_{\Delta}$** , where  $m_{\Delta}$  measures the difference between the degree to which an object manifests a property at the beginning and end of an event. Kennedy (2012) supports this analysis by showing similarities between COS verbs and comparatives. They both measure differences; COS verbs (based on  $m_{\Delta}$ ) like (4) measure differences between the object undergoing the change at the beginning and end of the event, and comparatives like (3) measure differences between two objects on a scale. For example, *30 kilometers* in (4) indicates the difference between the canyon's initial and final width.

- (3) The canyon is 30 kilometers wider than the river.  
(4) The canyon widened 30 kilometers {#for / in} one million years.

### 3. The Semantics of IT Verbs (Kennedy 2012)

Kennedy and Levin's scalar analysis of COS verbs does not directly extend to IT verbs because IT verbs are sensitive to nominal reference. Kennedy (2012) presents a piece of evidence that IT verbs in English do not lexicalize  $m_{\Delta}$ : IT verbs do not combine with degree constructions in the same way as COS verbs, as shown in (5) and (6).

- (5) a. #Jones wrote the paper more than Smith did.  
b. #Jones wrote the paper two sections.
- (6) a. Jones wrote more of the paper than Smith did.  
b. Jones wrote two sections of the paper.

Based on this contrast, Kennedy argues that  $m_{\Delta}$  must be associated with the IT argument, rather than the IT verb. Under this analysis, scales are lexicalized in COS verbs, but not in IT verbs.

### 4. Verbs of Variable Telicity in Japanese

I show that Kennedy and Levin's scalar analysis of COS verbs naturally extends to Japanese. Like in English, Japanese COS verbs show variable telicity, and measure phrases provide differential measures.

- (7) John-wa suupu-o {ni-hun-kan / ni-hun-de} samasi-ta.  
 John-Top soup-Acc {two-minute-for / two-minute-in} cool-Past  
 ‘John cooled the soup {for/in} two minutes.’ (cf. (2))
- (8) Kyookoku-ga 30-kiro hirogat-ta.  
 canyon-Nom 30-km widen-Past  
 ‘The canyon widened 30 km.’ NOT ‘The canyon became 30km wide.’ (cf. (4))

However, Japanese IT verbs differ from English IT verbs: Unlike English IT verbs in (5), Japanese IT verbs in (9) combine with degree constructions, just like as COS verbs in (10).

- (9) a. Jones-wa Sumisu-yori sono ronbun-o kai-ta.  
 Jones-Top Smith-than that paper-Acc write-Past  
 ‘(lit.) J wrote the paper more than S did.’ (✓J wrote more of the paper than S did.)
- b. Jones-wa sono ronbun-o ni-syoo kai-ta.  
 Jones-Top that paper-Acc two-section write-Past  
 ‘(lit.) Jones wrote the paper two sections.’ (✓J wrote two sections of the paper.)
- (10) a. Jones-wa Sumisu-yori sono suupu-o atatame-ta.  
 Jones-Top Smith-than that soup-Acc warm-Past  
 ‘Jones warmed the soup more than Smith did.’
- b. Jones-wa sono suupu-o 10-do atatame-ta.  
 Jones-Top that soup-Acc 10-degree warm-Past  
 ‘Jones warmed the soup 10 degrees.’

Moreover, both IT verbs and COS verbs in Japanese parallel with comparatives. For instance, the measure phrase in (9b) provides a differential measure; (9b) means that the written-part of that book became 2 sections more than it was.

I conclude that the contrast found in English is not obtainable in Japanese; scales are always lexicalized in verbs in the case of Japanese.

### 5. Cross-Linguistic Variations

The question then is why there is such a cross-linguistic variation. It is independently known that (some) degree constructions in Japanese express verbal measurement rather than nominal measurement (Nakanishi 2007). For example, floating quantifier constructions in Japanese are sensitive to the properties of verbal predicates, as shown in (11). This can be explained by assuming that (11) measures events through measuring individuals.

- (11) Gakusei-ga kinoo san-nin Peter-o {tatai-ta / #korosi-ta}.  
 student-NOM yesterday three-CL Peter-ACC {hit-PAST / kill-PAST}  
 ‘Three students {hit / killed} Peter yesterday.’

I argue that in Japanese, degree constructions always involve measurement of events (and they may measure individuals by measuring events), while in English, degree constructions directly measure individuals or events. I further hypothesize that there is a correlation between the existence of mass/count distinction and the existence of direct nominal measurement. English makes grammatical distinctions between mass and count nouns, but not Japanese. This correlation is also tied to the semantics of IT verbs; in languages with a mass/count distinction, nominal arguments can lexicalize scales (as in the case with IT arguments in English), whereas in languages without this distinction, nominal arguments cannot lexicalize scales, hence scales are always lexicalized by verbs, as in Japanese.

**Selected references** [1] Kennedy, C. 2012. The composition of incremental change. In *Telicity, Change, and State: A Cross-Categorical View of Event Structure*. [2] Kennedy, C., and B. Levin. 2008. Measure of change: The adjectival core of degree achievements. In *Adjectives and Adverbs: Syntax, Semantics and Discourse*.