The Comparative Morpheme in Modern Japanese

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0. Introduction

Japanese differs from languages like English in that it (usually) has no overt comparative morphology like the English –er/more, as shown in (1):

(1) a. Tokyo-wa Sapporo-yori (-mo) atatakai.
    ‘It is warmer in Tokyo than in Sapporo.’

b. Taro-wa Hanako-ga kaita (-no)-yori (-mo) nagai ronbun-o kaita.
    ‘Taro wrote a longer paper than Hanako wrote.’ (NM=Nominalizer)

Yori in (1) is a marker of standard. Structurally, (1a) is ‘phrasal’ and (1b) is ‘clausal.’ However, in Modern Japanese yori is used in limited environments as the equivalent of the English comparative morpheme more, as shown in (2):

(2) a. Yori ooku-no nihon-jin-ga Denver-yori-(mo) New York
    More many-GEN Japan-people-NOM Denver-than-MO New York
    -ni sun-deiru.
    -LOC live-STATIVE
    ‘More Japanese people are living in New York than in Denver.’

b. Taro-wa yori anzen-ni tokoro-ni hikkoshi-ta.
    ‘Taro moved to a safer place.’

Although many studies have focused on the syntax and semantics of Japanese comparatives like that in (1) (e.g. Kikuchi 1987, Ishii 1991, Ueyama 2004, Beck

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et al. 2004, Hayashishita in press, Kennedy 2007, in press, Bhatt and Takahashi 2008), to the best of my knowledge, little attention has been paid to cases like (2). This may be because the comparative morpheme yori only occurs in special environments. The purpose of this paper is to investigate the syntax and semantics of the comparative morpheme yori in Modern Japanese from synchronic and diachronic perspectives and try to capture the asymmetrical relationship between (1) and (2) in a unified way. More specifically, we will consider the following questions: (i) In what environment does the comparative morpheme yori arise? (ii) Why is the comparative morpheme yori necessary in this environment, and what role does it play in the grammar of comparison? (iii) How did the standard marker yori ‘than’ develop into the comparative morpheme yori ‘more’?

As to question (i), I argue that the comparative morpheme yori is used only if a given sentence cannot otherwise express comparison. I will verify this generalization using two corpuses: Google Japanese and the Asahi newspaper database.

As to question (ii), I argue that the comparative morpheme selects (Kennedy 2007) a comparative phrase/clause (elided or not) and makes it scope over a gradable predicate at the LF so that the sentence can be interpreted as a ‘native’ Japanese comparative. Regarding question (iii), I argue that both language contact and reanalysis are relevant to the development of the comparative morpheme yori.

This paper shows that the directionality of the development from the marker of standard yori to the comparative morpheme yori can support Kennedy’s (2007) idea that the marker of standard, rather than comparative morphology, expresses the meaning of comparison (i.e. ‘greater than’).

1. The Comparative Morpheme Yori vs. the Marker of Standard Yori

Yori in (1) is a marker of standard whereas the underlined yori in (2) is a comparative morpheme. In terms of syntactic category, yori in (1) is a postposition whereas the underlined yori in (2) is an adverb. Three pieces of empirical evidence support the idea that they are categorically different. The first piece of evidence is concerned with deletion. We cannot analyze the underlined yori in (2) as a postposition whose complement is elided, because although Japanese allows the use of a ‘null pronoun’, the postposition/case marker must be dropped along with the NP. Thus, if the postposition –ni is not deleted along with its complement, the sentence becomes ungrammatical:

(3)  Taro-mo  [PP _ (*-ni)]  i-tta.
    Taro-also    _  -to   go-PAST
        ‘Taro also went to a contextually given place.’

If the underlined yori in (2) is a postposition, the sentences are predicted to be ungrammatical but they are natural. This suggests that the underlined yori is not a postposition. The second piece of evidence is the fact that the particle mo can attach to the standard marker yori, but not to the comparative morpheme (Martin 1975). Therefore, the following sentence is ungrammatical:
Third, the comparative morpheme \textit{yori} and the marker of standard \textit{yori} are phonologically different. Although the marker of standard \textit{yori} does not have an accent, in the case of the comparative morpheme \textit{yori}, \textit{yo} is stressed (Martin 1975).

As Martin (1975), Hida (2002) and many Japanese dictionaries point out, Modern Japanese developed a new comparative morpheme usage of \textit{yori}, meaning ‘more’, under the influence of translations from European languages. However, this does not mean that the comparative morpheme can be freely used in Japanese comparatives. The examples in (1) do not use the comparative morpheme, but the examples in (2) do. Why is the comparative morpheme \textit{yori} used in some instances but not in others?

2. Generalization on the Use of the Comparative Morpheme \textit{Yori}

I would like to propose the following (descriptive) generalization:

\begin{enumerate}
\item[(5)] \textbf{Generalization on the use of the comparative morpheme \textit{yori}}: Insert the comparative morpheme \textit{yori} only if a given sentence cannot otherwise express comparison.
\end{enumerate}

Let us apply this descriptive generalization to (1) and (2). Contrary to the examples in (1), the following sentences sound odd because we can express comparison without the comparative morpheme \textit{yori}:

\begin{enumerate}
\item[(6)] a. ?? Tokyo-wa Sapporo-yori-(mo) \textit{yori} atatakai.
\end{enumerate}

\begin{enumerate}
\item[(6)] b. ?? Taro-wa [Hanako-ga kaita (-no)]-yori-(mo) \textit{yori} nagai
\end{enumerate}

On the other hand, the comparative morpheme \textit{yori} is obligatory in (2). If we delete it from (2a), the resulting sentence must be interpreted as a sentence with the expression ‘rather than’, as shown in (7):

\begin{enumerate}
\item[(7)] See Giannakidou and Stavrou (in press) for a discussion of ‘rather than’.
\end{enumerate}
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‘Many Japanese people are living in New York rather than in Denver.’

In (7) the target and the standard are both expressed inside the domain of the predicate, and in this environment we cannot express comparison without the comparative morpheme *yori*.

Furthermore, if we delete the comparative morpheme in (2b), the resulting sentence must be interpreted as a simple sentence with a bare adjective:

(8) Taro-wa anzenna tokoro-ni hikkoshi-ta. Taro-TOP safe place-to move-PAST

‘Taro moved to a safe place.’

The fact that the comparative morpheme *yori* cannot appear in a differential comparative sentence also supports the generalization in (5):

(9) Kono sao-wa (*yori) 10 senchi nagai. This rod-TOP more 10 cm long

‘This rod is 10cm longer.’ (*This rod is 10 cm long.)

As Snyder et al. (1995) and Schwarzschild (2005) point out, Japanese does not allow measure phrases to combine directly with an adjective. Therefore, (9) without *yori* can only mean ‘This rod is 10cm longer.’ We do not need the comparative morpheme *yori* since the sentence can express comparison without it.

3. Corpus study

In this section, we will test whether the proposed generalization on the comparative morpheme *yori* is valid by using two online corpuses: Google Japanese and the *Asahi* newspaper database *Kikuzoo*. I made the following minimal pairs:

(10) a. x-wa y-[yori-mo _ADJ] x-TOP y- than-MO _ADJ

b. x-wa y-[yori-mo _yori ADJ] x-TOP y- than-MO more ADJ

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2 Note that in (7), ‘Denver yori New York-ni’ forms a ‘fixed constituent.’ If we change the word order, the sentence sounds odd:


The standard marker *yori* (=1) does not have this syntactic property. For example, in (1a) ‘Sapporo-yori’ can move to the sentence-initial position. Therefore, it is safe to assume that the standard marker *yori* and the ‘rather than’ *yori* (=7) are lexically different.
According to my generalization, (10b) should be bad because it can express comparison without using the comparative morpheme, although this is not true of (10a). I searched for the strings \([\text{yori-mo} \, \text{ADJ}]\) and \([\text{yori-mo yori} \, \text{ADJ}]\) in the corpora. The particle \(\text{mo}\) is attached so that the first \(\text{yori}\) must be interpreted as a marker of standard.\(^3\) Table (11) shows the frequency of the minimal pair:

(11) Frequency of \(\text{yori}\) (Surveyed online, May 11, 2008)

<table>
<thead>
<tr>
<th></th>
<th>Asahi Newspaper</th>
<th>Google Japanese</th>
</tr>
</thead>
</table>
| 1a. | __ yori-mo tanoshii than-MO fun | 131 hits (100%) | 55,600 hits (99.4%)
| 1b. | __ yori-mo yori tanoshii than-MO more fun | 0 hits (0%) | 343 hits (0.6%)
| 2a. | __ yori-mo atatakai than-MO warm | 21 hits (100%) | 27,100 hits (99.97%)
| 2b. | __ yori-mo yori atatakai than-MO more warm | 0 hits (0%) | 7 hits (0.03%)
| 3a. | __ yori-mo samui than-MO cold | 20 hits (100%) | 33,900 hits (99.99%) |
| 3b. | __ yori-mo yori samui than-MO more cold | 0 hits (0%) | 3 hits (0.009%)
| 4a. | __ yori-mo chiisai than-MO small | 164 hits (100%) | 591,000 hits (99.53%)
| 4b. | __ yori-mo yori chiisai than-MO more small | 0 hits (0%) | 2,800 hits (0.47%)
| 5a. | __ yori-mo kawai-teiru than-MO dry-STATE | 0 hits | 647 hits (100%)
| 5b. | __ yori-mo yori kawa-iteiru than-MO more dry-STATE | 0 hits | 0 hits (0%)
| 6a. | __ yori-mo hirai-teiru than-MO open-STATE | 0 hits | 6,060 hits (99.97%)
| 6b. | __ yori-mo yori hirai-teiru than-MO more open-STATE | 0 hits | 2 hits (0.03%)

We can observe the following points. First, examples of type (b) are far less common than those of type (a). Second, the proportion of examples of type (b) is close to zero. The judgment between (a) and (b) is (almost) categorical.\(^4\) We can observe this tendency more clearly in the Asahi newspaper than in Google Japanese. The above results show that the generalization in (5) is empirically correct.

4. The Job of the Comparative Morpheme in Modern Japanese

\(^3\) I used brackets for the Google Japanese so as to get examples in which the string forms a phrase. If the brackets are omitted, we find many cases in which each lexical element appears separately in non-adjacent positions. I also chose the option ‘search Japanese websites.’

\(^4\) It may be possible to argue that some people treat the comparative morpheme \(\text{yori}\) as an ‘intensifier’ like \(\text{motto}\):

(i) Taro-wa Hanako-yori-mo motto kasikoi.
Taro-TOP Hanako-than-MO MOTTO intelligent
‘Taro is even more intelligent than Hanako.’

(i) implies that both Taro and Hanako are intelligent (e.g. Okumura 1995, Beck et al. 2004).
4.1. Semantics of ‘Native’ Japanese Comparatives

Let us rethink the generalization we have stated more theoretically. The examples in (1) may be called ‘native’ Japanese comparatives because they lack any explicit comparative morphology. There are several approaches for the semantics in (1). One approach is to argue that the relation ‘greater than’ is expressed by MORE (e.g. Von Stechow 1984: 8). Another approach is to argue that the comparative morpheme –er forms a semantic constituent with the than clause at the semantic structure (e.g. Cresswell 1976; Heim 1985). These views lead us to postulate that there is a null comparative morpheme for (1) (e.g. Beck et al. 2004).

Kennedy (2007) proposes an alternative approach in which the marker of standard, not MORE, denotes the relational meaning. As he argues, this approach seems natural if we consider the fact that many languages do not have an overt comparative morphology (Ultan 1972). This approach also seems to be simpler because we do not need to posit a null comparative morpheme for (1). This paper adopts Kennedy’s (2007) view. I will also assume, following Kennedy (in press), that yori is an ‘individual comparison.’ That is, the comparative clause/phrase in Japanese denotes type <e>. The denotations of the standard marker yori and attatakai ‘warm’ are shown in (12) and the LF of (1a) is shown in (13):

(12) a. [yoristandard] = \( \lambda y \lambda g \lambda x. \max(g)(x) > \max(g)(y) \)
    b. [attatakai] = \( \lambda d \lambda z. \text{warm}(z) \geq d \)

(13)

\[
\begin{align*}
S & \Rightarrow \lambda x. \max (\lambda d. \text{warm}(x) \geq d) > \max (\lambda d. \text{warm}(z) \geq d) \\
&D \Rightarrow \lambda g x. \lambda x. \max(g)(x) > \max(g)(z) \geq d \Rightarrow \lambda d \lambda z. \text{warm}(z) \geq d \\
&\text{atatakai ‘warm’} \\
&P & \Rightarrow \lambda y \lambda g \lambda x. \max(g)(x) > \max(g)(y) \\
&\text{yori} \\
&\text{Tokyo-wa} \\
&\text{Sapporo}
\end{align*}
\]

4.2. A sentence with the comparative morpheme yori

4.2.1. Case 1: elided comparative clause/phrase

Thanks to the emergence of the comparative morpheme yori, Japanese can express elliptical comparison. The LF structure of (14) can be represented as (15):

(14) Koko-wa yori anzen-da.
    Here-TOP more safe-PRED
    ‘This place is safer.’

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5 Ultan (1972) states that 32 of 108 languages he surveyed do not have overt comparative morphology.
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(15) $\lambda d.\text{safe}(\lambda x.\text{max}\ (\lambda d.\text{safe}(x)) \geq d) > \lambda d.\text{safe}(\lambda x.\text{max}\ (\lambda d.\text{safe}(\text{context. place})) \geq d)$

\[ \text{Koko-wa} \lambda x.\text{max}\ (\lambda d.\text{safe}(x)) \geq d) > \lambda d.\text{safe}(\lambda x.\text{max}\ (\lambda d.\text{safe}(\text{context. place})) \geq d) \]

'\text{this place}'

\[ \lambda g.\lambda x.\text{max}(g)(x) > \max(g)(\text{context. place}) \]

\[ \lambda d.\text{safe}(\lambda z.\text{safe}(z)) \geq d \]

\[ \text{Contextually determined place} \]

The square box shows the elided part. The comparative morpheme \textit{yori} signals that there is a hidden comparative phrase that scopes over the gradable predicate.

4.2.2. Case 2: Use of Two \textit{Yoris}

(16a) can be paraphrased by (16b), which is a native Japanese comparison:

   -LOC live-STATIVE
   ‘More Japanese people are living in New York than in Denver.’

   -NOM live-STATIVE
   ‘More Japanese people are living in New York than in Denver.’

In (16a) there is a comparative morpheme, but in (16b), there is no comparative morpheme. In (16a) the target of comparison and the standard of comparison are both inside the predicate.\(^6\) I assume here that the second \textit{yori} in (16a) is a marker of standard.\(^7\) Kennedy (2007) argues that English sentences like ‘more people live in New York than Chicago’ have a complicated LF, which involves a ‘parasitic scope’ (Heim 1985, Barker in press, Bhatt and Takahashi 2007). As we can see from the following figure, we must assume that such a complicated LF exists in example (16a):

\(^6\) Note that the standard of comparison can also be clausal (Sawada 2008):
(i) Taro-wa [Ofisu-ni iru toki]-\textit{yori} [ie-ni iru toki] \textit{yori} takusan ochya-o nomu.
   Taro-TOP Office-LOC be when-than home-LOC be when more many tea-ACC drink
   ‘As for Taro, he drinks more tea when he is at home than when he is at the office.’

\(^7\) There is also a possibility that the second \textit{yori} in (16a) is the ‘rather than’ \textit{yori} (Sawada 2008). Recall that if we delete the first \textit{yori} in (16a), the second \textit{yori} is interpreted as ‘rather than.’
There are several steps involved in the above LF. First, *New York-ni* is raised to scope over the entire sentence. Second, the comparative morpheme *yori* is raised for interpretability to a position above ‘*λz*’ and binds a degree variable in its base position. Note that the comparative morpheme *yori* is semantically vacuous. Since the operation of the second movement depends on the first movement, we can say that the scope relation is ‘parasitic.’ Finally, the comparative morpheme *yori* selects the comparative phrase *Denver-yori* ‘than Denver’ and makes it scope over the gradable predicate (*yori ooku-no Nihon jin ga sundeiru*). At the end of the day, the logical structure of (16a) is like that of ‘native Japanese’ comparatives (i.e. (16b)), where no comparative morpheme *yori* is used. We can summarize Section 4 as follows:

(18) The comparative morpheme selects (Kennedy 2007) a comparative phrase/clause (elided or not) and makes it scope over a gradable predicate at the LF so that the sentence can be interpreted as a native Japanese comparative.8

5. **Historical Syntax of Yori**

8 As Kennedy (in press, 2007) argues, example (i) involves ‘parasitic scope’ configuration:

(i) Taro-wa Hanako-yori nagai kasa-o katta.

Taro-TOP Hanako-than long umbrella-ACC bought

‘Taro bought a longer umbrella than Hanako (bought).’

The reason why (i) does not need the comparative morpheme *yori* is because its surface structure is that of a native Japanese comparative. This suggests that a parasitic scope configuration can be posited even if there is no comparative morpheme *yori*. (i) must posit a parasitic scope configuration in order to avoid an unnatural interpretation in which *Hanako yori nagai kasa* forms a constituent (Kennedy in press).
5.1. Language Contact

Hida (2002) points out that *yori* was used to translate the comparative form of Dutch adjectives in the grammar book *Oranda gohoo kai* (1805), the first Dutch grammar in Japanese. It must be the case that before the emergence of the comparative morpheme *yori*, Japanese grammar could not generate a comparative sentence where both the target and the standard are inside the domain of the predicate, nor could it produce a comparative sentence whose comparative clause is elided.

According to Heath (1978:115), “only those morphemes have actually been diffused which contribute something to the borrowing language which was previously lacking... morphemic borrowing is viewed in its therapeutic aspects. Borrowings are interpreted as devices to fill functional gaps.” Although the notion of filling structural gaps is controversial and not all scholars support it (e.g. Brody 1987), this approach fits the emergence of the Japanese comparative morpheme. However, even if we accept the gap-filling view, we still cannot explain why Japanese decided to recycle the existing word *yori* for a comparative morpheme.

5.2. Change of bracketing through ‘reanalysis’

The following stages explain the development of the comparative morpheme *yori*:

\[(19) \begin{align*}
(\text{a}) & \quad \text{NP-wa } [\text{NP-}yori]_{\text{PP}} \text{ ADJ} \\
(\text{b}) & \quad \text{NP-wa } [\_\_yori]_{\text{PP}} \text{ ADJ} \quad \text{ADJ} \\
(\text{c}) & \quad \text{NP-wa } [\text{yori ADJ}]_{\text{AP/DegP}} \\
\end{align*} \]

In (19a) the standard marker *yori* combines with its complement. However, if the complement of *yori* is unpronounced, the sentence becomes ungrammatical, as in (19b). Therefore, we can say that the facts that (19b) is ungrammatical, and that unlike in English, the comparative clause/phrase in Japanese precedes a gradable predicate, both contributed to the development of the comparative morpheme *yori*. The following figure shows the reanalysis from (19b) to (19c):

\[(20) \text{Reanalysis from the marker of standard to the degree modifier}\]

However, there is a question as to whether the analysis in (19) can be regarded as a ‘real’ reanalysis. Many researchers argue that reanalysis depends upon surface ambiguity or the possibility of more than one analysis (Langacker 1977, Harris and Campbell 1995). Although it is clear that (20) involves a change of (i) constituency, (ii) hierarchical structure and (iii) category labels, this is not an ‘independent’ process, because the fundamental motivation for the reanalysis is the necessity of translation, not a structural ambiguity. According to Harris and Campbell (1995), there are three mechanisms of syntactic change reanalysis, extension, and borrowing. I would like to suggest that both reanalysis and borrowing were
involved in the development of the comparative morpheme *yori* and neither was sufficient on its own.

5.3. Comparison with Pipil
Campbell (1987) argues that the Pipil comparative construction was borrowed directly from the Spanish ‘*más... que*’.  

(21) ne siwa:-t mas galána ke taha. (Pipil)
‘That woman is prettier than you are.’ (cf. esa mujer es *más linda que* tú)

Pipil had several different comparative expressions before its contact with Spanish, but these have been eliminated and replaced by this borrowed comparative construction (Campbell 1987, Harris and Campbell 1995). Modern Japanese comparatives differ from Pipil comparatives in the following ways. First, while Japanese recycled an existing lexical item *yori* for the new grammatical morpheme, Pipil directly borrowed the comparative morpheme *más* as well as the marker of standard *que* from Spanish. This means that in Japanese both language-internal factors and language-external factors are involved, whereas in Pipil, only language-external factors are involved. Second, while the comparative morpheme *yori* appears only in limited environments, the use of the borrowed construction is obligatory for Pipil comparatives. These differences suggest that the Japanese language is conservative in that it tries to maintain a ‘native’ grammar as much as possible.

6. Conclusion
This paper investigated the syntax and semantics of the comparative morpheme *yori* in Modern Japanese from synchronic and diachronic perspectives. I proposed that the comparative morpheme *yori* is used only when a given sentence cannot otherwise express comparison. I argued that the comparative morpheme *selects* (Kennedy 2007) a comparative phrase/clause (elided or not) and makes it scope over a gradable predicate at the LF so that the sentence can be interpreted as a native Japanese comparative. As for the development of the comparative morpheme *yori*, I argued that both borrowing and reanalysis played an important role.

What will this paper contribute to the semantic theory of comparatives in general? Researchers have argued that the ‘greater than’ meaning is expressed by comparative morphology (e.g. von Stechow 1984) or that the comparative morpheme –*er* forms a semantic constituent with the *than* clause at the level of semantic structure (e.g. Cresswell 1976, Heim 1985). These views lead us to consider that there is a null comparative morpheme in (1) (e.g. Beck et al. 2004). Kennedy (2007), on the other hand, argues that markers of standard, not comparative morphemes have the meaning of comparison (i.e. ‘greater than’). This

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9 Pipil is an indigenous language spoken in El Salvador.
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discussion suggests that Kennedy’s approach is more plausible for the following reasons. First, Kennedy’s idea fits naturally with the ‘directionality’ of the syntactic change, from the marker of standard $yori$ to the comparative morpheme $yori$. Semantically, we can say that this is a process of semantic bleaching. The marker of standard $yori$, which has a semantic content of ‘greater than’, developed the comparative morpheme whose meaning is null. Second, Kennedy’s idea allows us to avoid a situation in which Modern Japanese has two comparative morphemes: the null comparative morpheme MORE and the comparative morpheme $yori$. If, on the other hand, we take the view that the null comparative morpheme MORE can contribute to the semantics of comparison in Japanese, we must stipulate a division of labor between the comparative morpheme $yori$ and the null morpheme MORE, which is not natural typologically. Typologically, it seems that lexical diversity is observed in the position of the marker of standard, rather than the comparative morpheme (e.g. Greek $apo$ and $apoti$; Merchant 2006)). I hope this paper will shed new light on the interface between formal semantic theory and historical linguistics.

References

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