

Association with Focus in Japanese: An Event-based Postsuppositional Approach

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1. Issue Given that a focus particle, such as *mo* ‘also’, must c-command its focus associate, it has been at issue how to treat the case of “upward association,” where *mo* does not c-command, and is dominated by its associate (e.g., Aoyagi 1998). For example, when *mo* only c-commands the subject NP as in (1), they can indeed get associated as in (2), which compares the referents of the subject NPs. However, the associate can also be the *vP* as in (3), which compares the events described by the *vPs*. In order to capture this, Aoyagi proposes that *mo* undergoes covert raising to the head T, at which it c-commands the *vP* and can be assumed as meeting the c-command condition. This paper argues against this syntactic account.

(1) [TP [_{VP} [_{NP} Tom]-*mo* piano-o hii]-ta] (under the *vP*-internal subject hypothesis)

Tom-also piano-Acc play-Past

(2) Kyo-wa Bill-ga piano-o hii-ta. Sosite Tom-mo piano-o hii-ta.
today-Top Bill-Nom piano-Acc play-Past and Tom-also piano-Acc play-Past
‘Today, Bill played the piano, and Tom also played the piano.’

(3) Kyo-wa Bill-ga aria-o utai-ta. Sosite Tom-mo piano-o hii-ta.
today-Top Bill-Nom aria-Acc sing-Past and Tom-also piano-Acc play-Past
‘Today, Bill sang an aria, and Tom also played the piano.’

2. Data There are at least two problems. First, some stipulations are needed to predict the impossibility of “sideward association,” where *mo* neither c-commands nor is dominated by its associate. For example, *mo* in (1) should be able to get associated with the object NP, because *mo* should come to c-command it after covert raising to T. However, this kind of association is totally impossible; (4) is not acceptable on the object-association reading, but (5) is.

(4) * Kyo-wa Tom_i-ga gitaa-o hii-ta. Sosite kare_i-mo piano-o hii-ta.
today-Top Tom-Nom guitar-Acc play-Past and he-also piano-Acc play-Past
‘Today, Tom_i played the guitar, and he_i also played the piano.’

(5) Kyo-wa Tom_i-ga gitaa-o hii-ta. Sosite kare_i-wa piano-mo hii-ta.
today-Top Tom-Nom guitar-Acc play-Past and he-Top piano-also play-Past
‘Today, Tom_i played the guitar, and he_i also played the piano.’

Second, it is unclear how to predict the impossibility of “covert repair,” by which we mean that covert raising should allow *mo* to avoid being interpreted in its overt position. In (6), for example, *mo* cannot be attached to universal quantifiers (UQ) like *zen’in*; cf. (3). The problem is that if covert raising is possible, *mo* should be able to get interpreted in a different position than next to the UQ, as is the case with (7). Though we only analyze the case of NP-*mo* for the reasons of space, the contrast below suggests that covert particle raising be eliminated.

(6) * Kyo-wa Bill-ga aria-o utai-ta. Sosite zen’in-mo piano-o hii-ta.
today-Top Bill-Nom aria-Acc sing-Past and everyone-also piano-Acc play-Past
‘Today, Bill sang an aria, and everyone also played the piano.’

(7) Kyo-wa Bill-ga aria-o utai-ta. Sosite zen’in-ga piano-o hiki-mo-si-ta.
today-Top Bill-Nom aria-Acc sing-Past and everyone-Nom piano-Acc play-also-do-Past
‘Today, Bill sang an aria, and everyone also played the piano.’

3. Claim Szabolcsi (2015) proposes a general semantic theory of *mo*, under which it impose a *postsupposition*, namely a condition on the output context resulting after the at-issue content is incorporated. Thus, in (3), we assume that *mo* imposes a postsupposition, which must be entailed by the output context, and the output context of (3) consists of at least the first and second clauses (i.e., **sing(bill)(aria) ∧ play(tom)(piano)**). Along these lines, we propose an event-based semantics of *mo* as shown in (8), assuming that the sets of entities and events are closed under *join* (\oplus) and partially ordered by *part-of* (\leq) (e.g., Krifka 1989). Note that the variables *K*, *K'* range over quantifiers (type $\langle\langle e, \langle v, t \rangle\rangle, \langle v, t \rangle\rangle$), *R*, *R'* over

event-participant relations (type $\langle e, \langle v, t \rangle \rangle$), and e, e' over events (type v).

$$(8) \quad \llbracket mo \rrbracket = \lambda K. \lambda R. \lambda e. [K(R)(e) \wedge \exists K'. \exists R'. \underbrace{[K'(R) \subsetneq K(R)]}_{(a)} \wedge \underbrace{[K(R) \subseteq K'(R)]}_{(b)} \wedge \underbrace{[\exists e'. [K'(R')(e')]}_{(c)}]]$$

The superscripted part is the postsupposition of $\llbracket mo \rrbracket$, which is satisfied iff the output context entails that there are alternatives K', R' such that (a) $K'(R)$ irreflexively includes $K(R)$; (b) $K(R)$ reflexively includes $K'(R')$; and (c) $K'(R')(e')$ is true for some e' . Since $K(R), K'(R)$, etc. are of type $\langle v, t \rangle$ and denote a set of events, the two relations \subseteq, \subsetneq are defined as in (9).

$$(9) \quad \text{a. } K(R) \subseteq K'(R') \text{ iff } K(R) = K'(R') \vee \forall e. [K(R)(e) \rightarrow \exists e'. [e' \leq e \wedge K'(R')(e')]] \\ \text{b. } K(R) \subsetneq K'(R') \text{ iff } K(R) \neq K'(R') \wedge \forall e. [K(R)(e) \rightarrow \exists e'. [e' \leq e \wedge K'(R')(e')]]$$

Importantly, (8a) requires K' to be distinct from and stronger than K , and (8b) requires R' to be equal to or a hypernym of R . Thus, (8a) is true if $K' = \llbracket everyone \rrbracket$ and $K = \llbracket someone \rrbracket$, but not vice versa, and (8b) is true if $R = \llbracket play the piano \rrbracket$ or $\llbracket sing an aria \rrbracket$ and $R' = \llbracket perform \rrbracket$, as the latter is a hypernym of the former. Let us now consider (3). With the vP represented as in (10), we treat *Tom* as a quantifier (i.e., $\llbracket Tom \rrbracket = \lambda R. \lambda e. [R(\mathbf{tom})(e)]$) and posit the meaning of v' as in (11), where $\mathbf{Ag}(e)$ and $\mathbf{Th}(e)$ refer to the agent and theme of e (e.g., Kratzer 1996).

$$(10) \quad [{}_{vP} [Tom mo] [{}_{v'} v [{}_{vP} play the piano]]]$$

$$(11) \quad \llbracket v' \rrbracket = \lambda x. \lambda e. [\mathbf{Ag}(e) = x \wedge \mathbf{play}(e) \wedge \mathbf{Th}(e) = \mathbf{piano}]$$

Then, under (8), the at-issue content and postsupposition are determined as in (12) and (13).

$$(12) \quad \llbracket vP \rrbracket = \llbracket mo \rrbracket(\llbracket Tom \rrbracket)(\llbracket v' \rrbracket) = \lambda e. [\mathbf{Ag}(e) = \mathbf{tom} \wedge \mathbf{play}(e) \wedge \mathbf{Th}(e) = \mathbf{piano}]$$

$$(13) \quad \wedge \exists K'. \exists R'. [K'(\llbracket v' \rrbracket) \subsetneq \llbracket Tom \rrbracket(\llbracket v' \rrbracket) \wedge \llbracket Tom \rrbracket(\llbracket v' \rrbracket) \subseteq \llbracket Tom \rrbracket(R') \wedge \exists e'. [K'(R')(e')]]$$

Postsupposition (13) is met, since the output context of (3) at least entails $\mathbf{sing}(\mathbf{bill})(\mathbf{aria}) \wedge \mathbf{play}(\mathbf{tom})(\mathbf{piano})$. To illustrate, suppose $K' = \lambda R. \lambda e. [R(\mathbf{bill} \oplus \mathbf{tom})(e)]$ (stronger than $\llbracket Tom \rrbracket$), and $R' = \lambda x. \lambda e. [\mathbf{Ag}(e) = x \wedge \mathbf{perform}(e)]$ (a hypernym of $\llbracket v' \rrbracket$), then (13) amounts to saying that $\exists e'. [\mathbf{Ag}(e') = \mathbf{bill} \oplus \mathbf{tom} \wedge \mathbf{perform}(e')]$, which is entailed by the output context of (3). Let us then consider (4), where the NP-argument K of *mo* is $\llbracket kare_i \rrbracket$ and refers back to $\llbracket Tom \rrbracket$. (4) is out, as its output context disallows us to assume the existence of any K' that is distinct from K . Likewise, (6) is out, since the NP-argument K is a UQ. That is, it is logically impossible to assume the existence of any K' that is stronger than a UQ. Here is a prediction; a partitive UQ like ‘everyone else’ should be allowed as the NP-argument K , since it has a stronger alternative K' , i.e., its bare counterpart ‘everyone’. This prediction is upheld by (14); cf. (6).

$$(14) \quad Kyo-wa \quad \boxed{Bill-ga \quad aria-o \quad utat-ta.} \quad Sosite \quad \boxed{nokorino-zen'in-mo \quad piano-o \quad hi-ta.} \\ \text{today-Top} \quad \text{Bill-Nom} \quad \text{aria-Acc} \quad \text{sing-Past} \quad \text{and} \quad \text{rest.Gen-everyone-also} \quad \text{piano-Acc} \quad \text{play-Past} \\ \text{‘Today, Bill sang an aria, and all of the others also played the piano.’}$$

4. Conclusion We have shown that our semantic account of upward association by *mo* is more tenable than the syntactic account, which relies on covert particle raising. Here are two prospects for the future research. First, our account can be extended to the same behavior of the crosslinguistic counterparts of *mo* shown by Szabolcsi (2015). Second, as the c-command condition is already falsified by the case of upward association, it must be eliminated together and derived from a theory of focus assignment itself. This shift is plausible in Schwarzschild’s (1999) framework, under which any non-focused material must be contextually entailed.

References Aoyagi, H. 1998. *On the Nature of Particles in Japanese and Its Theoretical Implications*, Ph.D. dissertation, USC. Kratzer, A. 1996. Severing the external argument from its verb, *Phrase Structure and the Lexicon*, eds. J. Rooryck and L. Zaring, 109-137, Dordrecht: Kluwer. Krifka, M. 1989. Nominal reference, temporal constitution and quantification in event semantics. *Semantics and Contextual Expression*, eds. R. Barsch, J. van Benthem, and P. van Emde Boas, 75-115. Dordrecht: Foris. Schwarzschild, R. 1999. Givenness, AvoidF and other constraints on the placement of accent, *Natural Language Semantics* 7, 141-177. Szabolcsi, A. 2015. What do quantifier particles do?, *Linguistics and Philosophy* 38, 159-204.