Comparison with indeterminateness: a multidimensional approach

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Introduction: In Japanese the meaning of free choice is expressed by indeterminate pronouns and the particle *mo* in comparative environments, as shown in (1). (Note: normally, the meaning of free choice is expressed by indeterminate pronouns plus *demo*, but *demo* cannot appear in comparative environments). (1a) and (1b) are different in word order, but semantically, they both have what I call the 'individual reading.' However, if the indeterminate pronoun *nani* 'what' is used in the same environment, there can be at most two different interpretations, as shown in (2). Although (2a) and (2b) both have the 'individual' reading, (2b) also has what I call the 'noteworthy' (NW) reading. In this reading, the proposition 'tennis is interesting' is compared with alternative propositions in terms of 'noteworthiness' and is construed as the most noteworthy. It is not impossible to read (2a) the noteworthy way, but in that case, we must treat *nani-yori-mo* as 'parenthetical' (Potts 2005).

This paper investigates the semantics and pragmatics of the two types of *nani-yori-mo* and argues that the meaning of comparison with indeterminateness can be calculated in the domain of conventional implicature (CI) as well as in the domain of 'at issue' semantics.

'Individual' *nani-yori-mo* vs. 'noteworthy' *nani-yori-mo*: There are at least two diagnostics for distinguishing between the two types of *nani-yori-mo*. First, the intensifier *totemo* 'very/really' can appear in the 'noteworthy' reading, but not in the 'individual' reading, as shown in (3). Second, the 'individual' reading cannot arise in negative sentences, but the 'noteworthy reading' can, as shown in (4). Generally, the meaning of free choice does not arise in negative sentences (Giannakidou 1998). Does the fact that (4) allows the 'noteworthy' reading mean that the way in which a sentence is read has nothing to do with free choice? The answer is no. I argue that the asymmetries in (3) and (4) can be reduced to a difference in their modification structures, as shown in Figures 1 and 2. *Nani-yori-mo* in the 'individual' reading (=Figure 1) attaches to the gradable adjective *tanoshii* (i.e. $\lambda d \lambda x$. interesting $(x) \geq d$), while in the 'noteworthy' reading (=Figure 2), *nani-yori-mo* attaches to the entire sentence. More specifically, in Figure 2 *nani-yori-mo* takes a proposition $\langle t^a \rangle$ and returns a CI of type $\langle t^c \rangle$ via the CI Application (Potts 2005) (The superscript 'c' stands for CI and the superscript 'a' stands for 'at issue.') Note that in the 'noteworthy' reading, the sentence's basic structure is construed as adjectival with a null degree morpheme *pos* (e.g. Cresswell 1976; Kennedy 1999). The reason why the degree morpheme *totemo* 'very/really' can occur in the 'noteworthy' reading of (3) but not in the 'individual' reading is that *totemo* is an adverb that is 'restricted' to the adjectival domain (Neeleman et al. 2004 and references therein). As for the negative sentence in (4), the 'noteworthy' reading is possible but the 'individual' reading is not, because in the former case *nani-yori-mo* is placed above negation. The above analysis naturally accounts for the fact that both readings can be applied to the same sentence, as in (5).

Meaning of the two types of *nani-yori-mo*: There can be various approaches to the meaning of *nani-yori-mo* in the 'individual' reading, but here I use a Hamblin-style analysis of Japanese indeterminate pronouns (Kratzer & Shimoyama 2002). In this system, *nani* 'what' introduces a set of **individual** alternatives, as in (6a). As for the semantics of comparison, I assume that the marker of standard *yori* has a comparative meaning (Kennedy 2007), as in (6b). The denotation of *nani-yori* is composed by applying functional application 'pointwise' in (7). Note that the alternatives expand until they meet the universal operator *mo*, which selects them, as in (8a). The truth condition for the 'individual' reading in (2) is (8b). The crucial point in (8b) is that a comparison is made in the 'at issue' level.

Now let us consider the meaning of the 'noteworthy' type. The reason why *nani-yori-mo* has the 'noteworthy' reading, but *dare-yori-mo* does not is that *nani* can introduce a set of alternatives that are

propositions. The question is where the meaning of 'noteworthiness' comes from. I argue that *nani-yori-mo* in the 'noteworthy' reading behaves as a sentential adverb that contributes information about the speaker's evaluation of the proposition, which is expressed in terms of noteworthiness. (Note: *mo* is optional in this reading). The denotation of *nani-yori(-mo)* in this reading is shown in (9). The crucial point in (9) is that the proposition expressed (=p) is compared with all of the contextually determined alternative propositions 'in the domain of CI.' This paper argues that there are two modes of 'comparison with indeterminateness' from the standpoint of multidimensional semantics (e.g. Potts 2005).

(1) a. Taro-wa   <u>dare-yori-mo</u> kashikoi.   (*dare-yori-demo 'who-than-FC')
       Taro-TOP who-than-MO intelligent
       'Taro is more intelligent than anyone else.' (Individual reading)
    b. <u>Dare-yori-mo</u> Taro-wa   kashikoi.
       Who-than-MO Taro-TOP   intelligent
       'Taro is more intelligent than anyone else.' (Individual reading)
(2) a. Tennis-wa   <u>nani-yori-mo</u>   tanoshii.
       Tennis-TOP what-than-MO fun
       'Tennis is more fun than anything.' (Individual reading)
    b. <u>Nani-yori-mo</u>   tennis-wa   tanoshii.
       What-than-MO tennis-TOP fun
       '1: Tennis is more fun than anything.' (Individual reading)
       '2: The proposition that tennis is fun is more noteworthy than any other proposition.' (NW reading)
(3) <u>Nani-yori-mo</u> tennis-wa   **totemo** tanoshii.
    What-than-MO tennis-TOP really   fun
    '* Tennis is really more fun than anything.' (Individual reading)
    'The proposition that tennis is <u>really</u> fun is more noteworthy than any other proposition.'(NW reading)
(4) <u>Nani-yori-mo</u> tennis-wa   tanoshiku-**nai**.
    What-than-MO tennis-TOP fun-NEG
    '?? Tennis is not more fun than anything.' (Individual reading)
    'The proposition that tennis is <u>not</u> fun is more noteworthy than any other proposition.' (NW reading)
(5) <u>Nani-yori-mo</u> [Taro-wa dare-yori-mo   yasashii].
    What-than-MO   Taro-TOP who-than-MO kind
    'The proposition that Taro is more kind than anyone is more noteworthy than any other proposition.'
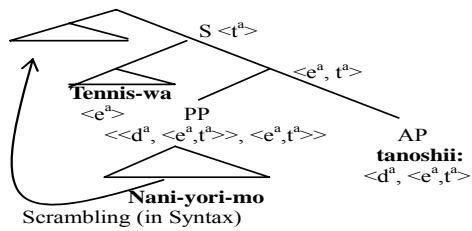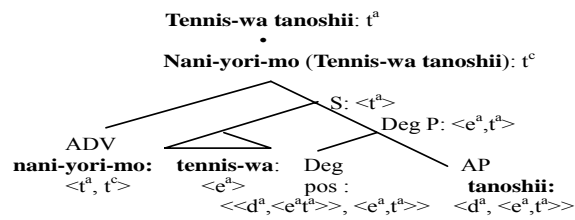
Figure 1   S   **Figure 2**

(6) a. $[\![nani]\!]$ = {x ∈ D_e: thing (x)}
    b. $[\![yori]\!]$ = λyλg$_{<d^a, <e^a,t^a>>}$ λz. max (g)(z) > max (g)(y)
(7) *Pointwise* Functional Application (K&S 2002): If α is a branching node with daughters β and γ, and
    $[\![β]\!]^{w,g} ⊆ D_σ$ and $[\![γ]\!]^{w,g} ⊆ D_{<στ>}$, then $[\![α]\!]^{w,g}$ = {a∈$D_τ$: ∃b ∃c [b∈ $[\![β]\!]^{w,g}$ & c∈ $[\![γ]\!]^{w,g}$ & a = c(b)]}
(8) a. $[\![mo]\!]$ ($[\![nani-yori]\!]$) = {λg$_{<d^a, <e^a,t^a>>}$ λz. ∀x [x ∈ {D_e: thing (x)} → max (g)(z) > max (g)(x)]}
    b. $[\![$Tennis-wa nani-yori-mo tanoshii$]\!]$: $<t^a>$ = 1 iff
       {∀x [x ∈ {D_e: thing (x)} → max (λd. interesting (tennis) ≥ d) > max (λd. interesting (x) ≥ d)]}
(9) $[\![nani-yori(-mo)_{NW}]\!]$: $<t^a, t^c>$ =
    {λp$_{<t^a>}$ ∀q [q∈ {D_t : proposition (q)} → ∃d[noteworthy (p)(d) ∧ d > max (λd′ noteworthy (q)(d′)]]}

Selected References: [1] **Cresswell, M. J.** 1976. The Semantics of Degree. In B. H., Partee, ed., *Montague Grammar*. New York: Academic Press. [2] **Giannakidou, A.** 1998. *Polarity Sensitivity as (Non) Veridical Dependency*. Amsterdam: John Benjamin. [3] **Kennedy, C.** 1999. *Projecting the Adjective: The Syntax and Semantics of Gradability and Comparison*. New York: Garland. [4] **Kennedy, C**. 2007. Standards of Comparison. Handout, Colloque de Syntaxe et Sémantique à Paris. [5] **Kratzer, A. and J, Shimoyama**. 2002. Indeterminate Pronouns: the View from Japanese. *The Proceedings of the Third Tokyo Conference on Psycholinguistics*. [6] **Neeleman, A. et al.** 2004. Degree Expressions. *The Linguistic Review* 21: 1-66. [7] **Potts, C.** 2005. *The Logic of Conventional Implicatures*. Oxford: OUP.