The role of comparison in discourse: The meaning and use of the Japanese utterance comparative expressions *sore-yori-(mo)* 'than that' and *nani-yori-(mo)* 'than anything'

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Abstract

This study investigates the meaning and use of the Japanese utterance comparative expressions *sore-yori-(mo)* 'than that' and *nani-yori-(mo)* 'than anything' and considers the role of comparison in discourse. I argue that *sore-yori* and *nani-yori* can compare individuals at the semantic (at-issue) level, but they can also compare utterances (speech acts) at the non-at-issue level (= conventional implicature (CI)) (e.g., Grice 1975; Potts 2005; McCready 2010; Sawada 2010; Gutzmann 2011). The utterance comparative *sore-yori* conventionally implicates that U in *sore-yori(U)* is more important than the previous utterance, and the utterance comparative *nani-yori* conventionally implicates that U in *nani-yori(U)* is more important than any alternative utterance.

An interesting feauture of the utterance comparatives *sore-yori-(mo)* and *nani-yori-(mo)* is that their pragmatic functions are quite flexible. As for *sore-yori*, in some contexts, it can function as a topic-changing expression, but in other contexts it does not. As for *nani-yori*, when it occurs discourse-initially, it functions like the expression *first of all*, but when it occurs discourse-finally, it functions as an additive reinforcing expression. I argue that the pragmatic effects of utterance comparative expressions arise based on the interaction between their scalar meanings and the general pragmatic principles of relevance/Question Under Discussion and manner (e.g.,Grice 1975; Roberts 1996).

This study demonstrates that in addition to regular comparison and metalinguistic comparison, there is a third type of comparison: utterance comparison, and that the notion of comparison plays an important role in advancing the conversation economically/effectively. Finally, cross-linguistic variations in utterance comparison will also be discussed using English and Korean data.

Keywords: utterance comparison, discourse structure, speech act modifier, scale, conventional implicature (CI), pragmatic functions

1 Introduction

In the literature on the syntax and semantics of comparatives, it is often assumed that there are two distinct types of comparison, "regular comparison" and "metalinguistic comparison." Regular comparison compares a target and a standard based on a scale associated with a gradable predicate. For example, the following sentences are typical examples of English and Japanese regular comparison:[1]

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[1]The following abbreviations are used for example glosses: ACC: accusative, BE: be, CONF.Q: confirmation question, DAT: dative, DECL: declarative, EVI: evidential, GEN: genitive, HON: honorific, IMP: imperative, LOC: locative, MIR:

(1) (Regular comparison)

    a. Tom is taller than Mary.

    b. Taro-wa   Hanako-yori se-ga   takai.
       Taro-TOP Hanako-than back-NOM tall
       'Taro is taller than Hanako.'

In (1) Taro's height and Hanako's height are compared on a scale of tallness.

On the other hand, metalinguistic comparison does not compare two individuals (a target and a standard) based on the scale of a gradable predicate but rather compares the appropriateness of descriptions with regard to the same target. The sentences (2) are typical examples of English and Japanese metalinguistic comparison:

(2) (Metalinguistic comparison)

    a. Tom is more of a scholar than a teacher.

    b. Taro-wa   sensei-to iu-yori   gakusha-da.
       Taro-TOP teacher-as say-than scholar-PRED
       'Taro is more of a scholar than a teacher.'

Roughly speaking, (2) means that it is more appropriate to say that Taro is a scholar than to say that he is a teacher.[2]

In this paper I will look at a new kind of comparison, "utterance comparison," with special reference to the Japanese *sore-yori-(mo)* 'than that' and *nani-yori-(mo)* 'than anything'. As the following example shows, *sore-yori-(mo)* and *nani-yori-(mo)* can be used in a regular comparison:

(3) (Regular comparison, with *sore yori*)

    Hanako-no   keeki-wa sore-yori-(mo) ookii.
    Hanako-GEN cake-TOP it-than-MO   big

    'Hanako's cake is bigger than that.'

(4) (Regular comparison, with *nani-yori-(mo)*)

    Kenkoo-wa nani-yori-mo   taisetsu-da.
    Health-TOP what-than-MO important-PRED

    'Health is more important than anything.'

However, *sore-yori-mo* and *nani-yori-mo* can also function at a discourse-pragmatic level. For example, in (5) *sore-yori-(mo)* shifts the topic of conversation (Kawabata 2002) by signaling that talking about yesterday's exam is more important than taking about whether the speaker and the addressee may play tennis:

(5) (Utterance comparison, with *sore-yori* (topic shifting))

    A: Ima-kara   tenisu shi-nai?
       Now-from tennis do-NEG
       'Can't we play tennis from now on?'

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mirative, MO: Japanese *mo*, NEG: negation, NOM: nominative, NON.PST: non-past, POL: polite, PRED: predicative, Prt: particle, PST: past, Q: question particle, TE: Japanese *te*, TOP: topic.

   [2]We will discuss various ideas on the semantics of metalinguistic comparison (e.g., Giannakidou & Yoon 2011; Morzycki 2011; Wellwood 2019) in §2.2.2.

B: Sore-yori-(mo) kinou-no   tesuto dou da-tta?
That-than-MO yesterday-GEN exam how PRED-PST
'*Sore-yori-mo*, how was yesterday's exam?'

In (6) *nani-yori-(mo)* signals that the information that "Shizuoka is warm" is the most important information, and it functions like *first of all*:

(6)   (Utterance comparison, with *nani-yori-(mo)*)

A: Shizuoka-no   yoi   tokoro-wa nan-desu-ka?
Shizuoka-GEN good point-TOP what-PRED.POL-Q
'What are the good features of Shizuoka City?")

B: Nani-yori-(mo) Shizuoka-wa ondan-desu.
What-than-MO Shizuoka-wa warm-PRED.POL
'More than anything, Shizuoka is warm.'

What are the differences between the utterance comparative *sore-yori-(mo)*/*nani-yori-(mo)* and regular/ metalinguistic comparisons? How can we analyze the meaning and use of utterance comparative *sore-yori-(mo)* and *nani-yori-(mo)*? Can we capture the two kinds of utterance comparative expressions in a systematic way? The purpose of this paper is to investigate the meaning and use of the Japanese utterance comparative expressions *sore-yori-(mo)* and *nani-yori-(mo)* and consider the role of comparison in discourse.

As for the meaning of *sore-yori-(mo)*, I claim that unlike regular comparison and (regular) metalinguistic comparison, the utterance comparatives *sore-yori-(mo)* and *nani-yori-(mo)* compare utterances on the scale of importance at the level of conventional implicature (CI)(i.e., not at the level of "what is said"). The utterance comparative *sore-yori* conventionally implicates that U in *sore-yori*(U) is more important than the previous utterance and the utterance comparative *nani-yori* conventionally implicates that U in *nani-yori*(U) is more important than any alternative utterance.

The important feature of the utterance comparatives *sore-yori-(mo)* and *nani-yori-(mo)* is that their pragmatic functions are quite flexible and can be used for various pragmatic purposes. As for *sore-yori-(mo)*, in some contexts it can function as a topic-changing expression as in (5), but in other contexts it does not. As for *nani-yori-(mo)*, it often appears discourse-initially as in (6) and behaves like *first of all*, but it can also appear discourse-finally and functions as an additive reinforcing expression. I argue that various kinds of pragmatic functions arise based on their different scalar properties (i.e., normal comparison or superlative-like comparison) and general pragmatic principles of relevance and manner (Grice 1975; Roberts 1996).

This paper shows that the notion of scalarity/comparison is used systematically not only at the semantic or metalinguistic level but also at a discourse level in a principled manner and plays an important role in advancing conversation in an effective/economical fashion.

The structure of this paper is as follows. In §2, we first address the meaning and use of the utterance comparative *sore-yori-(mo)*. §3 focuses on the meaning and use of *nani-yori-(mo)*. In analyzing the utterance comparatives *sore-yori-(mo)* and *nani-yori-(mo)*, we will clarify the differences with regular/metalinguistic comparison and other related utterance comparative expressions. §4 discusses the relationship between *sore-yori-(mo)* and *nani-yori-(mo)* and reveals that two utterance comparative expressions can co-occur in a single sentence (i.e., *sore-yori-(mo) nani-yori-(mo)*) and that there is an ordering restriction between the two. §5 considers the cross-linguistic variations of utterance comparative expressions by comparing the Japanese data with those of Korean and English comparatives and considers the point of variation in the meaning of utterance comparative expressions, and §6 concludes with a few theoretical implications.

2 The meaning and use of the utterance comparative *sore-yori-(mo)*

Let us first investigate the meaning and use of *sore-yori-(mo)*. We will first look at the interpretation of *sore-yori-(mo)* as an individual comparison and then consider the meaning and function of the utterance comparative *sore-yori-(mo)*.

2.1 *Sore-yori-(mo)* as an individual comparison

As we observed in §1, the individual comparative *sore-yori-(mo)* compares two individuals on a scale associated with a gradable predicate:

(7) Hanako-no   keeki-wa {kore/sore/are}-yori(-mo) ookii.
    Hanako-GEN cake-TOP this/that/that-than-MO   big
    'Hanako's cake is bigger than this/that one.'

Sore in the individual *sore-yori* is a spatial demonstrative referring to a thing close to the addressee. Note that *yori* in the individual comparison can combine with various kinds of demonstratives such as *kore* 'this', *are* 'that', and *sore* 'it/that'. In terms of its meaning, *sore-yori-(mo)* in (7) is interpreted at the at-issue (semantic) level in that its meaning is part of the truth condition of the given proposition. The evidence of this lies in the fact that the denial *sore-wa uso-da* 'No, that's false' can target the comparative meaning derived by *sore-yori*, as shown in (8):[3]

(8) A: Hanako-no   keeki-wa sore-yori(-mo) ookii.
       Hanako-GEN cake-TOP that-than-MO big
       'Hanako's cake is bigger than that.'
    B: Iya sore-wa   uso-da.   Futa-tsu-wa onaji ookisa-da.
       No, that-TOP false-PRED 2-CL-TOP   same size-PRED
       'Not that's false. The two are of the same size.'

In (8) B is objecting to A's idea that Hanako's cake is bigger than the discourse salient entity (cake).

Let us now analyze the meaning of the individual *sore-yori-(mo)*. As for the semantics of comparison, in this paper, I assume that in Japanese comparative, the standard marker *yori* encodes a comparative meaning (e.g., Kennedy 2007; Hayashishita 2009; Schwarzschild 2010; Sawada 2013)(cf. Beck et al. 2004):[4]

(9) $[[\text{yori}]] = \lambda x \lambda g \lambda y.\ max\{d' \mid g(d')(y)\} > max\{d'' \mid g(d'')(x)\}$

Yori in (9) takes a standard *y*, a gradable predicate *g*, and a target *x* and denotes that the maximum degree of *x* on the scale of *g* is greater than the maximum degree of *g* with respect to *y*.[5]

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[3]Note that *so* in the denial sentence is a discourse anaphoric demonstrative.

[4]Japanese comparison does not involve a comparative morpheme like English *more/-er*, and there have been a variety of approaches to the form and meaning of the Japanese comparative (see Sawada 2013; Hohaus & Bochnak 2019 for an overview and discussion).

[5]Note that there is also a negation-based approach to the semantics of comparison (i.e., the "A-not A" analysis). In this approach the meaning of (i) can be analyzed as (ii), using negation:

(i) a. A is taller than B.
     b. There is some expense-threshold: A meets it and B does not.

In this paper I will assume that *yori* directly encodes the 'greater than relation' between the two individuals. See Schwarzschild (2008) for a detailed overview of the negation-based approach.

As for the meaning of a gradable predicate, I assume that gradable predicates represent relations between individuals and degrees (e.g., Klein (1991); Kennedy & McNally (2005)):

(10) $[[ookii]] = \lambda d\lambda x.\ \mathrm{big}(x) = d$

Note that, as I briefly explained in the Introduction, the particle *mo* is completely optional in the individual comparison. In this paper I will assume that *mo* in regular individual comparison is meaningless and does not affect the meaning of a sentence. (Note that things are different in the case of individual *nani-yori-mo*, where for many speakers *mo* is obligatory.) The following figure shows the logical structure of (7) with *sore* 'that' (the information of tense and world are omitted for simplicity):

(11)
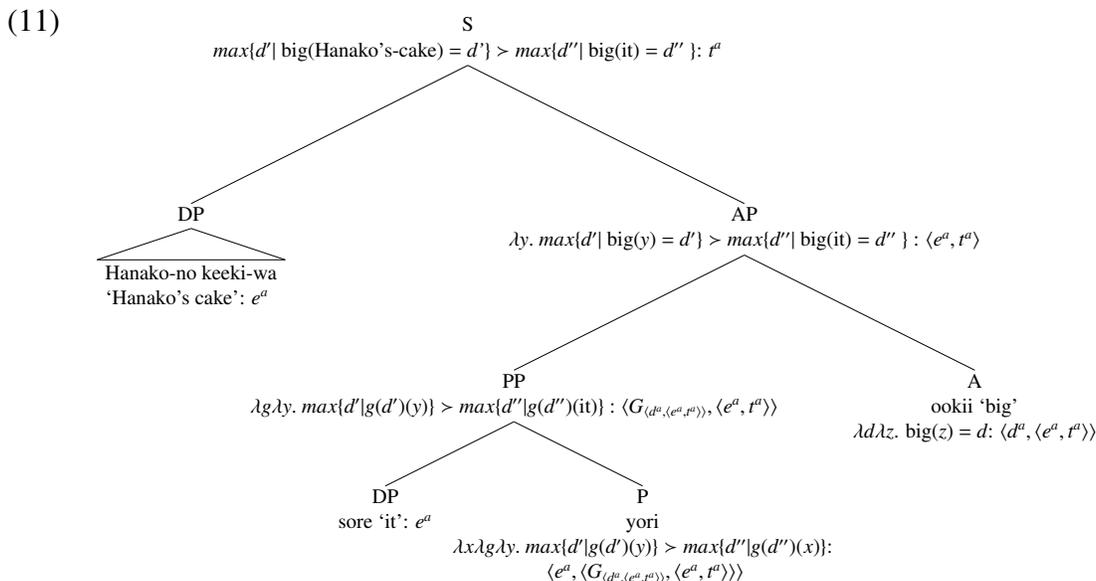
2.2 The meaning of the utterance comparative *sore-yori-(mo)*

Now, let us start by investigating the meaning and use of the utterance comparative *sore-yori-(mo)*.

2.2.1 The utterance comparative *sore-yori-(mo)* operates on a speech act and has a property of a CI

This section clarifies that the utterance comparative *sore-yori-(mo)* is an utterance modifier and its meaning corresponds to a CI.

First, the idea that the utterance *sore-yori-(mo)* is a speech act level comparison is supported by the fact that it can co-occur not only with declarative clauses but also interrogative and imperative clauses as well:

(12) (As a reply to the question "Why don't we play tennis now?'')

    a. (Declarative)

       Sore-yori-(mo) kinou-no   tesuto saiaku-da-tta.
       That-than-MO yesterday-GEN exam terrible-PRED-PST

       '*Sore-yori-mo*, yesterday's exam was terrible.'

    b. (Interrogative)

       Sore-yori-mo shukudai-wa   owa-tta-no?
       It-than-MO   homework-TOP finish-PST-Q

'*Sore-yori-mo*, did you finish your homework?'

c. (Imperative)

Sore-yori-mo hayaku shukudai-o   katazuke-nasai!
It-than-MO   soon   homework-ACC finish-IMP

'*Sore-yori-mo*, hurry up and do your homework!'

We can say that the comparative meaning triggered by the utterance comparative *sore-yori-(mo)* is a CI. In the Gricean theory of meaning, CIs are considered part of the meaning of words, yet these meanings are not part of "what is said" (e.g., Grice 1975; Potts 2005, Potts 2007; McCready 2010; Gutzmann 2012; Horn 2013; Sawada 2010, 2018). Furthermore, CIs have the semantic property of speaker-orientedness (by default) (Potts 2005, 2007).

The utterance comparative *sore-yori-(mo)* satisfies these criteria. First, the pragmatic use of *sore-yori-(mo)* is speaker-oriented in nature. Second, its meaning is logically and dimensionally independent of "what is said." This is supported by the fact that the meaning triggered by the utterance comparative *sore-yori-(mo)* cannot be challenged by the utterance "No, that's not true," as shown in the following conversation:

(13)   (Example of the pragmatic *sore-yori-(mo)* (topic shifting))

    A: Sensei   osoi-ne?
          Teacher late-CONF.Q

          'The teacher is late, isn't she?'

    B: Sore-yori-(mo) ashita-wa   tesuto-da.
          It-than-MO   tomorrow-TOP test-PRED

          At-issue: There will be an exam tomorrow.
          CI: My utterance is more important than your utterance.

    A: Iya sore-wa   uso-da.
          No that-TOP false-PRED

          'No, that's false.'

Unlike the individual comparative *sore-yori-(mo)*, in the utterance comparative *sore-yori-(mo)*, the denial cannot target the comparative meaning triggered by the utterance comparative *sore-yori-(mo)*; it can only target the at-issue part of the B's utterance. Furthermore, the fact that the meaning triggered by *sore-yori-(mo)* cannot be within the semantic scope of logical operators (such as past tense in (12a)) also supports the idea that the meaning of comparison in the utterance comparative *sore-yori* is independent of "what is said" (at-issue content).

I consider the comparative meaning conveyed by the pragmatic *sore-yori* not to be a presupposition. The comparative meaning of *sore-yori* is not something that is already assumed to be part of the speaker and the addressee's background.

2.2.2   The difference with metalinguistic comparison

We should now clarify the similarities and differences with metalinguistic comparison:

(14)   Japanese metalinguistic comparative (*to iu-yori*)

    a. Taro-wa   sensei-to iu-yori-(mo) gakusha-da.
        Taro-TOP teacher-as say-than-MO scholar-PRED

        'Taro is more a scholar than a teacher.' (Sawada 2007)

b. Kono mondai-wa   houritsu-no mondai-to iu-yori-(mo) zaisei-no   mondai-da.
This problem-TOP legal-gen   problem-as say-than-MO finance-GEN problem-PRED
'This problem is more financial than legal.'

(15)   English metalinguistic comparison

    a. Taro is more of a scholar than a teacher.

    b. Your problems are more financial than legal.

<div align="right">(McCawley 1988: 673)</div>

There have been several analyses of the semantics of metalinguistic comparison. Giannakidou &
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. Morzycki (2011) assumes that metalin-
guistic comparison posits a scale of imprecision or "pragmatic slack" (Lasersohn 1999) and compares
the precision levels of focal adjectives. Under this approach, for example, 'George is more dumb than
crazy' means that "George is dumb" is true at a higher level of precision than "George is crazy." Well-
wood (2019) considers, similarly to Giannakidou & Yoon (2011), that English metalinguistic comparison
(which she calls "categorizing comparatives") involves sentence-level interpretation; hoever, she assumes
a scale of accuracy and an invisible morpheme *say*.

Since the purpose of this research is to examine the nature of utterance comparison, I will not assess
the theoretical approaches to metalinguistic comparison, but whichever approach one takes, it is important
to recognize that the utterance comparative *sore-yori-(mo)* is different from metalinguistic comparison in
that the meaning of the utterance comparative *sore-yori-(mo)* is not part of "what is said'' (= CI) (see
§2.2.1), whereas the meaning of metalinguistic comparison is part of "what is said" (= propositional).
As the following examples demonstrate, the meaning of metalinguistic comparison can be challenged by
saying "No, that's false":

(16)   A: Taro-wa   sensei-to iu-yori-(mo) gakusha-da.
       Taro-TOP teacher-as say-than-MO scholar-PRED

       'Taro is more a scholar than a teacher.'

    B: Iya sore-wa   usoda. Taro-wa   subarashii gakusha-de ari subarashii sensei-demo aru.
       No that-TOP false. Taro-TOP great   scholar-and BE great   teacher-also BE

       'No, that's false. Taro is a great scholar and at the same time he is a great teacher.'

(17)   A: Your problems are more financial than legal.

    B: No, that's false. The problems are both financial and legal.

Note that in Japanese there is also a discourse connective expression *to iu-yori-(mo)*, which can appear
in sentence-initial position (Okimori 2016):

(18)   Osusume-wa   yappari   piza-desu!   To iu-yori   saishoni tanon-da
Recommendation-TOP not surprisingly pizza-PRED.POL As say-than first   order-PST
piza-de   onaka-ga   ippaini na-tte shima-tta-node   sore-igai-wa
pizza-with stomach-NOM full   become negatively.affected-PST-because it-without-TOP
wakari-masen.
know-NEG.POL

'My recommendation is not surprisingly a pizza! More appropriately, since my stomach became
full with the first pizza that was ordered, I don't know anything else.'
(https://retty.me/area/PRE13/ARE1/SUB113/100000004887/34006476/)

The discourse-initial *to iu-yori-(mo)* is similar to the utterance comparative *sore-yori-(mo)* in that its meaning is not part of "what is said" and cannot be challenged by denial:

(19)   A: Kore-wa   houritsu-no mondai-desu.
          This-TOP legal-GEN   matter-PRED.POL
          'This a legal matter.'

        B: Iya {sore-yori-(mo) / to iu-yori-(mo)} sore-wa   zaiseitekina mondai-desu.
          No it-than-MO   / as say-than-MO that-TOP financial   matter-PRED.POL
          'No, *sore-yori-mo/to iu-yori-mo*, it is a financial matter.'

        A: Iya sore-wa   machigai-desu.
          No that-TOP false-PRED.POL
          'No, that's false.'

In the above conversation, A is only objecting to B's idea that the problem is a financial matter. Okimori (2016) observed that this type of *to iu-yori* indicates that the wording mentioned in the subsequent utterance is more appropriate than the wording mentioned earlier.

However, we should admit that there is still a difference between the utterance comparative *sore-yori-mo* and the discourse-initial *to iu-yori-mo*. *To iu-yori-mo* is still metalinguistic in that it corrects the previous utterance by signaling that the following utterance is more appropriate. In contrast, *sore-yori-(mo)* is not metalinguistic. It does not have the flavor of correcting/replacing the previous utterance with an appropriate utterance. It conveys a more important utterance. We can confirm the difference based on the following contrast:

(20)   A: Sensei   osoi-ne?
          Teacher late-CONF.Q
          'The teacher is late, isn't she?

        B: {Sore-yori(-mo) / # To-iu-yori-(mo)} kinoo-no   tesuto-wa dou-da-tta?
          It-than-MO   /   as-say-than-MO yesterday-GEN test-TOP how-PRED-PST
          '*Sore-yori-mo/to iu-yori-mo*, how was yesterday's exam?'

(20B) with *to-iu-yori-(mo)* sounds odd because the context is not appropriate context for correction.

2.2.3   The formal analysis of the utterance comparative *sore-yori-(mo)*

Now, let us consider how the meaning of the utterance comparative *sore-yori-(mo)* can be analyzed in a formal way based on the following example:

(21)   (As a reply to the question "Why don't we ply tennis now?'')

      Sore-yori-(mo) kinou-no   tesuto saiaku-da-tta.
      That-than-MO yesterday-GEN exam terrible-PRED-PST

      '*Sore-yori-mo*, yesterday's exam was terrible.'

In this paper I will analyze the meaning of the utterance comparison based on a multidimensional theory of CIs (e.g., Potts 2005; McCready 2010; Gutzmann 2012). Although the at-issue meaning and the CI meaning are compositional, they are interpreted along different dimensions. More specifically, in this paper, I will utilize McCready's logic called $\mathcal{L}_{CI}^{+S}$, which is an extended theory of Potts' logic called $\mathcal{L}_{CI}$. Building on McCready's logic of $\mathcal{L}_{CI}^{+S}$, I assume the following type definition (I have added new types for degrees (d) and speech acts (a) in addition to the standard types for entities (e), truth values (t), and worlds (s):

(22) a. e^a, t^a, d^a, s^a, a^a are basic at-issue types for $\mathcal{L}^{+S}_{CI}$.

b. e^s, t^s, d^s, s^s, a^s are basic shunting types for $\mathcal{L}^{+S}_{CI}$.

c. If σ is an at-issue type for $\mathcal{L}^{+S}_{CI}$ and τ is a shunting type for $\mathcal{L}^{+S}_{CI}$, then $\langle \sigma, \tau \rangle$ is a shunting type for $\mathcal{L}^{+S}_{CI}$.

d. If τ is a shunting type for $\mathcal{L}^{+S}_{CI}$ and τ is a shunting type for $\mathcal{L}^{+S}_{CI}$, then $\langle \sigma, \tau \rangle$ is a shunting type for $\mathcal{L}^{+S}_{CI}$.
(Based on McCready's logic $\mathcal{L}^{+S}_{CI}$ with additional types)

A shunting type is used to calculate the meaning of certain types of CIs. In this theory, the CI expressions that have a shunting type are interpreted based on the operation of shunting as follows:

(23) Shunting application (McCready 2010)

$$\alpha(\beta) : \tau^s$$
$$\overbrace{\qquad\qquad\qquad\qquad}$$
$$\alpha : \langle \sigma^a, \tau^s \rangle \quad \beta : \sigma^a$$
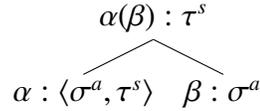
The shunting application states that an α of type $\langle \sigma^a, \tau^s \rangle$ takes β of type σ^a and returns τ^s.[6]

Based on the above setup, I propose that there is another *yori* 'than' for speech act-level comparison (*U* and *U'* are the variables for type *a*):

(24) [[yori$_{DISCOURSE}$]]: $\langle a^a, \langle a^a, t^s \rangle \rangle$
= $\lambda U \lambda U'.\ max\{d' \mid \text{important}(U') = d'\} > max\{d'' \mid \text{important}(U) = d''\}$

Yori in (24) takes two utterances (speech acts) *U* an *U'* as its arguments and conventionally implicates that the maximum degree to which *U'* is important is greater than the maximum degree to which *U* is important. Note that in this *yori*, the measure function "important" is built in the lexicon.[7] No explicit

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[6]McCready's type system of $\mathcal{L}^{+S}_{CI}$ is an extended type system of Potts' logic $\mathcal{L}_{CI}$ and it introduces a new type, called a shunting type. In Potts' logic $\mathcal{L}_{CI}$ there are at-issue type and a CI type:

(i) The logic $\mathcal{L}_{CI}$

a. e^a, t^a, s^a are basic at-issue types for $\mathcal{L}_{CI}$.

b. e^c, t^c, s^c are basic CI types for $\mathcal{L}_{CI}$.

c. If σ and τ are at-issue types for $\mathcal{L}_{CI}$, then $\langle \sigma, \tau \rangle$ is an at-issue type for $\mathcal{L}_{CI}$.

d. If σ is an at-issue type for $\mathcal{L}_{CI}$ and τ is a CI type for $\mathcal{L}_{CI}$, then $\langle \sigma, \tau \rangle$ is a CI type for $\mathcal{L}_{CI}$.
(Based on Potts (2005: 55))

Potts (2005) then proposed the following rule for the interpretation of the CI expressions that have a CI type:

(ii) CI application (Potts 2005: 65)

$$\beta : \sigma^a$$
$$\bullet$$
$$\alpha(\beta) : \tau^c$$
$$\overbrace{\qquad\qquad\qquad\qquad}$$
$$\alpha : \langle \sigma^a, \tau^c \rangle \quad \beta : \sigma^a$$
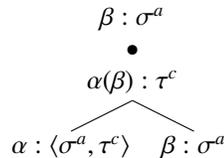
This rule is different from shunting application in that it is a resource-insensitive application. An α that is of $\langle \sigma^a, \tau^c \rangle$ takes a β of type σ^a and returns τ^c. At the same time, a β is passed on to the mother node. In this paper I will not utilize Potts' CI application although I share the underlying basic ideas of CIs.

[7]Regarding the source of the meaning of 'important', I think it arises in relation to the goal of the conversation. If the speaker selects utterance 1 instead of utterance 2 in relation to the goal of the conversation, it is natural to perceive that utterance 1 is more important than utterance 2. I would like to consider that this kind of reasoning has been conventionalized

gradable predicate is combined with *yori*. *Yori* for utterance comparison then combines with *sore* 'that', which refers to a previous utterance:

As for *sore*, I consider that it refers to a previous utterance (speech act):

(25)   [[sore]]: a^a = the previous utterance U_{PRE}

For example, in the case of (21) *sore* refers to the previous utterance "Why don't we ply tennis now?''. I consider that *sore* in the utterance comparative *sore-yori* is a "discourse deictic demonstrative'' (Diessel 1999). Discourse deictic demonstratives refer to propositions, speech acts, or a chunk of the surrounding discourse (Diessel 1999; see also Webber 1991).[8]

Sore and *yori* are then combined via the shunting operation (McCready (2010)). The following shows the result of the combination of *sore* and *yori*:

(26)   [[yori$_{DISCOURSE}$]]([[sore]]): $\langle a^a, t^s \rangle$
$= \lambda U'. max\{d' | \text{important}(U') = d'\} > max\{d'' | \text{important}(U_{PRE}) = d''\}$

Sore-yori then combines with a main utterance. Let us look at the structure of the speech act in detail. For the semantic representation of a speech act, I will follow the ideas due to Stenius (1967), Searle (1969), and Krifka (2001), according to which a speech act operator combines with a sentence radical meaning (typically, a proposition) to form a speech act. I define a speech act operator as follows:

(27)   A speech act operator is a function from the type of sentence radical to type a^a.

One might wonder whether a speech act has a status of at-issueness. Intuitively, speech acts cannot be a target of a denial. For example, we cannot deny the illocutionary force (assertion itself) in (21)(i.e. I asserts that yesterday's exam was terrible) by saying "No, that's false.''[9] Although this is the case, I would like to consider that speech act has a property of at-issueness. One empirical motivation for this idea comes from the fact that a speech act can be referred to by the discourse deictic pronoun *sore* 'that'. I consider that the fact that a speech act is non-challengeable comes from its theoretical status – a speech act has type a rather than type a and it does not have to do with truthness.[10]

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and the notion of importance is part of the lexical meaning of the utterance comparative *yori*. Sawada (2018) considers that *yori* in the utterance comparative *sore-yori-(mo)* posits a scale of preference and the notion of importance is derived pragmatically, but in this paper I will consider *yori* in the utterance comparative *sore-yori-(mo)* to inherently have the meaning of "important."

[8]While *sore* in the utterance comparative *sore-yori* refers to a previous speech act, in some cases, *sore* can also refer to a proposition. For example, in the following dialogue, *sore* in the B's utterance refers to the proposition that "Taro graduated yesterday'':
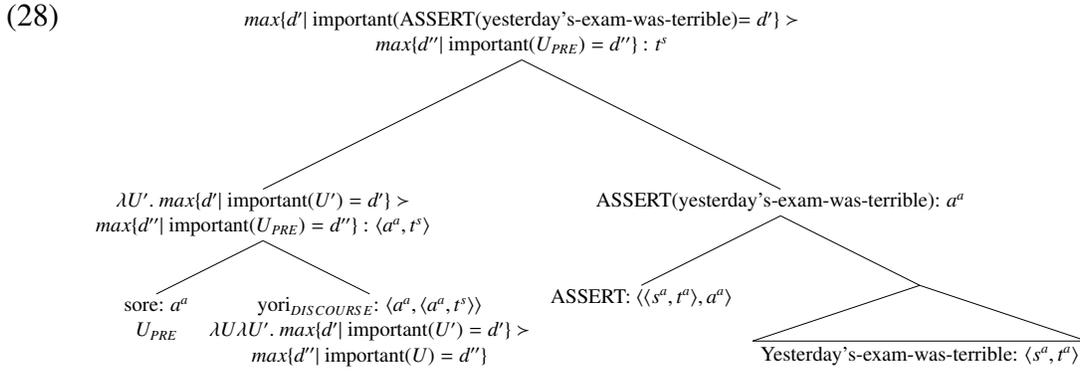
(i)   A: Kinou   Taro-ga   sotsugyoo-shi-mashi-ta.
           Yesterday Taro-NOM graduation-do-PRED.POLITE-PST
           'Taro graduated yesterday.'
      B: Sou-desu-ka.   {Sore / #are / #kore}-wa yoka-tta-desu-ne.
           That-PRED.POLITE-Q That / that / this-TOP   nice-PST-PRED.POLITE-Prt
           'Oh, really? That's nice.'

Crucially, *are* and *kore* cannot function as a discourse deictic demonstrative. *Kore-yori-mo* or *are-yori-mo* can only be used for individual comparison.

[9]McCready (2015) assumed that the speech act $A(p)$ is of type u^s, where u is a type of speech act that corresponds to a in our type system. Further in McCready's analysis, a speech act has a shunting type (i.e., u^s where u corresponds to a speech act/utterance).

[10]If a speech act is non-at-issue, then the type of speech acts will be of type a^s. And *yori* will combine it by shunting application. But in this paper I would like to take the position that speech act has a property of at-issueness. I thank a reviewer for a valuable discussion.

In this system, (21) will be analyzed as having the logical structure in (28):[11]

(28)

$$max\{d'|\text{ important}(\text{ASSERT}(\text{yesterday's-exam-was-terrible})= d'\} >$$
$$max\{d''|\text{ important}(U_{PRE}) = d''\} : t^s$$

$\lambda U'. max\{d'|\text{ important}(U') = d'\} >$
$max\{d''|\text{ important}(U_{PRE}) = d''\} : \langle a^a, t^s \rangle$

ASSERT(yesterday's-exam-was-terrible): a^a

sore: a^a
U_{PRE}

yori$_{DISCOURSE}$: $\langle a^a, \langle a^a, t^s \rangle\rangle$
$\lambda U \lambda U'. max\{d'|\text{ important}(U') = d'\} >$
$max\{d''|\text{ important}(U) = d''\}$

ASSERT: $\langle\langle s^a, t^a \rangle, a^a \rangle$

Yesterday's-exam-was-terrible: $\langle s^a, t^a \rangle$

Although the above representation captures the CI meaning of the utterance comparative *sore-yori*, we need to posit additional rules to capture the at-issue speech act and truth-conditional semantic content of the given sentence in an explicit way in its final representation. First, in this representation, the at-issue speech act (assertion) itself is not represented at the root level, even though it is performed. To avoid this problem, I posit the following general rule for the interpretation of an (embedded) speech act based on the following rule:[12]

(29) **Embedded speech act to the root (mother node)**

$$\text{ER} \; \frac{\langle \varnothing, E(A(\varphi))\rangle}{\langle A(\varphi), E(A(\varphi))\rangle}$$

E is an operator (expression) that embeds/modifies a speech act, such as the utterance modifier *sore-yori-mo* and *frankly speaking*. This rule is written in a deductive style (proof tree). Before **Embedded speech act to the root** is applied, an embedded speech act cannot be referenced directly. However, after this rule has been applied, the embedded speech will be reintroduced. With this rule, we can interpret both a CI comparative meaning (t^s) and an embedded speech act (a^a) on the root node (mother node).[13]

Second, in this representation, the truth-conditional semantic content is embedded in the speech act operator and is lost (invisible) at the root level. To solve this problem, I adopt McCready's 2015 rule of **Assertion to content**:[14]

(30) **Assertion to content**

$$\text{AC} \; \frac{\langle \varnothing, A(\varphi)\rangle}{\langle \varphi, A(\varphi)\rangle}$$

(Based on McCready (2015) (slightly simplified))

---

[11]As for the pragmatic effect of ASSERT, various formal compositional analyses have been proposed. For example, in the dynamic semantics view, where an utterance is interpreted against the common ground which is the set of propositions that the discourse participants are in agreement about (Stalnaker 1978), ASSERT can be viewed as an operator that proposes to add a proposition to the common ground (Groenendijk & Roelofsen 2009, Farkas & Bruce 2010, Murray 2014).

[12]As we will see below this rule is similar to McCready's 2015 rule of "Assertion to content'' in that the embedded element is reintroduced but it is different in that it reintroduces a speech act rather than truth conditional content.

[13]This rule is relevant for accounting for the phenomenon of the so-called embedding speech act in general (see Mittwoch 1977; Krifka 2014, among many others). 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 2014)

The *because* clause appears to be a speech act because it allows the speech act modifying adverb *frankly speaking* to be present.

[14]McCready (2015) introduced this rule to analyze the meanings of hedge expressions that modify speech acts/utterances.

Before **Assertion to content** is applied, there is no truth-conditional semantic content, and only the speech act $A(\varphi)$ is represented. However, after the rule is applied, the semantic content φ embedded in the speech act operator A is reintroduced.[15]

These additional steps make it possible to capture the truth-conditional semantic content, CI, and the at-issue speech act of the sentence at the final stage of interpretation:

(31) a. After **Embedded speech act to the root (mother node)** :
      $\langle$ ASSERT(yesterday's-exam-was-terrible): a^a, $max\{d'|$ important(ASSERT(yesterday's-exam-was-terrible)= $d'\} > max\{d''|$ important(U_{PRE}) = $d''\}$: t^s $\rangle$

   b. After **Assertion to content**:
      $\langle$ Yesterday's-exam-was-terrible: t^a, ASSERT(yesterday's-exam-was-terrible): a^a, $max\{d'|$ important(ASSERT(yesterday's-exam-was-terrible)= $d'\} > max\{d''|$ important(U_{PRE}) = $d''\}$: t^s $\rangle$

After **Embedded speech act to the root (mother node)** , we have the assertion of type a^a in addition to the CI scalar meaning (of type t^s). After **Assertion to content**, the truth-conditional semantic content (of type t^a) is reintroduced.

2.3   Deriving the function of topic-shifting

Having clarified the lexical meaning of the utterance comparative *sore-yori-(mo)*, let us now turn our attention to the pragmatic function of the utterance comparative *sore-yori-(mo)*. As we observed in the Introduction, the utterance comparative *sore-yori-(mo)* often functions as a topic-shifting expression, but it does not always behave as such. I argue that the pragmatic function of topic-shifting is derived by Grice's maxim of relevance; namely, it is determined by the extent to which *U* in *sore-yori(U)* is relevant to the "current" Question Under Discussion (QUD) (e.g., Roberts 1996). The underlying pragmatic principle behind the above analysis is the principle of relevance (Grice 1975):

(32)   Be relevant. (Grice 1975: 46)

If the given utterance (the utterance associated with *sore-yori*) is less relevant to the QUD, the comparison by *sore-yori* is interpreted as more topic-shifting. In the less relevant case, the speaker is intentionally flouting the maxim of relevance. By conveying irrelevant information, the speaker signals that he/she wants to shift the goal of conversation.

The following is an example of a goal-internal comparison. B's utterance is directly related to the current QUD:

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[15]A reviewer pointed out that the following example can be an empirical motivation for introducing "Assertion to content'' :

(i)   Watashi-ga tenisu-o   shi-yoo-to   it-tara,   haha-ni   sore-yori-mo watashi-wa mazu
      I-NOM   tennis-ACC do-let's-that say-when mother-DAT it-than-MO   first   homework-ACC
      shukudai-o   yaru-beki-da-to iw-are-ta.
      do-should-PRED-that say-PASS-PST

   'When I suggested playing tennis, my mother told me that *sore-yori-mo* I should first do my homework. (Based on a reviewer's example)

The embedded pronoun *watashi* 'I' is mean to ensure that the embedded clause is an indirect quotation. "Assertion to content'' is needed since the at-issue content of the embedded clause needs to be retrieved and given as an argument to the matrix predicate so that the compositional calculation of the meaning of the sentence can proceed. I thank the reviewer for the valuable comment and interesting data.

(33)   (Example of goal-internal comparison) [Context: What kind of person is Hanako?]

    A: Hanako-wa   kashikoi-desu.
       Hanako-TOP smart-PRED.POL
       'Hanako is smart.'

    B: Iya, (sore-yori(-mo)) Hanako-wa   yasashii hito-desu.
       No that-than-MO   Hanako-TOP kind   person-PRED.POL
       'No, *sore-yori-mo*, first, Hanako is a kind person.'

B's utterance sounds natural even if we delete *sore-yori* because B's utterance without *sore-yori* is relevant to the current QUD. Thus, it is reasonable to assume that B is shifting a goal via *sore-yori*.

On the other hand, the following is a clear example of a topic-shifting comparison.

(34)   A: Sensei   osoi-ne?
       Teacher late-CONF.Q
       'The teacher is late, isn't she?'

    B: Sore-yori(-mo) kinoo-no   tesuto saiaku-da-tta.
       It-than-MO   yesterday-GEN test   terrible-PRED-PST
       '*Sore-yori-(mo)*, yesterday's exam was terrible.'

In this case, B's utterance becomes odd if there is no *sore-yori-(mo)*, because the at-issue proposition is "not relevant" to the current QUD. I consider that in this case, *sore-yori* triggers a new topic and ignores the current QUD.

Note that if there is absolutely no relevance between A's utterance and B's utterance, then the sentence with *sore-yori-(mo)* becomes odd.

(35)   A: Kyoo-wa   atsui-ne.
       Today-TOP hot-Prt
       'It is hot today, isn't it?'

    B: ?? Sore-yori-(mo) 3 kakukei-no naikaku-no   souwa-wa 180-do-da.
         That-than-MO triangle-GEN interior angle-GEN sum-TOP 180-degree-PRED
       '*Sore-yori-mo*, the sum of the 3 interior angles of a triangle is 180 degrees.'

(36)   A: Tenisu-shi-nai?
       Tennis-do-not
       'Can't we play tennis?'

    B: ?? Sore-yori zoo-wa   hana-ga   nagai.
         That-than elephant-TOP nose-NOM long
       '*Sore-yori-mo*, the elephant has a long trunk.'

In this conversation, there seems to be no connection between A's question regarding the climate and B's answer regarding the sum of the angles of a triangle.[16] These facts suggest that there is actually some relevance between A's utterance and B's utterance, even in the case of a topic-shifting comparison. Because *sore-yori* compares two utterances based on the scale of importance, there is some similarity between them. (Both playing and studying are the activity of A.) Because of the nature of "comparison," there is no completely irrelevant relationship between the two utterances.

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[16]However, if we posit a context where B is teaching math to A, (37B) is perfectly natural.

2.4 Comparison with typical topic-shifting markers

In the previous section, we considered the topic-shifting function of utterance comparative *sore-yori-*(*mo*). In this section we will compare the topic-shifting *sore-yori-*(*mo*) and the typical topic-shifting expression *tokorode* 'by the way' as in (37) and consider the difference between them:

(37)   Tokorode   shiken-wa doo-da-tta?
        By.the.way exam-TOP how-PRED-PST
        'By the way, how was the exam?'

The natural context in which *tokorode* is used is one in which the speaker assumes that the conversation has reached a goal (at least for one speaker). The interesting point about *tokorode* is that it cannot be used in a context where the goal-shifting *sore-yori* is used (see also Kawabata (2002)):

(38)   A: Tenisu-shi-nai?
            Tennis-do-NEG
            'Can't we play tennis?'

       B: {Sore-yori-(mo)/??Tokorode} shukudai   owa-tta-no?
            That-than-MO/by the way   homework finish-PST-Q
            '*Sore-yori*-mo/??*Tokorode*, did you finish your homework?'

B's utterance with *tokorode* sounds odd because A and B have clearly not finished talking about tennis. I consider the expression *tokorode* to include the presupposition, as in (41):

(39)   [[tokorode]] = λU: There was a discourse goal in the past, and the speaker and hearer have just reached the goal. *U*

In contrast, topic-shifting *sore-yori-*(*mo*) does not have this kind of presupposition. As the following example shows, it is very odd to use topic-shifting *sore-yori-*(*mo*) in a context where the speaker and hearer have just reached a prior discourse goal:

(40)   A: Ashita   tenisu shi-nai?
            Tomorrow tennis do-NEG
            'Can't we play tennis tomorrow?'

       B: Un iiyo. Itsumo-no   basho-de   yar-oo.
            Yes OK   always-GEN place-LOC do-let's
            'Yes, OK. Let's play at the usual place.'

       B: {Tokorode/??Sore-yori} shukudai-wa   owa-tta?
            By.the.way/it-than   homework-TOP finish-PST
            '{By the way/??*sore-yori*}, did you finish your homework?'

In this discourse context, it does not make sense to compare the prior discourse goal with B's new goal because the prior discourse goal has already been reached and is no longer at-issue in the discourse.

Before ending this section, let me note that unlike ordinary topic-shifting *tokorode*, topic-shifting *sore-yori-*(*mo*) often triggers a speaker's negative attitude toward the addressee. Sawada (2015) argues that the speaker's negative emotion toward an addressee is expressed as a result of comparison/competition between the speaker's goal and the hearer's goal and that the speaker's negative emotion is strong if the speaker compares his/her personal (i.e., non-shared) goal and the hearer's personal goal, while if the goals can be shared by the speaker and hearer, there is no strong negativity (or perhaps no negativity at all). Note that if a speaker uses the expression *sonna koto-yori* 'than such a thing', a strong negative attitude toward the previous utterance is expressed due to its negative lexical meaning of *sonna koto* 'such thing'.

3 The meaning and use of the utterance comparative *nani-yori-mo*

3.1 The individual comparative *nani-yori-mo*

Let us now turn to the second example of utterance comparative expressions, *nani-yori-(mo)* 'than anything'. As we saw in the Introduction, *nani-yori-(mo)* can be used at both the semantic and discourse-pragmatic levels. First, let us examine the meaning of the semantic *nani-yori-(mo)* based on the following example:

(41) (Individual comparison, with *nani-yori-mo*)

    a. Tenisu-wa   nani-yori-mo   tanoshii.
       Tennis-TOP what-than-Universal.MO fun

       'Tennis is more fun than anything.' (Individual reading)[17]

    b. Kenkoo-wa nani-yori-mo   taisetsu-da.
       Health-TOP what-than-Universal.MO important-PRED

       'Health is more important than anything.' (Individual reading)

These sentences are interpreted like a superlative meaning in that the target is construed as the highest degree among all possible alternatives. Note that for many native speakers, *mo* is obligatory. As will be discussed later, I will assume that *mo* in wh-*yori-mo* is different from *mo* in a plain comparison (e.g., *sore-yori-mo*) in that it has a universal quantificational force.[18]

In terms of the dimension of meaning, as with individual *sore-yori-(mo)*, the meaning of the individual *nani-yori-mo* is part of "what is said" (at-issue). This is corroborated by the fact that a denial can target the superlative comparative meaning triggered by *nani-yori-mo*:

(42) A: Tenisu-wa   nani-yori-mo   tanoshii.
       Tennis-TOP what-than-Universal.MO fun

       'Tennis is more fun than anything.'

    B: Hontou? Boku-wa yakyuu-ga   ichiban tanoshii.
       Really   I-TOP   baseball-NOM 1st   fun

       'Really? I like baseball the best.'

Now, let us analyze the meaning of the individual *nani-yori-(mo)*. First, as for *yori*, the same lexical item *yori* is utilized as in individual *sore-yori-(mo)*:

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[17]In this sentence there is also a non-at-issue (discourse-pragmatic) reading where the property "fun" is construed as more noteworthy/important than alternative properties.

[18]Note that other indeterminate pronouns such as *dare* 'who', *doko* 'where', and *dono* 'which' can combine with *yori* in individual comparison and also require *mo*:

(i)   a. Taro-wa   dare-yori-?(mo)   kashikoi.
        Taro-TOP who-than-Universal.MO smart

        'Taro is smarter than anyone.' (Individual reading)

    b. Tokyo-wa   doko-yori-?(mo)   benri-da.
        Tokyo-TOP where-than-Universal.MO convenience-PRED

        'Tokyo is more convenient than anywhere.'

    c. Taro-wa   dono gakusei-yori-?(mo)   se-ga   takai.
        Taro-TOP which student-than-Universal.MO height-NOM tall

        'Taro is taller than any student.'

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

In contrast to semantic *sore-yori-(mo)*, semantic *nani-yori-(mo)* combines with the indeterminate pronoun *nani*, which denotes a set of alternative individuals:

(44) $[[\text{nani}]] = \{x \mid x \in \text{thing} \land C(x)\}$

A contextual operator C ensures that *nani* 'what' only introduces contextually relevant alternatives.

The alternatives expand until they meet the universal operator *mo*, which selects them (Kratzer & Shimoyama 2002; Shimoyama 2006). As for the compositionality of *nani-yori-mo*, I assume that *mo* first combines with *yori* and then combines with an indeterminate pronoun. I propose the following lexical entry for *mo* (S is a variable for *yori* 'than' and α is a variable for an indeterminate pronoun):

(45) For $[[\alpha]] \subseteq D_e$
      $[[\text{mo}]] = \lambda S \lambda \alpha \lambda g \lambda z.\ \forall x[x \in [[\alpha]] \rightarrow S(x)(g)(z)]$

If *mo* is combined with *yori* and *nani*, we obtain the following meaning:[19]

(46) For $[[\alpha]] \subseteq D_e$
      $[[\text{mo}]]([[\text{yori}]])([[\text{nani}]]) =$
      $\lambda g \lambda z.\ \forall x[x \in \text{thing} \land C(x) \rightarrow max\{d' \mid g(d')(y)\} > max\{d'' \mid g(d'')(x)\}]$

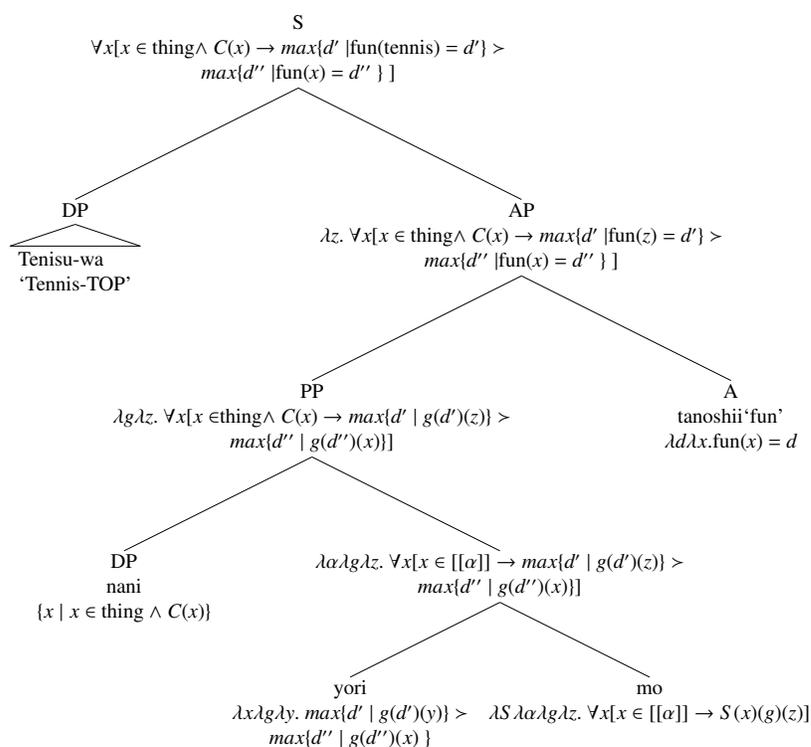*Nani-yori-mo* is then combined with the gradable predicate *tanishii* 'fun':[20]

(47) $[[\text{tanoshii}]] = \lambda d \lambda x.\ \text{fun}(x) = d$

The following figure shows the logical structure of the individual comparison in (41a).

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[19]Since *nani* is directly combined with *mo(yori)*, which has a universal meaning, I will not posit the pointwise function application (Kratzer & Shimoyama 2002; Shimoyama 2006). The analysis is simplified for the expository purposes and a proper analysis needs to employ Hamblin semantics in order to analyze complex examples such as *dono supootsu-yori-mo* in which a wh word is embedded inside the phrase that *mo* takes as one of its arguments. As a reviewer pointed out, strictly speaking, the simplified analysis still needs to recognize pointwise function application since one cannot do standard function application when the two daughters of a local tree both denote (singleton) sets. A singleton set $\{f\}$ and a function f itself are formally not identical. I thank the reviewer for valuable comment.

[20]Predicates such as *fun* and *tasty* are often construed as typical examples of predicates of personal taste and are theoretically treated separately from regular gradable predicates such as *tall* and *expensive* in that the former relate to an internal state or experience (e.g., Lasersohn 2005, Stephenson 2007, among many others). In this paper, I analyze regular gradable predicates and the predicate of personal taste as having the same semantic type.

(48)

S
$\forall x[x \in \text{thing} \wedge C(x) \rightarrow max\{d' \mid \text{fun(tennis)} = d'\} > max\{d'' \mid \text{fun}(x) = d''\}]$

DP
Tenisu-wa
'Tennis-TOP'

AP
$\lambda z. \forall x[x \in \text{thing} \wedge C(x) \rightarrow max\{d' \mid \text{fun}(z) = d'\} > max\{d'' \mid \text{fun}(x) = d''\}]$

PP
$\lambda g \lambda z. \forall x[x \in \text{thing} \wedge C(x) \rightarrow max\{d' \mid g(d')(z)\} > max\{d'' \mid g(d'')(x)\}]$

A
tanoshii 'fun'
$\lambda d \lambda x. \text{fun}(x) = d$

DP
nani
$\{x \mid x \in \text{thing} \wedge C(x)\}$

$\lambda \alpha \lambda g \lambda z. \forall x[x \in [[\alpha]] \rightarrow max\{d' \mid g(d')(z)\} > max\{d'' \mid g(d'')(x)\}]$

yori
$\lambda x \lambda g \lambda y. max\{d' \mid g(d')(y)\} > max\{d'' \mid g(d'')(x)\}$

mo
$\lambda S \lambda \alpha \lambda g \lambda z. \forall x[x \in [[\alpha]] \rightarrow S(x)(g)(z)]$

3.2 The meaning of the utterance comparative *nani-yori*(*-mo*)

Let us now turn our attention to the utterance comparative *nani-yori-*(*mo*). Similar to the utterance comparative *sore-yori-*(*mo*), utterance comparative *nani-yori-*(*mo*) is an utterance modifier that operates on a speech act. This is supported by the fact that the utterance comparative *nani-yori-*(*mo*) can co-occur with various sentence types:

(49)   a.   (Declarative)
       Nani-yori-(mo) Shizuoka-wa   atatakai.
       What-than-MO Shizuoka-TOP warm

       At issue: Shizuoka is warm.
       CI: The assertion that "Shizuoka is warm" is more important than any other assertion.

     b.   (Interrogative)
       Nani-yori-(mo) naze anata-wa Chicago-ni iku-no?
       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 more important than any other question.

     c.   (Imperative)
       Nani-yori-(mo) jugyoo-ni ki-nasai!
       What-than-MO class-to   come-IMP

       At issue: Come to class!
       CI: The command "Come to class!" is more important than any other command.

Note that unlike the individual *nani-yori-mo*, *mo* is optional in the case of the utterance comparative expression. I consider this to be due to conventionality. In the utterance comparison, *nani* 'what' is the

only possible indeterminate pronoun that can be used as an utterance comparison. As a result, *nani-yori-mo* has been conventionalized as a single phrase and *mo* has become optional.

Regarding meaning, I assume that the utterance comparative *nani-yori-(mo)* conventionally implicates that the at-issue utterance is more important than any alternative utterance. The evidence that its meaning as a CI is independent comes from the fact that the denial cannot target the comparative meaning:

(50) (What are the good features of Shizuoka?)

    A: Nani-yori-(mo) Shizuoka-wa   atatakai.
         What-than-MO Shizuoka-TOP warm

         At issue: Shizuoka is warm.
         CI: The assertion that "Shizuoka is warm" is more important than any other assertion.

    B: Hontou? Watashi-wa Shizuoka-wa   sonnnani atatakaku-nai-to omou.
         Really   I-TOP   Shizuoka-TOP that   warm-NEG-that think

         'Really? I think that Shizuoka is not that warm.'

Here, the denial can only target the at-issue part of A's utterance. In this context, *nani-yori-mo* in (50A) functions like discourse markers such as *first of all*. The meaning of utterance comparative *nani-yori-(mo)* as a CI is also supported by the fact that it is speaker-oriented. Similar to the utterance comparative *sore-yori-(mo)*, the meaning of the utterance comparative *nani-yori-(mo)* is not a presupposition in that its meaning is new information that is not shared between a speaker and a hearer prior to the utterance.

3.3   The formal analysis of the utterance comparative *nani-yori-(mo)*

Let us now consider how the meaning of utterance comparative *nani-yori-(mo)* is analyzed compositionally. I argue that the meaning of the utterance comparative *nani-yori-(mo)* utilizes the same lexical item $yori_{DISCOURSE}$ as the utterance comparative *sore-yori-(mo)*:

(51) $[[yori_{DISCOURSE}]]$: $\langle a^a, \langle a^a, t^s \rangle \rangle$
      $= \lambda U \lambda U'. \, max\{d' \,|\, \text{important}(U') = d'\} > max\{d'' \,|\, \text{important}(U) = d''\}$

For *nani*, it is assumed that it denotes a set of speech acts:

(52) $[[nani]] = \{U \mid U \in \text{speech act} \wedge C(U)\}$

As for *mo*, I assume that it has the following denotation:

(53)   For $[[\alpha]] \subseteq D_a$
      $[[mo]] = \lambda S \lambda \alpha \lambda U'. \, \forall U[U \in [[\alpha]] \rightarrow S(U)(U')]$

If *mo* is combined with $yori_{DISCOURSE}$ and *nani*, we obtain the following expression:

(54)   For $[[\alpha]] \subseteq D_a$
      $[[mo]]([[yori]])([[nani]]) = \lambda U'. \, \forall U[U \in \text{speech act} \wedge C(U) \rightarrow max\{d' \,|\, \text{important}(U') = d'\} > max\{d'' \,|\, \text{important}(U) = d''\} \,]$

As in the case of the individual *nani-yori-mo*, the superlative-like meaning in the utterance comparative *nani-yori-mo* is derived from the meaning of the universal particle *mo*.

Note that because both *mo* and *yori* have a shunting type (i.e., *Mo* ultimately returns a CI), to combine them, we need to introduce a new compositional rule, an expressive application (McCready 2010; Gutzmann 2011), in addition to the shunting application and type system discussed in §2.2.3:

(55) Expressive application (with a shunting type)

$$\alpha(\beta) : \tau^s$$

$$\alpha : \langle \sigma^s, \tau^s \rangle \quad \beta : \sigma^s$$

Based on the expressive application and the type system discussed in Footnote 8, we can combine *yori* and *mo*.[21, 22]

Nani-yori-mo is then combined with the main part of the utterance, the speech act. The following figure shows the logical structure of (49a):

(56) The logical structure of (49a) with the utterance comparative *nani-yori*

a.
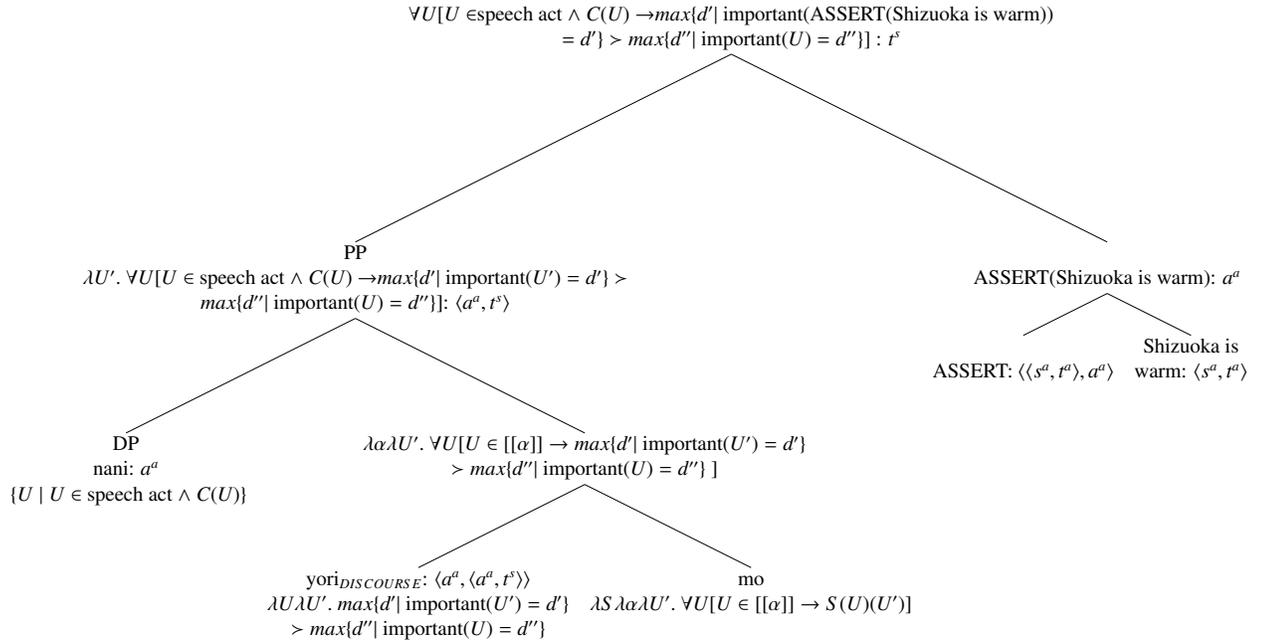
b. After **Embedded speech act to the root (mother node)** :
⟨ ASSERT(Shizuoka is warm): a^a, $\forall U[U \in$speech act $\land C(U) \to max\{d'|$ important(ASSERT(Shizuoka is warm)) $= d'\} > max\{d''|$ important$(U) = d''\}]$: t^s ⟩

c. After **Assertion to content**:
⟨Shizuoka is warm: t^a, ASSERT(Shizuoka is warm): a^a, $\forall U[U \in$speech act $\land C(U) \to max\{d'|$ important(ASSERT(Shizuoka is warm)) $= d'\} > max\{d''|$ important$(U) = d''\}]$: t^s ⟩

---

[21]However, as I claimed in §3.2, in the case of the utterance comparative *nani-yori-mo*, *mo* is optional. It may be possible to regard *nani-yori* (without *mo*) as a fixed expression and treat this operation as lexically encoded inside the meaning of *nani-yori*.

[22]Note that, as one of the reviewers pointed out, there are also idiomatic expressions *nani-yori-da/nani-yori-desu* which behave as predicates that mean "is better than anything'':

(i) Ogenki-de   nani-yori-desu.
Doing well-with what-than-PRED.POLITE

'lit. It is better than anything that you are doing well.'
(= I am very happy that you are doing well.)

Although the predicative *nani-yori* is different from the individual/utterance comparative *nani-yori*, I think they share a semblance of similarity, namely, the predicative *nani-yori* also has a superlative-like meaning.

As in the case of the utterance comparative *sore-yori-*(*mo*), the embedded speech act is passed up to the root level via **Embedded speech act to the root (mother node)** and the embedded truth-conditional semantic content is reintroduced via **Assertion to content** (see §2.2.3).[23]

3.4 Deriving the pragmatic functions of the utterance comparative *nani-yori-*(*mo*)

Let us now consider the pragmatic functions of the utterance comparative *nani-yori-*(*mo*). As we observed earlier, *nani-yori* can trigger various pragmatic effects. If *sore-yori-*(*mo*) is placed at the beginning of a discourse sequence, it triggers a "priority listing" effect as shown in (57), and if it is placed at the end of a discourse sequence, it triggers a "discourse-final additive reinforcing" effect, as shown in (58):

(57) (Discourse-initial priority listing)

    A: Tokyo-no   ii   tokoro-tte nan-desu-ka?
        Tokyo-GEN good point-TE what-PRED.POL-Q
        'What are the good features of Tokyo?'

    B: Soo-desu-nee. Nani-yori-mo Tokyo-wa   anzen-desu.   Soreni
        Let's see   what-than-MO Tokyo-TOP safe-PRED.POL Furthermore
        benri-ga   ii-desu-shi   tabemono-mo oishii-desu.
        convenience-NOM good-PRED.POL-and food-also   good-PRED.POL
        'Let's see. More than anything, Tokyo is safe. Furthermore, Tokyo is convenient and the food is also good.'

(58) (Discourse-final additive reinforcing)

    A Tokyo-no   ii   tokoro-tte nan-desu-ka?
       Tokyo-GEN good point-TE what-PRED.POL-Q
       'What are the good features of Tokyo?'

    B: Soo-desu-nee. Tokyo-wa   benri-ga   ii-desu-shi   tabemono-mo
        Let's see   Tokyo-TOP convenience-NOM good-PRED.POL-and food-also
        oisii-desu.   Sosite nani-yori-mo, Tokyo-wa   anzen-desu.
        good-PRED.POL. And   what-than-MO Tokyo-TOP safe-PRED.POL
        'Let's see. Tokyo is convenient, and the food is also good. And more than anything, Tokyo is safe.'

I claim that the functions of "priority listing" and "discourse-final additive reinforcing" naturally arise from the interaction between *nani-yori-*(*mo*)'s superlative meaning and Grice's maxim of manner: Be orderly.[24]

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[23]A reviewer provided the following example where *nani-yori-(mo)* is embedded under a subordinate clause:

(i) Shizuoka-wa nani-yori-mo ocha-ga   oishii-node nando.demo   otozure-tai.
    Shizuoka-TOP what-than-MO green.tea-NOM tasty-because any number of times visit-want
    'I want to visit Shizuoka as often as possible because more than anything it has delicious tea.' (Based on a reviewer's example)

I think that this example also clearly suggests that the rules of **Embedded speech act to the root (mother node)** and **Assertion to content** are necessary. In order to interpret the entire sentence, it is necessary to make referent to the content of the clause with *nani-yori-mo*.

[24]Maxim of manner consists of the following sub-maxims (Grice 1975):

(59)   Maxim of manner (sub-maxim): Be orderly.

$$(\text{Grice 1975: 46})$$

Given that the speaker needs to provide information in order and that *nani-yori-(mo)* conveys that the at-issue utterance is the most important as in (60), the optimal timing to present the most important information is to signal it at either the beginning or the end of a discourse sequence (U_{ALT} stands for an alternative utterance).

(60)   The scale of importance

$$|----|----|----|----|----\bullet$$

$$U_{ALT} \qquad U_{ALT} \qquad U_{ALT} \qquad U_{ALT} \qquad U_{at-issue}$$
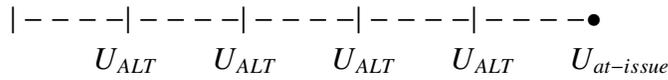
The maximum endpoint of the importance scale is mapped onto the edge of a temporal scale of discourse, that is, the beginning or the end. Let us consider this in more detail. In terms of discourse structure, the end-point-oriented meaning of pragmatic *nani-yori-(mo)* is mapped onto the temporal scale. The idea is that the superlative meaning triggered by utterance comparative *nani-yori-(mo)* is mapped on to the "edge" of a temporal sequence of utterances.

In Roberts' (2012) theory of information structure, there is a set *M* that consists of moves and can have distinguished sub-sets: a set of assertions, a set of questions, and a set of suggestions. Furthermore, *M* can have a subset *Acc*, which is the set of accepted moves.

(61)   *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
         $Acc \subseteq M$, the set of accepted moves   (Roberts 2012: 14)

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

(62) $<$ 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$\in$N   (Roberts 1996, 1998, 2012: 16)

If we apply this idea to the discourse moves in (57), we can posit the following ordering:

(63)   Strategy 1: Moves in (57)
         m_1(with *nani-yori-mo*) $< m_2 < m_3$
         (where m_1: assert(Tokyo is safe), m_2: assert(Tokyo is also convenient), m_3: assert(Food is good in Tokyo))

(i)   Manner: Be perspicuous.(Grice 1975: 46)
         a.   Avoid obscurity of expression.
         b.   Avoid ambiguity.
         c.   Be brief (avoid unnecessary prolixity).
         d.   Be orderly.

The above figure represents an ordering of moves based on time scale, but there is also an ordering of information inside the utterance comparative *nani-yori-(mo)* (which has to do with the scale of importance). If we combine both orderings, we obtain the pragmatic function of priority listing. This is a situation where the last move provides the most important information.[25]

By contrast, the conversation in (58) posits the following discourse structure:

(64)   Strategy 2: Moves in (58)
$m_1 \prec m_2 \prec m_3$ (with *nani-yori-mo*)
(where m_1: assert(Tokyo is convenient), m_2: assert(Food is good in Tokyo), m_3: assert(Tokyo is safe))

Here, the utterance with *nani-yori-(mo)* is placed at the endpoint of discourse flow. If we combine the ordering of the moves and the CI meaning of the utterance comparative *nani-yori-(mo)*, the pragmatic function of additive reinforcing emerges.

Note that we cannot use *nani-yori-(mo)* in the middle of a discourse sequence because if we do so it will violate the maxim of manner:

(65)   (Unnatural discourse move)

A Tokyo-no   ii   tokoro-tte nan-desu-ka?
Tokyo-GEN good point-TE what-PRED.POL-Q
'What are the good features of Tokyo?'

B: Soo-desu-nee. Tokyo-wa   benri-ga   ii-desu.   Soshite nani-yori-mo,
Let's see   Tokyo-TOP convenience-NOM good-PRED.POL. And   what-than-MO
Tokyo-wa   anzen-desu.   # Soshite tabemono-mo oishii-desu.
Tokyo-TOP safe-PRED.POL   And   food-also   good-PRED.POL
'Let's see. Tokyo is convenient. And more than anything Tokyo is safe. And the food is also good.'

Furthermore, *nani-yori-(mo)* cannot be used for topic-shifting. This is because *nani-yori* compares every alternative utterance, and we cannot compare the at-issue utterance with a specific previous utterance.

4   The relationship between the utterance comparative *sore-yori-(mo)* and the utterance comparative *nani-yori-(mo)*
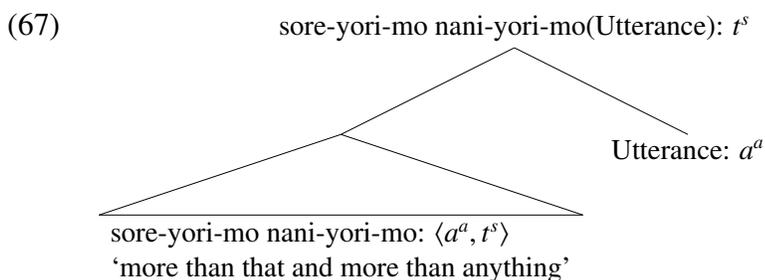
In §2 and §3, we discussed the meaning and use of the pragmatic *sore-yori-(mo)* and *nani-yori-(mo)*. Interestingly, the utterance comparative *nani-yori-(mo)* and the utterance comparative *sore-yori-(mo)* can co-occur in the same sentence; however, there is an asymmetry in the ordering in that the utterance comparative *sore-yori-(mo)* has to come first:

(66)   (Example of goal-internal comparison) [Context: What kind of person is Hanako?]

A: Hanako-wa   kashikoi-desu.
Hanako-TOP smart-PRED.POL
'Hanako is smart.'

---

[25]It is not clear whether there is a relative ordering between the second and third utterances in terms of the scale of importance, but they are additional information and at least were not as important information as the first utterance at the time the speaker used *nani-yori-mo*.

B: Iya, {sore-yori(-mo) nani-yori(-mo) / #nani-yori-mo sore-yori-mo} Hanako-wa yasashii
No that-than-MO what-than-MO / what-than-MO that-than-MO Hanako-TOP kind
hito-desu.
person-PRED.POL
'No, *sore-yori-mo*/*nani-yori-mo*, Hanako is a kind person.'

This can be explained based on the idea of information update. To refer to the previous utterance, we need to first use *sore-yori-(mo)*. If we first introduce *nani-yori-(mo)*, it will compare every alternative speech act. Thus, it is meaningless to refer to the previous utterance by *sore-yori-(mo)* after *nani-yori-(mo)*. In contrast, it is perfectly natural to refer to the previous utterance by *sore-yori-(mo)* and convey that the following utterance is more important than the previous utterance, and additionally convey that the given utterance is, in fact, more important than any alternative after that. Regarding their structural properties, it seems that the sequence *sore-yori-(mo) nani-yori-(mo)* is understood as a single phrasal adverb, as in:[26]

(67)   sore-yori-mo nani-yori-mo(Utterance): t^s

                                          Utterance: a^a

      sore-yori-mo nani-yori-mo: $\langle a^a, t^s \rangle$
      'more than that and more than anything'

The following example is a case in which the expression *sore-yori nani-yori* is shifting a topic:

(68) Watashi-mo fuyu   daaisuki!! Hayaku yuki-ga   fut-te hoshii-desu.   Sore-yori
     I-also   winter-NOM really.like Soon   snow-NOM fall-TE want-PRED.POL It-than
     nani-yori ashita-wa   toutou Sanii Dei-ga   Kanazawa-ni yattekuru-node ima-kara
     what-than tomorrow-TOP finally Sunny Day-NOM Kanazawa-to come-because   now-from
     wakuwaku dokidoki-desu
     thrilled   heart beat fast-PRED.POL
     'I really like the winter!! I wish the snow will fall soon. *Sore-yori nani-yori* because Sunny Day
     (= a rock band) will come to Kanazawa tomorrow, I am excited and my heart is beating so fast.'
     (http://www.sonymusic.co.jp/Music/Info/nb/BBS/001130$_0$.html)

In this case, *sore-yori* and *nani-yori* seem to form a single adverbial phrase. In this context, *nani-yori-(mo)* cannot function independently.

5   Cross-linguistic variations of utterance comparative expressions

Finally, let us consider the cross-linguistic variations of discourse-oriented comparison by comparing Japanese, Korean, and English data.

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[26]If there is an intonation break between *sore-yori-mo* and *nani-yori-mo*, then these two adverbial phrase can be placed at different positions, but I would like to put this issue aside.

5.1 Korean utterance comparative expressions

Korean *ku.kes/ke.kes-pota-to* 'that.thing-than-TO' has the same pragmatic function as the Japanese *sore-yori-mo*. As the following examples show, a demonstrative *ku.kes/ke.kes* 'than that thing/it' plus *pota-to* can be used both as topic-shifting as in (69B) and non-topic shifting as in (70B):[27]

(69) (Context of topic-shifting)

A: Nayil   syophing hale an   ka-ni?
    Tomorrow shopping do   NEG go-Q?

    'Can't we go shopping tomorrow?'

B: Ku.kes-pota-to ecey   sihem-un ettay-ess-ni?
    It-than-TO   yesterday exam-TOP how-PST-Q?

    '*Ku.kes-pota-to*, how was yesterday's exam?'

(70) (Context of non-topic-shifting) [Question: 'What kind of person is Professor Yamada?]

A: Yamata kyoswu-nim-un   chincelha-n kyoswu-nim-i-ta.
    Yamada professor-HON-TOP kind-Adnz professor-HON-be-DECL

    'Professor Yamada is a kind professor.'

B: Aniya. ke.kes-pota-to, mence, yamata kyoswu-nim-un   ttokttokha-n
    No,   it-than-to,   first,   Yamada professor-HON-TOP smart-Adnz
    pwun-i-ta.
    person(Hon)-be-DECL

    'No, *ke.kes-pota-to*, first, Professor Yamada is a smart person.'

Korean also has the expression *mwues-pota-to* 'what-than-TO', which has the same meaning and functions as Japanese *nani-yori-(mo)*:

(71) (Context of priority listing) [Question: What are the good points of tennis?]

A: Mwues-pota-to theynisu-nun caymi-iss-e.
    What-than-to   tennis-TOP   fun-exist-DECL

    'More than anything, tennis is fun.'

A: Keytaka theynisu-nun kenkang-ey coh-ko   ton-i   an   tul-e.
    Also   tennis-TOP health-LOC good-Conn money-NOM NEG cost-DECL

    'Also, tennis is good for the health and does not cost money.'

(72) (Context of additive reinforcing) [Question: What are the good points of tennis?]

A: Theynisu-nun kenkang-ey coh-ko   ton-i   an   tul-e.
    Tennis-TOP   health-LOC good-Conn money-NOM NEG cost-DECL

    'Tennis is good for the health and does not cost money.'

A: Kuliko mwues-pota-to theynisu-nun caymi-iss-e.
    And   what-than-to   tennis-TOP fun-exist-DECL

    'And *mwues-pota-to*, tennis is fun.'

These data suggest that there is a parallelism between Japanese utterance comparison and Korean utterance comparison.

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[27]I thank Arum Kang for providing me with the Korean data.

5.2 English discourse-pragmatic comparative expressions

English also has pragmatic comparative expressions such as *more than that* and *more than anything*. The following is an example of the use of the discourse-pragmatic *more than that*:

(73) a. Amar truly is an excellent Realtor, but more than that he is an excellent person to work with. Without him, we wouldn't have been able to say that we are happy homeowners now. (From the Internet)

b. I felt happy, but more than that—I felt relieved. (From the Internet)

However, unlike the utterance comparative *sore-yori*, it cannot be used in the context of rejecting a previous utterance:

(74) A: What kind of person is Hanako?

B: Hanako is smart.

C: No, {??more than that/rather than that}, Hanako is a kind person.

Furthermore, the English *more than that* does not have a topic-shifting function:

(75) (Context of topic-shifting comparison)

A: Can't we play tennis?

B: {# More than that/rather than that/instead of that} did you finish your homework?

In this context, expressions such as *instead of that* or *rather than that* are more natural. This point is radically different from the Japanese utterance comparative *sore-yori*.

However, as for English *more than anything*, its meaning and function are the same as those of the Japanese discourse-pragmatic *nani-yori-mo*.[28] As the following examples show, *more than anything* has both "discourse-initial priority listing" and "discourse-final additive reinforcing" functions:

(76) (Example of *more than anything* (priority listing strategy))
More than anything she is a personal achiever, where she scores unusually high. She is also very high as a real manager and as an expert idea generator.
(https://books.google.co.jp/books?isbn=1881052826)

(77) (Example of *more than anything* (additive reinforcing strategy))
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.
(http://sportsillustrated.cnn.com/2010/olympics/2010/writers/david$_e$pstein/02/23/freeman.diabetes/index.htm

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[28]Note that the English "more ADJ than anything" is quite different from *more than anything* in that the former is a metalinguistic comparison:

(i) It is quite big itself, though, more tall than anything.
(www.avforums.com/forums/archive/index.php/t-32348.html) (cf. It is taller than anything.)

These sentences say that the adjective *tall* is the most appropriate/precise property for describing the size of the subjects (i.e., *it*, *you*). Furthermore, unlike the individual reading and the utterance comparative reading, *anything* in (i) seems to be introducing a set of alternative properties (i.e., size adjectives like *big*).

5.3   Discussion

How can we explain the similarities and differences between English and Japanese pragmatic comparatives? I would like to claim that the English *more than* and the Japanese *yori* in their pragmatic use have different meanings in that the former, but not the latter, has an additional additive component (presupposition) whereby the standard of comparison (= U) satisfies a contextual standard of importance and has a restriction that the two utterances are relevant to the current QUD)(I assume that these additional informations belong to a presupposition):

(78)   a.   English
$[[\text{more than}_{DISCOURSE}]] = \lambda U \lambda U' : \exists d[d \geq \text{STAND}_{important} \wedge \text{important}(U) = d].\ max\{d'|$
$\text{important}(U') = d'\} > max\{d''| \text{important}(U) = d''\}$
(where U and U' are relevant to the current QUD)

   b.   Japanese/Korean
$[[\text{yori/pota}_{DISCOURSE}]] = \lambda U \lambda U'.\ max\{d'| \text{important}(U') = d'\} > max\{d''| \text{important}(U) = d''\}$

However, what is essential is that when *yori* and *more than* are used in endpoint-oriented comparatives (superlative-like comparison), their difference is neutralized. Both *more than anything* and *nani-yori-(mo)* denote that the given utterance is the most important among other alternatives; thus, they have the same superlative CI meaning and the same pragmatic functions (although there is a difference between them in the scalar value of the alternatives.)

6   Conclusion

In this paper I investigated the meaning and use of the Japanese utterance comparative expressions *sore-yori-(mo)* and *nani-yori-(mo)*. I argued that unlike individual comparative *sore-yori-(mo)* and *nani-yori-(mo)*, utterance comparative *sore-yori-(mo)* and *nani-yori-(mo)* operate on the speech act at the level of conventional implicature (CI). The utterance comparative *sore-yori-(mo)* conventionally implicates that the given utterance is more important than the previous utterance and the utterance comparative *nani-yori-(mo)* conventionally implicates that the given utterance is the most important of all alternative utterances. I then showed that these CI meanings are utilized for various pragmatic strategies such as topic shifting, priority listing, and additive reinforcing, which are derived via general pragmatic principles of relevance and manner. This suggests that there is a rich interaction between a CI and a conversational implicature. Finally, I clarified the cross-linguistic variation of utterance-comparative comparisons by comparing Japanese with Korean and English.

This paper showed that in addition to the regular comparison and metalinguistic comparison, there is a third type of comparison, utterance comparison, in natural language. The notion of comparison is important for human communication because it enables us to make the conversation move effectively/economically. The notion of comparison can relativize multiple utterances and signal the extent to which a given utterance contributes to achieving the goal of a conversation. Furthermore, the notion of comparison can structure the moves of a discourse or change its direction (by relativizing the goal of conversation, the QUD). The notions of scalarity and comparison are ubiquitous, and they not only play an important role in measuring the quantity and quality of things, but also play an important role in human communication.

In future studies, a more serious investigation is necessary to determine the theoretical status of a speech act. In this paper, I assumed that speech acts are objects that can be ordered on a scale of importance. In the paper, I also assumed that speech acts have the property of at-issueness. Given that

the previous utterance can be referred to by the discourse deictic demonstrative *sore* 'that', these seem to be reasonable assumptions. (If we consider that anaphoricity is closely tied to at-issueness, it seems natural to consider that a speech act is at-issue (see Snider 2017; Koev 2018; Korotkova 2020 for various positions regarding the relationship between anaphoricity and at-issueness)). However, as a reviewer also pointed out, the speech act escapes direct denial. I consider this to be so, because a speech act is not concerned with truthness. (It has a designated speech act type (type a^a) rather than type t^a.) In this view, there is a type of meaning that is at-issue but not truth-conditional (i.e., a^a). This idea seems to offer new possibilities for classifying the types of meaning in natural language, but more detailed empirical and theoretical discussions will be necessary for the ontological issue of speech acts.[29]

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