

Indeterminate NPIs and Scope

It is widely accepted that English NPI *any* is interpreted as a narrow scope existential with respect to its licensor, rather than as a wide scope universal (Ladusaw 1979, Carlson 1980). In the literature on Japanese NPIs, it has been a common assumption that the narrow scope existential analysis of English *any* will naturally carry over to its Japanese counterpart in the form of indeterminate pronoun + *mo*.

This common assumption, however, presents a puzzle when considered with a more general picture of how quantification is expressed in Japanese. The quantificational force of the so-called indeterminate pronouns is determined depending on which particle they occur with. What is noteworthy is that the universal series and the NPI series differ only in accentual patterns: the former is accented, while the latter is unaccented (e.g., *da're-mo* 'everyone' and *dare-mo* 'anyone_{NPI}').

This paper is a first attempt to scrutinize the common assumption that the *mo* NPIs are narrow scope existentials. A significant finding of the paper is that there are instances of *mo* NPIs in particular contexts that can only be analyzed as wide scope universals. This result is also particularly interesting in view of the conclusion independently arrived at by Sells (2006) for certain Korean NPIs, namely that they require an universal analysis. Further, a common syntactic assumption that they undergo movement to Spec of NegP, hence outside the syntactic scope of negation, is suitable for deriving the interpretation (cf. Giannakidou 2000).

Since the indeterminate-*mo* NPIs are licensed solely by local sentential negation, a difficulty arises in distinguishing the predictions made by the narrow scope existential analysis and the wide scope universal analysis. Sentential negation denotes a function that validates the equivalences in (1). These are the functions that are called anti-morphic functions in Zwarts (1998).

$$(1) \text{ a. } f(A \vee B) = f(A) \wedge f(B) \qquad \text{ b. } f(A) \vee f(B) = f(A \wedge B)$$

Of particular relevance here is (1)a, which by itself characterizes what is called anti-additive functions. It says that narrow scope disjunction with respect to function *f* is equivalent to wide scope conjunction with respect to *f*. In the context of indeterminate-*mo* NPIs, this amounts to saying that narrow scope existential with respect to negation is equivalent to wide scope universal with respect to negation (i.e., one of De Morgan's laws). Thus, as long as we look at simple data, it seems almost impossible to tell whether these NPIs are existential or universal.

We circumvent this difficulty by constructing cases in which an additional quantificational element *Q* in conjunction with sentential negation creates a non-anti-additive context (see Ladusaw 1979 for the use of *rarely*). In a sentence that contains a non-anti-additive function of the form $Q\bar{}$, the existence of the reading in (2)b is evidence that the indeterminate-*mo* NPI is interpreted as wide scope universal. This is because, if it was existential, it would have to be interpreted in the scope of negation as in (2)a, which is not equivalent to (2)b.

$$(2) \text{ a. } Q\bar{} > \exists \quad (= Q\forall\bar{}) \qquad (3) \text{ a. } \bar{} > \exists \\ \text{ b. } \forall > Q\bar{} \qquad \text{ b. } \forall > \bar{} \quad (= \bar{}\exists Q)$$

Likewise, if a sentence with a non-anti-additive function of the form $\bar{}Q$ has a reading that corresponds to (3)a, that is evidence for the existential interpretation of the indeterminate-*mo* NPI.

In examples (4) and (5), the reading in (2)b is indeed possible, showing that these NPIs are interpreted as universal. Note that the reading in (2)a is also possible, but a pause after the NPI makes the crucial reading in (2)b more readily available. This is presumably because this prosodic pattern makes the inverse or reconstructed scope reading inaccessible.

- (4) Nihonzin gakusei-no dare-mo hudan-wa sankasinakatta. $\forall > Q \neg$
 Japanese student-GEN who-MO usually-WA did.not.participate
 ‘For every Japanese student, it was usually the case that he or she did not participate.’
- (5) Kokyaku-no dare-kara-mo gozentyuu-wa taitei denwa-ga nakatta. $\forall > Q \neg$
 client-GEN who-from-MO morning-WA mostly call-NOM did.not.exist
 ‘For every client, it was mostly the case that there was no call from him or her in the mornings.’

On the other hand, (6) lacks the reading in (3)a. The only available reading is (6)b, in which, interestingly, the Q adverb and the NPI do not maintain the surface scope relation.

- (6) Hinpanni-wa dare-to-mo dekakenakatta.
 often-WA who-with-MO did.not.go.out
 a. *‘It is not the case that often, there was someone who I went out with.’ $\neg Q > \exists$
 (= Hinpanni dare-ka-to dekaketa wake de-wa nai.)
 b. ‘There was noone who I went out with often.’

Additional support comes from the following examples modeled after Korean examples in Sells 2006, using minimizer NPIs of the form ‘one-classifier-even’. Assuming that these minimizers are reasonably analyzed as being in the scope of negation, the degraded status of (7)b is accounted for because there is a conflicting requirement on scope: the subject wants to be in the scope of negation, whereas the object wants to be outside the negation.

- (7) a. Dare-mo it-teki-mo kobosanakatta. b. ??Hito-ri-mo dore-mo tabenakatta.
 who-MO one-CL-even did.not spill one-CL-even which-MO did.not.eat
 ‘Noone spilled even a single drop.’ ‘Not a single person ate anything.’

We also point out an interesting puzzle never discussed before that arises when we look at how the *mo* NPIs are interpreted in certain modal contexts. On the one hand, the availability of the *de re* reading in (8) seems to require a universal interpretation of *dare-mo*: \forall POSSIBLE \neg . On the other hand, the availability of the *de dicto* reading in (9) seems to indicate that *dare-mo* here is interpreted existentially: \neg POSSIBLE \exists .

- (8) Gakusei-o daremo kaikosi-naku-te ii. POSSIBLE \neg (or \neg NECESSARY)
 student-ACC who-MO fire-not-TE good
 ‘(We’re) allowed not to fire any student.’
 a. ‘For every student, we are allowed not to fire him or her.’ (*de re*)
 b. ‘It is allowed that we fire no students.’ (*de dicto*)
- (9) Saburo-wa seizika-o dare-mo yonde-wa ikenai. \neg POSSIBLE (or NECESSARY \neg)
 Saburo-TOP politician-ACC who-MO invite-WA go.not
 ‘Saburo is not allowed to invite any politician.’
 a. ‘For no politician, Saburo is allowed to invite him or her.’ (*de re*)
 b. ‘It is not allowed that Saburo invites a politician.’ (*de dicto*)

One might suggest that the modal involved in (9) is a necessity modal, in which case the *de dicto* reading can be captured by the universal analysis. A similar reanalysis of (8), however, would necessitate an existential interpretation of *dare-mo* in the *de dicto* context. We speculate that looking at the historical development of certain modal expressions may help us solve this puzzle.

Selected references

- Giannakidou, A. 2000. Negative ... concord?, *NLLT* 18, 457-523.
 Sells, P. 2006. Interactions of Negative Polarity Items in Korean. Proceedings of the 11th Harvard International Symposium on Korean Linguistics, Harvard University, 724-737.