The role of scalarity in discourse context: the case of noteworthy comparison with indeterminateness

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Abstract
This paper investigates the meaning/use of “noteworthy” comparison with an indeterminate pronoun (e.g., Japanese nani-yori-mo ‘what-than-MO’, English more than anything) and considers the role of scalarity in discourse context.

Noteworthy comparison is different from regular comparative or metalinguistic comparison in that (i) it operates on speech acts (it is not a comparison between propositions, nor between individuals) and (ii) its meaning does not contribute to ‘what is said.’ However, in terms of attitude, noteworthy comparison is similar to metalinguistic comparison: it involves the speaker’s attitude of “preference” (Giannakidou and Yoon 2011). I argue that in the noteworthy comparison the speaker conventionally implicates that the at-issue utterance is preferable to any contextually relevant alternative utterances, and that the meaning of “noteworthiness/importance” additionally arises via the pragmatic principle of ‘relevance to a goal’ (Roberts 2012).

We will then consider the role of noteworthy comparison with indeterminateness in discourse context and claim that its pragmatic function can vary depending on its timing: if noteworthy comparison with indeterminateness is signaled at the beginning of a discourse sequence, it creates an effect of “priority listing” (i.e. the top-down strategy), whereas if it is signaled at the end of a discourse sequence, it creates an effect of “additive reinforcing” (i.e. the bottom-up strategy). I argue that the pragmatic function of noteworthy comparison with indeterminateness is discourse-dependent and that it is sensitive to placement in the periphery of a discourse (as opposed to the discourse particle man, whose meaning is sensitive to placement in the periphery of a sentence, i.e., the right periphery and the left periphery (McCready 2009)).

The theoretical implications of this paper are that the scale structure that is used at the level of semantics is extended to the discourse level in a parallel way, and that gradability and comparison play an important role in moving conversation toward a goal in an economical/effective fashion. This strongly suggests that there is no boundary between semantics and pragmatics for scalar cognition. This paper shows that the phenomenon of noteworthy comparison supports the multidimensional view that there is a shared conceptual basis between at-issue and non-at-issue meanings (e.g. Potts 2005, 2007a; McCready 2010; Gutzmann 2012).

Key words: noteworthy comparison, speaker’s attitude, moves, goal-orientedness, conventional implicature, semantics/pragmatics interface
1. Introduction
The notion of comparison is pervasive in language, and there are various kinds of morphemes/constructions that involve a meaning of comparison. The most typical and well-studied kind of comparison in the literature of syntax and semantics is (1) where two objects/things are compared according to a scale associated with a gradable predicate, as shown in (1):

(1) a. Tom is taller than Bill. \textit{(Phrasal comparison)}
    b. Tom is taller than Bill is. \textit{(Clausal comparison)}

In the literature (1a) is called a “phrasal” comparison because (at least superficially) the standard marker \textit{than} takes a DP as its complement. On the other hand, (1b) is called a clausal comparison in that \textit{than} takes clausal elements. Although (1a) and (1b) are different in surface form, they are truth-conditionally equivalent. Roughly speaking, both sentences compare Tom’s height and Bill’s height in terms of the scale of tallness and denote that the degree to which Tom is tall is greater than the degree to which Bill is tall.\footnote{In the literature of comparatives there have been extensive studies of the syntactic relationship between these two kinds of comparison. Roughly speaking, there are two competing theories about “phrasal comparatives” like (1a)—direct analysis and clausal analysis. Direct analysis assumes that the standard marker directly combines with a DP (Hankamer 1973; Hoeksema 1983; Kennedy 1999). Clausal analysis assumes that the “phrasal comparison” in (1a) is actually a reduced case of clausal comparison (e.g. Bresnan 1973; Heim 1985). (See, e.g. Beck et al. 2005; Kennedy 2007, 2009; Merchant 2009; Bhatt and Takahashi 2011 for cross-linguistic investigation of the relationship between phrasal comparison and clausal comparison). There have also been intensive studies on the semantics of comparison like (1). For example, some researchers have assumed that comparison represents two sets of degrees (e.g., Heim 2000; Kennedy 2005). In this theory, the sentence (1) denotes that “the maximum degree to which Tom is tall is greater than the maximum degree to which Bill is tall.” However, other researchers have assumed that there is negation inside the logical representation of comparative clause (Seuren 1973; Schwarzschild 2008). Under this approach (the “A not-A” approach), (1) can be interpreted as “there is some tallness-threshold: Tom meets or exceeds it and Bill does not meet or exceed it. (See von Stechow 1984; Kennedy 2005; Schwarzschild 2008; Beck 2011; Morzycki 2013 for detailed overviews of theories of the semantics of comparatives.)}

In natural language there is also a so-called “metalinguistic” comparison (e.g. McCawley 1988; Embick 2007; Lechner 2007; Giannakidou and Stavrou 2009; Giannakidou and Yoon 2011; Morzycki 2009):

(2) a. Your problems are more financial than legal. \textit{(English)}(McCawley 1988: 673)
    b. \begin{verbatim}
    ta provlimata sou ine perissotero oikonomika {para/apoti}
    the problems yours are-3PL more financial than
    nomika.
    legal
    ‘Your problems are more financial than legal.’ \textit{(Greek)}(Giannakidou and Yoon 2011: 622)\end{verbatim}
McCawley (1988) observes that metalinguistic comparison is different from regular comparatives like (1) in that it does not refer to the degree of an adjective. Rather it refers to the degree of correctness. Although metalinguistic comparison has not received serious attention in the past, recently a number of important studies have been made regarding the semantics of metalinguistic comparison. For example, Giannakidou and Stavrou (2009) and Giannkidou and Yoon (2011) claim that unlike regular comparatives like (1), metalinguistic comparison is subjective/attitudinal in nature: it introduces the point of view of an individual toward a sentence. They argue that metalinguistic comparison expresses the individual’s preference. On the other hand, Morzycki (2009, 2011) analyzes the meaning of metalinguistic comparison in terms of the notion of precision or ‘pragmatic slack’ (Lasersohn 1999).

Although regular comparison and metalinguistic comparison are semantically different, in terms of the semantics/pragmatics interface, they belong to the same type of comparison, viz. semantic comparison. The meaning of regular comparison and metalinguistic comparison both belong to “what is said.” This idea is supported by the fact that if we say “No, that’s not true” after the sentences in (1) and (2), as in (3), the denial can target the comparative meaning:

(3) After utterances (1)/(2)
No, that’s not true.

For example, if we utter (3) after (1), the denial in (3) will target the relative relationship between Tom and Bill. The denial can be understood as “it is false that Tom is taller than Bill (is).” Likewise, if we utter (3) after (2), the denial will target the comparative component of metalinguistic comparison. That is, the denial will be interpreted as stating that it is false that “your problems are more financial than legal.” This suggests that both regular comparison and metalinguistic comparison are part of “what is said” (semantics).

However, if we closely look at the phenomena of comparison, we see that there are cases where comparative expressions used at the semantic level can also be used at the pragmatic (non-truth-conditional) level. For example, in Japanese, the comparative expression nani-yori-mo can be used at both the at-issue and the non-at-issue level (Sawada 2010):

(4) Nani-yori-mo tenisu-wa tanoshii-desu. (Japanese)
What-than-MO tennis-TOP fun-PRED.POLITE
a. at-issue: Tennis is more fun than anything. (Individual reading)
b. at-issue: Tennis is fun. (Implicature: The utterance that tennis is fun is more noteworthy than any other utterance related to tennis.) (Noteworthy reading)

Descriptively, in reading (4a), the speaker compares ‘tennis’ with contextually determined alternatives (e.g., soccer, basketball, or baseball) and says that tennis is the most fun. Note that although there is no comparative morpheme like -er/more, reading (4a) is interpreted as a regular comparison, as the translation shows. On the other hand, in (4b), the speaker compares the utterance ‘tennis is fun’ with alternative utterances in terms of noteworthiness/importance and says that the at-issue utterence is the most noteworthy/important. Let us call this second reading a “noteworthy reading.” Nani-yori-mo in the noteworthy reading is not semantic (i.e., it is non-truth-conditional). This is corroborated by the fact that if someone denies the
utterance in (4b), the denial does not target the meaning of the noteworthy
*nani-yori-mo*.

(5) Iya, watashi-wa soo-wa omoi-masen.
   No I-TOP so-TOP think-NEG.POLITE
   ‘No, I don’t think so.’

Note that the phenomenon of noteworthy comparison is not peculiar to Japanese, but is cross-linguistically pervasive (Sawada 2012). For example, in Korean, a sentence with *mwues-pota-to* ‘what-than-TO’ can be ambiguous between noteworthy and individual readings:

(6) Mwues-pota-to teynisu-nun caymi-itta. (Korean)
   What-than-to tennis-TOP fun-decl
   ‘Tennis is more fun than anything.’
   ‘More than anything, tennis is fun.’

Similar phenomena can be observed in English as well. Although English explicitly distinguishes the individual reading from the noteworthy one in its surface structure, we can express the two readings using exactly the same degree morphemes (i.e., “more,” “than”). (7) represents an individual comparison reading and (8) represents a noteworthy comparison reading:

(7) Tennis is more fun than anything.           (Individual reading)
(8) a. More than anything, tennis is fun.      (Noteworthy reading)
    b. Tennis is, more than anything, fun.      (Noteworthy reading)

These data strongly suggest that the phenomenon of noteworthy comparison is cross-linguistically pervasive and is not just a matter of a language-specific phenomenon.

The above observations will lead us to consider the questions:

(9) a. What is the meaning of noteworthy comparison? Is there a semantic relationship between noteworthy comparison and other kinds of comparison?
    b. What role does the noteworthy comparison play in discourse context?
    c. What does the phenomenon of noteworthy comparison theoretically mean?

The purpose of this paper is to investigate the meaning/use of noteworthy comparison with a determinate pronoun and to try to answer these questions.

As to the first question, I will argue that similarly to metalinguistic comparison, noteworthy comparison is attitudinal. It encodes a speaker’s attitude of “preference” (Giannakidou and Yoon 2011). (Notice that both kinds of comparison do not make use of an explicit gradable predicate.)

However, I will also argue that noteworthy comparison is different from metalinguistic comparison (and regular comparison) in that (i) it is a comparison between speech acts (not between propositions (e.g. metalinguistic comparison), or between individuals (e.g. regular comparison)) and (ii) its meaning corresponds to Grice and Potts’s notion of conventional implicature (CI). I will argue that the scale structure of preference is also utilized at the discourse level and propose that in noteworthy
comparisons with indeterminateness, the speaker conventionally implicates that the at-issue utterance is preferable to any contextually determined alternative utterances.

Then question is where the notion of noteworthiness/importance comes from. Clearly there is an intuition that the noteworthy comparative expressions (nani-yori-mo/more than anything) convey that the at-issue utterance is the most important/noteworthy. I will argue that the meaning of importance/noteworthiness is an inference derived from interaction with the pragmatic principle of relevance to a goal (Roberts 2012). According to Roberts (2012), a move (utterance) is relevant if and only if it promotes the achievement of an accepted goal of the interlocutors. If we assume that the speaker signals that the at-issue utterance is the most preferable under the general pragmatic rule that “the speaker’s utterance must be relevant to a goal”, it is reasonable to think that the at-issue utterance is the “most relevant”, and therefore the most noteworthy/important.

In this paper we will also consider an alternative approach where the scalar dimension of noteworthy comparison is not lexically identified and purely pragmatic. Under this approach, the noteworthy expression with an indeterminate pronoun (e.g. nani-yori-mo ‘what-than-MP’, more than anything) just means “above all”, and the scalar meanings such as “preferable” and “noteworthy” are derived via the principle of relevance to a goal. However, it will be shown that this purely pragmatic approach is problematic at least synchronically, in that it cannot explain why noteworthy comparative expressions are invariably preferential and why the “noteworthy/importance” meaning is cancellable, whereas the preferential meaning is not. We will argue that the “preferential” meaning is grammaticized/conventionalized in the noteworthy comparative expressions (just like the case of metalinguistic comparison).

As to the second question (the question as to the role of comparison in discourse context), I will show that the pragmatic function of noteworthy comparison with indeterminateness can vary depending on where it is signaled. If noteworthy comparison with indeterminateness is signaled at the beginning of the discourse sequence, it creates an effect of “priority listing” (i.e. the top-down strategy), whereas if it is signaled at the end of the discourse sequence, it creates an effect of “additive reinforcing” (i.e. the bottom-up strategy). This suggests that the use of noteworthy comparison is sensitive to the dynamic sequence of discourse.

(10) **Top-down strategy**
A: Tokyo-no ii tokoro-tte nan-desu-ka
Tokyo-GEN good point-TE what-PRED.POL-Q
‘What is a good point of Tokyo?’/‘What are the good points of Tokyo?’
Let’s see what-than-MO Tokyo-TOP safe-PRED.POL
‘Let’s see. More than anything, Tokyo is safe.’
(B: Sore-ni (Tokyo-wa) benri-mo ii-desu.)
In addition to that Tokyo-TOP convenient-also good-PRED.POL
‘In addition to that, Tokyo is also convenient.’

(11) **Bottom-up strategy**
A: Tokyo-no ii tokoro-tte nan-desu-ka?
Tokyo-GEN good point-TE what-PRED.POL-Q
‘What are the good points of Tokyo?’/‘What is a good point of Tokyo?’
B: (Utterance 1):
Soo-desu-nee. Tokyo-wa benri-ga ii-si tabemono-mo
Let’s see Tokyo-TOP convenience-NOM good-and food-also
oisii-desu.
good-PRED.POL.
‘Let’s see. Tokyo is convenient, and the food is also good.’

B: (Utterance 2):
Sosite nani-yori-mo, Tokyo-wa anzen-desu.
And what-than-MO Tokyo-TOP safe-PRED.POL
‘And more than anything, Tokyo is safe.’

I will suggest that the pragmatic function of noteworthy comparison is context-dependent and that it is sensitive to placement on the periphery of discourse (as opposed to the discourse particle man, which is sensitive to placement on the periphery of a sentence (McCready 2009)).

We will also look at the meaning and use of what is more and show that it can only be used in a bottom-up fashion. I will argue that this is due to the fact that it does not have universal quantification and cannot take every contextually relevant alternative into consideration.

The theoretical implications of this paper (the third question) are that the scale structure that is used at the level of semantics is extended to the discourse level in a parallel way, and that gradability and comparison play an important role in making conversation move toward the goal of conversation in an economical/effective way. This is significant for the theory of the semantics-pragmatics interface, because the phenomenon of noteworthy comparison strongly suggests that there is no boundary between semantics and pragmatics for a scalar concept. I will claim that the ubiquity of scalarity provides the supportive evidence for the multidimensional approach to meaning (e.g. Potts 2005; McCready 2010; Gutzmann 2012). Various approaches have been proposed for the phenomenon corresponding to Grice’s notion of conventional implicature (e.g. Blakemore’s procedural approach (Blakemore 1987, 1992) and Bach’s treatment of CIs as either an entailment or a second-order speech act). However, only the multidimensional approach can theoretically capture the similarities between noteworthy comparison and other kinds of semantic comparison. I will suggest that it is possible to integrate the procedural/speech act aspects of noteworthy comparison in a multidimensional composition system.

This paper is structured as follows: In section 2, we consider the differences between the individual nani-yori-mo and the noteworthy nani-yori-mo based on the modification structure. In section 3, we analyze the meaning of the individual nani-yori-mo. In section 4, we turn our attention to the meaning of the noteworthy nani-yori-mo and consider the properties of noteworthy comparison. In section 5, we investigate the meaning of noteworthy comparison more theoretically. We claim that the noteworthy comparison posits a scale of preference and that the meaning of noteworthy/importance in noteworthy comparison is derived via the interaction with the general pragmatic principle of “relevance to a goal.” In section 6, we consider an alternative approach in which the meaning of noteworthy comparison is simply “greater than every utterance” and claim that the preference-based approach is better than the alternative approach.

In section 7, we look at use of the noteworthy comparison from a discourse-pragmatic perspective and think about the role of scalarity in discourse context. We observe various timings of the use of the noteworthy comparison with
indeterminateness and discuss the discourse sensitivity of noteworthy comparison. In section 8, we summarize the analyses of noteworthy comparison and discuss the theoretical implications for theories of the semantics/pragmatics interface.

2. The individual comparison vs. the noteworthy comparison
Let us first consider the empirical difference between the individual comparison and the noteworthy comparison based on the example of the Japanese *nani-yori-mo*. As we observed in the introduction, the following sentence can be ambiguous between an individual reading and a noteworthy reading:

(12) Nani-yori-mo tenisu-wa tanoshii.
What-than-MO tennis-TOP fun
a. at-issue: Tennis is more fun than anything. *(Individual reading)*
b. at-issue: Tennis is fun. *(Implicature: The utterance that tennis is fun is more noteworthy than any other utterance related to tennis.)* *(Noteworthy reading)*

Note that if the subject *tenisu* ‘tennis’ is replaced by the place name Tokyo, then only a noteworthy reading becomes available.

(13) Nani-yori-mo Tokyo-wa tanoshii.
What-than-MO Tokyo-TOP fun
At-issue: Tokyo is fun.
Implicature: The utterance “Tokyo is fun” is more noteworthy than any contextually relevant alternative utterance related to Tokyo.)* *(Noteworthy reading)*

In order to get an individual/semantic reading, we must use the word *doko* ‘where’ instead of *nani*:

(14) Doko-yori-mo Tokyo-wa tanoshii. *(Individual/semantic reading only)*
Where-than-MO Tokyo-TOP fun
‘Tokyo is more fun than anywhere.’

However, (14) then loses the noteworthy reading.

Structurally speaking, we can say that the basic structure of the individual reading is comparative, while that of the noteworthy reading is adjectival. This is corroborated by the fact that while the intensifier *totemo* ‘very/really’ can appear in the ‘noteworthy’ reading, it cannot appear in the ‘individual’ reading, as shown in (15):

(15) Nani-yori-mo 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 really fun is more noteworthy than any other proposition.* *(Noteworthy reading)*

As is argued in the literature on Japanese linguistics, the intensifier *totemo* ‘very/really’ is more or less ‘restricted’ to adjectival predication (e.g. Watanabe 1990, Tsujimura 2001), and it cannot appear in a comparative environment:
The above data clearly show that the individual reading of (12) is structurally different from the noteworthy reading.

We can schematically represent the structural difference between the individual reading and the noteworthy reading in (12) as follows:

In the individual reading, the sentence’s basic structure is comparative. Note that in (17a) \textit{nani-yori-mo} combines with the constituent ADJ at the logical structure, but in surface form, it is moved to the sentence initial position via scrambling (see (12)). On the other hand, in the noteworthy reading, \textit{nani-yori-mo} is base generated at the sentence initial position, and the sentence’s basic structure is construed as adjectival, with a null degree morpheme \textit{pos} (e.g. Cresswell 1976; Kennedy 1999). The role of \textit{pos} is to relate the degree argument of an adjective to a contextual standard and denote that it is greater than a standard. (We will discuss the denotation of \textit{pos} in detail in section 5.)

This structural difference between (17a) and (17b) can naturally explain why the adverb \textit{totemo} can appear in the noteworthy reading but not in the comparative reading. The intensifier \textit{totemo} can appear in the noteworthy reading because it is a special kind of \textit{pos} morpheme. Intuitively speaking, \textit{totemo} denotes that an at-issue degree (degree argument) is located at a much higher position than a standard. (See Kennedy and McNally (2005) for a detailed discussion of the meaning of the English intensifier \textit{very}.)

On the other hand, \textit{totemo} cannot appear in the individual comparative reading because the position of \textit{totemo} ‘very’ is already filled by the comparative morpheme MORE, so in our example, it cannot directly combine with the adjective \textit{tanoshii} ‘fun.’

Note that a sentence with the noteworthy \textit{nani-yori-mo} does not need to contain an adjective, as in the following example:

(18) (Context: Please tell me where Japan is located?)
Nani-yori-mo nihon-wa ajia-ni aru.
‘More than anything, Japan is in Asia.’
This strongly suggests that the noteworthy comparison is not an adjectival comparison. The noteworthy nani-yori-mo is operating at a higher level.

Then how can we analyze the meaning of the two kinds of nani-yori-mo? In the following sections we will discuss the meanings of the two kinds of nani-yori-mo and the parallelism and non-parallelism between the two kinds of comparison with indeterminateness.

3. The semantics of the Japanese individual nani-yori-mo

Let us first consider the meaning of the individual reading. I would like to point out first that we can express the meaning of individual comparison with indeterminateness by using various kinds of indeterminate pronouns:

(19) Indeterminate pronoun plus yori-mo

<table>
<thead>
<tr>
<th>Indeterminate pronoun</th>
<th>Yori-mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>dare ‘who’ (dare-yori-mo)</td>
<td>ikura ‘how much’ (*ikura-yori-mo)</td>
</tr>
<tr>
<td>nani ‘what’ (nani-yori-mo)</td>
<td>itu ‘when’ (*itu-yori-mo)</td>
</tr>
<tr>
<td>dore ‘which’ (dore-yori-mo)</td>
<td>naze ‘why’ (*naze-yori-mo)</td>
</tr>
<tr>
<td>dono ‘which (Det)’ (dono N-yori-mo)</td>
<td>doo ‘how’ (*doo-yori-mo)</td>
</tr>
<tr>
<td>doko ‘where’ (doko-yori-mo)</td>
<td></td>
</tr>
</tbody>
</table>

Itu-yori-mo ‘when-than-mo’ sounds odd for some native speakers. Note that there is also an expression itu-mo–yori, but it means “than usual,” not “than anytime.”

As the above table shows, individual comparison with indeterminateness is not fully productive. It can only be used when the indefinite pronoun is dare ‘who’, nani ‘what’, dore ‘which’, dono NP, or doko ‘where.’

In order to highlight the difference between the individual and noteworthy readings, this paper only focuses on the semantics of individual comparison in which the indeterminate pronoun nani is used:

(20) Nani-yori-mo tennis-wa tanoshii.
What-than-MO tennis-TOP fun
a: ‘Tennis is more fun than anything.’ (Individual reading)
b: ‘The proposition that tennis is fun is more noteworthy than any other proposition.’ (Noteworthy reading)

As for the semantics of comparison, I assume that the marker of standard yori has a comparative meaning (e.g., Kennedy 2007; Hayashishita 2009; Sawada 2013), as in (21):

(21) \[ [\text{yori}] = \{ \lambda x \lambda g \lambda y. \text{max} \{ d' | g(d')(y) > \text{max} \{ d'' | g(d'')(x) \} \} \]

As for the meaning of the gradable predicate, I follow the assumption that gradable predicates represent relations between individuals and degrees (Seuren 1973; Cresswell...

\[(22) \quad \text{[[tanoshii]]} = \lambda d \lambda x. \text{fun}(x) = d\]

The question is how to generate the meaning of \textit{nani-yori-mo}. There are various approaches for the meaning of indeterminate pronouns and \textit{mo}, but, in this paper, I use Hamblin’s (1973) semantics for Japanese indeterminate pronouns (Kratzer & Shimoyama 2002; Shimoyama 2006). In this system, \textit{nani} ‘what’ in (20) introduces a set of \textit{individual} alternatives, as in (23), where possible worlds and variable assignments are omitted for the sake of simplicity:

\[(23) \quad \text{[[nani]]} = \{x \in D_e: \text{thing}(x) \land C(x)\}\]

I posited a contextual operator \(C\) in (23) to make sure that \textit{nani} ‘what’ only introduces contextually relevant alternatives.

\textit{Nani} in (23) then combines with \textit{yori} in a pointwise manner. The denotation of \textit{nani-yori} is composed by applying a functional application ‘pointwise’:

\[(24) \quad \text{Pointwise Functional Application (Kratzer & Shimoyama 2002):}\]

If \(\alpha\) is a branching node with daughters \(\beta\) and \(\gamma\), and \([[\beta]] \subseteq D_\sigma\) and \([[\gamma]] \subseteq D_{<\sigma,\gamma>}\),

then \([[\alpha]] = \{a \in D_\tau: \exists b \exists c [b \in [[\beta]] \land c \in [[\gamma]] \land a = c(b)]\}\]

The above function application says that, if there is a representation like that in (25a), it is interpreted as in (25b):

\[(25) \quad \text{a.} \quad \alpha \{\gamma\} \quad \beta\{<\sigma>\} \quad \gamma\{<\sigma,\gamma>\} \quad \beta\{<\sigma>\} \quad \gamma\{<\sigma,\gamma>\} \quad \{b_1, b_2, ..., b_n\} \quad \{c\}\]

If we apply this functional application to \textit{nani-yori} in the individual reading, we can derive the following meaning:

\[(26) \quad \text{nani-yori}\]
\[\{\text{yori (soccer), yori (baseball), yori (basketball), ...}\}

\text{nani} \quad \text{yori}
\[\{\text{soccer, baseball, basketball, ...}\} \quad \{\text{yori}\}\]
Note that the alternatives expand until they meet the universal operator mo, which selects them as in (27):²

(27) \[ [mo] = \{ \lambda P \lambda g \lambda y. \forall x [x \in \{ \text{thing} \} \rightarrow P(g)(y)] \} \]

(where x is an expanding individual variable in P)

Thus, if mo in (27) is combined with nani-yori, we get the following meaning:

(28) \[ [mo] (\{ \text{nani-yori} \}) = \{ \lambda g. \forall x [x \in \{ \text{De: thing} (x) \} \rightarrow \max (g)(z) > \max (g)(x)] \} \]

The following figure shows the logical structure of nani-yori-mo:

(29)

(30) \[ [\text{Tennis-wa nani-yori-mo tanoshii}] = 1 \text{ iff } \{ \forall x [x \in \{ \text{thing} \} \rightarrow \max \{ d' \mid \text{fun(tennis)} = d' \} > \max \{ d'' \mid \text{fun(x)} = d'' \} \} \]
This sentence is true only in the case where the degree to which tennis is fun on a given scale is greater than any of contextually relevant alternative. The crucial point here is that the comparison in (30) is made at the at-issue level.

4. The noteworthy comparison with indeterminateness: a preliminary discussion
Let us now turn our attention to the meaning and use of noteworthy comparison with indeterminateness. As a starting point, in this section we will show that there is a striking similarity between noteworthiness comparison and metalinguistic comparison. They both involve the speaker’s preference. However, I will also claim that they are significant different in terms of their morphosyntactic structure of comparison, modification structure, semantic status, modification structure and discourse structure (Question-answer structure).

4.1 The noteworthy comparison involves the speaker’s preference (similar to metalinguistic comparison)
It is important to notice that there is a striking similarity between metalinguistic comparison and noteworthy comparison in terms of the speaker’s attitude. They both involve the speaker’s “preference” (Giannakidou and Yoon 2011). The following are typical examples of metalinguistic comparison:

(31)  a. Your problems are more financial than legal. (McCawley 1988: 673) (English)
     b. ta provlimata sou ine perissotero oikonomika {para/apoti} the problems yours are-3PL more financial than nomika.
     legal
     ‘Your problems are more financial than legal.’ (Greek) (Giannakidou and Yoon 2011)
     c. Taro-wa sensei-to iu-yori-mo gakusya-da. (Japanese)
     Taro-TOP teacher-as say-than-MO scholar-PRED
     ‘Taro is more of a scholar than a teacher.’

Building on Giannakidou and Stavrou’s (2009) idea of metalinguistic comparison, Giannakidou and Yoon (2010) claim that metalinguistic comparison introduces the point of view of an individual towards a sentence, and denotes that the speaker is expressing that he/she prefers one sentence in a given context over another.

3 Note that if ‘tennis’ is in the set of alternative individuals in (30), the sentence will always be false. In order to avoid such a situation, we need to either remove ‘tennis’ from the set of contextually relevant alternatives or change ‘>’ to ‘≥’. The same thing applies to the case of the noteworthy reading that we will discuss later. In this paper I would like to consider that tennis is automatically excluded from the set of alternatives because “tennis” has already been topicalized in the sentence. Thanks to Chris Potts for pointing out this issue.

4 There are also other approaches to metalinguistic comparison. Morzycki (2009, 2011) analyzes the meaning of metalinguistic comparison in terms of the notion of imprecision or ‘pragmatic slack’ (Lasersohn 1999). In his 2009 study of the semantics of metalinguistic comparison, he analyzes “more α than β” as denoting that “α is closer to being true of x than β is” (Morzycki 2009). Since I am interested in the attitudinal
If we think about the meaning of noteworthy comparison from the standpoint of the speaker’s attitude, we see that noteworthy comparison also involves the speaker’s preference. For example, we can say that (32) is similar to metalinguistic comparison in that it involves the speaker’s preference.

(32) a. (What are the good points of Tokyo?)
Nani-yori-mo Tokyo-wa anzen-da. (Declarative)
What-than-MO Tokyo-TOP safe-PRED
‘More than anything, Tokyo is safe.’
b. Nani-yori-mo naze anata-wa Chicago-ni iku-no? (Interrogative)
What-than-MO why you-TOP Chicago-TO go-Q
‘More than anything, why do you go to Chicago?’
c. Nani-yori-mo jugyoo-ni ki-nasai! (Imperative)
What-than-MO class-to come-IMPERATIVE
‘More than anything, come to the class!’

In (32a), by using nani-yori-mo the speaker conveys his/her view that the utterance “Tokyo is safe” is the most preferable utterance in answering the question under discussion. In (32b), the speaker conveys his/her view that among various possible questions, the question “why do you go to Chicago” is the most preferable question to achieve the goal of the conversation. And in (32c) it is possible to consider the command “come to the class!” to be the most preferable command.

Based on the above discussion I now redefine the meaning of noteworthy comparison as follows:

(33) The meaning of noteworthy comparison: The noteworthy comparative expressions conventionally implicate that the speaker thinks that the at-issue utterance is preferable to any other relevant alternative utterance in the achievement of the conversational goal.

4.2. The differences between noteworthy comparison and metalinguistic comparison

However, there are also differences between metalinguistic comparison and noteworthy comparison. Intuitively, noteworthy comparison is not “metalinguistic” in that it does refer to the language used by an earlier speaker.5 Furthermore, noteworthy comparison aspect of noteworthy comparison, I will adopt Giannakidou and Yoon’s approach to metalinguistic comparison. As we will discuss in section 5, Giannakidou and Yoon’s attitudinal approach is broad and provides a way of thinking about the similarity between noteworthy comparison and metalinguistic comparison.

5 The term “metalinguistic” is often discussed in the literature on metalinguistic negation. Horn (1989: 363) characterizes metalinguistic negation as a “device for objecting to a previous utterance on any grounds whatever, including the conventional or conversational implicata it potentially induces, its morphology, its style or register, or its phonetic realization.” For example, in the following example, the speaker is objecting to a pronunciation of “mongooses”:

(i) I didn’t manage to trap two mongoose—I managed to trap two mongooses.

(Horn 1989: 371)
is significantly different from metalinguistic comparison in terms of (i) morpho-syntax, (ii) the status of meaning, (iii) modification structure, and (iv) discourse structure. Let us consider each of these points.

4.2.1 Morphosyntactic difference
First, metalinguistic comparison and noteworthy comparison are morphosyntactically different.

(34) a. It is quite big itself, though, more tall than anything.
   (cf. It is taller than anything.)

b. You're not that big, more tall than anything.
   (www.learngospelmusic.com/forums/index.php?action=profile;u=68224;sa=showPosts)
   (cf. ??You are taller than anything.)

In English, metalinguistic comparison (accuracy assessment type) is made by more (see also Di Sciullo and Williams 1987; Embick 2007; Giannakidou and Stavrou 2009; Giannakidou and Yoon 2011; Morzycki 2011 among many others) even in a case where the comparative morpheme -er must be used in a regular comparison. Notice that in metalinguistic comparison, more and than do not form a constituent in the surface form.

This strongly contrasts with the noteworthy comparison with indeterminateness. In the noteworthy comparison, more and than form a constituent.

(35) a. More than anything, it is tall.
   b. More than anything you are tall.

In Japanese, metalinguistic comparison is made by a special expression to iu-yori(-mo) ‘lit. than to say as’, as shown in (36):

(36) a. Taro-wa sensei-to iu-yori-mo gakusya-da.
   Taro-TOP teacher-as say-than-MO scholar-PRED
   ‘Taro is more of a scholar than a teacher.’

b. Sapporo-wa suzushii-to iu-yori(-mo) samui.
   Taro-TOP kind-as say-than-MO fun
   ‘Taro is more fun than kind.’

However, Japanese cannot make metalinguistic comparison with indeterminateness using to iu-yori-mo, as shown in (37).

6 For example, although the adjective tall needs to combine with the –er form, in the metalinguistic comparison it must combine with more:
(i) a. George is more tall than big.
   b. *George is taller than big.

7 In Japanese there is also an expression nan-to i-ttemo ‘what-as say-even.’ However, this is not a metalinguistic expression.
(i) A: Kono mise-no osusume-no menyu-wa nan-desu-ka?
   This store-GEN recommendation-GEN menu-TOP what-PRED.POLITE-Q
   ‘What is a recommended menu of this store?’
4.2.2 The difference in the semantic status: The meaning of noteworthy comparison is a CI

Second, as we observed in the previous sections, noteworthy comparison and metalinguistic comparison are different in terms of their level of meaning. As we discussed earlier (section 1, section 4.1), while the meaning of the noteworthy comparison is not part of “what is said”, the meaning of metalinguistic comparison is part of what is said.

For example, if we say “no, that’s not true” after the noteworthy comparative utterance, the denial can only target the at-issue part of the utterance (i.e. Tokyo is safe):

What-than-MO Tokyo-TOP safe-PRED.POLITE  
‘More than anything, Tokyo is safe.’
B: Iya, sono kangae-wa tadashiku-nai-desu. (Tokyo is not safe.)  
No that idea-TOP true-NEG-PRED.POLITE  
‘No, that idea is not true.’ (Tokyo is not safe.)

However, in the case of metalinguistic comparison the denial can target the description of metalinguistic comparison:

(39) A: Taro-wa keizaigakusya-to iu-yori-mo seijigakusya-desu.  
Taro-TOP economist-as say-than-MO political scientist-PRED.POLITE  
‘Taro is more of a political scientist than an economist.’
B: Iya, sono kangae-wa tadashiku-nai-desu. (He is an economist.)  
No that idea-TOP true-NEG-PRED.POLITE  
‘No, that idea is not true.’ (He is an economist.)

The speaker in (39B) is denying the metalinguistic comparative meaning that “Taro is more of a political scientist than an economist.”

Although there are various kinds of meaning that can be regarded as “not part of said”, e.g. conversational implicature, conventional implicature, presupposition, etc., in this paper I will assume that the meaning of noteworthy comparison with indeterminateness corresponds to conventional implicature (CI). In the Gricean theory of meaning, CIs are considered to be part of the meaning of words, but these meanings are independent of “what is said” (e.g. Grice 1975; Potts 2005, 2007a; Horn 2008, 2013;
McCready 2009, 2010; Sawada 2010; Gutzmann 2011, 2012, 2013. Potts (2005) defines CI as follows:

(40) Potts’s definition of CI (Potts 2005)
   a. CIs are part of the conventional meaning of the words.
   b. CIs are commitments, and thus give rise to entailments.
   c. These commitments are commitments of the speaker.
   d. CIs are logically and compositionally independent of ‘what is said.’

We can say that the noteworthy *nani-yori-mo* satisfies the above condition. Condition (a) is satisfied because the meaning of the comparison with indeterminateness is associated with the lexical items. Condition (b) is satisfied because the meaning of the noteworthy *nani-yori-mo* gives rise to an entailment, since it would be odd to cancel the CI by saying, ‘But that is not noteworthy information at all.’ Before considering Condition (c), let us first look at Condition (d). We can say that Condition (d) is also met. As we saw in (38), the meaning of the noteworthy *nani-yori-mo* in (38A) cannot be challenged by saying, ‘No, that’s false.’

Finally, let us consider Condition (c). As far as example (38A) is concerned, this condition is also met for the meaning of the noteworthy *nani-yori-mo* because in (38A) the person who thinks that the proposition (utterance) expressed is the most noteworthy one is the speaker. However, recent studies have shown that the CI triggering expressions are not always speaker-oriented (Amaral, Roberts & Smith 2007; Harris and Potts 2009). (See also Wang et al. 2005 and Karttunen and Zaenen 2005).

For example, Potts (2005) claims that appositives can be speaker-oriented even if they are embedded in the complements of attitude predicates and verbs of saying (Potts 2005):

(41) Sheila believes that Chuck, a psychopath, is fit to watch the kids.

However, Amaral et al. (2007) claim that if we assume that it is part of the interlocutors’ common ground that Chuck is a psychopath, the appositive can be subject-oriented. They further claim that in the following example, one is likely to get the subject-anchored interpretation, where Sheila (and not the speaker) is committed to Chuck’s being a sweetheart:

(42) Sheila believes that Chuck, a sweetheart if she ever met one, is fit to watch the kids.       (Amaral et al. 2007: 737)

Harris and Potts (2009) present corpus and experimental evidence to indicate that appositives (and expressives) are generally speaker-oriented, but certain discourse conditions can counteract this preference. Non-speaker-orientation becomes the dominant interpretation if certain discourse conditions are met.

A similar phenomenon can be observed with regard to the noteworthy *nani-yori-mo*. In the following sentence, where *nani-yori-mo* is embedded under the verbs of saying, it can be either speaker-oriented or subject-oriented:

(43) Taro-wa [nani-yori-mo Shizuoka-wa sumiyasui]-to kangae-teiru.
Taro-TOP what-than-MO Shizuoka-TOP easy to live-that think-TEIRU
‘Taro thinks that *nani-yori-mo* Shizuoka is easy to live.’
(a) Subject-oriented reading: (CI: Taro thinks that the proposition that Shizuoka is easy to live is preferable to any other proposition related to Shizuoka.)
(b) Speaker-oriented reading: (CI: The speaker thinks that the proposition that Shizuoka is easy to live is preferable to any other proposition related to Shizuoka.)

The foregoing discussion suggests that the property of speaker-orientedness may not necessarily be the defining characteristic of CIs. However, this does not mean that we cannot define the property of CI, nor that we cannot say that the noteworthy nani-yori-mo has a CI meaning. Although Condition (c) may need to be revised (or abandoned), we still can define the property of CI based on the other conditions. The CIs are derived from words, and their meanings do not contribute to ‘what is said.’ And clearly, the noteworthy nani-yori-mo has these properties.

One might think that the meaning of the noteworthy nani-yori-mo is a presupposition, rather than a CI. However, several pieces of empirical evidence suggest that the meaning of the noteworthy comparison is a CI (rather than a presupposition).

First, the meaning of the noteworthy nani-yori-mo cannot be backgrounded. In the literature, it is often claimed that a presupposition is a proposition whose truth is taken for granted as background information and it is discourse-old. However, CIs have the anti-backgroundedness property (Potts 2005). For example, Potts (2005) claims that a supplement should be considered a CI (rather than a presupposition) because, unlike a presupposition, it cannot be backgrounded based on the following contrast:

(44) Lance Armstrong survived cancer.
   a. # When reporters interview Lance, a cancer survivor, he often talks about the disease.
   b. And most riders know that Lance Armstrong is a cancer survivor.

(Potts 2005: 34)

According to Potts (2005), (44a) is infelicitous or redundant because the content of a supplement is part of the initial context. A supplement is a CI and thus cannot be backgrounded. However, (44b) is perfectly natural because know is a presupposition trigger and does not have the anti-backgroundedness property.

If we look at the meaning of the noteworthy nani-yori-mo, we see that similarly to the case of a supplement, it has the anti-backgroundedness property. It always provides new information. The noteworthy nani-yori-mo provides new information. This is corroborated by the fact that if the meaning of the noteworthy nani-yori-mo is discourse-old, then the sentence becomes odd or redundant:

(45) (Context: Speaker A is asking Speaker B, who was a professional tennis player.)
   A: Naze tenisu-o suru-nodesu-ka? ‘Why do you play tennis?’
   B: Soo desune. Kore-ga ima-no boku-nitotte mottomo konomashii kotae-desu. ‘This is the most preferable answer for my current situation. (#More than anything) I play tennis because it is fun.’
In this context, speaker B explicitly mentions that he is providing the most appropriate/preferable answer for his current situation (the situation as a non-professional tennis player). In this context, if speaker B uses *nani-yori-mo* ‘more than anything’, his utterance sounds redundant. This suggests that the meaning of *nani-yori-mo* is a CI, rather than a presupposition.

Additional evidence for the idea that the meaning of *nani-yori-mo* is a CI rather than a presupposition is that unlike presuppositions, the meaning of the noteworthy *nani-yori-mo* can project beyond presupposition plugs such as the non-factive verbs (or verbs of saying) (see example (43)). In the pragmatics literature, it is often claimed that presupposition plugs such as *believe* and *think* block off all presuppositions among the lower clauses (Karttunen 1973). However, as we can see in example (43), the meaning of the noteworthy *nani-yori-mo* can project beyond the presupposition plug *kantaeru* ‘think’.

Although there is a major ongoing debate on the status of CI (with some researchers claiming that there is no such thing as a CI (Bach 1999; for the procedural approach in Relevance Theory, see e.g. Blackmore 1987, 2002), and others claiming that what is analyzed as a CI must be analyzed as presupposition (e.g. Schlenker 2007)), in this paper I will take the position that CIs and presuppositions differ and that the meaning of the noteworthy *nani-yori-mo* belongs to a CI. See Schlenker 2012, Potts 2013 and Tonhauser et al. 2013 for further discussion of the potential differences/similarities between presuppositions and CIs.

### 4.2.3 The difference in modification structure: the noteworthy comparison operates on the speech act

Third, noteworthy comparison and metalinguistic comparison are different in terms of modification structure. While metalinguistic comparison compares between propositions, noteworthy comparison compares between speech acts (see section 4.2). The idea that metalinguistic comparison does not operate on speech acts is supported by the following example:

(46) Taro-wa sensei-to iu-yori-mo gakusya-desu-ka-nee. (Japanese)

Taro-TOP teacher-as say-than-MO scholar-PRED-Q-CONFIRM

‘Isn’t it true that Taro is more of a scholar than a teacher?’

(46) is natural as a confirmation question. Here the speaker himself/herself is considering that “Taro is more of a scholar than a teacher.” The crucial point here is that the meaning of metalinguistic comparison is inside the scope of the confirmation question operator *ka-nee*. This shows that metalinguistic comparison does not operate on speech acts.

On the other hand, noteworthy comparison operates on speech acts. This idea is supported by the fact that the noteworthy comparison can scope over speech acts/sentence types (Sadock and Zwicky 1985):

(47) a. Nani-yori-mo Tokyo-wa anzen-da. (Declarative)

What-than-MO Tokyo-TOP safe-PRED

At issue: Tokyo is safe.

CI: The assertion that “Tokyo is safe” is more noteworthy than any other assertion.
b. Nani-yori-mo naze anata-wa Chicago-ni iku-no?  
(Interrogative)
What-than-MO why you-TOP Chicago-TO go-Q
At issue: Why do you go to Chicago?
CI: The question “why do you go to Chicago?” is preferable to any other question.
c. Nani-yori-mo jugyoo-ni ki-nasai!  
(Imperative)
What-than-MO class-to come-IMPERATIVE
At issue: Come to the class!
CI: The command “come to the class!” is preferable to any other command.

(47a) is comparing the assertion “Tokyo is safe” with contextually relevant alternative assertions, while (47b) is comparing the question “Why did you come to Chicago?” with contextually relevant alternative questions and is saying that the at-issue question is the most noteworthy. As for (47c), it is comparing the command “come to the class!” with contextually determined alternative commands (e.g., “study hard!”) and is saying that “come to the class!” is the most noteworthy command.

The same phenomenon can be found in the Korean mwues-pota-to ‘what-than-TO’ and the English more than anything:

(48) Mwues-pota-to teynisu-nun caymi-itta.  
(Korean)
what-than-TO tennis-TOP fun-decl
Reading 1: ‘Tennis is more fun than anything.’
Reading 2: ‘More than anything, tennis is fun.’

(49) a. Mwues-pota-to, swuep-ey (com) o-ala!  
(Korean, Imperative)
what-than-TO class-loc (COM) come-Imp
‘More than anything, come to the class!’
b. Mwues-pota-to, Tokyo-ey way ka-ss-e?  
(Korean, Interrogative)
What-than-TO, Tokyo-loc why go-Past-Decl
‘More than anything, why did you go to Tokyo?’

(50) a. More than anything, do not start training again until you are fully recovered.  
(http://www.faant.com/library/race-recovery-secrets-revealed.cfm) (Imperative)
b. More than anything, why do you care so much?  
(www.circleofmoms.com/.../what-s-the-appeal-in-naming-your-girl-a-boy-s-name-563913 -) (Interrogative)

However, there is a potential problem with the idea that noteworthy comparison operates on speech acts. As the following examples show, noteworthy comparison can appear in the middle of the sentence:

(51) a. Tenisu-wa nani-yori-mo tanoshii.  
(Noteworthy reading)
Tennis-TOP what-than-MO fun
‘Tennis is, more than anything, fun.’

b. Tennis is, more than anything, fun.

Here, nani-yori-mo and more than anything behave as parenthetical phrases. One way to analyze this is to assume that the parenthetical noteworthy nani-yori-mo/more than
anything operates on the speech act level at LF, despite the fact that at a superficial level it is placed inside the sentence. Another way to analyze (51) is to assume that the parenthetical nani-yori-mo operates on a property and posit different semantics for it. For example, it may be possible to consider that the parenthetical nani-yori-mo in (51) and more than anything in (51b) convey the following CI meaning:

(52) The at-issue property is preferable to any other property for characterizing tennis.

I think that the former option is preferable because if we accept it, we don’t have to posit another lexical entry for the noteworthy nani-yori-mo. However, in order to determine which approach is better, there must be more empirical investigations (especially as to whether the parenthetical nani-yori-mo can appear in non-declarative environments). I would like to leave this question for future research.

4.2.4 Discourse structure (Question and Answer structure)

Finally, noteworthy comparison and metalinguistic comparison are different in terms of discourse structure. As the name suggests, metalinguistic comparison is metalinguistic in the sense that it corrects/rejects the language used by an earlier speaker (references). In terms of discourse structure, the standard of comparison is discourse-given:

(53) A: Tokyo-wa anzen-desu-ka?
    Tokyo-TOP safe-PRED.POLITE-Q
    ‘Is Tokyo safe?’
    B: Iya, anzen-to iu-yori benri-ga ii-desu.
    No safe-as say-than convenience-NOM good-PRED.POLITE
    ‘No, it is more convenient than safe.’

In terms of information structure the standard of comparison of metalinguistic comparison is usually discourse old (see also Goncharov 2014).

On the other hand, the noteworthy comparison is not metalinguistic in that it does not refer to the language used by an earlier speaker. For example, nani-yori-mo cannot be used in the metalinguistic context. It is odd to utter (54B) as a reply to question (54A):

(54) A: Tokyo-wa anzen-desu-ka?
    Tokyo-TOP safe-PRED.POLITE-Q
    ‘Is Tokyo safe?’
    B: # Iya, nani-yori-mo Tokyo-wa benri-ga ii-desu.
    No what-than-MO Tokyo-TOP convenience-NOM good-PRED.POLITE
    ‘No, more than anything Tokyo is convenient.’

In order to make utterance (54B) natural, it is necessary to change the question under discussion (QUD) as in (55B):

(55) A: Tokyo-no yoi tokoro-tte nan-desu-ka?
    Tokyo-TOP good point-TE what-PRED.POLITE-Q
    ‘What are good points of Tokyo?’
    B: Nani-yori-mo Tokyo-wa benri-ga ii-desu.
    what-than-MO Tokyo-TOP convenience-NOM good-PRED.POLITE
‘More than anything, Tokyo is convenient.’

5. Analysis: The preference-based approach to the noteworthy comparison
In section 4 we claimed that there is a striking similarity between noteworthy comparison and metalinguistic comparison in terms of the speaker’s preference. However, we also showed that noteworthy comparison and metalinguistic comparison are different in terms of (i) morpho-syntax, (ii) the status of meaning, (iii) modification structure, and (iv) discourse structure. Based on the above discussion, in the next section we will analyze the meaning of noteworthy comparison in a more theoretical way.

I will claim that we can naturally extend the idea of a preference scale to the noteworthy comparison by introducing a multidimensional composition system. The question is: if noteworthy comparison posits a scale of preference, where does the scalar meaning of noteworthiness/importance come from? It is odd to assume that the scale of preference and the scale of noteworthiness/importance are identical. I will argue that the meaning of “noteworthiness/importance” in noteworthy comparison is derived via the interaction with the general pragmatic principle of ‘relevance to a goal’ (Roberts 2012).

5.1 The semantics of metalinguistic comparison
Before moving on to the analysis of noteworthy comparison, let me introduce Giannakidou and Yoon’s (2011) analysis of metalinguistic comparison, which will provide important background for the analysis of noteworthy comparison. As we discussed in the previous section, Giannakidou and Yoon (2011) assume that metalinguistic comparison involves a speaker’s preference: it expresses that the speaker prefers one sentence in a given context over another. Giannakidou and Yoon (2011) consider that there are two types of metalinguistic comparison: an emphatic preference type and an accuracy assessment type:

(56)  a. I would rather die than marry him. *(Emphatic preference)*
       b. Your problems are more financial than legal. *(Accuracy assessment)*

(McCawley 1988: 673)

Regarding the preference measure function, Giannakidou and Yoon (2011: 638) assume that the preference ordering of metalinguistic comparison is similar to the one we find with gradable volitional predicates such as *want* and *desire*. That is, the metalinguistic comparative morpheme denotes “prefer more.” Based on their analyses of the semantics of *want* (Stalnaker 1984; Heim 1992; Villalta 2008), Giannakidou and Yoon define the meaning of metalinguistic comparison (*would rather* type) as follows:

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8 Usually, the accuracy assessment type of comparison is labeled metalinguistic comparison (e.g. McCawkey 1988; Morzycki 2010), but Giannakidou and Yoon (2011) treat emphatic preference and accuracy assessment as a natural class.

9 Heim (1992) defines the semantics of *want* as follows:
   (i) “α wants that φ is true in w iff for every w’ ∈ Doxα(w):
       every φ-world maximally similar to w’ is more desirable to α in w than any non-φ
       world maximally similar to w’.”

(Heim 1992: 193)

The above denotation instructs us to compare, for every belief world, the set of its closest φ-alternatives to the set of its closest non-φ-alternatives.
(57) (Emphatic preference type “Would rather type”)

\[ [\text{MOREML}] = \lambda P \lambda Q [P >_{\text{Des}(\alpha(c))} Q] \]

where \( >_{\text{Des}(\alpha(c))} \) is an ordering function such that: for \( P \) and \( Q \) and degrees \( d \) and \( d' \), the degree \( d \) to which \( \alpha \) desires \( P \) in \( c \) is greater than the degree \( d' \) to which \( \alpha \) desires \( Q \) in \( c \); \( \alpha \) is the anchor of comparison; \( P \) and \( Q \) are Potts tuples for sentences \(<\Pi; \Sigma; \alpha: t>\).

(Giannakidou and Yoon 2011: 639)

This is a denotation for the emphatic preferential case. Here MORE is comparing \( P \) and \( Q \). \( P \) and \( Q \) are Potts tuples for sentences \(<\Pi; \Sigma; \alpha: t>\), where \( \Pi \) is a phonological representation, \( \Sigma \) is a syntactic representation, and \( \alpha \) is a semantic representation of type \( t \) (see Potts 2007b for a detailed discussion of the compositional mechanism of the tuple). In the typical emphatic preferential case, it will be the propositions expressed by \( P \) and \( Q \) that are compared.

On the other hand, regarding the meaning of accuracy assessment, Giannakidou and Yoon posit the following lexical entry:

(58) (Accuracy assessment metalinguistic comparative)

\[ [\text{MOREML}] = \lambda u \lambda u' [u >_{\text{Des}(\alpha(c))} u'] \]

where \( >_{\text{Des}(\alpha(c))} \) is an ordering function such that: for \( u \) and \( u' \) and degrees \( d \) and \( d' \), the degree \( d \) to which \( \alpha \) desires \( u \) in \( c \) is greater than the degree \( d' \) to which \( \alpha \) desires \( u' \) in \( c \); \( \alpha \) is the anchor of comparison; \( u \) and \( u' \) are quotations of sentences \( P \) and \( Q \).

In the accuracy assessment the speaker compares \( u \) and \( u' \), which are quotations of sentences \( P \) and \( Q \).\(^{10}\)

---

Based on Heim’s (1992) discussion, Villalta (2008) defines the meaning of \textit{want} as follows (\( >_{a,w} \) stands for “is more desirable to \( a \) in \( w \)’):

(i) \[ [[\text{wantC}]]^g(p)(\alpha)(w) = 1 \text{ iff } \forall q: q \neq p \& q \in g(C): \text{Sim}_w'(\text{Dox}_a(w) \cap p) >_{a,w} \text{Sim}_w'(\text{Dox}_a(w) \cap q) \]

(Villalta 2008: 478)

In this view the semantics of \textit{want} involve comparison of \( p \) with the set of its contextual alternatives \( q \). The index \( C \) is a variable anaphoric to a contextually determined set of propositions.

\(^{10}\) Note that in Japanese emphatic preference and accuracy assessment comparison are lexically distinguished:

(i) Emphatic preference

Furiiitaan-ni naru-kurai-nara ryuunen-suru.
Permanent part-timer-to become-level-COND stay on-do
‘I will stay in the same class for another year rather than become a permanent part-timer.’

(ii) Accuracy assessment

Taro-wa sensei-to iu-yori-mo gakusya-da.
Taro-TOP teacher-as say-than-MO scholar-PRED
‘Taro is more of a scholar than a teacher.’
5.2 The formal analysis of noteworthy comparison with indeterminateness

Let us now consider the meaning of noteworthy comparison based on the following example:

(59) Nani-yori-mo tenisu-wa tanoshii. (Japanese, noteworthy reading)
     What-than-MO tennis-TOP fun
     ‘Nani-yori-mo, tennis is fun.’

I propose that similarly to metalinguistic comparison, noteworthy comparison posits a “desirability ordering function” (Giannakidou and Yoon 2011), but unlike metalinguistic comparison noteworthy comparison takes utterances, and the comparative meaning is calculated at the level of CI (see section 4 for a detailed discussion of the semantic status of noteworthy comparison). I propose that the standard marker yori has the following definition (U is a variable for utterances/speech acts):

(60) \[
    [[\text{yori}_{NW}]] = \lambda U \lambda U'[U' >_{\text{Des}(\alpha)(c)} U]
\]
    where \( >_{\text{Des}(\alpha)(c)} \) is an ordering function such that: for \( U \) and \( U' \) and degrees \( d \) and \( d' \), the degree \( d \) to which \( \alpha \) desires to utter \( U' \) in \( c \) is greater than the degree \( d' \) to which \( \alpha \) desires \( U \) in \( c \).

Yori in (60) is different from the semantic use of yori in that it does not take a gradable predicate as its argument. Instead, it inherently has a gradable component of desirability. (See the denotation of the ordinary comparative yori in section 3.)

As for the meaning of nani in noteworthy nani-yori, I assume that, when it is used in the context of noteworthy comparison, it introduces a set of speech acts (\( a \) is a type of speech act), as in (61):

(61) \[
    [[\text{nani}]] = \{U \in D_a: \text{speech act}(U) \land C(U)\}
\]

The contextual domain variable C makes sure that the alternative speech acts are all related to the particular context.

Thus, if we combine yori and nani in a pointwise fashion, we get the following meaning:

(62) The meaning of nani-yori via pointwise function application

\[
    \text{nani-yori} \quad \{yori (tennis is good for health), yori (tennis does not cost money), yori (tennis is a social activity), ...\}
\]

\[
    \begin{array}{c}
     \text{nani} \\
     \{\text{tennis is good for health, tennis does not cost money, tennis is a social activity, ...}\}
    \end{array}
\]

\[
    \begin{array}{c}
     \text{yori} \\
     \{yori\}
    \end{array}
\]

Emphatic preference is expressed by the special conditional marker kurai-nara ‘level-if’ and accuracy assessment is expressed by to iu-yori.
What is important in the above computation is that it is made at a level of conventional implicature (CI). Recall that the meaning of the noteworthy *nani-yori-mo* is not part of what is said (see section 4.1).

In order to make sure that the meaning of the noteworthy *nani-yori-mo* is interpreted at the CI level, I will adopt the multidimensional theory of meaning (e.g. Potts 2005, 2007a; McCready 2010; Gutzmann 2012; cf. Kartunnen and Peters 1979). More specifically I will assume that McCready’s extended theory of CI regarding shunting type enables us to analyze the compositionality of *nani-yori*. In the multidimensional theory a sentence involving a CI expression has two dimensions (tiers), an at-issue dimension and a CI dimension. The important point is that in this theory there are two distinct types in natural language, an at-issue type and a CI type; the former is used for at-issue meaning and the latter is used for CI meaning. Based on this idea, Potts (2005) proposes the following compositional rule, called a CI application:

\[
\begin{align*}
\alpha : & \langle \sigma, \tau \rangle \\
\beta : & \sigma' \\
\text{•} : & \tau' \\
\alpha (\beta) : & \tau' \\
\end{align*}
\]

(Potts 2005: 65)

As we can see in the above figure, an \( \alpha \) that is of type \( <\sigma, \tau> \) takes a \( \beta \) of type \( \sigma' \) and returns \( \tau' \). The important point is that this system ensures that at-issue meaning is resource insensitive. \( \beta \) passes up to the level above the bullet •. The bullet • is a metalogical device for separating independent lambda expressions. This rule ensures that the at-issue dimension is always insensitive to the presence of adjoined CI operators.

Let us now consider how the above system works based on the example of the speaker-oriented adverb *fortunately* (e.g. Potts 2005; Ernst 1984, 2002, 2009 and references therein). As we can see in (64), the meaning of a sentence with *fortunately* can be divided into two components: an at-issue component and a CI component.

(64) Fortunately, Beck survived.
At-issue: Beck survived.
CI: The proposition that Beck survived is fortunate (positive).

The above division can be explained by Potts’s CI application. The following diagram shows the logical structure of (64) (I have omitted tense information for the sake of simplicity):
The modifier *fortunately* is a sentential modifier that applies to an at-issue proposition of type $f'$ to produce a CI meaning that “the proposition that Beck survived is fortunate” which is of type $t'$ (see Bonami and Goddard (2008) and Mayol and Castroviejo (2013) for a detailed investigation of the semantics of evaluative adverbs). Notice that the at-issue proposition (i.e. $\text{survive(Beck)}$) is passed up to the mother node (the node above the bullet) in addition to being the argument of *fortunately*. This ensures that the at-issue meaning and the CI meaning are both logically and dimensionally independent of each other.

However, Potts’s CI application does not naturally apply to the noteworthy *nani-yori-mo*. If we combine the standard marker *yori*, which has a CI meaning, and *nani* via Potts’ CI application, *nani* is going to be passed up to the node above the black bullet, which is problematic:

In order to make sure that *nani* does not pass up to the higher node, I will adopt McCready’s (2010) theory of shunting. According to McCready, in addition to a type $c$ (superscript $c$), there is another type of CI expression, i.e., a shunting type (superscript $s$). The shunting type (superscript $s$) is used for a resource-sensitive CI application, as in Figure (67) (cf. Potts’s 2005 CI application):

The superscript $s$ stands for a shunting type. Note that this rule is specific to certain CI meanings, i.e., resource-sensitive conventional implicature. This rule ensures that, at the end of derivation, there is only a CI meaning. Unlike in Potts’s CI function application,
the at-issue element \( \beta \) is shunted. It no longer exists by the time the meaning of the entire sentence is computed.

We can now assume that \( yori \) in the noteworthy \( nani\text{-}yori\text{-}mo \) has denotation of type \( <a^a, <a^a, ts> \) (where the non-superscript \( a \) is a type for speech acts):

\[
\text{[[yoriNW]]} : <a^a, <a^a, ts>> = \lambda U\lambda U'[U' >_{\text{Des}(x)(c)} U]
\]

where \( >_{\text{Des}(x)(c)} \) is an ordering function such that: for \( U \) and \( U' \) and degrees \( d \) and \( d' \), the degree \( d \) to which \( \alpha \) desires to utter \( U' \) in \( c \) is greater than the degree \( d' \) to which \( \alpha \) desires \( U \) in \( c \).

Thus, if we combine \( yori \) and \( nani \) ‘what’ in a pointwise fashion, we will get the following logical structure. The shunting type allows us to analyze the meaning of \( nani\text{-}yori \) as follows:

\[
\text{yori(nani)}: <a^a, t^c>
\]

\{yori(tennis is good for health), yori(tennis does not cost money), yori(tennis is a social activity), \ldots\}

\[
\text{nani ‘what’}: a^a \quad \text{yori ‘than’}: <a^a, <a^a, ts>>
\]

\{tennis is good for health, tennis does not cost money, tennis is a social activity, \ldots\}

\( Nani\text{-}yori \) is then combined with \( mo \), which selects all the alternatives created by \( nani \):

\[
\text{mo}: <<a^a, t^c>, <a^a, t^c>>
\]

\{\lambda O_{a,t}:\lambda U'.\forall U[U \in \{\text{speech act}\} \rightarrow O(U')]\}

(where \( U \) is an “expanding” speech act in \( O \))

The following figure shows the logical structure of \( nani\text{-}yori\text{-}mo \):

\[
\text{nani: } a^a \quad \text{yorisw: } <a^a, <a^a, t^c>>
\]

\{\( U \in D_{a}: \text{speech act (U)} \wedge C(U)\}\} \quad \{\lambda UU'[U' >_{\text{Des}(x)(c)} U]\}
The CI meaning in (71) is then combined with the main part of the utterance, a speech act.

Let us now turn our attention to the semantics of the speech act. As for the representation of speech act/clause-type systems, here I follow Stenius (1967), according to whom an illocutionary operator combines with a sentence radical meaning (typically, a proposition) to form a speech act (see also Krifka (2001), Tomioka (2010), Hara (2006)).

This approach assumes the following general type-formation:

(72) a. Basic types: $e$ entities, $t$ truth values, $p (=st)$ propositions, $a$ speech acts.
   b. A speech act operator is a function from the type of sentence radical it selects as type $a$.
   c. The variables for type $a$ = \{U, U', U'', \ldots\}

This idea is similar to (and compatible with) Searle’s (1969, 1979) theory of speech acts. In Searle’s view, elementary illocutionary acts are of the form $F(p)$, where the variable $F$ takes illocutionary force, indicating devices as values, and $p$ takes expressions for propositions (Searle 1969: 31). (Note that there are also approaches to the sentential force per se not being formally represented in the syntax (Portner 2005)).

Let us now look at the meaning inside the proposition in (73):

(73) Tenusu-wa tanoshii.
   Tennis-TOP fun
   ‘Tennis is fun’.

In section 3 we assumed that gradable predicates represent relations between individuals and degrees (Seuren 1973; Cresswell 1977; von Stechow 1984; Klein 1991; Kennedy and McNally 2005). The following shows the denotation of $tanoshii$:

(74) $[[tanoshii]] = \lambda d \lambda x. fun(x) = d$

Although this denotation was useful for deriving a meaning of semantic comparison, it does not fit the meaning of a simple adjectival sentence like (73). In (73) the sentence is not just denoting the degree to which tennis is fun. Instead, it relates the degree of fun of tennis to a contextual standard. Sentence (73) roughly means that the degree of fun of tennis is greater than a contextual standard. In order to derive this context-dependent meaning, in this paper I will follow the prevailing view that a relative gradable predicate combines with a null morpheme $positive$. This turns the adjective into a property of individuals. The semantic function of $pos$ is to relate the degree argument of the adjectives to an appropriate standard of comparison (Cresswell 1977; von Stechow 1984; Kennedy and McNally 2005, among others):

(75) $[[pos]] = \lambda G \lambda x. \exists d [d \geq Stand \land G(d)(x)]$

When $pos$ is combined with the adjective $tanoshii$, we get an individual property, as in:

(76) $[[pos]]([[tanoshii]])$
    $= \lambda x. \exists d [d \geq Stand \land interesting(x) = d]$
We are now in a position to see the entire derivation of (59). If we put everything together, we get the following figure, showing the logical structure of (59):

\[
\forall U [U \in \{\text{speech act}\} \rightarrow [\text{ASSERT(tennis is fun)}] >_{\text{Des}(\alpha)(\epsilon)} U]] : t'
\]

Notice that, in the above figure, the speech act (\text{ASSERT(tennis is fun)}) is not represented at the root. We will assume that a speech act is always interpreted at the root level regardless of whether or not it is embedded.

One potential problem with this analysis is that the at-issue speech act (assertion) itself is not represented at the root level despite the fact that it is performed. In order to avoid this problem, I will posit the following general rule for the interpretation of an (embedded) speech act, based on the concept of a parsetree in Potts (2005) and McCready (2010):

\[
\text{Let } T \text{ be a semantic parsetree with the CI term } \alpha : \sigma^\epsilon \text{ on its root node, and distinct terms } \beta_1 : a^\epsilon, \ldots, \beta_n : a^\epsilon \text{ on nodes in it. Then the interpretation of } T \text{ is } \langle [[\alpha : \sigma^\epsilon]], [[\beta_1 : a^\epsilon]], \ldots, [[\beta_n : a^\epsilon]] \rangle.
\]

With this definition, the interpretation of (77) is determined by the CI term on its root node (\(t'\)) as well as the speech act (\(a^\epsilon\)).

11 It seems to me that this kind of rule is relevant for accounting for the phenomenon of the so-called embedding speech act in general (see Mittwoch 1997; Krifka 2002, to appear, among many others). It is well known that in some environments a speech act can be embedded in a subordinate clause such as a because clause:

(i) Peter is unhappy because quite frankly, few people like him. (Krifka to appear)
5.3 Deriving the meaning of “noteworthiness/importance”
The question is how we get a meaning of noteworthiness/importance in a noteworthy context with indeterminateness. In the above analysis, I claimed the noteworthy nani-yori-mo conventionally implicates that an at-issue utterance is preferable to any contextually relevant alternative and that there is no meaning like noteworthy/important in the logical structure.

Then the question is how we can derive the noteworthy meaning. I would argue that the meaning of noteworthiness/importance emerges as a result of an interaction with the general pragmatic requirement of ‘relevance to a goal’ (Roberts 2012). Roberts defines the notion “relevant” as follows:

(79) A move $m$ is relevant at a given point in a collaborative, task-oriented interaction if and only if it promotes the achievement of an accepted goal of the interlocutors.\textsuperscript{12} (Roberts 2012: 9)

Based on the idea of relevance, I assume that there is a following general pragmatic principle like (80):

(80) Principle of relevance to a goal (Based on Roberts’s 2012 notion of relevance):
Be relevant to a goal.
(i.e. Make your utterance one which promotes the achievement of a goal).

If we assume that the speaker tries to make his/her utterance one that promotes the achievement of a goal, utterance of the sentence with the noteworthy expression

The because clause appears to be a speech act because it allows the speech act modifying adverb frankly speaking to be present (Krifka to appear). Although I don’t have enough space to discuss (i) in detail, if we modify the root node $\alpha: \sigma^{[s,a]}$ into $\alpha: \sigma^{[s,a]}$, it seems that we can analyze these cases as well. See also footnote 33.

\textsuperscript{12} Regarding the notion of goal, I will assume following Roberts (2012) that at any given point in discourse, there is a set of goals, which is the set of sets of individual interlocutor goals for all the interlocutors (i.e. $G$), and there is a set of common goals, which is the subset of $G$ (i.e. $G_{\text{com}}$). $G$ is closely related to the question under discussion (QUD) in that each accepted question corresponds to a common goal of the interlocutors (Roberts 2012):

(i) $I$, the set of interlocutors at $t$, $G$, a set of sets of goals in effect at $t$, such that for all $i \in I$, there is a (possibly empty) $G_i$ that is the set of goals that $i$ is committed at $t$ to trying to achieve, and

$G = \{G_i | i \in I\}$

$G_{\text{com}} = \{g | \forall i \in I : g \in G_i\}$, the set of the interlocutors’ common goals at $t$

$GQ = \{g \in G_{\text{com}} |$ there is some $Q \in \text{QUD}$ and $g$ is the goal of answering $Q\}$

(Roberts 2012: 14)

Furthermore, Roberts (2012, 1996) posits that there are two kinds of goals at any given point in a discourse: the discourse goals, aiming to address particular questions in the QUD, and for the rest, their domain goals (intuitively, those things they want to accomplish in the world).
(nani-yori-mo/more than anything) will trigger the following non-monotonic inference:

(81) If a speaker signals that he/she prefers $U$ (a move) to any alternative utterance (move), given that the speaker must be relevant to the goal of the conversation, it is reasonable to think that the speaker considers $U$ to be the most relevant, thus more important/noteworthy.

For example, in the case of (59), if the speaker conventionally implicates that “tennis is fun” is the preferable utterance, given the principle of relevance to a goal, it is reasonable to assume that he/she considers this utterance to be the most noteworthy/important, as shown in (82):

(82) The meanings of (59)
   a. At-issue: Tokyo is safe.
   b. CI: The utterance “Tokyo is safe” is preferable to any contextually relevant alternative utterance.
   c. Conversational Implicature: The utterance “Tokyo is safe” is more noteworthy (important) than any contextually relevant alternative utterance (via (81))

6. An alternative approach: the purely inferential approach

In this section we will consider an alternative approach to the meaning of noteworthy comparison. The basic idea of the alternative approach is that nani-yori-mo and more than anything just mean “greater than every utterance,” and a scalar dimension like noteworthiness/preference is an inference that arises from interaction with a discourse-pragmatic principle. It will be shown that although the alternative approach is simpler, the preference-based approach is better.

6.1 Geurts and Nouwen (2007)’s analysis of more than

In this section we will first look at Geurts and Nouwen (2007)’s analysis of more than, which will become an important background for the alternative analysis of noteworthy comparative expression. Geurts and Nouwen (2007) claim that more than in the following examples is different from ordinary comparative construction with a gradable adjective or adverb (i.e., more ... than):

(83) a. Betty had more than three highballs: she had seven.
    b. I’m more than happy with the results.
    c. Tom is more than a major.

(Guerts and Nouwen 2007)

First, in the case of more than the complex modifier has to be a continuous phrase. This can be corroborated by the following contrast:

(84) a. more (*beers) than three beers
    b. more scared than Betty

---

13 I thank Peter Alrenga and one of the reviewers for their valuable comments regarding the possibility of applying the Geurts and Nouwen’s (2007) analysis of more than to the noteworthy nani-yori-mo.
Unlike ordinary comparatives like (84), it is odd to insert *beer* between *more* and *than*. The same observation can be made in cases where the scale of alternatives is not one of amounts. Geurts and Nouwen (2007) observe that while (85a) is natural, inserting material between *more* and *than* produces oddities, as in (85b):

(85)  a. I’m more than happy with the results.
    b. ? I’m more ecstatic about the results than (merely) happy with them.

(Geurts and Nouwen 2007: 555)

Gueurts and Nouwen (2007) claim that, even if (85b) is acceptable, the interpretation is markedly different from that of (85a) in that it involves metalinguistic comparison.

Second, in some languages, the distinction between comparative modifiers and other forms of comparison is lexicalized. Guerts and Nouwen show that, in French, there is a morphological distinction between the modifiers *plus de* and *plus ... que*:

(86)  a. plus de trois bières ‘more than three beers’ (French)
    b. plus grand que Fred ‘taller than Fred’ (French)

Because of these reasons, it is safe to assume that [more than] is different from [more ADJ than].

Then what is the meaning of the scalar modifier *more than*? Geurts and Nouwen (2007) propose that the semantics for *more than* are as follows:

(87)  [[more than \( \alpha \)]] =

\[ \lambda x \exists \beta [\beta \triangleright \alpha \land \beta(x)] , \text{ where } \alpha \text{ and } \beta \text{ are of type } <e,t> \]

The symbol \( \triangleright \) stands for a precedence relationship. In this analysis, *more than* is construed as a kind of focus sensitive operator. That is, *more than* focuses on its argument and introduces a set of alternatives. The crucial point of this analysis is that the denotation of *more than* does not semantically state in what respect \( \beta \) is above (or precedes) \( \alpha \). Instead, we get the measure function dimension by the relationship between \( \alpha \) and its alternatives \( \beta \).

Let us consider the meaning of this based on the example of [more than warm\( _F \)]. In this configuration, when *more than* is applied to [[warm\( _F \)]] , the phrase selects the properties that outrank \( \lambda x.\text{warm}(x) \) on the temperature scale, as in the following:

(88) \[ \lambda x.\text{scalding}(x) \triangleright \lambda x.\text{hot}(x) \triangleright \lambda x.\text{warm}(x) \]

Thus, in the end we get the following denotation for *more than warm*:

(89)  [[more than warm\( _F \)]] = \( \lambda x[\text{hot}(x) \lor \text{scalding}(x)] \)

*More than warm* in (89) denotes a set of things that are hot or scalding. Guerts and Nouwen (2007) further analyze the meaning of the following example:

(90)  She is more than a major: she is a lieutenant colonel.
As Geurts and Nouwen (2007) correctly observe, the scale of (91) is not based on semantic entailment:

(91) \[[\text{more than a major}]\]
    \[= \lambda x. \text{lieutenant colonel}(x) \triangleright \lambda x. \text{major}(x)\]

(91) is not a semantic scale in that being a lieutenant colonel outranks being a major, but one cannot be both a lieutenant colonel and a major. In this paper, we assume that the scale based on \(\triangleright\) is not necessary based on semantic entailment, but it can be based on pragmatic/encyclopedic knowledge (see Geurts and Nouwen (2007) for a discussion of pragmatic scale).

6.2 “Greater than” plus a pragmatic inference

In principle, it seems possible that Geurts and Nouwen (2007)’s analysis of more than can be extended to the noteworthy nani-yori-mo. We can consider yori in the noteworthy reading like (92) to just denote a “greater-than” relationship as in (93):

(92) nani-yori-mo Taro-wa tanoshii.
    What-than-MO Taro-TOP fun
    At issue: Taro is fun.
    CI: The utterence “Taro is smart” is greater than any other utterance.”

(93) \[[\text{yori}_{NW}]\] = \{\lambda U\lambda U'.U' \triangleright U\}

Under this approach, the logical structure of nani-yori-mo is going to be represented as follows:

(94)

\[
\begin{align*}
&\{\lambda U.\forall u[u \in \{\text{speech act}\} \rightarrow U \triangleright u]\} : <d^a, t^f> \\
&\{\lambda U. U \triangleright u\} : <d^a, t^f> \\
&\text{mo: } <<d^a, t^f>, <d^a, t^f>>, \{\lambda O.\forall u[u \in \{\text{speech act}\} \rightarrow O(U')]} \\
&\text{where } U \text{ is an “expanding” speech act in } O \\
&\text{nani: } d^a \\
&\text{yori}_{NW}: <d^a, <d^a, t^f>>, \{\lambda U.\lambda U. U \triangleright u\} \\
&\{u \in D_u: \text{speech act (u)}\} \\
&\{\lambda u\lambda U. U \triangleright u\}
\end{align*}
\]

The CI meaning in (94) is then combined with the main part of the utterance, a speech act. If we put everything together, we get the following logical structure:

(95)
The crucial point for this alternative approach is that scalar dimensions like “noteworthiness” or “preference” are not represented in the logical structure. They are inferences. Under this approach, they will be considered to be inferences derived from the principle of relevance to a goal in (96), as in (97):

(96) Principle of relevance to a goal (Based on Roberts 2012) (= 80):
Be relevant to a goal. (i.e. Make your utterance one that promotes the achievement of a goal).

(97) If a given utterance $U$ is greater than every utterance, and given that every utterance must be “relevant” to a goal, it is reasonable to assume that utterance $U$ is the most relevant, and therefore the most important, noteworthy, etc.\(^\text{14}\)

For example, if the speaker signals that the utterance “tennis is fun” is greater than any alternative utterance, it is reasonable to assume that the at-issue utterance is the most relevant, and therefore the most noteworthy, important, etc.

The consequence of this inference-based approach is that there are three kinds of meanings, as in the following:

(98) a. At-issue: Tennis is fun.
b. CI: The utterance “tennis is fun” is greater than any other utterance.
c. Conversational Implicature: The utterance “tennis is fun” is preferable to/more noteworthy (important) than any other utterance.

6.3 Which approach is better?

\(^{14}\) Recall that we consider the notion relevant in terms of contribution to the goal of the conversation. A move $m$ is relevant at a given point in a collaborative, task-oriented interaction if and only if it promotes the achievement of an accepted goal of the interlocutors (Roberts 2012: 9).
The question is which approach is better, a preference-based approach or an inference-based approach? I argue that the preference-based approach is better than the inference-based approach. Although the alternative approach might look simpler, it cannot explain the fact that the noteworthy expressions are invariably attitudinal (preferential). Under the purely inference-based approach (the alternative approach), neither the scalar dimension of importance/noteworthiness nor the dimension of preference meaning is lexically encoded in the expression *nani-yori-mo* (*more than anything*). They just mean “greater than all.” Thus, we would predict that if we posit the right context, the noteworthy expression would entail various kinds of scales. However, in reality, the noteworthy comparison always has a meaning of preference in any context:

(99) Possible scales of noteworthy comparison:

<table>
<thead>
<tr>
<th>Scalarity</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Preference (ATTITUDE)</td>
<td>Yes</td>
</tr>
<tr>
<td>B Length (SPACE)</td>
<td>No</td>
</tr>
<tr>
<td>C Earliness (TIME)</td>
<td>No</td>
</tr>
</tbody>
</table>

• **Not length**

First, *nani-yori-mo* does not convey that the given utterance is the longest. As the following example shows, the at-issue utterance in (100A) is clearly shorter than the bracketed part of the utterance in (100B):

(100) A: *Nani-yori-mo, [Tokyo-wa anzen-desu.]*  
what-than-MO Tokyo-TOP safe-PRED.POL  
‘And more than anything, Tokyo is safe.’
B: *Sore-ni [Tokyo-wa benri-ga ii-si tabemono-mo oisii-desu.]*  
Furthermore Tokyo-TOP convenience-NOM good-and food-also good-PRED.POL.  
‘Let’s see. Tokyo is convenient, and the food is also good.’

• **Not temporal (earliness)**

Second, *nani-yori-mo* does not convey that the given utterance is the kind that must be uttered in the first place. Although it is true that the noteworthy comparison with an indeterminate pronoun often appears at the beginning of a series of utterances, it is also possible for the speaker to use it at the end of his/her series of utterances, as shown in (101):

(101) A: *Tokyo-no iitokoro-tte nan-desu-ka?*  
Tokyo-GEN good point-TE what-PRED.POL-Q  
‘What are the good points of Tokyo?’/’What is a good point of Tokyo?’
B: (Utterance 1):  
*Soo-desu-nee. Tokyo-wa benri-ga ii-si tabemono-mo oisii-desu.*  
Let’s see Tokyo-TOP convenience-NOM good-and food-also good-PRED.POL.  
‘Let’s see. Tokyo is convenient, and the food is also good.’
B: (Utterance 2):
Sosite nani-yori-mo, Tokyo-wa anzen-desu.
And what-than-MO Tokyo-TOP safe-PRED.POL
‘And more than anything, Tokyo is safe.’

On the other hand, the preference-based approach can naturally account for the fact that the noteworthy expression cannot posit scales other than a preference scale. One potential question about our preference-based approach is whether the meaning of “importance/noteworthiness” is really an inference. In the preference-based approach, the meaning of noteworthiness/importance is an inference. If it is an inference, it should be defeasible. As the following examples show, this prediction is borne out:

(102) A: Tenisu-tte donna supootu-desu-ka?
Tennis-TE what kind of sport-PRED.POLITE-Q
‘What kind of sport is tennis?’
B: Nani-yori-mo tenisu-wa kenkoo-ni ii-desu.
What-than-MO tennis-TOP health-for good-PRED.POLITE
‘More than anything, tennis is good for health.’
B: Demo boku-nitte ichiban juuyoona-no-wa tenisu-wa tanoshii
- the fact that-PRED.POLITE
‘But for me, what is the most important point about tennis is it is good for health.’

B’s second utterance may sound a bit odd, but still not impossible. Here we can say that B’s second utterance cancels the “most noteworthy/important” interference triggered in B’s first utterance (the one with nani-yori-mo). Since lexically speaking, nani-yori-mo is only saying that the given utterance is preferable, it is not necessarily a contradiction to provide the most important information in the second utterance.¹⁵

On the other hand, the following conversation is quite odd:

(103) A: Tenisu-tte donna supootu-desu-ka?
Tennis-TE what kind of sport-PRED.POLITE-Q
‘What kind of sport is tennis?’
B: Nani-yori-mo tenisu-wa kenkoo-ni ii-desu.
What-than-MO tennis-TOP health-for good-PRED.POLITE
‘More than anything, tennis is good for health.’

¹⁵ The same thing can be said about the English more than anything (Thomas Grano, personal communication). The following example may be somewhat odd, but still not impossible:
(i) More than anything, Mary is kind. What is more important, she is a genius.
The sentence is not impossible because “more than anything” lexically means “this is the most appropriate/preferable way to describe Mary”, in which case appropriateness/preference is not necessarily in conflict with importance (Thomas Grano, personal communication). Note that if we explicitly add “important” to the first clause, the result is straightforwardly a contradiction:
(ii) # More importantly than anything, Mary is kind. What is more important, she is a genius. (Thomas Grano, personal communication)
B: #Demo boku-nitotte ichiban konomashii kotae-wa tenisu-wa
    But I-for me the most preferable answer-TO tennis-TOP
    tanoshii-to.iu.koto-desu.
    fun-the fact that-PRED.POLITE
    ‘But for me, what is the most preferable answer for me is the fact
    that tennis is good for health.’

Since B’s first utterance denotes lexically that it is the most preferred, B’s second
utterance is clearly a contradiction.

The above examples strongly show that in the modern use the meaning of
preference has been conventionalized/grammaticalized as part of the meaning of
*yori* and the meaning of noteworthiness/importance arises as an inference. Based on the
above discussion, I conclude that the preference-based approach is better than the purely
inference-based approach.

### 6.4. The relation with the predicative use of *nani-yori*

Before concluding this section let me briefly mention that the preference-based
approach can be connected to other uses of *nani-yori-mo*. Although these are used in a
semantic dimension, they are similar to the noteworthy *nani-yori-mo* in that they have to
do with the speaker’s preferability/desirability. The following is a typical example of
the predicative use of *nani-yori*:

(104) a. Ogenki-de nani-yori-desu.
    Doing well-with what-than-PRED.POLITE
    ‘lit. It is preferable to anything that you are doing well.’
    (= I am very happy that you are doing well.)

b. (A father talks to a son)
    Shiken-ni uka-tte nani-yori-da.
    Exam-to pass-TE what-than-PRED
    ‘lit. It is preferable to anything that you passed the exam.’
    (= I am very happy that you passed the exam.)

*Nani-yori* in the above examples itself behaves as a predicate, meaning ‘the most
preferable/desirable.’

Note that the predicative *nani-yori* has some idiosyncratic properties. First, as
the Japanese reference grammar book Group Jamashii (1988) correctly mentions,
*nani-yori-da* is used in a context where the speaker evaluates a situation/event that is
relevant to the addressee. If the sentence with *nani-yori-da* is concerned with the
speaker, it becomes odd:

(105) ?? Watashi-ga Toodai-ni nyuugaku-deki-te nani-yori-desu.
    I-NOM U of Tokyo-to enter-can-TE what-than-PRED.POLITE
    ‘I am very pleased that I was able to enter the U of Tokyo.’
    (Group Jamashii 1998: 395)

Second, the predicative *nani-yori* can only be used in a special context where the
target proposition is discourse-given. The natural context where the utterance can be
uttered is one where a person says he/she is doing well and the speaker responds to this
utterance. Thus, if the speaker utters the sentences in (104) without recognizing that fact, the sentence becomes odd.

These pragmatic requirements suggest that the meaning of the predicative *nani-yori* is an idiomatic expression. We can define the meaning of the predicative *nani-yori* as follows: \(^{16}\)

\[(nani-yori-da) = \lambda p. \text{p is the most desirable for the speaker (where p is related to the addressee and the speaker recognized p)}\]

This seems to be indirect supportive evidence for the preference-based approach to the noteworthy *nani-yori-mo*.

7. **Noteworthy comparison in discourse context**

In the previous sections, we looked at the meaning of noteworthy comparison, and how it is interpreted.

In this section, we consider the use of the noteworthy comparison from a discourse-pragmatic perspective and think about the role of scalarity in discourse context. It will be shown that there are two ways of timing the use of the noteworthy *nani-yori-mo*: (i) using it at the beginning of sequences of utterances and (ii) signaling it at the end of sequences of utterances, with each use triggering a different pragmatic effect. When noteworthy comparison with indeterminateness is signaled at the beginning of a discourse sequence, it creates an effect of “priority listing” (i.e. the top-down strategy), whereas if it is signaled at the end of a discourse sequence, it creates an effect of “additive reinforcing” (i.e. the bottom-up strategy). We will compare this kind of context-sensitivity of noteworthy expression and that of the expression *man* (McCready 2009) and consider the similarities and differences between them.

7.1 **Strategy 1: The First Utterance, The Most Noteworthy**

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\(^{16}\) Note that there is also an (idiomatic) expression *nani-yori-mo-no* ‘what-than-mo-GEN,’ which behaves as a noun modifier and means “the best NP”:

(i) a. **Shigoto-go-no ippai-ga nani-yori-(mo)-no tanoshimi.**

   Work-after-GEN one-CL.cup-NOM what-than-MO-GEN pleasure
   ‘One glass of alcohol after work is the best pleasure.’
   (Lit. One glass of alcohol after work is a pleasure that is better than anything.)
   (http://news.livedoor.com/article/detail/8454223/)

b. **Anata-no egao-ga nani-yori-no kusuri-da.**

   You-GEN smile-NOM what-than-GEN medicine-PRED
   ‘Your smile is the best medicine.’ (Your smile is a medicine that is better than anything.)
   (http://toranet.jp/t/r/T103040s.jsp?ecd=01&srchLAreaCd=10&rqmtId=30767924&jbTypeCd=2016&__u=1379402072196-762710887568194264)

c. **Koko-ni iru-no-ga [nani-yori-no shyooko]-da.**

   Here-LOC be-GEN-NOM what-than-GEN proof-PRED
   ‘The fact that you are here is the best proof.’

This use of *nani-yori* also has to do with preference.
Let us first look at the strategy wherein the first utterance is the most noteworthy. Observe the following conversation (A is going to visit Tokyo this summer and is asking a Japanese friend, B, about Tokyo):

(107) A: Tokyo-no ii tokoro-tte nan-desu-ka
   Tokyo-GEN good point-TE what-PRED.POL-Q
   ‘What is a good point of Tokyo?’/‘What are the good points of Tokyo?’
   Let’s see what-than-MO Tokyo-TOP safe-PRED.POLITE
   ‘Let’s see. More than anything, Tokyo is safe.’
B: Soreni benri-mo ii-desu.
   Furthermore convenient-also good-PRED.POL
   ‘Also, Tokyo is also convenient.’
B: Mata oishii resutoran-mo takusan ari-masu.
   Also delicious restaurant-also many exist-PRED.POLITE
   ‘There are a lot of good restaurants.’

In this conversation, B replies to A’s question, starting out by saying that Tokyo is safe and continuing by saying that Tokyo is also convenient.

Let us consider the utterance moves in the top-down approach based on Roberts’s theory. Up to time $t$ there are various moves made by the interlocutors. Roberts defines this in terms of sets. In this theory there is a set $M$ that consists of moves and can have distinguished sub-sets: the set of assertion, the set of questions and the set of suggestions. Furthermore, $M$ can have a subset $\text{Acc}$, which is the set of accepted moves.

(108) $M$, the set of moves (m) made by interlocutors up to $t$, with distinguished sub-sets:
A $\subseteq M$, the set of assertions
Q $\subseteq M$, the set of questions
S $\subseteq M$, the set of suggestions
$\text{Acc} \subseteq M$, the set of accepted moves

(Roberts 2012: 14)

Furthermore, in this theory each move can be represented according to a precedence relationship (time):

(109) < is the precedence relation, a total order on $M$:
   $m_i < m_k$ iff $m_i$ is made/uttered before $m_k$ in a discourse $D$
   The order of any two elements under < will be reflected in the natural order on their indices, where for all $m_i$, $i \in \mathbb{N}$


If we apply this idea to the discourse moves in (107), we can posit the following ordering:

(110) Moves in (107)
   $\text{nani-yori-mo}(m_i) < m_{i+1} < m_{i+2}$
The crucial point is that this is just an ordering based on time. In the conversation in (107), there is also another ordering that is based on the scale of preference/noteworthiness. On the scale of preference, the first utterance is considered the most preferable and the second and third utterances are considered to be below it on the scale of preference. If we relate the moves of utterance based on the scale of noteworthiness/importance, we will have the following top-down movement:

\[
\begin{align*}
\text{assert(Tokyo is safe)} & \quad (= m_i) \\
\text{assert(Tokyo is convenient)} & \quad (= m_{i+1}) \\
\text{assert(There are a lot of good restaurants)} & \quad (= m_{i+2})
\end{align*}
\]

Since the first utterance (move) signals that it is the most preferable utterance (move), the second and third moves will be automatically situated below it. This creates a situation where utterances move from the top downward on the scale of preference.

The English *more than anything* and *above all* can also be used in the discourse initial position:

(112) The example of *more than anything* (discourse initial)
More than anything studying overseas is an opportunity to learn about yourself, discover new strengths and abilities, conquer new challenges, and solve new problems.

(113) The example of *above all* (discourse initial)
Above all it is important to point out that we can only maintain our prosperity in Europe if we belong to the most innovative regions in the world.
(http://www.brainyquote.com/quotes/quotes/a/angelamerk325744.html)

The top-down strategy is conventionalized in the grammar of discourse. In natural language, there are many expressions that posit the assumption that “the earlier expressed, the more important.” The English expression *last but not least* is another good example:

(114) **Last but not least**, I’d like to thank all the catering staff.

The expression *last but not least* is used when the speaker’s final utterance is ‘not less important than discourse-given utterances.’ This expression clearly suggests that ‘the first utterance is normally the most important.’ Japanese also has an expression that can support this norm.
(115) Saigo-ni nari-masi-ta-ga, kono purojekuto-o sapooto-si-te last-to become-PRED.POL-PAST-but this project-ACC support-do-TE itadai-ta subete-no kata-ni fukaku kansya-itimasu. give.HON-PAST all-GEN people-to deeply thank-do.POL
‘lit. The following utterance is made at the end, but I would like to deeply thank all of the people who supported this project.’

Notice that the speaker is using the concessive expression _ga_ ‘but.’ The utterance “p-ga q” implies that ‘generally, if q, then not p.’ (The status of the meaning of _ga_ ‘but’ is controversial but we will not get into a discussion of that here. See Bach (1999) for a discussion of the status of the meaning of the English _but._)

The speaker uses the concessive marker _ga_ because he/she thinks that thanking his/her supporters is very important, and normally this should have been done earlier. (The expression _saigo-ni nari masi ta-ga_ is almost a fixed expression that is used for finishing a speech in a polite manner.)

The strategy of stating the most important information first is very effective because there is never any guarantee that the conversation will continue until the speaker has uttered everything he/she wants. Also, the listener may not be able to listen to every utterance due to lack of attention or concentration, etc. Thus, it is very useful to utter the most noteworthy utterance at the beginning of a series of utterances. Once the speaker utters the most noteworthy utterance, he or she has in a way satisfied his/her purpose, because he/she has conveyed the most important information to the addressee. The given utterance unilaterally entails the other utterances in terms of the degree of noteworthiness. In fact, it seems that it is often the case that the speaker only conveys the most noteworthy information and doesn’t move on to the next alternative utterance.

7.2 Strategy 2: The Last Utterance as the Most Noteworthy

However, there is another strategy for signaling the noteworthy comparison. As the following conversation shows, a speaker can signal the highest relative noteworthiness at the end of a series of utterances:

(116) A: Tokyo-no itokoro-tte nan-desu-ka?
Tokyo-GEN good point-TE what-PRED.POL-Q
‘What are the good points of Tokyo?’/What is a good point of Tokyo?’
B: Soo-desu-nee. Tokyo-wa benri-ga ii-desu.
Let’s see Tokyo-TOP convenience-NOM good-PRED.POLITE
‘Let’s see. Tokyo is convenient.’
B: Tabemono-mo oisii-desu.
Food-also good-PRED.POL.
‘The food is also good.’
B: Sosite nani-yori-mo, Tokyo-wa anzen-desu.
And what-than-MO Tokyo-TOP safe-PRED.POL
‘And more than anything, Tokyo is safe.’

If we relativize the above conversation in terms of the time scale we get the following ordering:

(117) Strategy 2: $m_i < m_{i+1} < \text{nani-yori-mo}(m_{i+2})$
(where \( m_i \): assert(Tokyo is convenient), \( m_{i+1} \): assert(Food is good in Tokyo), \( m_{i+2} \): assert (Tokyo is safe)

The crucial point is that in (116) the speaker signals the last utterance is the most noteworthy/preferable. This means that the speaker moves the conversation in a bottom-up fashion. If we combine the time scale and the preference scale, the discourse in (116) will have a bottom-up movement:

(118)

Note that for the listener, the relative ranking of the alternative utterances is implicit (i.e. not clear), at least before the final utterance (the utterance with nani-yori-mo ‘more than anything’). Until the third move, we do not have any information regarding which move is preferable.

Exactly the same strategy can be observed in the English expression more than anything and above all:

(119) The example of more than anything
I want to show the U.S. Ski Team how I can ski, I want to show the country how I can ski, and more than anything, I want to show the diabetes community what’s possible. I really did not want to have a blood-sugar episode on the biggest stage. I wanted this to be ‘You can do anything with this disease’ -- and I still totally believe that -- but there are setbacks along the way. I got one more chance.


(120) Above all, discourse final-use
We took Yoshi’s tour, and he lived up to our expectations. He is a fantastic guide with a good sense of humor, and above all, he is very easy to understand. He knows his country very well. We learned things no guide book mentions about Japan.

(http://www1.adachi.ne.jp/sa37nino/guests_say.html)

Strategy 2 is different from Strategy 1 in terms of the directionality of move. Strategy 2 is used when the speaker wants to convey the noteworthiness of his/her information in a cumulative way, i.e. from the bottom up. The fact that the noteworthy nani-yori-mo (and also the English more than anything) always co-occur with the conjunction sorsite ‘and’ supports this fact. On the other hand, in the case of Strategy 1, the directionality of movement is from top to bottom on the scale of noteworthiness.
7.3 Sensitivity to discourse structure
In sections 7.1 and 7.2 we showed that the pragmatic function of noteworthy comparison with indeterminateness can vary depending on when its meaning is signaled: if noteworthy comparison with indeterminateness is signaled at the beginning of a discourse sequence, it creates an effect of “priority listing” (i.e. the top-down strategy), whereas if it is signaled at the end of a discourse sequence, it creates an effect of “additive reinforcing” (i.e. the bottom-up strategy).

(121) **Listing**

**Nani-yori-mo** Tokyo-wa anzen-desu.
what-than-MO Tokyo-TOP safe-PRED.POL
At-issue: Tokyo is safe.’
CI: The utterance that Tokyo is safe is more noteworthy than any other utterance.
Pragmatic strategy: top-down (listing)

(122) **Additive reinforcing**

(i) Tokyo-wa benri-ga ii-si tabemono-mo
Tokyo-TOP convenience-NOM good-and food-also
oisii-desu.
good-PRED.POL.
‘Tokyo is convenient, and the food is also good.’

(ii): (Utterance 2):
Sosite **nani-yori-mo**, Tokyo-wa anzen-desu.
And what-than-MO Tokyo-TOP safe-PRED.POL
At-issue: And, Tokyo is safe.
CI: The utterance that Tokyo is safe is more noteworthy than any alternative utterance.
Pragmatic strategy: bottom-up (additive reinforcing)

What does this mean? It seems that this suggests that the actual use of noteworthy comparison is sensitive to discourse structure.

Recently the literature has seen a discussion of the relationship between the position of discourse-oriented expressions and their meanings (e.g. the sentence initial *man* vs. the sentence final use of *man* (McCready 2009); the sentence-internal versus the sentence final use of *even* (Kim and Jahnke 2011)). For example, in his detailed studies of the meaning/use of the discourse particle *man*, McCready (2009) claims that the meaning of *man* differs according to the environment in which it is used:

(123) a. Man(,) it’s hot.
b. It’s hot, man. (McCready 2009)

McCready (2009) argues that *man* in the sentence initial position (= 123a) has two distinct uses distinguished by intonation. If there is a comma-like intonation it simply expresses the speaker’s attitude toward the position in the sentence in which *man* appears. On the other hand, if *man* is integrated into the sentence by intonation, it has the function just described and it also intensifies a gradable predicate inside the sentence. By contrast, the sentence final *man* like the one in (123b) has a more pragmatic meaning. According to McCready (2009), the sentence final *man* serves to strengthen the speech act performed by use of the sentence. It is largely pragmatic in the sentence in that it is
concerned with the knowledge and interaction of agents in dialogue (McCready 2009, p. 702).

Note that *man* always appears in a peripheral position. As the following example shows, the sentence final *man* does not appear in conjunction:

(124) *Go to school, man, or go to work.*

(McCready 2009: 711)

McCready (2009: 711) observes that the above example is fine at first sight, but the second clause has the flavor of an afterthought or even a correction, so in some sense it is not really a disjunction. He explains this fact based on the idea that it relates to speech acts.

The noteworthy comparison with indeterminateness is also sensitive to the position in which it arises. However, in the case of noteworthy comparison with indeterminateness, the notion of periphery is understood as “discourse-periphery” rather than the periphery of a sentence. In a sentential level, there is no difference between the top-down use and the bottom-up use in terms of the position of *nani-yori-mo* (or *more than anything*). However, if we look at the series of the entire discourse, we see that *nani-yori-mo* in the top-down use is placed at the beginning and *nani-yori-mo* in the bottom-up use is placed at the end of the discourse:

(125) a. Strategy 1: \[nani-yori-mo(m_i) < m_{i+1} < m_{i+2}\]

b. Strategy 2: \[m_i < m_{i+1} < \text{nani-yori-mo}(m_{i+2})\]

In (125a), *nani-yori-mo* is at the left periphery and in (125b) *nani-yori-mo* is at the right periphery. But what if the noteworthy comparative expression appears in the middle of the discourse? I will argue that it is odd to use the noteworthy expression in the middle of a sequence of moves. As the following examples show, the result becomes an odd conversation:

(126) The odd strategy

A: Tokyo-no iitokoro-tte nan-desu-ka?
    Tokyo-GEN good point-TE what-PRED.POL-Q
    ‘What are the good points of Tokyo?’/’What is a good point of Tokyo?’

B: Tokyo-wa totemo benri-no yoi tokoro-desu. (= m_i)
    Tokyo-TOP very convenient-GEN good place-PRED.POLITE
    ‘Tokyo is a very convenient place.’

B: Sosite nani-yori-mo anzen-desu. (= m_{i+1})
    And what-than-MO safe-PRED.POLITE
    ‘And more than anything Tokyo is safe.’

B: ?? Mata, oisii mise-mo takusan ari-masu. (= m_{i+2})
    Furthermore delicious restaurant-also many exist-PRED.POLITE
    ‘Furthermore, there a lot of good restaurants in Tokyo.’

(127) The odd strategy

\[m_i < \text{nani-yori-mo}(m_{i+1}) < m_{i+2}\]
The following table shows that given the time scale and the preference scale, we will get the following moves:

(128) The moves of (126B) (= odd moves)

<table>
<thead>
<tr>
<th>Time</th>
<th>preference/noteworthiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>$m_i$</td>
<td></td>
</tr>
<tr>
<td>$m_{i+1}$</td>
<td>$\bullet$</td>
</tr>
<tr>
<td>$m_{i+2}$</td>
<td>$\bullet$</td>
</tr>
</tbody>
</table>

This pattern is odd because as the figure shows, the third utterance is made after the speaker provides the most preferable utterance. If $u_{i+2}$ is something that is not an alternative to $m_i$ and $m_{i+1}$, this kind of movement might be okay, but if all three moves are concerned with the same goal, the moves in (126) are very odd. This is presumably because they violate the maxim of manner (i.e. be orderly) (Grice 1975). The above example strongly shows that the noteworthy comparison with indeterminateness can only occur at a discourse-periphery.

To sum up, in this section (section 7) we showed that the pragmatic function of the noteworthy comparison with indeterminateness is multifunctional and that it is sensitive to placement in the periphery of the discourse. The phenomenon of noteworthy comparison with indeterminateness strongly suggests that there is a concept of discourse periphery (as opposed to sentence periphery). Note, however, that not all discourse-oriented comparisons are multifunctional and sensitive to the discourse periphery. For example, the expression *what is more* can appear only in an additive environment:

(129) The decorations were absolutely beautiful and what's more, the children had made them themselves.  
(Cambridge Advanced Learner's Dictionary & Thesaurus)

(130) You have come late for school, and what's more you’ve lost your books.  
(Longman Dictionary of Contemporary English)

In terms of semantic status, *what is more* is similar to a noteworthy comparison in that its meaning does not contribute to “what is said.” If we delete *what's more* from (129) and (130), the truth condition of the given sentences does not change. However, in terms of meaning, *what is more* is not multifunctional. Roughly speaking, *what's more* conventionally implies that the at-issue utterance is more surprising or remarkable than the previous utterance/proposition, and it can be used only in an additive environment.\(^{17}\)

\(^{17}\) An interesting point about *what is more* is that it can posit various kinds of scalar meanings. Brinton (2008) observes that a wide variety of different adjectives, such as
This is supported by the fact that if we use *what's more* at the beginning of the discourse, the utterance becomes odd, as shown in (131):

(131) (Q: What are the good points of Tokyo?)
# What is more, Tokyo is safe.

Furthermore, *what is more* does not necessarily arise at the end of a discourse sequence, either. As the following example shows, it is perfectly natural to add relevant information after the utterance with *what's more*:

(132) (Question: ‘What kind of person is Taro?’)
Taro is a kind person. What’s more, he is smart. Also, he is a great tennis player.

This suggests that unlike *nani-yori-mo* (or *more than anything*), *what is more* is not sensitive to the discourse periphery. I would like to consider that *what is more* is not sensitive to the discourse periphery because it does not take every utterance or move *surprising, remarkable, crucial, impressive*, etc., may occupy this position. For example, we can paraphrase the meaning of (i) as (a) and (b):

(i) What is more, he didn’t tell his parents.
   a. What’s more surprising, he didn’t tell his parents.
      (Quirk et al., 1985, p. 1117; Brinton, 2007, p. 206).
   b. What is more important, he didn’t tell his parents.

Many dictionaries state that *what is more* has multiple interpretations. The Cambridge Advanced Learner's Dictionary & Thesaurus states that *what is more* is used to add something surprising or interesting to what you have just said. According to the Longman Dictionary of Contemporary English, *what is more* is equivalent to *more importantly, more seriously*, etc.

However, I think that this does not mean that a sentence with *what is more* always has this kind of semantic variability. In the following examples, *what is more* can be interpreted as “what is more important”, but it cannot be interpreted as “what is more surprising”:

(ii) a. However, if this is what actually happened, then why aren’t more crimes solved? **What is more**, why aren’t crimes solved within an hour?
   (http://blogs.tees.ac.uk/anthropology/tag/laser-scanning/)
   b. **What is more**, don’t leave the island without visiting Lindos with the impressive antiquities, the ancient acropolis with the famous ancient temple of Lindia Athina.
      (http://www.avis.gr/greece/car-rental/rhodes_car_hire.htm)

This suggests that the meaning of *what is more* is not unconstrained, but is interpreted according to the level it modifies. I would argue that there are at least two types of *what is more*, a proposition modifying use and a speech act modifying use. The first type is concerned with the speaker’s surprise about a proposition (fact). The second type modifies a speech act and indicates the speaker’s preference (or view of importance). Semantically the second type seems to be quite similar to the noteworthy comparison in terms of scalarity.
into consideration. It always refers to a previous utterance (move) as a standard of comparison. However, in the case of a noteworthy comparison with indeterminateness, the at-issue utterance is compared with every relevant alternative utterance, and the standard of comparison is not specific. It represents that an at-issue move is more preferable than every alternative move. This makes the noteworthy expression with an indeterminate pronoun appear at both ends of the discourse, at the beginning of the discourse sequence or at the end of the discourse sequence.

8. Conclusions and theoretical implications
In this paper we investigated the meaning and use of noteworthy comparison with an indeterminate pronoun and considered the role of scalarity in discourse. Noteworthy comparison is different from other kinds of comparison (e.g. regular comparison, metalinguistic comparison) in that it operates on speech acts (it is not a comparison between propositions, or between individuals). Furthermore, unlike other types of comparison, its meaning does not contribute to ‘what is said.’ However, we also observed that metalinguistic comparison is similar to noteworthy comparison in that it involves the speaker’s attitude of “preference” (Giannakidou and Yoon 2011).

I argued that noteworthy comparison with indeterminateness conventionally implicates that the speaker considers that the given utterance is “preferable” to any alternative utterance, and claimed that the meaning of “noteworthiness/importance” arises through the pragmatic interaction with the general pragmatic principle of ‘relevance’ (Roberts 2012). If a speaker prefers an utterance $U$ (a move $m$) to any alternative utterance (move), it is reasonable to think that the speaker considers $U$ to be the most relevant, thus the most important/noteworthy.

We then looked at the use of noteworthy comparison with indeterminateness in various discourse contexts and showed that the pragmatic effect in the use of noteworthy comparison differs depending on the timing with which it is expressed. If noteworthy comparison with indeterminateness is signaled at the beginning of a discourse sequence, it creates an effect of “priority listing” (i.e. the top-down strategy), whereas if it is signaled at the end of a discourse sequence, it creates an effect of “additive reinforcing” (i.e. the bottom-up strategy). This suggests that the use of noteworthy comparison is sensitive to the dynamic sequence of discourse, and scalarity can be used in moving a conversation toward a goal in both economical (top-down) and effective (bottom-up) ways.

The theoretical implications of this paper are that the scale structures at the level of semantics (metalinguistic comparison/regular comparison) are extended to the discourse-pragmatic dimension and that scalarity plays an important role in moving a conversation toward a goal in an economical/effective way. I think this consequence is significant for studies of the semantics/pragmatics interface, because it strongly suggests that there is a semantic parallelism between semantics and pragmatics. More theoretically, the dual-use phenomenon of gradable concepts supports the multidimensional view that there is a conceptual basis between at-issue and non-at-issue meanings (Potts 2005; McCready 2010; Gutzmann 2012).

In the current literature on the semantics/pragmatics interface, various theories have been proposed with regard to Grice’s concept of conventional implicature, aside from the multidimensional approach. For example, Bach (1999) argues that Grice’s notion of conventional implicature is a myth. Bach (1999) claims that the alleged conventional implicature devices (ACID) are actually entailment or second-order speech acts in the sense of Grice (1989). For example, Bach argues that the meaning of
but, which is usually assumed to be a conventional implicature triggering expression, is really part of “what is said” based on the indirect quotation (IQ) test:

(133) Marv said that Shaq is huge but that he is agile.  

(Bach 1999:339)

According to Bach, but can be part of an indirect quotation, so it is actually a part of “what is said.”

On the other hand, Bach (1999) considers the utterance modifiers like moreover and in other words in (134) not to contribute to “what is said” because they cannot pass the IQ test, as shown in (135):

(134)  a. Moreover, Bill is honest.  
         b. In other words, Bill is a liar.

(135)  a. # John said that moreover, Bill is honest.  
         b. # John said that in other words, Bill is a liar.  

(Bach 1999: 341)

For these cases Bach claims, following Grice (1989), that they are vehicles for the performance of second-order speech acts. (See also Rieber’s 1997 tacit performative analyses of discourse connectives). 18

If we consider the meaning of noteworthy comparison in terms of Bach’s (1999) theory, it will be analyzed as a second order speech act. If the noteworthy expressions like nani-yori-mo and more than anything are used at the end of a series of utterances (i.e. additive reinforcing), their function will look similar to that of the discourse connective moreover. On the other hand, if they are used at the beginning of a series of utterances, their function will look similar to that of the utterance modifier first of all. (Bach (1999: 357) assumes first of all is an utterance modifier.)19

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18 According to Rieber (1997), expressions such as but are tacit performatives. For example, he argues that (i) they should be analyzed as (ii), which contains the performative verb suggest:

(i) Sheila is rich but she is unhappy.  
(ii) Sheila is rich and (I suggest that this contrasts) she is unhappy.  (Rieber 1997: 54)

19 However, what is puzzling is that the noteworthy comparative expression can be embedded under the “that” clause:

(i) John said that more than anything, Bill is honest.

Here more than anything can naturally be anchored to the subject (John) and can be regarded as part of what John said (Thomas Grano, Justin Boffemmyer, p.c.). This is corroborated by the fact that it is possible to challenge the “more than anything” part of (i) by saying (ii):

(ii) No, that’s not true. John said that honesty was the least important thing about Bill.  
    (Thomas Grano, p.c.)

Here the denial is targeting the ranking created by more than anything. This suggests that there are variations among utterance modifiers with regard to embeddability and the indirect quotation test may not be the perfect test for understanding the semantic status.
Blakemore’s procedural approach also denies the existence of conventional implicature, but the theoretical consequences and implications of this claim are quite different from those of Bach. Blakemore (1987, 2002) argues that the standard cases of Gricean conventional implicature, such as *but*, *moreover*, and *therefore*, are examples of linguistic expressions that encode procedural meaning. Blackmore claims that they “do not contribute to a propositional representation, but simply encode ‘instructions’ for processing propositional representation” (Blakemore 1992: 151). Note that in this theory there is a dichotomy between conceptual meaning and procedural meaning. While conceptual meaning contributes to logical form, procedural meaning does not.

For example, Blakemore (1992: 140) claims that the use of *besides* indicates that the proposition it introduces is additional evidence for an assumption that is derived from the first segment:

(136) A: Will you make pancakes?
B: I haven’t really got time tonight. Besides there’s no milk.

(Blakemore 1992: 140)

Blakemore claims that the effect of presenting the additional evidence is to strengthen the guarantee that the speaker is offering the factuality of the assumption “B will not make pancakes,” which is derived from B’s first utterance. She assumes that discourse markers like *after all*, *moreover*, *but*, *furthermore*, and *so* also have procedural meanings.

If we apply Blakemore’s theory to the phenomenon of noteworthy comparison with indeterminateness, it will be analyzed as having a procedural meaning. Similarly to discourse connectives like *moreover* and *besides*, noteworthy expressions like *nani-yori-mo* or *more than anything* provide instructions for processing the at-issue utterance in relation to its possible alternatives.

Both Bach’s theory and Blakemore’s theory seem to successfully capture the important characteristics of noteworthy comparison. Namely, it is speech act-oriented and provides instruction for processing the attached utterance. However, these theories cannot theoretically capture the similarity between the noteworthy comparison and semantic comparison (especially metalinguistic comparison). In Bach’s theory, the relationship between semantic comparison and pragmatic comparison will only be captured under the dichotomy between entailment and second-order speech act, while in Blakemore’s theory the relationship will only be captured under the dichotomy between conceptual and procedural meaning. Nothing follows from their theory that there is a conceptual basis for the similarity between semantic comparison (regular comparison, metalinguistic comparison) and pragmatic comparison (noteworthy comparison).

On the other hand, the multidimensional approach we adopted in this paper can naturally explain this similarity. The theory assumes that at-issue and non-at-issue meanings are both conceptual (compositional). However, I think that this does not mean that we should ignore the fact that noteworthy comparison is speech act-oriented and has a procedural characteristic. I think that it is possible to integrate the speech-act-oriented and procedural-oriented characteristics of CI inducing elements in the logic of conventional implicature. I hope this paper will shed new light on the issue of the semantics-pragmatics interface.

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of utterance modifiers. (See Harris and Potts 2009 and section 4.1 for the embeddability of CI triggering expressions)
This paper has left many questions for future research. For example, in this paper we only looked at the notion of noteworthiness with regard to the phenomenon of comparison. However, in the literature, the notion of noteworthiness has been used for various linguistic phenomena, including exclamatives and scalar focus particles:\(^\text{20}\)

\[(137)\]  
\begin{align*}
\text{a. What a song John wrote!} & \quad \text{(Chernilovskaya and Nouwen 2012)} \\
\text{b. Even BILL likes Mary.} & \quad \text{(Herberger 2000)}
\end{align*}

Regarding exclamatives, Chernilovskaya and Nouwen (2012) assume that exclamatives like (137a) directly express a noteworthiness evaluation in a logical form. (cf. Castroviejo 2006; Rett’s (2011) analyses of exclamatives where the notion of noteworthiness is not involved.) As for the focus particle even, Herburger (2010) analyzes even as having a scale of noteworthiness. According to Herburger, sentence (137b) expresses the idea that “according to the speaker, Bill’s liking Mary is more noteworthy than anyone else’s liking her” (Herburger 2000: 119) (cf. Karttunen and Peters (1979)’s influential idea that even has a likelihood scale). It would be worthwhile to consider whether the notion of noteworthiness is a semantic notion, a pragmatic notion or both.

Second, I think that the role of scalarity in discourse context should be investigated from a wider perspective. For example, in Japanese there is a similar expression sore-yori-mo ‘it-than-MO’ (Sawada 2014), and its pragmatic function is quite different from the noteworthy nani-yori-mo:

\[(138)\]  
\begin{align*}
\text{A: Ima-kara } & \text{ tenisu si-yoo.} \\
& \quad \text{ ‘Let’s play tennis from now on.’} \\
\text{B: Sore-yori-(mo) ore-tachi ashita tesuto-da.} \\
& \quad \text{ ‘Sore-yori-mo, we have an exam tomorrow.’} \\
& \quad \text{(Implied: The goal related to my utterance is preferable to the goal related to the previous utterance.)}
\end{align*}

Kawabata (2002) observes that sore-yori-mo can function as a “topic changing” expression that negates a previous utterance (an utterance corresponding to sore) and selects a new utterance as more appropriate. If we consider the topic-changing function in terms of discourse structure (see Roberts 1994, 2012), sore-yori-mo in (138B) seems to be serving to shift the goal of the conversation and conventionally implicate that the goal related to the at-issue utterance is preferable to the goal related to the previous utterance (Sawada 2014a, b). This seems to suggest that scalarity not only plays an important role signaling a preferable move toward a certain goal, but that it also plays a crucial role in signaling a better goal.

\(^{20}\) Thanks to the reviewer for the valuable suggestion regarding this point.
References


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