DP-internal relative readings of Japanese *ichiban* superlatives

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Abstract. This paper provides a new perspective on the question of whether Japanese superlatives involve movement of *ichiban*, considered to be a superlative morpheme, out of superlative DPs. Aihara (2007, 2009) proposes that the different readings of Japanese superlatives are due to the structural ambiguity caused by the movement of *ichiban* to different landing sites, following Heim (1985, 1999) and Szabolcsi (1986). However, I argue that no movement of a superlative morpheme to a DP-external position is involved in Japanese superlatives based on the absence of "DP-internal relative readings" that are observed in Slavic languages (Pancheva and Tomaszewicz, 2012; Tomaszewicz, 2015). To derive this reading, the superlative *-est* in Slavic moves out of the superlative DP; the absence of this reading in Japanese supports the view that no such movement obtains in Japanese.

Keywords: superlatives, the Scope Theory, DP-internal relative readings, ordinals

1. Introduction

Since Ross (1964), it has been observed that superlatives in English and other languages exhibit two distinct interpretations, absolute and relative readings:

(1) John climbed the highest mountain.
   a. Absolute reading
      John climbed the highest mountain among the contextually relevant mountains.
   b. Relative reading:
      A mountain that John climbed is higher than any of the mountains that the other contextually relevant climbers climbed.

To derive the two readings, two analyses have been developed: the DP-internal *-est* theory and the Scope Theory. Under the DP-internal *-est* theory (Farkas and Kiss, 2000; Sharvit and Stateva, 2002), *-est* always stays inside DP and the two interpretations are derived by pragmatic resolution. In contrast, under the Scope Theory (Heim, 1985, 1999; Szabolcsi, 1986), the two interpretations are due to a structural ambiguity which is triggered by covert movement of *-est* to different landing sites inside or outside of the DP. The debate between the two theories has not been settled yet.

Aihara (2007, 2009) argues that *ichiban* is a superlative morpheme corresponding to English *-est* and the Scope Theory can be directly carried over to Japanese superlatives: *ichiban* moves either DP-internally or DP-externally and the structural ambiguity created by the movement of *ichiban* derives the two interpretations. Furthermore, there is a clear difference between Japanese and English: in contrast to the covert movement of *-est* in English, *ichiban* is overtly realized in DP-external positions, apparently demonstrating the overt movement of *ichiban*. Therefore, Aihara argues that the Scope Theory is supported by the Japanese superlatives that instantiate the overt movement of the superlative morpheme.

In this paper, I will present counter-evidence for Aihara's Scope Theory-based analysis on Japanese superlatives, especially *ichiban* as *-est*. Pancheva and Tomaszewicz (2012) and Tomaszewicz (2015) observe that Slavic languages such as Bulgarian and Polish allow 'DP-internal relative readings', in which correlates (i.e. items that are compared to other elements in relevant contexts) are elements inside the superlative DP. Crucially, they demonstrate that DP-internal relative readings can be derived only by QR of a superlative morpheme into the clause; if the superlative morpheme stays inside the superlative DP, DP-internal relative readings cannot be obtained. If *ichiban* in Japanese took a clausal scope outside the superlative DP, DP-internal relative readings would be possible in Japanese, like Bulgarian and Polish. However, I will show that Japanese superlatives lack DP-internal relative readings and this fact suggests that *-est* does not take a clausal scope, regardless of the position of *ichiban* in Japanese.

Furthermore, I will provide cross-linguistic evidence from Korean. A difference between Japanese and Korean is whether morphemes used in superlatives can occur outside DP or not: unlike *ichiban*, superlative morphemes *ceyil/kacang* in Korean cannot be associated with DP-internal adjectives from outside DP. This suggests that *-est* in Korean superlatives always stays inside DP and it should not allow DP-internal relative readings. This prediction is also borne out. Therefore, the comparison between the two languages underscores that, although *ichiban* can appear in a DP-external position, it is not a superlative morpheme, and *-est* in Japanese, like in Korean, always stays inside DP.

2. Japanese superlatives and two major theories

The two distinct readings of superlatives introduced above are also attested in Japanese. Aihara (2007, 2009) observes that when *ichiban* appears outside the superlative DP, only the relative reading is obtained:

(2) a. John-ga [$_{DP}$ ichiban takai yama-ni] nobotta.
John-NOM -est high mountain-DAT climbed
'John climbed the highest mountain' (ABS/REL)

b. Ichiban$_i$ John-ga [$_{DP}$ t$_i$ takai$_i$ yama-ni] nobotta.
-est John-NOM high mountain-DAT climbed
'John climbed the highest mountain' (*ABS/REL)

This raises the question of how the two distinct readings of superlatives are derived. In previous literature, two major theories have been proposed to account for the ambiguity associated with superlatives. According to the DP-internal *-est* theory, the *-est* morpheme always remains inside the DP, though variations of this theory exist depending on whether *-est* moves within DP (Sharvit and Stateva, 2002) or stays in situ (Farkas and Kiss, 2000). These variations stem from different assumptions about the meaning of gradable adjectives and *-est*. For our purposes, I will focus on Sharvit and Stateva's version of the DP-internal theory, as it shares key assumptions about the meaning of adjectives and the semantics of *-est* with the Scope Theory. In their analysis, *-est* with a contextual variable *C* (i.e., comparison class) undergoes DP-internal movement, abstracting over a degree variable in its original position (Sharvit and Stateva, 2002). Given the semantics of *ichiban*, which is the same as *-est*, the two readings of Japanese superlatives are thus derived as follows (Aihara, 2009: 344):

(3) $[\![\textit{ichiban}]\!] = [\lambda C[\lambda R[\lambda x : x \in C \ \& \ \forall z[z \in C \rightarrow \exists d[R(d)(z) = 1]]].$
$\exists d[R(d)(x) = 1 \ \& \ \forall y[y \neq x \ \& \ y \in C \rightarrow R(d)(y) = 0]]]]]$

(4) a. LF syntax:
John [$_{DP}$ the [*C-ichiban*] λd [d-high mountain]] climbed

b. Whenever defined, [[(4a)]] = 1 iff John climbed the unique x such that
∃d[x is a d-high mountain & ∀y[y ≠ x & y ∈ C → y is not a d-high mountain]]
C_A:{x: ∃d s.t. x is a d-high mountain} (ABS)
C_R:{x: ∃d s.t. x is a d-high mountain climbed by relevant climbers} (REL)

In contrast to the DP-internal *-est* theory, Heim (1985, 1999) and Szabolcsi (1986) propose that the two distinct readings of superlatives arise from different LF structures, which are derived through the covert movement of the superlative morpheme *-est*. The Scope Theory also assumes that *C-est* is base-generated inside AP, and the covert movement of the *C-est* complex leaves a degree variable in its original position. Under these assumptions, when *C-est* undergoes minimal DP-internal movement, it derives the two relevant readings discussed above. However, when it moves DP-externally, it yields relative readings. The specifics of the Scope Theory are represented in (5) (Aihara 2009:344–345):

(5) a. LF syntax:
John$_i$ [*C-ichiban*] λd [t_i climbed [$_{DP}$ ~~the~~ [d-high mountain]]]

b. Whenever defined, [[(5a)]] = 1 iff ∃d [John climbed a d-high mountain &
∀y[y ≠ John & y ∈ C → y did not climb a d-high mountain]]
C_R: {x: ∃d s.t. x climbed a d-high mountain} (REL)

When the *C-est* complex just moves DP-internally in (5a), we obtain the absolute and relative readings by a contextual resolution. In contrast, when the *C-est* complex moves out of DP in (5a), it takes scope at a DP-external position below a subject in Spec, TP. To be precise, the subject moves from Spec, vP to Spec, TP, establishing binder-variable relation and this is followed by QR of the *C-est* complex in-between the binder and the variable (i.e. parasitic scope; Barker, 2007). Here, the *C-est* complex takes two arguments, 'x climbed a d-high mountain' (<d,<e,t>>) as its internal argument and the individual John as its external argument. This results in the relative reading where John climbed a d-high mountain and no other climbers climbed a d-high mountain. Note that when *C-est* moves out of DP, the definite article *the* must be converted into an indefinite article *a/an*. This is because if the definite article is interpreted in this LF, there will be a clash between presupposition and assertion: *C* will be the set of people who all climbed the unique mountain, but *-est* will assert that John alone did so. To avoid this problem, the definite article must be replaced by the indefinite article (Heim, 1985, 1999; Szabolcsi, 1986). Thus, the Scope Theory explains the two readings in question by the structural ambiguity that is derived by the DP-internal and DP-external movement of *C-est*.

Crucially, Aihara points out that *ichiban* can appear in DP-external positions, and if *ichiban* is indeed *-est*, this is considered direct evidence for the Scope Theory. While the overt realization of DP-external *ichiban* is an important empirical finding, it is worth noting that a discrepancy exists between the predictions of the Scope Theory and the empirical data regarding the overt position of *ichiban*. Specifically, the Scope Theory predicts that *ichiban* must follow the

correlate, such as the subject *John*, because it takes parasitic scope. However, *ichiban* can in fact precede the correlate, as illustrated in (2b). This discrepancy is further underscored by the fact that *ichiban* must immediately precede correlates in relative readings:

(6) a. Ichiban$_i$ **Taro-ga** Ziro-ni [$_{DP}$ t$_i$ ookuno hon-o] ageta.
-est Taro-NOM Ziro-DAT many book-ACC gave
'Taro gave more books to Ziro than any others did' (REL)

b. Ichiban$_i$ **Ziro-ni**$_j$ Taro-ga t$_j$ [$_{DP}$ t$_i$ ookuno hon-o] ageta.
-est Ziro-DAT Taro-NOM many book-ACC gave
'Taro gave more books to Ziro than he did to any others' (REL)

In (6a), the correlate is the subject *Taro*, while in (6b), the correlate is the dative *Ziro*. In other words, the correlates are those that immediately follow *ichiban*. Thus, the Scope Theory, which employs parasitic scope, incorrectly predicts the word orders. Although Aihara (2009) introduces an additional assumption to derive the correct word orders, he notes that the assumption is stipulative. This suggests that *ichiban* is not a direct counterpart of *-est*. In the next section, I will argue that *ichiban* in Japanese cannot be equated with *-est*, based on the fact that Japanese superlatives do not allow a correlate inside a superlative DP—i.e., DP-internal relative readings.

3. DP-internal relative readings

In this section, I will first illustrate DP-internal relative readings in Polish and Bulgarian, demonstrating that QR of a superlative morpheme into a clause is crucial for deriving these readings. I will then show that Japanese lacks DP-internal relative readings in both superlatives and superlatives modified by ordinals (i.e. ordinal superlatives). Furthermore, I will discuss Korean superlatives, in which superlative morphemes *ceyil/kacang* cannot be associated with DP-internal adjectives from outside DP unlike *ichiban*. The absence of DP-internal relative readings in Korean superlatives further supports the view that *ichiban* is not a superlative morpheme.

3.1. DP-internal relative readings of Bulgarian and Polish

Pancheva and Tomaszewicz (2012) and Tomaszewicz (2015) observe that certain relative readings are available in Slavic languages such as Bulgarian and Polish but not in English. In these readings, the correlates are elements within superlative DPs, leading them to be referred to as DP-internal relative readings. It is important to note that the relative readings discussed thus far have focused on DP-external relative readings, in which correlates are elements outside superlative DPs—e.g., John climbed the highest mountain among the climbers, where the correlate is the subject *John*. With this distinction in mind, let us now examine DP-internal relative readings in Bulgarian and Polish (adapted from Pancheva and Tomaszewicz, 2012: 295):

(7) a. Ivan ima [DP naj-dobri albumi ot U2]. (Bulgarian)
Ivan has est-good albums by U2
'Ivan has better albums by U2 than anyone else does' (DP-EXTERNAL REL)
'Ivan has better albums by U2 than by any other band' (DP-INTERNAL REL)
b. Ivan ma [DP naj-lepsze albumy U2]. (Polish)
Ivan has est-better.ACC albums.ACC U2
'Ivan has better albums by U2 than anyone else does' (DP-EXTERNAL REL)
'Ivan has better albums by U2 than by any other band' (DP-INTERNAL REL)

Under the DP-internal relative reading in (7), Ivan owns albums by various bands, such as U2, the Beatles, and Queen, with the albums by U2 being better than those by the other bands. In this case, *U2*, which appears inside the superlative DP, serves as the correlate for the relative reading. Notably, these DP-internal relative readings coexist with DP-external relative readings in these languages. Furthermore, Pancheva and Tomaszewicz (2012) point out that DP-internal relative readings are absent in English (adapted from Pancheva and Tomaszewicz, 2012:294):

(8) John has [DP the best albums by U2].
'John has better albums by U2 than by anyone else does' (DP-EXTERNAL REL)
'John has better albums by U2 than by any other band' (*DP-INTERNAL REL)

As shown, English does not permit DP-internal relative readings and allows only DP-external relative readings.

A key question arises: why do Bulgarian and Polish allow DP-internal relative readings, whereas English does not? Pancheva and Tomaszewicz (2012) and Tomaszewicz (2015) argue that these readings in Slavic languages are derived through the movement of the superlative morpheme *naj-* to a DP-external position, following the Scope Theory. For example, in a sentence like *John climbed the highest mountain*, *-est* takes two arguments: (i) *x* climbed a *d*-high mountain as its internal argument and (ii) the individual *John* as its external argument, thereby deriving the DP-external relative reading. Crucially, in this structure, the external argument of *-est* serves as the correlate for the DP-external relative reading. Now, consider a case in which a DP-internal correlate undergoes QR to the top of the clause, with *-est* tucking in below the QRed correlate DP. In an English sentence like 'John has the best albums by U2' (English does not allow DP-internal relative readings, let us assume for the sake of argument that this sentence does), *-est* would take *John has d-good albums by x* as its internal argument and *U2* as its external argument. In this case, the external argument of *-est* would serve as the correlate for the DP-internal relative reading. Thus, the underlying mechanism for deriving both DP-external and DP-internal relative readings is fundamentally the same.

Now, let us first consider the cases of Polish and Bulgarian. As illustrated above, DP-internal relative readings in these languages are derived through QR of the DP-internal correlate DP to the clause, with QR of *naj*-C occurring below the correlate DP (adapted from Pancheva and Tomaszewicz, 2012: 297):

(9) a. [TP1 U2 [TP2 [*naj-C*] [TP3 Ivan has [DP *d*-good albums by *x*]]]]
b. U2 ∈ *C*; ∀*y* [*y* ∈ *C* → ∃*d* [John has *d*-good albums by *y*]. (presupposition of *naj*-)

In this derivation, *naj-C* takes scope over 'Ivan has *d*-good albums by *x*'. Furthermore, *C* must satisfy the presupposition of *naj-*, which requires (i) U2 is an element of *C* and (ii) all elements of *C* are arguments of the second argument of *naj-*, i.e., the comparison class must consist of the set {*x*: ∃*d*[Ivan has *d*-good albums by *x*]}. As a result, the DP-internal relative reading 'Ivan has better albums by U2 than by any other band' is obtained. Therefore, the QR of *naj-C* into the clause derives the DP-internal relative reading.

In contrast to Bulgarian and Polish, Pancheva and Tomaszewicz argue that in English, *-est* is always interpreted within the DP. In this case, *C-est* takes scope over the NP *d-good albums by x,* and the presupposition of *-est* requires *C* to be the set of 'd-good albums by U2' (Pancheva and Tomaszewicz, 2012: 298):

(10) a. [$_{TP1}$ John has [$_{DP}$ the [C-est] [$_{NP}$ d-good albums by U2]]
b. *C* = {*x*: ∃*d* [*x* are *d*-good albums by U2]} (presupposition of *-est*)

The comparison class is specified as {x: ∃d [x are d-good albums by U2]}, which includes *U2*. Thus, even if the comparison class is further specified contextually, this does not change the outcome. As a result, the DP-internal relative reading is not available when *C-est* remains inside the DP. Although I will omit the remaining possible derivations, Pancheva and Tomaszewicz (2012: 298–299) demonstrate that only the movement of *-est/naj-* to a DP-external position yields the correct interpretation of DP-internal relative readings. Consequently, DP-internal relative readings are available in Bulgarian and Polish because *naj-C* moves outside the DP, whereas they are unavailable in English because *C-est* remains inside the DP. Now, I will show that Japanese also does not permit DP-internal relative readings in the next section.

3.2. Lack of DP-internal relative readings in Japanese

Now, consider the possibility of DP-internal relative readings in Japanese. If *ichiban* is *-est* and realized at DP-external positions, it is predicated that Japanese should allow the DP-internal relative readings just like Polish and Bulgarian. However, this prediction is not borne out:

(11) a. Taro-ga [$_{DP}$ ichiban takai U2-no arubamu-o] motteiru.
Taro-NOM ICHIBAN expensive U2-GEN album-ACC have
'Taro has a more expensive album of U2 than anyone else does' (DP-EXTERNAL)
'Taro has a more expensive album of U2 than any other band' (*DP-INTERNAL)
b. Taro-ga [$_{DP}$ ichiban ookuno U2-no arubamu-o] motteiru.
Taro-NOM ICHIBAN many U2-GEN album-ACC have
'Taro has more albums of U2 than anyone else does' (DP-EXTERNAL)
'Taro has more albums of U2 than any other band' (*DP-INTERNAL)

(12) a. Ichiban Taro-ga [$_{DP}$ takai U2-no arubamu-o] motteiru.
ICHIBAN Taro-NOM expensive U2-GEN album-ACC have
'Taro has a more expensive album of U2 than anyone else does' (DP-EXTERNAL)
'Taro has a more expensive album of U2 than any other band' (*DP-INTERNAL)
b. Ichiban Taro-ga [$_{DP}$ takusanno U2-no arubamu-o] motteiru.
ICHIBAN Taro-NOM many U2-GEN album-ACC have
'Taro has more albums of U2 than anyone else does' (DP-EXTERNAL)
'Taro has more albums of U2 than any other band' (*DP-INTERNAL)

Regardless of whether *ichiban* remains inside the DP or moves outside it, DP-internal relative readings are not available. This fact follows naturally if *-est* always stays within the DP, regardless of the position of *ichiban*:

(13) a. [$_{TP}$ Taro has [$_{DP}$ [C-*est*] [$_{NP}$ d-expensive albums of U2]]]
b. *C* = {x: ∃d [x is a d-expensive album of U2]} (presupposition of *-est*)

As in English, the comparison class is specified as {x: ∃d [x are d-expensive albums of U2]}, which includes *U2*. Consequently, the correct comparison set, consisting of alternatives to *U2*, cannot be formed, leading to the absence of DP-internal relative readings. Recall that the Scope Theory treats *ichiban* as a degree quantifier that moves to a DP-external position to derive relative readings. If this were the case, Japanese should allow DP-internal relative readings, similar to Bulgarian and Polish. However, this prediction is not borne out. Therefore, the absence of DP-internal relative readings in Japanese suggests that *-est* does not take clausal scope.

Note also that superlatives modified by ordinals in Japanese do not allow DP-internal relative readings. Unlike *ichiban*, ordinals such as 'second' cannot appear in DP-external positions when used as superlatives:

(14) Taro-ga [$_{DP}$ nibanme-ni takai arubamu-o] motteiru.
Taro-NOM second-DAT expensive albums-ACC have
'Taro has the second most expensive album of U2' (ABS/REL)

(15)* Nibanme-ni$_i$ Taro-ga [$_{DP}$ t$_i$ takai arubamu-o] motteiru.
second-DAT Taro-NOM expensive albums-ACC have
'Taro has the second most expensive album of U2'

As expected, ordinals that occur inside DP cannot give rise to the DP-internal relative readings:

(16) a. Taro-ga [$_{DP}$ nibanme-ni takai U2-no arubamu-o] motteiru.
Taro-NOM second-DAT expensive U2-GEN albums-ACC have
'Taro has the second most expensive album of U2' (DP-EXTERNAL)
'Taro has the second most expensive album of U2' (*DP-INTERNAL)
b. Taro-ga [$_{DP}$ nibanme-ni ookuno U2-no arubamu-o] motteiru.
Taro-NOM second-DAT many U2-GEN albums-ACC have
'Taro has the second most albums of U2' (DP-EXTERNAL)
'Taro has the second most albums of U2' (*DP-INTERNAL)

Under the intended DP-internal relative reading in (16a), for example, Taro has albums by different bands such as U2, the Beatles, and Queen. The albums by U2 are more expensive than those by the Beatles but less expensive than those by Queen, making the albums by U2 the second-ranked. However, the DP-internal relative reading is not available in (16a), nor is it in (16b). Thus, both *ichiban* superlatives and ordinal superlatives entirely lack this reading.

Crucially, the behavior of *ichiban* superlatives parallels that of ordinal superlatives, which do not allow DP-external use. This suggests that *ichiban* is not a direct counterpart of *-est*. However, the interpretation of *ichiban* superlatives indicates that a null counterpart of *-est* stays inside the DP and *ichiban* is similar (though not identical) to an ordinal modifier, as evidenced by the absence of DP-internal relative readings. In the next section, I will present a cross-linguistic evidence from Korean.

3.3. Lack of DP-internal relative readings in Korean

So far, I have discussed DP-internal relative readings in Japanese. In this section, I argue that Korean also lacks DP-internal relative readings, further supporting the view that *-est* does not take clausal scope in Japanese.

In Korean, two morphemes, *ceyil* and *kacang*, are used in superlatives. These morphemes can appear immediately before adjectives like *nop-un* 'high' within DP, similar to Japanese superlatives, and both absolute and relative readings are available:

(17) Chelswu-ka [$_{DP}$ {ceyil/kacang} nop-un san-ul] ol-lass-ta.
Chelswu-NOM -est high-ADJ mountain-ACC climb-PAST-DEC
'Chelswu climbed a higher mountain than any other mountain' (ABS)
'Chelswu climbed a higher mountain than any other climbers' (REL)

A crucial difference between Japanese and Korean is that Korean does not allow DP-external use of *ceyil/kacang*. Specifically, unlike *ichiban* in Japanese, these morphemes cannot modify adjectives inside DP from a DP-external position:

(18) *{Ceyil/Kacang} Chelswu-ka [$_{DP}$ nop-un san-ul] ol-lass-ta.
-est Chelswu-NOM high-ADJ mountain-ACC climb-PAST-DEC
'Chelswu climbed the highest mountain'

As illustrated in the example, sentences with DP-external *ceyil/kacang* are ungrammatical. Now, let us examine DP-internal relative readings of Korean superlatives in comparison to Japanese. Lee (2018) observes that *ceyil/kacang* do not permit DP-internal relative readings. The following data, adapted from Lee (2018: 4) and verified by my consultant, support this observation:

(19) Chelswu-ka [$_{DP}$ ceyil/kacang pissa-n U2-uy album-ul] kaciko iss-ta.
Chelswu-NOM -est expensive-ADJ U2-GEN album-ACC have PROG-DEC
'Chelswu has a more expensive album of U2 than anyone else does' (DP-EXTERNAL)
'Chelswu has a more expensive album of U2 than any other band' (*DP-INTERNAL)

(20) Chelswu-ka [$_{DP}$ ceyil/kacang manh-un U2-uy album-ul] kaciko iss-ta.
Chelswu-NOM -est many-ADJ U2-GEN album-ACC have PROG-DEC
'Chelswu has more albums of U2 than anyone else does' (DP-EXTERNAL)
'Chelswu has more albums of U2 than any other band' (*DP-INTERNAL)

As illustrated, Korean superlatives do not permit DP-internal relative readings, unlike DP-external relative readings. This pattern mirrors that of Japanese superlatives. The fact that Korean, where superlative morphemes always stay inside DP, does not allow DP-internal relative readings supports the view that *-est* also remains within DP in Japanese. Although I will omit the derivation accounting for the absence of DP-internal relative readings in Korean, the explanation follows the same reasoning as in Japanese.

3.4. An alternative approach

I have argued that *ichiban* superlatives in Japanese do not give rise to DP-internal relative readings, regardless of the position of *ichiban*. Although the Scope Theory-based analysis claims that *ichiban* is equivalent to *-est* and it takes clausal scope when appearing outside DP, the absence of DP-internal relative readings suggests that *ichiban* is not *-est*. However, Japanese superlatives still allow superlative interpretations, the absolute and relative readings, indicating that *-est* must exist somewhere in the structure. A possible way to capture this fact is to posit that a null *-est* remains inside DP, while *ichiban* serves a different function. The question, then, is what role *ichiban* plays. Here, it is worth noting that the literal meaning of *ichiban* is 'number one,' and that the same *ban* morphology appears in ordinals used in ordinal superlatives:

(21) a. ichi-ban = one + number
b. ni-ban-me-ni = two + number + ordinal suffix + dative
c. san-ban-me-ni = three + number + ordinal suffix + dative

(22) a. ichi-ban takai yama
one-NUM high mountain
'the highest mountain'
b. ni-ban-me-ni takai yama
two-NUM-ORD-DAT high mountain
'the second highest mountain'
c. san-ban-me-ni takai yama
three-NUM-ORD-DAT high mountain
'the third highest mountain'

As illustrated in the example, *ichiban* may play a role similar to that of ordinals in superlatives. For instance, Alstott (2023) argues that ordinals function as exceptive modifiers of *-est*, where 'the n-th highest mountain' is interpreted as the highest mountain with 'n-1 exceptions.' If this analysis extends to *ichiban*, then *ichiban*, as a modifier of *-est*, can float from *-est* inside DP while *-est* itself remains within DP. This would explain why, even when *ichiban* appears outside DP, *-est* remains DP-internal, accounting for the absence of DP-internal relative readings. However, I leave a more detailed analysis for future research.

4. Conclusion

In this paper, I have demonstrated that *ichiban* superlatives do not allow DP-internal relative readings, regardless of the position of *ichiban*. Since DP-internal relative readings require *-est* to move to a DP-external position, as discussed in Bulgarian and Polish, the absence of DP-internal relative readings in Japanese supports the view that *-est* always remains inside DP in Japanese superlatives. Furthermore, I have also shown that Korean superlatives also lack DP-internal relative readings. The fact that superlative morphemes are always used DP-internally in Korean, combined with the absence of DP-internal relative readings, further corroborates the view that *-est* consistently stays inside DP in Japanese superlatives.

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