Pragmatic aspects of implicit comparison: an economy-based approach

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Abstract

There are two ways to express comparison: implicit comparison (e.g. *Compared to Tom, Jim is tall.*) and explicit comparison (e.g. *Jim is taller than Tom.*) (Sapir, 1944; Kennedy, in press). Although implicit comparison and explicit comparison can both be used to express comparison, they have different pragmatic properties. In these examples, the former, but not the latter, implies (a) Tom is not tall and (b) Jim is not definitely tall (possibly borderline). This paper investigates the pragmatic aspects of implicit comparison cross-linguistically (i.e. English and Japanese), considering (1) how it is pragmatically different from explicit comparison, (2) the status of the two implicatures, and (3) how they arise.

There are two approaches to explain the implicatures in implicit comparison: a symmetrical (or economy-based) approach, and an asymmetrical (or dependency) approach. In the symmetrical approach, the two implicatures are viewed as deriving from a single processing principle of economy. Under the asymmetrical approach, the implicature in (b) depends on the implicature in (a). I argue that the symmetrical approach is preferable.

Since the economy principle is neither stored in a particular lexicon, nor is it a co-operative principle, the implicatures have to be regarded as belonging to a third type of implicature: 'computational implicature.'

Key words: *implicit comparison, explicit comparison, context-dependency, implicature, economy of standard, truth-value, scale structure*

1 Introduction

Observe the following sentences:

(1) a. Compared to Jim, Tom is tall.

    b. Tom is taller than Jim.

Building on the discussion of gradability in Sapir (1944), Kennedy (in press) proposes that there are two modes of comparison, implicit comparison (=1a) and explicit comparison (=1b) and argues that the distinction between them can be attributed to the parameters of comparison. Roughly speaking, in English an explicit comparison is one in which a comparative morphology (-*er/more*) is used, while an implicit comparison is one in which an unmodified positive form of a gradable predicate is used. Kennedy (in press) argues that although implicit comparison and explicit comparison can both be used to express comparison, they differ in their semantics. Explicit comparison establishes the ordering between the two objects, x and y, using a degree morphology, not a contextually determined standard. Implicit comparison, on the other hand, compares the two objects, x and y, by manipulating the context in such a way that the positive form of a gradable predicate is true of x and false of y.

It is important to note that these two modes are different in pragmatics as well as in semantics. (2a), but not (2b), implies (3a) and (3b):

(2) a. Compared to Tom, Jim is tall.   (implicit comparison)

    b. Jim is taller than Tom.   (explicit comparison)

(3) a. Tom is not tall.

    b. Jim is not definitely tall.   (possibly borderline)

The purpose of this paper is to examine the pragmatic aspects of implicit comparison as in (2a) and consider (a) how implicit comparison is pragmatically different from explicit comparison, (b) the status of the implicatures, and (c) where the implicatures of implicit comparison come from.

Let us observe the implicatures of implicit comparison. (3a) shows that unlike explicit comparison, implicit comparison implies that the 'standard of comparison', in this case *Tom*, is low on the scale associated with the gradable predicate in the main clause. I will call this 'the implicature (inference) from the standard.' The existence of this implicature is clarified by the contrast in (4):

(4) a. Compared to {a gymnast/?? a basketball player}, Tom is tall.

    b. Compared to {a gymnast/ a basketball player}, Tom is taller.[1]

    c. Tom is taller than {a gymnast/a basketball player}.

In (4a), but not in (4b) and (4c), the sentence with the NP *a basketball player* is odd because the common knowledge that basketball players are tall conflicts with the low scale implicture for the standard of comparison.

    The second implicature in (3b), on the other hand, shows that the (unmodified) positive form is false of the subject *Jim*. I will call this implicature 'the implicature from the main clause.'[2] Notice, however, that the truth value of the main clause does not always have to be clearly false. It can be a borderline case:

(5) (Context: Mary is asked whether Jim is tall, but she cannot decide whether he is tall or not.)

    Mary: Well, compared to Tom, Jim is tall.

    (a) → Jim is not tall.

    (b) → I am not sure whether Jim is tall.

In this context, the speaker seems to imply (5b) rather than (5a). The implicature in (5b) is

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[1] Some native speakers might think that (4b) is not perfectly natural. This is presumably due to the availability of and preference for (4c) (Chris Kennedy p.c.).

[2] Notice that the following sentences are different from the *compared to* construction that is the focus of this paper:

    (i) Britain will have 46,180 tonnes in 1990, <u>compared to</u> 55,600 this year.   (BNC)

    (ii) More than half of working men with degree qualifications work in professional and managerial jobs <u>compared to</u> 35 per cent of women.   (BNC)

I am assuming that the phrase *compared to* in (i) and (ii) has the function of contrastiveness. There are no implicatures like (3a) and (3b) in (i) and (ii). I will call this type of *compared to* the contrastive *compared to* construction. The *compared to* construction that we are going to focus on in our paper and the contrastive *compared to* construction are different in syntax, as well. Although *compared to* can be fronted as in (iiib), it is not natural to front *compared to* in the contrastive *compared to* construction, as shown in (ivb) (Chris Kennedy p.c.):

    (iii) a. Jim is tall compared to Tom.
          b. Compared to Tom, Jim is tall.
    (iv) a. Britain will have 46,180 tonnes in 1990, <u>compared to</u> 55,600 this year. (BNC)
          b. ?? <u>Compared to </u>55,600 this year, Britain will have 46,180 tonnes in 1990.

These differences suggest that the *compared to* construction and the contrastive *compared to* construction are, in fact, different constructions.

epistemically weaker than that in (5a). The example in (5) suggests that the negative implicature is not uniform.

The above discussion strongly suggests that it is necessary to distinguish between implicit and explicit comparisons in pragmatics, as well as in semantics. However, the distinction between implicit and explicit comparisons proves not to be straightforward, if we take into consideration languages that do not have a specialized comparative morphology like the English -*er/more*.[3] For example, Japanese is a language which does not use comparative morphology in the environment 'x is A-er than y, as shown in (6):'[4]

  (6) Taro-wa   Ziro-**yori**   se-ga   takai.
      Taro TOP   Ziro-than   back- NOM   high
      'Taro is taller than Ziro.'

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3 Ultan (1972) states that 32 of 108 languages surveyed by him do not have overt comparative morphology.

4 The adverb *motto* is often translated as 'more', but it cannot be regarded as a pure comparative morpheme:
  (i) Taro-wa   Ziro-yori motto   kasikoi.
      Taro-TOP Ziro-than MOTTO smart
      'Taro is even smarter than Ziro.'
In (i) the speaker thinks that both Taro and Ziro are construed as smart (See also Beck et al., 2004: 327). In this sense, *motto* is similar to English *even*.
    Note that in Modern Japanese, *yori* can behave like English –*er/more* in special environments:
  (ii) Yori ooku-no   nihon-jin-ga   Denver-yori New York-ni   sun-deiru.
      More many-GEN Japanese people-NOM Denver-than New York-LOC live-STATIVE
      'More Japanese people are living in New York than in Denver.'
  (iii) Taro-wa   yori   anzenna tokoro-ni   hikkoshi-ta.
       Taro-TOP more safe   place-DAT move-PAST
       'Taro moved to a safer place.'
As Martin (1975) and many Japanese dictionaries point out, Modern Japanese has developed the new comparative morpheme *yori*, corresponding to English 'more', under the influence of translations from European languages. Notice however that the comparative morpheme *yori* is not used freely. As Sawada (in press) argues, the comparative morpheme *yori* is used only if a given sentence cannot otherwise express comparison. For example, the comparative morpheme *yori* in (ii) is necessary because if we delete it, (ii) is interpreted as a sentence with the expression 'rather than', i.e. 'Many Japanese people are living in New York rather than in Denver.' Furthermore, the comparative morpheme is necessary for comparison in (iii) as well. This is because if it is deleted, (iii) must be interpreted as a simple sentence with a bare adjective, i.e. 'Taro moved to a safe place.'
    What is crucial here is that the comparative morpheme *yori* in (6) is not necessary because we can express comparison without it. The corpus data also show that the comparative morpheme *yori* is rarely used in environments where we can express comparison without it. In this paper, we will only focus on environments in which the comparative morphology does not normally appear, i.e. 'x is A-er than y.'

This might lead one to think that Japanese does not have a mode of explicit comparison, since it has no specialized morphology that expresses an arbitrary ordering relationship, an idea considered by Beck et al. (2004). However, as Kennedy (in press) argues, the Japanese comparative *yori* does allow explicit comparison, and is semantically different from the implicit comparatives *kurabe-tara* 'compare-conditional' or *kurabe-ru-to* 'compare-present-conditional.' It is important to notice that in Japanese, implicit and explicit comparisons are differentiated in the comparative clause/phrase. That is to say, implicit comparison is expressed by the conditional morpheme -*tara* or -*ru-to* with the verb stem *kurabe* 'compare,' as in *kurabe-tara* 'compare-conditional' or *kurabe-ru-to* 'compare-present-conditional.'[5] As Sawada (2005, 2007) points out, these expressions are pragmatically different from the *yori-* comparative or *kurabe(-te)* 'compare-TE,' although the main clauses of implicit and explicit comparisons in Japanese have exactly the same forms, as in (8) and (9). (7) is a simple sentence with an adjective:

(7) Taro-wa   se-   ga   takai.
     Taro-TOP   height-NOM   tall
     'Taro is tall.'

(8) a. *Explicit comparison*

     Taro-wa   Ziro-**yori**   se-   ga   takai.
     Taro TOP   Ziro-than   back- NOM   high
     'Taro is taller than Ziro.'

  b. *Explicit comparison*

     Ziro-ni   **kurabe(-te)** Taro-wa   se-ga   takai.[6]
     Ziro-DAT   compare-TE Taro-TOP   height-NOM   tall
     'Taro is taller than Ziro.'

(9) a. *Implicit comparison*

     Ziro-ni   **kurabe-tara**   Taro-wa se-ga   takai.
     Ziro-DAT compare-COND Taro-TOP height-NOM tall
     'Compared to Ziro, Taro is tall.'

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[5] *Kurabe-reba* 'compare-conditional' also behaves as implicit comparison. Thanks to Yusuke Kubota for bringing this to my attention.

[6] Notice that here *te* can be omitted. I will gloss the clause linker —*te* as TE. It seems to me that -*te* in *kurabe(-te)* is not to be interpreted as 'and.' See also Yuasa and Sadock (2002) for a detailed discussion of this Japanese clause linker.

b. *Implicit comparison*

Ziro-ni	**kurabe-ru-to**	Taro-wa	se- ga	takai.
Ziro-DAT	compare-PRES-COND	Taro-TOP	height-NOM	tall

'Compared to Ziro, Taro is tall.'

Although the examples in (8) and (9) both have the same main clause, only the ones in (9) imply (10a) and (10b):

(10) a. Ziro is short.

  b. Taro is not definitely tall. (possibly a borderline)

These examples suggest that the distinction between explicit and implicit comparisons does not come from the superficial form of an adjective, nor from the presence or absence of the verb *compare*, because (a) there is no comparative morpheme in (8) and (9), and (b) Japanese allows us to express implicit and explicit comparisons using the verb stem *kurabe-* 'compare.'

Given these empirical facts, how can we explain the pragmatic aspects of implicit comparison theoretically? Specifically, what is the status of the two implicatures in implicit comparison? Where do they come from? Why do they have 'low' instead of 'high' scalar inference? Why does a speaker use an implicit comparison (e.g. *Compared to Tom, Jim is tall.*) rather than a simple form of a gradable predicate (e.g. *Jim is tall. /Jim is not tall.*) in a given context?

This paper tries to answer these questions by comparing two different approaches. One approach is what I will call the 'symmetrical' (or economy-based) approach and the other approach is what I will call 'asymmetrical' (or dependency) approach. In the symmetrical approach, the two implicatures in implicit comparison are viewed as deriving from a single processing principle, the economy of standard. In this view, both of the implicatures have the same status because they are derived simultaneously.

In the asymmetrical approach, on the other hand, the two implicatures in implicit comparison are considered to have a different status from each other. This approach is asymmetrical because in it, the derivation of the implicature from the main clause is considered to 'depend on' the existence of the implicature from the standard. Although both approaches work, I will argue that the symmetrical approach has more advantages than the asymmetrical approach.

This paper proceeds as follows. Section 2 introduces the analyses of explicit comparison and implicit comparison based on Kennedy (in press). Section 3 adduces the empirical

differences between the two modes of comparison in English and Japanese. Section 4 discusses the two implicatures in implicit comparison and provides a preliminary analysis. Section 5 introduces the symmetrical approach to the implicatures of implicit comparison, and Section 6 introduces the alternative asymmetrical approach to them. Section 7 compares the two approaches and argues that the symmetrical approach has more advantages than the asymmetrical approach. Section 8 is the conclusion.

2. Semantics of explicit comparison and implicit comparison

Before embarking on a pragmatic account of implicit comparison, let us briefly look at the semantics of explicit and implicit comparison. As we saw in Section 1, explicit comparison establishes an ordering between the two objects x and y with respect to gradable property g using a degree morphology. The conventional meaning of such explicit comparison is that the degree to which x is g exceeds the degree to which y is g. There are various ways to represent the semantics of (11a), but here I will represent it as (11b):

> (11) a. x is A-er than y.
>
> b. The degree to which x is A > the degree to which y is A

(11b) says that the degree to which x is tall exceeds the degree to which y is tall. The important point is that the semantics of (11a) establishes the ordering of x and y with respect to the scale of A, but does not tell us whether x and y are actually A or not.

Next, let us consider the semantics of implicit comparison. Kennedy (2007a, in press) argues that the function of *compared to* is to ensure that the denotation of the predicate is calculated with respect to a 'context' that includes only the two objects being compared. The semantics of (12a) can be represented in (12b):

> (12) a. Compared to y, x is A
>
> b. $[\![$A compared to $y]\!]$ is true of x in a context c iff $[\![$A$]\!]$ is true of x in any context c' just like c except that the domain includes just x and y.[7]

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[7] Note that the main clause of a sentence containing *compared to* does not always have to contain an adjective. The predicate can be a noun:

(i) Compared with my house, yours is a castle.
(ii) Compared with my daughter, yours seems a veritable angel.

I thank one of the reviewers for noting that these are cases of simile or metaphor. For example, the speaker in (i) knows that the addressee's house is not a castle, but he/she is

Note that the semantics in (12) entails that *x is more A than y*. This is because there is a general requirement that the domain of the predicate must always be partitioned into two non-empty sets (a 'positive' extension and a 'negative' extension) (Klein, 1980; Kennedy, 2007a, in press). Thus, it follows that in a context that includes just x and y, if it is true that x is A, it must be false that y is A, as shown in (13):

(13) Compared to y, x is A

$\underline{[[A(x)]] = 1 \quad \text{positive extension}}$
$[[A(y)]] = 0 \quad \text{negative extension}$

This is equivalent to saying that the degree to which x is A exceeds the standard of comparison in the *compared to* context, but the degree to which y is A does not. It follows from transitivity that the degree to which x is A exceeds the degree to which y is A, so (12a) entails (11a). These are the core ideas of the semantics of implicit and explicit comparison.

The following questions immediately arise. How can we be sure that implicit comparison and explicit comparison are semantically different? Is it really the case that Japanese has both implicit and explicit comparison despite the fact that it does not use the overt comparative morpheme? In order to answer these questions, we need to consider the diagnostics for the two modes of comparison, which will help us to decide whether a particular comparative is explicit or implicit.

3. Diagnostics for implicit vs. explicit comparison

This section adduces several diagnostics to show that explicit comparison and implicit comparison are semantically different. We will first look at English data and then apply these diagnostics to Japanese. These diagnostics play an especially important role for languages like Japanese, in which there is no overt comparative morpheme.

3.1 CRISP JUDGMENT (English)

The first diagnostic is concerned with Crisp Judgment. Kennedy (in press) argues that explicit comparison, not implicit comparison, is felicitous in contexts requiring Crisp Judgment. These are contexts in which the difference between the two objects with respect to the property measured by the adjective is potentially vanishingly small:

saying that it looks like one compared to his/her house. Although the truth value of *yours is a castle* is always false, the truth value of 'what is meant' by a metaphor or simile can be construed as true compared to *my house*.

(14) Context: There are two novels, a 100 page novel and a 99 page novel.

    a. ?? This novel is long compared to that one.

    b.   This novel is longer than that one.

(15) Context: There are two novels, a 100 page novel and a 50 page novel.

    a.   This novel is long compared to that one.

    b.   This novel is longer than that one.

In the context of (14), explicit comparison is natural, but implicit comparison is odd in this context. This is because if a 100 page novel is judged as long, a 99 page novel is also construed as long. *This novel* and *that novel* cannot be partitioned into two non-empty sets: negative extension and positive extension. In (15), on the other hand, both explicit and implicit comparisons are natural. (15a) is natural because there is a significant difference between a 100 page novel and a 50 page novel with respect to the property measured by the adjective *long*; therefore, these novels can be partitioned into two different domains.

3.2 Absolute gradable adjectives (English)

The second diagnostic is concerned with absolute gradable adjectives. Gradable adjectives can be classified into two types, absolute and relative. Absolute gradable adjectives do not have a context-dependent standard of comparison, unlike 'relative' gradable adjectives (Rotstein and Winter, 2004; Kennedy and McNally, 2005; Kennedy, 2007a, in press). Consider a sentence with the adjective *bent*: *This rod is bent*. This sentence does not mean that the degree to which the rod is bent surpasses some contextually determined standard of comparison, but rather simply means that the rod has a nonzero level of bentness. The standard of comparison is fixed at the minimum degree on the scale.

    Notice that it is difficult to use an absolute gradable adjective in implicit comparison in as shown in (16b) (Kennedy, in press):

(16) a.   B is more bent than A

    b. ?? Compared to A, B is bent.

Figure 1

Rod A: Rod B:

As Figure 1 shows, (16b) is odd because both of the rods are bent and we cannot partition them into different domains.

3.3 Differential measurements (English)

The third diagnostic is concerned with measure phrase. Kennedy (in press) argues that a measure phrase can occur in explicit comparison but not in implicit comparison:

(17) a.   Kim is 10 cm taller than Lee.

b. ?? Compared to Lee, Kim is 10 cm tall.

(17a), but not (17b), is well formed because the measure phrase (*10 cm*) represents the difference between the objects compared on the same scale. (17b) is odd because we cannot partition Kim and Lee into two non-empty sets with respect to the property of the adjective *tall*.

3.4 Discourse Structures (Question and answer structures) (English)

I would like to add one more diagnostic which is concerned with discourse structure. The distinction between implicit and explicit comparisons is reflected in the discourse structure, as well, as shown in (18) and (19):

(18) A: Which is more expensive, this car or that car?

B': This car is more expensive than that car.

B": ?? Compared to that car, this car is expensive.

(19) A: Is this car expensive?

B': ?? This car is more expensive than that car.

B": Yes, compared to that car, this car is expensive.

In (18) the comparative form is natural, but the positive form is odd. In (19), on the other hand, the comparative form is odd, but the positive form is natural.[8] Empirically speaking, implicit comparison is natural in a reply to a yes-no question but it is not for a reply to a wh-question. There is a rule of discourse cohesion that states that, if a question is based on a positive form, the reply must also be based on a positive form, while if a question is based on a comparative form, the (full) answer should be based on a comparative form.

The above four diagnostics suggest that the primary function of implicit comparison is not to simply compare the two objects on the same scale, but to judge the truth-value of the

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[8] The contrast may be not so strong, compared to other diagnostics.

proposition in the main clause by introducing a new standard. We will discuss this function in greater detail in section 4.

3.5 Crisp Judgment (Japanese)

Now let us consider the case of Japanese comparatives. Kennedy (in press) argues that *yori* behaves like explicit comparison. Japanese also can express comparison using *kurabe-te*, *kurabe-tara*, and *kurabe-ru-to*. Let us compare and contrast these four kinds of constructions using the diagnostics. As the following examples show, *yori* and *kurabe(-te)* are felicitous in contexts requiring crisp judgment but *kurabe-tara* and *kurabe-ru-to* are not in the context:

(20) (Context: There are two papers. One is 16 pages long and the other is 17 pages long.)

    a. Kono peepaa-wa   ano   peepaa-**yori**   nagai.
       This paper-TOP   that paper-than   long
       'This paper is longer than that paper.'

    b. Ano peepaa-ni   **kurabe(-te)**   kono peepaa-wa   nagai.
       That paper-DAT compare-TE (linker) this paper-TOP   long
       'This paper is longer than that paper.'

    c. ?? Ano peepaa-ni   **kurabe-tara**   kono peepaa-wa   nagai.
        That paper-DAT compare-COND this paper-TOP   long
        'Compared to that paper, this paper is long.'

    d. ?? Ano peepaa-ni   **kurabe-ru-to**   kono peepaa-wa   nagai.
        That paper-DAT compare-PRES-COND this paper-TOP   long
        'Compared to that paper, this paper is long.'

Kurabe-tara and *kurabe-ru-to* behave like the English expression *compared to*. (20c) and (20d) are odd because this paper and that paper cannot be partitioned into two non-empty sets since the difference between 100 pages and 98 pages is very small.

3.6 Differential measurement (Japanese)

The second diagnostic is concerned with differential measurement. As the following examples show, *yori* and *kurabe-te*, but not *kurabe-tara* and *kurabe-ru-to*, allow differential measurement phrases:

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(21) a. Taro-wa   Ziro-**yori**   **san-senti**   se-ga   takai.

Taro-TOP Ziro-than three-centimeter height-NOM tall

'Taro is 3 cm taller than Ziro.'

b. Ziro-ni   **kurabe(-te)**   Taro-wa   **san-senti**   se-ga   takai.

Ziro-DAT compare-TE   Taro-TOP three-centimeter height- NOM tall

'Taro is 3 cm taller than Ziro.'

c. ?? Ziro-ni   **kurabe-tara**   Taro-wa   **san-senti**   se-ga   takai.

Ziro-DAT compare-COND Taro-TOP three centimeter height-NOM   tall

'Taro is 3 cm tall compared to Ziro.'

d. ?? Ziro-ni   **kurabe-ru-to**   Taro-wa   **san-senti** se-ga takai.

Ziro-DAT compare-PRES-COND Taro-TOP three-cm   height-NOM tall

'Taro is 3 cm tall compared to Ziro.'

It is important to notice that the status of the oddness in (21c) and (21d) is similar to that of a simple sentence with the positive form. As the following sentence shows, measure phrases cannot directly combine with the positive form of an adjective (e.g. Snyder et al., 1995; Schwarzschild, 2005; Kennedy, in press):

(22)* Taro-wa   hyaku   nanaju-senti   se-ga   takai.

Taro-TOP hundred seventy-centimeter   height- NOM   tall

'Taro is 170 cm tall.' (Though this sentence is okay if Taro is 170 cm taller than a contextual standard of comparison (e.g. his month-old baby.))

Therefore, the oddness of (21c) and (21d) is to be expected, since implicit comparison judges the truth-value of the proposition in the main clause by introducing a new standard.

3.7 The noun *hoo* 'direction' (Japanese)

If the noun *hoo*, which literally means 'direction', is attached to the predicate form, the sentence means that the proposition is 'more or less' true:

(23) Kotosi- wa   atatakai-**hoo** -da.

This year-TOP warm-direction-PRED

'It is kind of warm this year.'

(23) means that *kotosi* 'this year' belongs to the warm zone rather than to the cold zone, but it is at the edges of that zone. The noun *hoo* is attached to the predicate because the speaker

knows that it is not particularly warm this year.[9]

Notice that *hoo* can only appear in *kurabe-tara* and *kurabe-ru-to*:

(24) a. ??Kotosi-wa   kyonen -**yori**   atatakai-**hoo**-da.

   This year-TOP last year-than   warm-direction-PRED

   'lit. This year is kind of warmer than last year.'

 b. ??Kyonen-ni   **kurabe(-te)**   kotosi-wa   atatakai-**hoo**-da.

   Last year-DAT compare-TE   this year-TOP   warm-direction-PRED

   'lit. This year is kind of warmer than last year.'

 c.   Kyonen-ni   **kurabe-tara**   kotosi-wa   atatakai- **hoo**-da.

   Last year- DAT compare-COND   this year-TOP   warm-direction-PRED

   'Compared to last year, this year is kind of warm.'

 d.   Kyonen-ni   **kurabe-ru-to**   kotosi-wa   atatakai-**hoo** -da.

   Last year-DAT compare-PRES-COND this year-TOP   warm-direction-PRED

   'Compared to last year, this year is kind of warm.'

Hoo cannot appear in *yori* and *kurabe(-te)* comparatives, because these comparatives do not locate an object in a zone by positing a contextually determined standard. Here, we can say that *hoo* has a function of hedge (Lakoff, 1972).

3.8 Absolute gradable adjectives (Japanese)

The third diagnostic is concerned with absolute gradable adjectives such as *maga-tteiru* 'bent'. These can occur in *yori* and *kurabe-te* comparatives but not in *kurabe-tara* and *kurebe-ru-to*:[10]

(25) a. Kono   sao-wa   ano sao-**yori**   maga-tteiru.

   This   rod-TOP that rod-than bent-STATIVE

   'This rod is more bent than that rod.'

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[9] Therefore, the sentence with *-hoo* cannot co-occur with an intensifier:

(i) * Kotosi-   wa   totemo atatakai -**hoo**   -da.
   This year-TOP very   warm-direction   -PRED
   'It is very kind of warm this year.'

[10] Since absolute gradable adjectives do not allow one to posit a contextually determined standard, implicit comparisons with absolute gradable adjectives never induce implicatures.

b. Ano sao-**ni** **kurabe(-te)** kono sao-wa maga-tteiru.

That rod-DAT compare-TE this rod-TOP bent-STATIVE

'This rod is more bent than that rod.'

c. ??Ano sao -ni **kurabe-tara** kono kasa-wa maga-tteiru.

That umbrella-DAT compare-COND this rod-Top bent-STATIVE

'Compared to that rod, this rod is bent.'

d. ?? Ano sao-ni **kurabe-ru-to** kono sao-wa maga-tteiru.

That rod-DAT compare-PRES-COND this rod-TOP bent-STATIVE

'Compared to that rod, this rod is bent.'

In the context indicated in Figure 2, (25c) and (25d) are odd because *kono sao* 'this rod' is already bent. It is not necessary to compare it with *ano sao* 'that rod' in order to say that *kono sao* 'this rod' is bent.

Figure 2

Kono sao 'this rod':   *Ano sao* 'that rod':

3.9 Discourse structures (Question-answer structures) (Japanese)

As the examples in (26) show, only an explicit comparison (26B1) is natural for a reply to a wh-question:

(26) A: Taro-to Hanako-de-wa **dotira-ga** se- ga takai-desu-

Taro-and Hanako-PRED-TOP which-Nom back-Nom tall-PRED.POLITE-

ka ?

Q

'Who is taller Taro or Hanako?

B1: Taro-no hoo-ga (Hanako-**yori**) se-ga takai-desu.

Taro-Gen direction-Nom Hanako-than height-Nom tall-PRED.POLITE

'Taro is the taller of the two'

B2: ??Hanako-ni **kurabe-tara** Taro-wa se-ga takai-desu.

Hanako-DAT compare-COND Taro-Top height-Nom tall-PRED.POLITE

'Compared to Hanako, Tom is tall.'

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B3: ??Hanako-ni   **kurabe-ru-to**   Taro-wa   se-ga   takai-

Hanako-DAT   compare-PRES-COND Taro-TOP   height-NOM   tall-

desu.

PRED.POLITE

'Compared to Hanako, Tom is tall.'

Note that (26B1) uses the special phrase *no hoo*. If *no hoo* is used with the *yori*-comparatives, the sentence conventionally implies the speaker is selecting one element rather than another. That is to say, (26B1) presupposes that there are only two choices, A and B, in the given context.[11]

However, the judgment is reversed if we posit a polar question. That is, only (27B3) and (27B4) are natural for a reply to a polar question about Taro's height:

(27) A: Taro- wa   se-ga   takai-desu-ka?

Taro- TOP   back-NOM   tall-PRED.POLITE-Q

'Is Taro tall?'

B1: ??Soo desune.   Taro-wa   Hanako-**yori**   se-ga   takai-desu.

Let's see   Taro-TOP   Hanako-than   height-NOM   tall-PRED.POLITE

'Let's see. Taro is the taller of the two' (alternative comparison)

B2: ??Soo desunee.   Hanako-ni   **kurabe(-te)**   Taro-wa   se- ga   takai-

Let's see.   Hanako-DAT   compare-TE   Taro-TOP   height-Nom   tall-

desu.

PRED.POLITE

'Let's see. Taro is taller than Hanako.'

---

[11] Therefore, even though the following sentences are explicit comparisons, it is not natural to use them in reply to (26A):

(i) (As a reply to (26A))
 a. # Taro-wa   Hanako -**yori**   se-ga   takai.   (explicit comparison)
     Taro-TOP   Hanako-than   back-NOM   high
     'Taro is taller than Hanako.'
 b. # Taro-wa   Hanako-ni **kurabe(-te)**   se   -ga   takai.   (explicit comparison)
     Taro-TOP Hanako-to compare-TE   height-NOM tall
     'Taro is taller than Hanako.'

This is because question (26A) considers the relation between Taro and Hanako, but (ia) and (ib) imply that Hanako is a new information.

B3: Soo desunee. Hanako-ni **kurabe-tara** Taro-wa se-ga takai-
Let's see Hanako-DAT compare-COND Taro-TOP height-Nom tall-
desu.
PRED.POLITE
'Let's see. Compared to Hanako, Taro is tall.'

B4: Soo desunee. Hanako-ni **kurabe-ru-to** Taro-wa se-ga
Let's see. Hanako-DAT compare-PRES-COND Taro-TOP height-Nom
takai-desu.
tall-PRED.POLITE
'Let's see. Compared to Hanako, Taro is tall.'

Based on these examples, we can safely conclude that *kurabe-tara* and *kurabe-ru-to* takes the truth-value of the main proposition into account.

3.10 Summary of sections 3

The diagnostics adduced in section 3 support the argument that there are two modes of comparison, explicit comparison and implicit comparison and they are semantically different. We can summarize this section as follows:

(28) (Summary: descriptive)
a. In English, explicit comparison is one in which a comparative morphology (-*er/more*) is used and implicit comparison is one in which an unmodified positive form of a gradable predicate is used.
b. In Japanese, comparative morphology does not occur in a predicative use of a gradable adjective, and yet there is a distinction between explicit comparison and implicit comparison. The *yori* and *kurabe*(-*te*) constructions mark explicit comparisons, while the *kurabe-tara* and *kurabe-ru-to* forms mark implicit comparisons. It is likely that the conditional morphology contributes to the semantics/pragmatics of implicit comparison in Japanese.[12]
d. Implicit comparison takes into account the truth-value of the proposition in the main clause based on a linguistically expressed standard unlike explicit

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[12] According to one analysis of the semantics of *yori* and *kurabe(-te)*, Japanese has an invisible degree morpheme like the English –*er/more* that combines with a positive form of an adjective (e.g. Beck et al., 2004). Another possibility is that there is no such thing as a null comparative morpheme in Japanese (Kennedy, 2007b). In this view, what distinguishes implicit and explicit comparisons in Japanese is not the semantics of the main clause, but the semantics of the comparative clause/phrase.

comparison. In the latter, what matters is the ordering between a target and a standard of comparison on a given scale.

The following figure shows the parametric variation between implicit and explicit comparisons in English and Japanese:

Figure 3: Implicit and explicit comparisons in English and Japanese

English
- *More/-er* --- explicit comparison
- *Compared to, with respect to*, etc. --- implicit comparison

Japanese
- *Yori, kurabe(-te)* --- explicit comparison
- *Kurabe-tara, kurabe-ru-to* --- implicit comparison
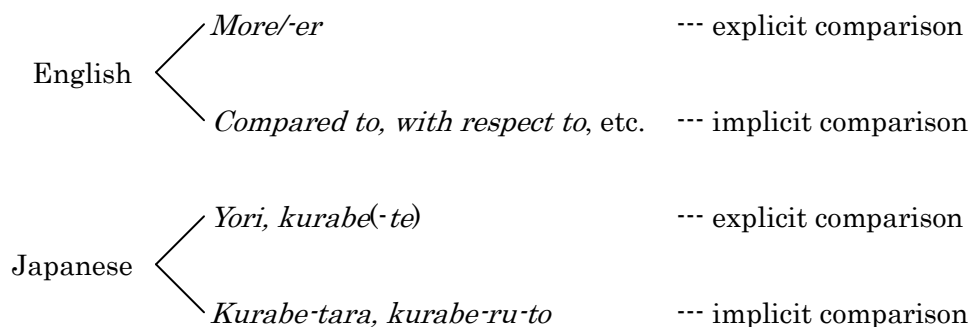
One of the reviewers pointed out that the distinction between explicit comparison and implicit comparison can be captured by the notion of the 'tightness' of interclausal linkage. Explicit comparison is tighter than implicit comparison. According to the reviewer, "tightness of interclausal linkage is, in principle, positively correlated with 'symbolicity' (decontextualization) and negatively correlated with indexicality (contextualizedness)." The notion of tightness seems to play an important role in functional linguistics (Silverstein, 1976; Lehmann, 1988).

However, this hypothesis does not naturally explain the Japanese comparatives. In Japanese implicit comparison and explicit comparison can both be expressed using the verb *kurabe* 'to compare.' Note that *ni kurebe-te* 'DATE-compare-TE' and *ni kurabe-tara* 'DAT-compare-COND' are morphosyntactically similar in that *te* and *tara* are subordinators. What they differ in is their semantics. That is, *ni-kurabe-te* behaves semantically like *yori* but *ni-kurabe-tara* does not.[13] This indicates that the pragmatic distinction between implicit and explicit comparison is based on a core difference in semantics.

4 Pragmatics of implicit comparison: preliminary discussion

13 Muraki (1991) and Francis and Yuasa (2008) argue that semantically, *ni kurbe-te* can be analyzed as a deverbal postposition that is synonymous with *yori*, but that morphosyntactically, *kurabe* must still be considered a verb. Francis and Yuasa (2008: 74) cite *ni kurabe-te* as an example to support the idea that "semantic properties can change faster than syntactic properties in the process of grammaticalization."

Now, let us consider our main theme, the pragmatic aspects of implicit comparison. In the following sections, we will consider the status of the implicatures in implicit comparison and how they arise. Implicit comparison has implicatures that explicit comparison does not have. Each of the sentences in (29) contains two implicatures in (30):

(29) a. Compared to Tom, Jim is tall.
     b. Tom-ni   kurabe-tara   Jim-wa   se-ga   takai.
       Tom-DAT compare-COND Jim-TOP height-NOM tall
       'Compared to Tom, Jim is tall.'

(30) a. Tom is not tall.
     b. Jim is not definitely tall. (possibly borderline)

Figures 4 and Figure 5 diagram the situations that the sentences in (29) denote:

Figure 4: Situation 1   **Figure 5** : Situation 2
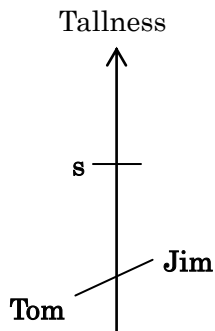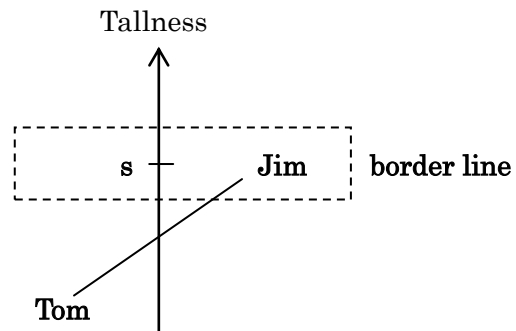
[**s** = contextually determined standard]

In order to investigate the source of the two implicatures in (29), we will propose two potential explanations of these implicatures: the symmetrical approach and the asymmetrical approach. In the symmetrical approach, the two implicatures in implicit comparison are considered to arise from a single processing principle, the economy of standard. In this view, both of the implicatures have the same status because they are derived simultaneously.

In the asymmetrical approach, on the other hand, the two implicatures in implicit comparison are considered to have a different status from each other. This approach is asymmetrical because in it, the derivation of the implicature from the main clause is considered to 'depend on' the existence of the implicature from the standard. We will argue for the former approach.

Before considering the analyses involved in each approach in detail, let us carefully examine the empirical facts concerning the two implicatures in implicit comparison.

4.1 Implicature from the standard

As mentioned in the introduction, there is an implicature that the NP of the comparative (or conditional) clause is construed as low on the scale of the gradable predicate (e.g. tallness):

(31) Compared to Tom, Jim is tall.
　　　→Tom is not tall.

The sentence becomes unnatural if we use a standard that is construed as high:

(32) Compared to $\left\{\begin{array}{l} \text{a gymnast} \\ \text{??a basketball player} \end{array}\right\}$, Tom is tall.

(33) Compared to $\left\{\begin{array}{l} \text{a homeless person} \\ \text{??a company executive} \end{array}\right\}$, Jim is rich.

(34) Compared to $\left\{\begin{array}{l} \text{Alaska} \\ \text{??Florida} \end{array}\right\}$, it is warm here.

The reason why one sentence in each of the pairs in (32) through (34) is odd is that there is a conflict between its low scale implicature and our encyclopedic knowledge.

Notice that if the main sentence in the construction is negative, the scale is reversed:

(35) Compared to $\left\{\begin{array}{l} \text{a basketball player} \\ \text{??a gymnast} \end{array}\right\}$ Sam is $\left\{\begin{array}{l} \text{not tall.} \\ \text{short} \end{array}\right\}$

In (35), a basketball player is construed as 'low' on the scale of 'not tallness' or 'shortness.' That is to say, the scale is reversed from tallness to shortness if a sentence is negative or if a positive sentence contains a 'negative adjective' like *short*, which is antonymous to *tall*, as shown in Figure 6:[14]

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[14] 'Negative adjectives' are different from 'positive adjectives' in two ways. First, negative adjectives license negative polarity items, but positive adjectives do not, as in (i):

(i) It was {foolish/*clever} of her to even *bother to lift a finger* to help.

Figure 6: A scale of shortness/not tallness

Shortness/not tallness

s

Sam
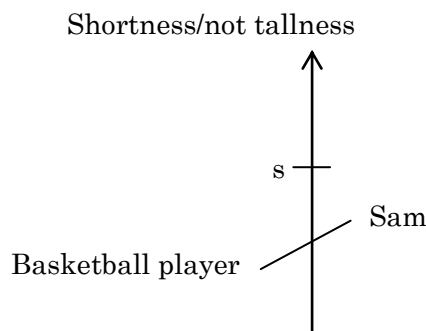
Basketball player

A basketball player is construed as low on this scale. Therefore, (35) is not a counterexample of the low scale implicature of the *compared to* clause.

4.2 Implicature from the main clause

Let us now consider the other implicature, i.e. the implicature from the main clause:

   (36) Compared to Tom, Jim is happy.

       → Jim is not definitely happy.

This implicature shows that *compared to*, unlike the morphological comparative, implies that the (unmodified) positive form is false or borderline for the subject.[15] This is further

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Second, negative adjectives permit downward entailment while positive adjectives permit upward entailment, as shown in (ii) and (iii):

   (ii) It's dangerous to climb Mt. Everest. ⇒ It's dangerous to climb Mt. Everest in winter.
   (iii) It's safe to climb Mt. Hakone. ⇐ It's safe to climb Mt. Hakone in winter.

The two properties are closely related to each other (see Seuren, 1978; Ladusaw, 1979; Linebarger, 1980; Kennedy, 2001 for detailed discussion of polar adjectives).
[15] There is a similarity between the implicature from the main clause in implicit comparison and the invited inference in *if...then* conditionals (Geis and Zwicky, 1971) in terms of negativity. (ia) has a negative implicature like (ib):

(i) a. If you mow the lawn, I'll give you $5.
   b. → If you don't mow the lawn, I won't give you $5.

Conditional perfection—the tendency to move from (ia) to (iib)—is taken to be an instance of invited inference. There is a debate over where the invited inference comes from. There are two main approaches: the R/I-based approach (Atlas and Levinson, 1981; Horn, 1989, 2000, among others) and the Q-based approach (Van der Auwera, 1997a, b; Schwenter, 1999, among others). See also Dancygier and Sweetser (1997) for alternative account of the

illustrated by the fact that in implicit comparison one cannot signal the possibility of going higher up the scale by using the 'suspender' *if not* (Horn, 1972), but it is possible in explicit comparison. Compare examples (37a) and (37b):

(37) a. *Compared to Tom, Jim is happy, if not (more) ecstatic.

    b. Jim is happier than Tom, if not more ecstatic.

      (cf. Jim is happy if not ecstatic.)

(37a) is not acceptable because there is a negative implicature that 'Jim is not definitely happy' in implicit comparison. *Not happy* and *ecstatic* are not on the same scale (a Horn scale), because they are not equally lexicalized (Horn, 1972; Grice, 1975; Gazdar, 1979; Levinson, 1983, 2000).

However, if we add *even* to the *compared to* clause, the sentence becomes natural:[16]

(38) *Even* compared to Tom, Jim is happy, if not (more) ecstatic.

This is because *even* cancels the preexisting negative assumption that "Jim is not happy" and makes the truth-value of the main clause true. In (38), *happy* and *ecstatic* are ordered along the same Horn scale; therefore, the sentence is natural.

4.3 Borderline case

The implicatures in the main clause of implicit comparison are not uniform. That is to say, the truth-value of the main clause does not always have to be clearly false. It can be borderline:

(39) (Context: Mary witnesses a male committing a crime in the street. A police officer
    asks her whether the suspect is tall, but she cannot decide whether or not he is.)
    Mary: Well, compared to my brother, the suspect is tall.
    (a) →The suspect is not tall.
    (b) → It is possible that the suspect is not tall.

---

phenomenon within the mental-spaces framework. Since this paper focuses on the pragmatics of comparison, we will not get into the debate over the inferences of *if...then* conditionals. Notice that a contextually determined standard is not required in the *if...then* conditionals.

[16] I would like to thank a member of the audience at the 2007 LSA Annual Meeting for pointing out this fact to me.

In this context, the speaker seems to imply (39b) rather than (39a). The implicature of (39b) is epistemically weaker than (39a). This example shows that the implicatures in the main clause of an implicit comparative are not uniform.

4.4 Scalar conversion

There is a phenomenon of scalar conversion from low scalar construal to high scalar construal. This section argues that *even* and the free choice *any* cause the phenomenon.

4.4.1 *Even* and *-temo*

As we have seen in the previous section, if the scalar additive particle *even* is inserted into a clause with *compared to*, the standard of comparison is construed as **high** rather than low on a given scale, as shown in (40):

    (40) Even compared to {a basketball player/?? a gymnast}, Jim is tall.

We can state the presupposition of (40) with a basketball player as a standard of comparison as follows[17]:

    (41) Presupposition of *even compared to a basketball player, Jim is tall.*
        (a) $\exists x[C(x) \wedge x \neq$ a basketball player $\wedge$ Jim is tall, compared to x]

                                      (Existential presupposition)
        (b) $\forall x[x \neq$ a basketball player $\rightarrow$ unlikelihood (Jim is tall compared to a basketball
           player) > unlikelihood (Jim is tall compared to x)]

                                        (Scalar presupposition)

(41a) says that there is some x in the given context C and x is not a basketball player, and Jim is tall, compared to x. (41b) says that the proposition that 'Jim is tall compared to a basketball player' is more unlikely than the proposition that 'Jim is tall compared to x'.

    In Japanese, the concessive conditional marker *-temo* converts the scalar construal from low to high:

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[17] If (40) is a negative sentence, there will be two possible explanations for the presupposition of the sentence, one deriving from scope theory (Karttunen and Peters, 1979; Wilkinson, 1996; Nakanishi, 2006; among others) and the other deriving from polarity theory (Rooth, 1985; Rullmann, 1997; Giannakidou, 2007; Yoshimura, 2007, among others). Roughly speaking, scope theory posits only one lexical item for *even*; its scope interaction with other operators (e.g. negation) accounts for the positive and negative cases of *even*. Polarity theory, on the other hand, posits at least two distinct lexical items for *even*.

(42) {Basuketto/ ?? taisoo}   sensyu-ni   kurabe-**temo**   Jim-wa   se-

       Basketball/gymnastics player-DAT compare-CONCE.COND Jim-TOP height-

       ga   takai.

       NOM tall

       'Even compared to {a basketball player/ ?? a gymnast}, Jim is tall.'

(42) is natural with a basketball player, but not with a gymnast, as the standard of comparison.[18]

The scale of (42) with a basketball player as the standard of comparison is diagramed in Figure 7:

Figure 7: Scale of (42) with a basketball player
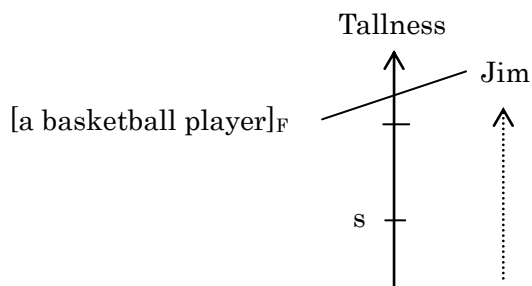
Here, the concessive conditional sentence with a basketball player as a standard of comparison cancels the preexisting assumption that 'Jim is not tall' and raises Jim's level above that of a basketball player.

4.4.2 Free-choice *any* and wh-morpheme plus –*temo* in Japanese

The free-choice *any* also overrides low scale implications. (43a) is semantically similar to (43b)[19]:

---

18 Notice that in Japanese the scalar additive particle *sae* cannot combine with the conditional marker *tara* 'if':

(i) *{Basuketto/ taisoo}   sensyu-ni kurabe-<u>tara-sae</u>   Jim-wa se-   ga   takai.

    Basketball/gymnastics player-DAT compare-COND-even Jim-TOP   height-Nom tall

    'Even compared to {a basketball player/ ?? a gymnast}, Jim is tall.'

In English it is possible to represent a concessive conditional meaning by combining the conditional marker *if* with *even* (i.e. *even if*). But in Japanese we must use the marker *temo* in order to express a concessive conditional meaning (See Fujii, 1989).

19 I would like to thank Chris Kennedy for pointing out this scalar conversion phenomenon.

(43) a. Compared to **anyone**, Jim is tall.

      b. <u>Even</u> compared to <u>the tallest person</u>, Jim is tall.

Lee and Horn (1995) argue that a free-choice *any* is semantically equivalent to a 'generic indefinite' (Diesing 1992) and it can be paraphrased by *even* plus a (contextually appropriate) superlative. Thus, (43a) can be paraphrased by (43b). This *any* is a free-choice *any* because it can be modified by *almost* or *absolutely*:[20]

(44) Compared to almost anyone, Tom is tall.

Notice that the meaning of free choice is expressed by using a wh-morpheme and the concessive marker -*temo* 'even if' in Japanese:

(45) **Dare**-to   kurabe-**temo**   Tom-wa   se   -ga   takai.

      Who-with   compare-CONCE.COND   Tom-Top   height- Nom   tall

      'Compared to anyone, Tom is tall.'

5 Symmetrical approach to the implicatures of implicit comparison

Section 4 has pointed out various pragmatic aspects of implicit comparison. This section will analyze the two implicatures of implicit comparison more theoretically. We will consider the status of these two implicatures and how they are derived. We will posit two approaches to solve these problems, the symmetrical (economy-based) approach and the asymmetrical (dependency) approach.

5.1 Implicit comparison vs. positive form

Before introducing the symmetrical (economy-based) approach to implicit comparison, we need to consider the following question: Why does the speaker use implicit comparison, rather than a simple sentence with a positive form like (46b) or (46c) in a given context?:

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[20] As Lee and Horn (1995: 4) argue, if *any* is interpreted universally, it can be modified by *absolutely* but if it is interpreted existentially, this is not possible:

    (i) a. Alfred will eat any food.   (Fauconnier, 1975)

       b. Alfred will eat absolutely/almost any food.   (Fauconnier, 1975)

    (ii) a. Alfred didn't eat any food.

       b. *Alfred didn't eat absolutely/almost any food.

(46) a. Compared to Tom, Jim is tall.

     b. Jim is not tall.

     c. Jim is tall.

Obviously, (46a) is longer and more complex than (46b) and (46c). We can explain the motivation behind implicit comparison by using Horn's Division of Pragmatic Labor. Horn (1989: 304) defines this concept as follows:

(47)

The use of a longer, marked expression in lieu of a shorter expression involving less effort on the part of the speaker signals that the speaker was not in a position to employ the simpler version felicitously. (...) There is a correlation between the stylistic naturalness of a given form, its relative brevity and simplicity, and its use in stereotypic situations; this reflects the operation of the R Principle. The corresponding periphrastic forms, stylistically less natural, longer, and more complex, are restricted, via Q-based implicature, to those situations outside the stereotype, for which the unmarked expression could not have been used appropriately.   (Horn, 1989: 304)

In (46) we can say that the speaker of (46a) uses implicit comparison because he or she thinks that shorter and unmarked expressions like (46b) and (46c) cannot express indirect or weak negative implicature. In other words, the speaker of (46a) is trying to change the evaluation 'indirectly' by introducing a new standard of comparison.[21]

5.2 Economy principle

Horn's Division of Pragmatic Labor can explain why the speaker chose implicit comparison rather than the positive form of the adjective. But this does not explain the mechanism by which the implicature of implicit comparison arises.

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[21] The classical example of the Division of Pragmatic Labor is the phrasal causative vs. the lexical causative. McCawley (1978) points out that sentences (i) and (ii) are different in meaning:

  (i) He caused the sheriff to die.
  (ii) He killed the sheriff.   (McCawley, 1978: 249)

McCawley (1978: 249) argues that (i) "would be an inappropriate thing to say if the person in question shot the sheriff to death, since there is an alternative available involving a less complex surface structure." He argues that a periphrastic causative as in (ii) is interpreted as referring to 'indirect' causation.

In the symmetrical approach, the economy principle can explain the nature of implicatures in implicit comparison. This principle ensures that a truth-conditional interpretation is achieved with 'no more effort than is necessary' as shown in:

(48) Economy of 'standard of comparison': It is a violation of economy to use a special form to introduce a new standard, if the truth-value of the main proposition in implicit comparison does not change.

This principle says that it is preferable to have as few standards as possible. That is, if we introduce a new standard, the truth-value of the main proposition has to change. Therefore, if we bother to introduce a new explicit standard, there must be good reason for doing so. Therefore, it is possible to say that the economy principle is a natural extension of Horn's Division of Pragmatic Labor. I will argue that this economy principle is different from (Neo)-Gricean maxims in that it is a truth value oriented principle.

Recall that the situations in which it is acceptable to employ the implicit comparison 'compared to x, y is tall' are those diagrammed in Figure 8 and Figure 9:
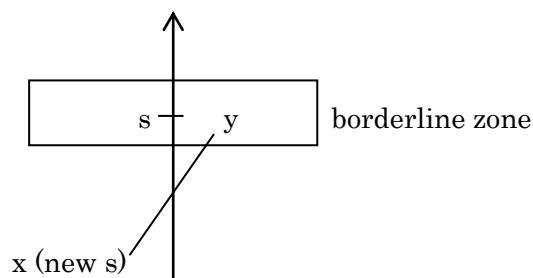
Figure 8: Situation 1   **Figure 9**: Situation 2
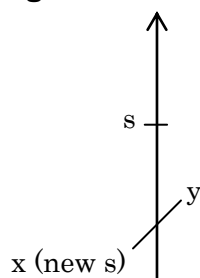
The economy principle can be tested by using the following scheme:

(49) Schema: a. (Compared to x, [y is Gradable P]).   (English)
            b. (x-ni kurabe-tara [y-wa Gradable P])   (Japanese)

Within the domain of the square brackets, i.e. […], the truth value of proposition in the main clause is calculated without including the comparative clause. In this situation, the truth value is calculated based on a contextually determined standard. (For example, the truth value of the proposition 'this building is tall' is calculated based on a contextually determined standard.) Within the domain indicated by the parentheses, i.e. (…[…]), the truth value of the proposition in the main clause is calculated based on the explicit standard

of comparison, namely x. Table 1 shows the possible patterns of truth value in implicit comparison:

Table 1: The possible patterns of truth value in implicit comparison

Truth value of [...]	Truth value of (...[...])	Result
a. F	T	Good
b. ?	T	Good (borderline case)
c. T	F	Bad
d. ?	F	Bad
e. F	F	Bad
f. T	T	Bad

Let us first look at the bad cases. Rows (c), (d), and (e) in Table 1 are all bad because the truth value of the entire sentence (...[...]) is false and violates the **maxim of quality**: 'Do not say what is considered to be false.' For example, (50) is an example of row (c):

(50) (Context: Tom is tall but he is <u>not</u> taller than a basketball player.)
  Compared to a basketball player, Tom is tall.

(51) is an example of row (d):

(51) (Suppose that a soccer player is a borderline case.)
  Compared to a basketball player, a soccer player is tall.

(52) is an example of row (e):

(52) Compared to a basketball player, a gymnast is tall.

Row (f) is important. It is bad not because it violates the maxim of quality, but because it violates the general principle of economy of standard. (53) is an example of row (f):

(53) (Context: Tom is the tallest man in the United States)
  ?? Compared to a basketball player, Tom is tall.

One may presume that (53) implies that Tom is extremely tall, but it does not induce such an implicature. In fact, the sentence is very odd. The reason why it is odd is that the truth-value of the proposition in the main clause does not change even if we introduce a new standard, in this case, a basketball player. This sentence violates the principle of economy of

standard in (48).[22] Another example for row (f) is shown in:

(54) (Context: Tom is a tall basketball player.)
    ?? Compared to a gymnast, Tom is tall.

(54) would be odd in this context. The speaker does not need to posit the explicit standard, i.e. *a gymnast* in this context, because it does not affect the truth value of the proposition in the main clause. The above discussion suggests that for implicit comparison, all that is relevant is the truth-value of the proposition of the main clause.

The good rows are (a) and (b). Row (a) is a case where the truth value of the proposition without an explicit standard is clearly false, but the truth value of the proposition with an explicit standard is true. Row (b) is a **borderline case** where the truth value of the proposition without an explicit standard is false but the truth value of the proposition with an explicit standard is a borderline.

The economy of standard constraint enables us to explain the nature of the two implicatures. The principle says that it is preferable to have as few standards as possible. And if we bother to introduce a new explicit standard, there must be good reason for doing so. The only situations in which there is good reason to posit a new explicit standard is those in rows (a) and row (b). Here, the speaker makes a false or borderline proposition true. In order to do so, we must introduce a new standard at the extreme low end of the given scale. We cannot introduce a new standard that is not very different from the contextually given standard, because that would not allow us to change the truth value of the proposition in the main clause. Because the two implicatures can be explained by a single principle, they are symmetrical, not asymmetrical.

One potential problem for the economy-based explanation is that it wrongly predicts that the following examples are not acceptable:

(55) Even compared to a basketball player, Tom is tall.
(56) Compared to anyone, Tom is tall.

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[22] The oddness in (53) can also be captured in terms of discourse structure (e.g. Roberts, 1998):

(i) a. Is Tom tall?
    b. ?? Yes, compared to a basketball player, Tom is tall.

(ib) sounds odd (and redundant) because the speaker in (ib) is answering to the question under discussion by introducing the unnecessary standard (i.e. a basketball player). I thank Yusuke Kubota for bringing this to my attention.

In (55) and (56), the truth value of the main clause and that of the entire sentence are both true. Therefore, the principle of economy of standard wrongly predicts that they are ill-formed.

Why are sentences (55) and (56) acceptable? Obviously because of the presence of *even* and *any*. Recall that if *even* or *any* are used in implicit comparison, the sentences are interpreted as superlatives that give rise to a universal meaning (Section 4.4.2). Thus, the sentences in (55) and (56) are equivalent to saying that *Tom is the tallest man (in the given context)*. Clearly, superlatives are different from the positive sentences (Tom is tall) in terms of quantification. I would argue that the economy of standard does not apply to (55) and (56), because implicit comparison with *even/any* is not a pure 'adjectival' sentence in terms of quantification. (55) and (56) do more than just posit a new standard with respect to Tom's height.

5.3 Economy of standard of comparison: Whose economy?

The economy principle is neither stored in the particular lexicon nor is it one of the (neo-) Gricean maxims. It is well-known that the definition of the R-principle and the Q principle are based on economy.

(57) a. The R-principle: Say no more than you must.   (speaker's economy)
     b. The Q-principle: Say as much as you can.   (hearer's economy)

R-implicature is an UPPER bounding correlate of the law of least effort, which dictates minimization of form. (58) and (59) are examples of R-based implicauture:

(58) Tom broke a finger yesterday.
         → The finger was one of Tom's.
(59) Tom ate the cake.
   →Tom ate the whole cake. (Harnish, 1976)

In these examples, 'p implies more than p.' Therefore, R-implicature is basically 'positive' in nature.

Although the economy of standard principle is similar to the R-principle in the sense that they both use the law of least effort, the notion of economy in this principle seems to be neither a speaker-oriented economy nor a hearer-oriented economy. The principle of the economy of standard is a truth-value oriented economy:

(60) Economy Principle: Calculate the truth-value with no more effort than is necessary.

The principle of economy of standard plays an important role in our communication. Based on the above discussion, I would like to propose that there is a third type of implicature, the computational implicature, as shown in figure 10:

Figure 10: Three types of implicature

Conversational implicature

Implicature Computational implicature

Conventional implicature
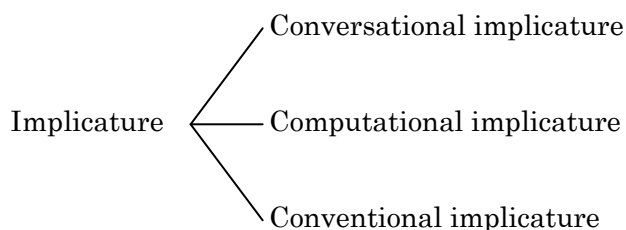
The computational implicature is the product of the application of the principle of economy of standard.

6 Asymmetrical approach to the pragmatics of implicit comparison

This section focuses on the alternative asymmetrical approach. In this approach, an asymmetrical strategy is used for the two implicatures because the implicature from the main clause depends on the implicature from the standard. If the implicature from the standard is not satisfied, the implicature from the main clause does not arise.

6.1 Is the implicature from the standard conventional?

Sentence (61) implies that Tom is not tall:

(61) Compared to Tom, Jim is tall.
→ Tom is not tall.

Where does the low inference implicature come from? Does it derive from the lexicon (conventionalized implicature) or from one of the cooperative principles (conversational implicature)? It is possible to check whether this implicature is conventionalized or not by using the tests of cancelability and detachability. If an implicature is detachable, but not cancelable, the implicature is conventional, but if it is both nondetachable and cancelable, it

is conversational (Grice, 1989; Sadock, 1978).

(62) Cancelability:

    Compared to Tom, Jim is tall. #And since Tom is tall, that makes Jim really tall.

The fact that the low construal implicature is difficult to cancel suggests that the implicature is conventional. Notice that the cancellation of the implicature from the standard automatically triggers the cancellation of the implicature from the main clause. The reason why (62) is not natural may be that the sentence tries to cancel the two implicatures simultaneously.

    Next, let us test the implicature by using the detachability test:

(63) Detachability:

    a. Compared to Tom, Bill is tall.   (→Tom is short.)
    b. If Bill is compared to Tom, he is tall. (→Tom is short)
    c. Considering Tom, Bill is tall.   (→Tom is short.)

Examples (63a-c) all imply that 'Tom is short.' This might lead us to conclude that the implicature is not detachable and is therefore a conversational implicature. Therefore, there seems to be a paradox:

（64）The cancelability test suggests that the inference is conventional, but the detachability test suggests that the inference is conversational.

It seems that there are two possible approaches to this paradox. The first approach is to consider that the implicature from the standard is conversational because the implicature from the standard is more cancelable than the typical conventional implicature:

(65) a. Tom is a politician, therefore corrupt. ## There is no connection between politicians and corruption, however.
    b. Compared to Tom, Jim is tall. # And since Tom is tall, that makes Jim really tall.)

(65b) sounds more natural than (65a), although it is not perfectly natural. If we take the view that the implicature from the standard is conversational, we need to account for its source by using one of Grice's Maxims.

The second approach is to consider that the implicature from the standard is conventional. This approach emphasizes that the detachability test is not always unproblematic. To test for non-detachability, we need to posit a set of synonymous expressions, which should share the same implicature. However, as Sadock (1978) points out, the implicature can actually be part of the semantic content of each member of that set. Therefore, it is, in principle, possible to argue that the constructions *compared to*, *considering*, and *if…then* all possess the same kind of 'conventional implicature.' These three constructions all share a conditional flavor.

Notice, however, that we cannot easily say that an implicature is part of the phrase *compared to*. Observe the following examples:

(66) a. Compared to Tom, Bill is tall.
   b. Compared to Tom, Bill is taller.

Although sentence (66a) implies that 'Tom is not tall', sentence (66b), to the extent that it is acceptable, does not imply such a negative implication (Chris Kennedy p.c.). This suggests that it is not the simple expression *compared to* but the construction 'compared to x, y is a gradable predicate' that possesses the conventional implicature.

The above discussion suggests that it is not clear whether the implicature from the standard is conventional or conversational. (We will come back to this problem later. I will argue that this is not a problem for the economy-based account because according to that theory, the implicature of implicit comparison is neither conversational nor conventional but computational.)

6.2 Implicature from the main clause is conversational
Now let us consider the implicature from the main clause. Sentence (67a) implies (67b):

(67) a. Compared to Tom, Jim is tall.
   b. → Jim is not definitely tall. (possibly borderline)

This implicature shows that *compared to*, unlike the morphological comparative, implies that the (unmodified) positive form is false (or unknown) of the subject. This implicature seems to be conversational, because it is both cancelable and non-detachable:

(68) Cancelability test (context: the speaker is asked weather Jim is tall.)
   Compared to Tom, Jim is tall. In fact, Jim is tall compared to anyone.

(69) Non-detachability test

    a. Compared to Tom, Jim is tall.

    b. Considering Tom, Jim is tall.

    c. If Jim is compared to Tom, Jim is tall.

In (68) the speaker reevaluated Jim's tallness and cancelled the negative implicature induced by the previous utterance. As for the non-detachability test, any other way of expressing the literal content of (69a) would license the same implicature that 'Jim is not definitely tall.' Because the implicature is both cancelable and non-detachable, it is safe to consider this implicature to be conversational.[23] Then how can the implicature arise? It seems that the implicature derives from Maxim of Quantity: Say as much as you can. We can say that the Q-implicature arises based on a 'substitutive' scale on the assumption that *compared to* is a kind of focus phrase[24]:

(70) The scale for *compared to Tom, Jim is tall.*

    Compared to [an ordinary standard], Jim is tall.

  ↑ Compared to [Tom]$_F$, Jim is tall.

By saying that *compared to Tom, Jim is tall*, the speaker implies that 'compared to an ordinary standard, Jim is NOT tall', via the Q-principle.[25] *Compared to* is a kind of a focus construction because it induces an alternative element x to a focused element (Rooth, 1985, 1992). However, it is important to notice that we must posit an additional constraint: that x is a contextually determined standard or a person above the standard. Therefore, we can say that the sentence *compared to* [*Tom*]$_F$, *Jim is tall* presupposes (71):

(71) (a) $\exists x[C(x) \land x \neq Tom]$

    (b) $x \geq$ contextually determined standard

C in (71a) is a contextual domain variable that is fixed by context.

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[23] The implicature in the main clause is also reinforceable, which provides further support for the argument that the implicature is conversational:

  (i) Compared to Tom, Bill is tall but Bill is not definitely tall.

[24] The fact that x in 'compared to x' cannot be a de-accented noun also supports the idea that it is a kind of focus construction.

[25] The alternative element may be a person who corresponds to a contextual ordinary standard.

6.3 The dependency of the implicature from the main clause

Notice that the Q-implicature does not arise without the implicature from the standard. If the focused element is higher on the scale than its alternative, the Q-implicature does not arise. That is, the conversational implicature depends on the conventional implicature. For example, the following scale is bad because there is no higher element.

(72) **Bad scale**: (No Q-implicature)
    The scale for ??*Compared to a basketball player, Jim is tall.*
        Compared to ꜰ [a basketball player], Jim is tall.
    ↑Compared to [an ordinary standard], Jim is tall.

Since the sentence *compared to a basketball player, Jim is tall* does not satisfy the implicature from the standard, the implicature from the main clause cannot arise.

7 Which approach is preferable, the asymmetrical approach or the symmetrical approach?

We have considered two possible explanations for the implicatures in implicit comparison, a symmetrical approach and an asymmetrical approach. We can summarize each approach as follows:

(73) Asymmetrical approach:
    (a) Low scale implicature from the standard can be conventional because it is not cancelable (But the result changes to conversational, if we invoke the detachablility test.)
    (b) The implicature from the main clause is conversational (a quantity implicature).
    (c) The implicature in (b) depends on the implicature in (a).

(74) Symmetrical approach (economy-based approach): The two kinds of implicature are explained simultaneously by the economy principle, the economy of standard of comparison.

Which approach is preferable? I will argue that the symmetrical approach is preferable for the following reasons.
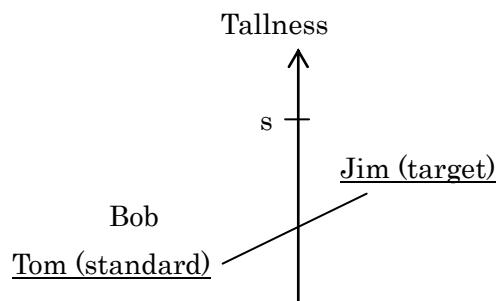
First, the asymmetrical approach cannot explain the nature of the implicature from the comparative clause clearly. A paradox arises, because it is conventional from the standpoint

of the cancelability test, but it is conversational from the standpoint of the detachability test.

Second, the symmetrical approach (economy-based approach) can explain both kinds of implicatures in implicit comparison simultaneously. It does not have to posit a step-by step derivation between the two implicatures.

The third advantage is concerned with the implicature from the main clause. The asymmetrical approach views this implicature as a scalar implicature. This approach has to stipulate that the alternative element (other than the NP) in the comparative clause must be a contextually determined standard in order to induce a proper scalar implicature. Let us consider the situation diagrammed in Figure 11:

Figure 11

In the asymmetrical approach, an alternative element cannot be an element that is between the standard of comparison and the target of the comparison on a given scale. This is because if we posit a situation like the one in Figure 11, the asymmetrical approach wrongly induces the Quantity implicature: that 'compared to Bob, Jim is not tall.' This implicature is in conflict with the situation in Figure 11, at least semantically.[26]

However, the symmetrical approach is not problematic for the situation in Figure 11, because this approach focuses on the truth-value of the main clause, so it does not matter whether there is a person between Tom and Jim on the given scale of height.

A fourth advantage for the economy-based approach is its generality. This approach can also account for the *for* PP phrases. The English *for* PP phrase also works like implicit comparison: [27]

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[26] Notice that the sentence *Compared to Bob, Jim is not tall* can be natural in the situation in Figure 9, if the speaker thinks that there is not a great difference in height between Bob and Jim. If there is in fact only a tiny difference between Bob and Jim, it is difficult to partition Jim into the positive extension and Bob into the negative extension. This can be another example of Crisp Judgment.

[27] Strictly speaking, (75) is not a 'regular' comparative. As Kennedy (2007a) argues, the

(75) Jim is tall for a gymnast.

　　　→ Jim is not definitely tall. (possibly a border line)

　　　→ A gymnast is not tall.

(75) is similar to implicit comparison in the sense that (75) implies negative implicatures. The *for* PP phrase is just like *compared to*. It introduces a new standard of comparison. The principle of economy of standard enables us to explain why there is a difference in acceptability in (76) without assuming the conventional meaning:

(76) Jim is tall for {a gymnast/?? a basketball player}.

According to the principle, it is a violation of economy to use the *for* PP phrase if the new explicit standard does not change the truth value of 'Jim is tall'. Thus, the only situation in which it is possible to use the *for* PP phrase is one in which situation in which the truth value of the proposition 'Jim is tall' (which is calculated based on a contextual standard) is considered to be a false or borderline, and the truth value of the proposition 'Jim is tall' (which is calculated based on *for* PP) is considered to be true. That is why the NP in the *for* PP phrase has to have a low scale value, rather than a high scale value.

　　Based on the above arguments, I conclude that the economy-based approach is preferable. The theoretical implication is that there is a third type of implicature: a computational implicature.

8 Conclusion

　　This paper has developed a pragmatic analysis of implicit comparison. There are two implicatures in implicit comparison. One is the implicature that the standard of comparison is construed as low on a given scale, and the other is that the proposition in the main clause is false or unknown. We have considered the two possible approaches to these implicatures, the symmetrical approach and the asymmetrical approach. From the standpoint of the asymmetrical approach, the implicature from the main clause depends on the implicature from the standard. From the standpoint of the symmetrical approach, on the other hand, the two implicatures are both seen as deriving from a single principle, the principle of economy of standard. This principle states that it is a violation of economy to introduce a new standard if the truth value of the main proposition in implicit comparison does not

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sentence *x is A for an NP* presupposes that x is an NP.

change. That is to say, in implicit comparison, the speaker converts the proposition in the main clause, which is construed as false or unknown, into a proposition that is construed as true by introducing a new standard that is construed as extremely low on a given scale. Notice that the principle of economy of standard enables us to explain the nature of both implicatures at the same time, so that it is unnecessary to consider that the two implicatures have a different pragmatic status. I conclude from this that the symmetrical approach is preferable.

The reason why the principle of economy of standard does not apply to explicit comparison is that in that case, the truth value of the proposition in the main clause does not matter. Japanese is interesting in this regard, because the fact that it lacks comparative morphology makes the main clause in implicit and explicit comparatives syntactically identical. However, although no comparative morphology is used in the environment 'x is A-er than y.' in Japanese, the language does have a distinction between explicit and implicit comparisons.

The notion of economy has so far played an important role in pragmatics. It is used to explain the difference of the Q-principle and the R-principle. The Q-principle is considered to be a hearer-based economy and the R-principle is considered to be a speaker-based economy (Horn, 1989). However, the economy principle discussed in this paper is not a speaker/hearer-based economy. Instead, it is concerned with the economy of a truth-conditional interpretation. This paper has proposed the existence of a third type of implicature, a computational implicature that derives neither from a lexicon nor from a co-operative principle. I hope this paper will shed a new light on the nature of implicature in natural language.

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