Interaction of phasal semantics of aspectual adverbs with tense-aspect information in Japanese: *Mô* versus *Sudeni*

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This presentation will focus on the Japanese adverbs *mô* and *sudeni*. Both adverbs are translated as *already*. The relationship between *already* and tense-aspect is discussed by Ernst (2001), who assigns the meaning of (1) to *already* based on Michaelis's (1998) analysis.

(1) ALREADY = [s O t & [s' [e = begin(s)] & e < t' & s' ⊆ t']]   (Ernst 2001: 342)

Ernst supports the meaning of *already* given by Michaelis, while Löbner (1989) and others have different views. Therefore, it is questionable whether Ernst's formulation accurately captures the meaning of the adverb corresponding to *already*. One of the typological problems in this regard is evident when we consider the relationship between the Japanese adverbs *mô* and *sudeni*, and tense-aspect information. *Mô* and *sudeni* are similar to *already* in that they typically co-occur with the verb inflection *-teiru*, which at least in one reading denotes perfect. However, they behave differently from *already* in several ways: first, they do not always take a stative predicate as their scope, as stated by Michaelis (1998). *Mô* and *sudeni* can co-occur with the verbal inflection *-ta* for the past, accompanied by the adverbial *ni-nen mae-ni* "two years ago" as shown in (2).

(2) Tarô-wa {*sudeni* / (?)*mô*} ni-nen   mae-ni   sigoto-o   yame-ta.

Taro-TOP *sudeni*   *mô*   two-years ago-OBL   job-ACC   finish-PST

lit. "Taro already resigned two years ago."

Second, when the verbal affix *-ru* is used, *mô* expresses the "imminent future" as shown in (3).

(3) Tarô-wa   { *sudeni / mô*}   tyûsyoku-o   tabe-ru.

Taro-TOP   *sudeni   mô*   lunch-ACC   eat-NPST

"Taro is having lunch soon."

From the above data, this presentation claims that Ernst's analysis is not enough and that *mô* introduces an abstract scale structure (Löbner 1989, Zimmermann 2018, Beck 2020) different from the temporal dimension, in contrast to *sudeni*. Verbal inflections determine the sentence tense, which is the relationship between speech time and event time. However, *-ta* and *-ru* underspecify the position of the reference time, i.e. the aspect information in the verbal morphology. The scale of *mô* uses the tense-aspect information of the sentence and disambiguates them by determining the position of the reference time. In other words, the temporal dimension, and the scale structure of *mô* project mutually and determine the tense-aspect information of sentences. Below is a detailed discussion of each adverb.

First, *sudeni* is an adverb for a temporal orientation toward the past. It is composed as a modification of the perfect operator (cf. Dowty 1982). The formulation of *sudeni* is as follows in (4) (cf. Katz 2003). From (4), *sudeni* can co-occur with *-teiru* and *-ta*.

(4) $[[sudeni]] = \lambda P \lambda t' \lambda t [P(t') \& t' \subset EN(t)]$; *EN(t)* is an extended now interval with *t* as its endpoint.

On the other hand, *sudeni* is infelicitous in (3), because the past orientation coded in *sudeni* contradicts the future orientation contained in *-ru,*

In contrast, *mô* introduces a two-phase scale consisting of a set of degrees $<d_0, d_1, d_2, ...,d_n>$. The scale has a transition point $d_\rightarrow$, in which *p* of type $<d, <s, t>>$ is applied from $d_\rightarrow$ to d_n. From d_0 to $d_\rightarrow$, $\neg p$ holds. Then, *mô* introduces an evaluation point d_e and places d_e in the *p* range. Also, in some contexts, it may set the maximum value of scale (d_{max}) (figure 1).

When *mô* is used in sentences related to time, the ordered set of degrees is monotonically mapped onto time intervals. The d_e corresponds to
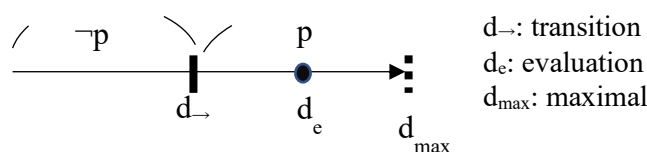

$d_\rightarrow$: transition
d_e: evaluation
d_{max}: maximal

Figure 1 Scale of *mô*

the reference time so as to evaluate the proposition. Also, $d_\rightarrow$ or d_{max} corresponds to the event time. If the event time should be at least before the reference time, then $d_\rightarrow$ corresponds to the event time. However, when the event time follows the reference time as in the case of (3), the event time corresponds to d_{max}. We claim that *mô* disambiguates the reading of non-past morpheme *-ru* making it futurate such that it is semantically decomposed into PRESENT and PROSPECT. Then, (3) is interpreted not merely as a plain future, but rather as an imminent future.

We will also support the above argument, focusing on the multiple readings of *mô* which differentiates it from *sudeni*.

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