

Korean NPIs *amu-(N)-to* and *amu-(N)-rato*

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YoungEun Yoon. 2008. Korean NPIs *amu-(N)-to* and *amu-(N)-rato*. *Language and Information* 12.2, 21–47. This paper reviews the analysis of the so-called Korean NPIs, *amu-(N)-to* and *amu-(N)-rato*, proposed by An (2007). An proposes that the two so-called polarity items are identical semantically, tantamount to English *even*, but they are in complementary distribution due to the opposite scope properties of the emphatic particles *to* and *rato* contained in the NPIs in question. Resorting to Karttunen and Peters' (1979) and Wilkinson's (1996) scope analysis of *even*, Lahiri's (1998) analysis of Hindi NPIs, and Guerzoni's (2002) analysis of the negative bias of *yes/no*-questions containing minimizers, An accounts for the distributional properties of the two Korean NPIs. Given this, however, it is observed that unlike *amu-(N)-to*, *amu-(N)-rato* could be licensed in much broader contexts. Based on this observation, this paper proposes that the two particles *to* and *rato* are two different particles with different meanings. (Ewha Womans University)

Key words: NPIs (Negative Polarity Items), *amu-(N)-to*, *amu-(N)-rato*, *also*, *even*, *any*, scope, minimizers, emphatic particles, emphatic statements, concessive markers, quality, quantity

1. Introduction

The so-called Korean NPIs, *amu-(N)-to* and *amu-(N)-rato*, have been studied by quite a few Korean researchers including I. Yang (1973), Shi (1997), Lee, Chung, and Nam (2000), and Chung, Lee, and Nam (2002, henceforth Chung et al.)¹

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¹ Another similar expression *amu-(N)-na* has also been dealt with in the literature along with *amu-(N)-to* and *amu-(N)-rato*. By a number of linguists, *amu-(N)-na* has been observed to behave differently from *amu-(N)-to*, and *amu-(N)-to* and *amu-(N)-rato* have been analyzed to have the same meaning. In this paper, however, it will be argued that all three particles *to*, *rato*, and *na* are semantically different, although our discussion will concentrate on *amu-(N)-to* and *amu-(N)-rato*.

Chung et al. observe that *amu-(N)-to* and *amu-(N)-rato* are complementarily distributed, as illustrated in the following data.²

- (1) Relative Clauses headed by a universal quantifier
- a. ***Amu-to** chayyongha-n hoysa-nun motwu ssureci-ess-ta.
anyone-TO hire-Adn company-Top all fall-Past-Dec
- b. **Amu-rato** chayyongha-n hoysa-nun motwu ssureci-ess-ta.
anyone-RATO hire-Adn company-Top all fall-Past-Dec
 'Every company that hired any number of/just any employee collapsed.'
- (2) *kikkeshayya* 'at most'
- a. ***Amu-hako-to** deyithha-e.pon saram-i
anyone-with-TO date-experience person-Nom
kikkeshayya sey myeng iss-ess-ta.
at.most three person exist-Past-Dec
- b. **Amu-hako-rato** deyithha-e.pon saram-i
anyone-with-RATO date-experience person-Nom
kikkeshayya sey myeng iss-ess-ta.
at.most three person exist-Past-Dec
 'There were at most three people who have ever dated with anybody.'
- (3) Questions
- a. ***Jini-hantheyse amu sosik-to** iss-ess-ni?
Jini-from any news-TO exist-Past-Q
- b. **Jini-hantheyse amu sosik-irato** iss-ess-ni?
Jini-from any news-RATO exist-Past-Q
 'Was there any news from Jini?'
- (4) Conditionals
- a. ***Amu-to** o-myeun na-eykey alli-e.cwu-e.
anyone-TO come-if I-Dat. inform-give-Dec
- b. **Amu-rato** o-myeun na-eykey alli-e.cwu-e.
anyone-RATO come-if I-Dat. inform-give-Dec
 'If anyone comes, please let me know.'
- (5) *before*-clauses
- a. **Koni-nun amu-to** chacao-ki.ceney cip-ul nase-ess-ta.
Koni-Top anyone-TO visit-before house-Acc leave-Past-Dec
 'Koni left home before anybody came to his house.'

² Examples (1-6), including the glosses, are recited from the appendix of Chung et al.

- b. *Koni-nun **amu-rato** chacao-ki.ceney cip-ul nase-ess-ta.
Koni-Top anyone-RATO visit-before house-Acc leave-Past-Dec

(6) Negative Sentences

- a. **Amu-to** an o-ass-ta.
anyone-TO not come-Past-Dec
 ‘Nobody came.’
- b. ***Amu-rato** an o-ass-ta.
anyone-RATO not come-Past-Dec

The above examples show that in the contexts where *amu-(N)-to* is licensed, *amu-(N)-rato* is not allowed, and vice versa. Based on this observation, Chung et al. propose that *amu* is an arbitrary choice quantifier and the particles *to* and *rato* are concessive markers. They further argue that based on the pragmatics of scalar implicature, the apparent ambiguity of PSIs between universal and existential readings are accounted for.

Quite recently, An (2007) also observes that *amu-(N)-to* and *amu-(N)-rato* show a complementary distribution within the set of typical NPI-licensing contexts. An accounts for this observation by analyzing both *amu-(N)-to* and *amu-(N)-rato* as emphatic particles with opposite scope properties, resorting to Karttunen and Peters’ (1979) and Wilkinson’s (1996) scope analysis of *even*, Lahiri’s (1998) analysis of Hindi NPIs, and Guerzoni’s (2002) analysis of the negative bias of *yes/no*-questions containing minimizers.

Given Chung et al.’s and An’s observation that *amu-(N)-to* and *amu-(N)-rato* are in complementary distribution, however, we could see pairs of examples as the following which show that unlike *amu-(N)-to*, *amu-(N)-rato* could be licensed in much broader contexts:

(7) Affirmative Sentences

- a. *Na-nun ancase **amu-chayk-to** ilk-ess-ta.
I-Top sitting any-book-TO read-Past-Dec
- b. Na-nun ancase **amu-chayk-irato** ilk-ess-ta.
I-Top sitting any-book-RATO read-Past-Dec
 ‘I read some book(s) while sitting.’
- c. Na-nun ancase **amu-chayk-irato** ta ilk-ess-ta.
I-Top sitting any-book-RATO all read-Past-Dec
 ‘I read all the books while sitting.’

(8) Negative Sentences

- a. John-un **amu-chayk-to** ilkci ahn-ass-ta.
John-Top any-book-TO read not-Past-Dec
 ‘John didn’t read any books.’

- b. John-un **amu-chayk-irato** ilkci ahn-ass-ta.
John-Top any-book-RATO read not-Past-Dec
 ‘John didn’t read any books.’

Although Chung et al. observe that in affirmative sentences, neither *amu-(N)-to* nor *amu-(N)-rato* is licensed, (7b, c) show that *amu-(N)-rato* could be allowed in this context. Furthermore, Chung et al. and An observe that in negative sentences, only *amu-(N)-to*, but not *amu-(N)-rato*, is allowed. And yet, (8b) seems to be felicitous.³

In this context, in the following sections, we will review the analysis of An (2007) and discuss some problems of his analysis. We will also try to account for the distributions of *amu-(N)-to* and *amu-(N)-rato* by proposing that *to* and *rato* are two different particles with different meanings.

This paper will be organized as follows. Section 2 reviews An’s analysis of *amu-(N)-to* and *amu-(N)-rato*. Section 3 discusses some problems of An’s analysis. A new approach analyzing *to* and *rato* as two different particles with different meanings is presented in section 4, and section 5 concludes this paper.

2. An’s (2007) Analysis

First, An (2007) analyzes *to* and *rato* as emphatic markers similar to English *even*. That is, as in the following, for example, *to* basically means *also*, but it could also be interpreted as *even* when uttered with proper prosody. Accordingly, what (9) asserts is (10a). (9) with the ‘also’ reading presupposes (10b), whereas (9) with the ‘even’ reading presupposes (11) in addition to (10b).

- (9) John-to wa-ss-ta.
John-TO come-Past-Dec
 ‘John also came. (Even John came.)’
- (10) a. John came.
 b. $\exists x[x \neq \text{John} \wedge x \text{ came}]$
- (11) $\forall x[x \neq \text{John} \rightarrow \text{likelihood}(x \text{ came}) > \text{likelihood}(\text{John came})]$

An argues that in interrogative sentences with stress on the *to/rato*-marked phrases, the presupposition induced by the emphatic particles *to* and *rato* emerges more clearly:⁴

³ (8b) is an example recited from An (2007), but he judges it infelicitous. However, it appears to be a good sentence to me, as confirmed by my informants.

⁴ An (2007, 320) briefly points out that the so-called ‘settle for less (SFL)’ reading, originated from Kadmon and Landman (1993), for sentences like (12b) with *rato* is not dealt with in his discussions. However, it is not clear exactly what reading of a sentence with *NP-rato* or *amu-(N)-rato* is regarded as the so-called SFL reading. Furthermore, the so-called SFL reading of *NP-rato* or *amu-(N)-rato* argued by An seems quite similar to that of the so-called NPI *amu-(N)-rato* as in (1b), (2b), (3b), and (4b).

- (12) a. John-**to** wa-ss-ni?
John-TO come-Past-Q
 ‘Did even John come?’
- b. John-**irato** wa-ss-ni?
John-RATO come-Past-Q
 ‘Did even John come?’

Both (12a, b) presuppose that the proposition ‘John came’ is the least likely one among the alternative propositions. That is, both of the two sentences convey a sense of surprise. An proposes the following denotation for *to* and *rato*:

- (13) $[[to/rato]] = \lambda C_{\langle st, t \rangle} . \lambda p_{\langle st \rangle} : \forall q_{\langle st \rangle} [q \in C \wedge q \neq p \rightarrow q \succ_{\text{likely}} p]. p$

According to An, *to* and *rato* are assumed to be two-place partial functions that take a contextually salient set of alternative propositions (*C*) and a proposition *p*.

Second, An (2007) observes that *amu-(N)-to* and *amu-(N)-rato* are complementarily distributed in the set of typical NPI-licensing contexts. That is, *amu-(N)-to* is licensed in negative contexts, but ruled out in other NPI-licensing contexts. On the other hand, *amu-(N)-rato* is disallowed in negative contexts, but allowed in other NPI-licensing contexts. The followings are some of the examples of NPI-licensing contexts, recited from An (2007):

- (14=8) a. John-un **amu-chayk-to** ilkci ahn-ass-ta.
John-Top any-book-TO read not-Past-Dec
 ‘John didn’t read any books.’
- b. *John-un **amu-chayk-irato** ilkci ahn-ass-ta.
John-Top any-book-RATO read not-Past-Dec
- (15) a. *Ne **amu-chayk-to** ilk-ess-ni?
you any-book-TO read-Past-Q
- b. Ne **amu-chayk-irato** ilk-ess-ni?
you any-book-RATO read-Past-Q
 ‘Did you read any books?’
- (16) a. *Nay-ka **amu-to** po-myen, allie cwu-keyss-ta.
I-Nom anyone-TO see-if, inform give-will-Dec
- b. Nay-ka **amu-rato** po-myen, allie cwu-keyss-ta.
I-Nom anyone-RATO see-if, inform give-will-Dec
 ‘If I see anyone, I will let you know.’
- (17) a. ***Amu-chayk-to** ilkun motun haksayng-tul-un hapkyekha-ess-ta.
any-book-TO read every student-Pl-Top pass-Past-Dec
- b. **Amu-chayk-irato** ilkun motun haksayng-tul-un hapkyekha-ess-ta.
any-book-RATO read every student-Pl-Top pass-Past-Dec
 ‘Every student who read any book passed the exam.’

- (18) a. *Ney-ka amu-chayk-to ilk-ess-tani nolapkuna.
you-Nom any-book-TO read-Past-Comp is-surprising
- b. Ney-ka amu-chayk-irato ilk-ess-tani nolapkuna.
you-Nom any-book-RATO read-Past-Comp is-surprising
 'It is surprising that you read any books.'

As indicated by the examples above, An observes that the distribution of *amu-(N)-to* is a mirror image of that of *amu-(N)-rato*.⁵

Third, in order to account for the complementary distribution of these so-called *to-/rato-NPIs*, An (2007) proposes opposite scope properties for the emphatic particles *to* and *rato*. That is, as also observed by Chung et al., An proposes that the observed complementary distribution of *to-/rato-NPIs* indicates that they are alloforms that have the same meaning. Given this, An tries to resort to the scope theory of *even* proposed by Karttunen and Peters (1979, henceforth K & P) and Wilkinson (1996).

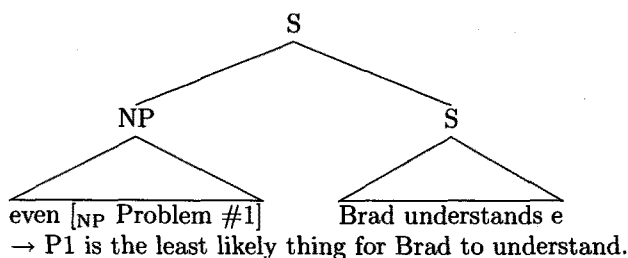
According to K & P, the sentence containing *even* in downward entailing (DE) contexts as the following could have two different readings.

- (19) It is hard for me to believe that Brad understands [_{NP} even [_{NP} Problem #1]].

That is, in one reading, (19) induces the presupposition that Problem #1 (P1) is hard for Brad to understand. In the other reading, (19) induces the presupposition that P1 is easy for Bill to understand.

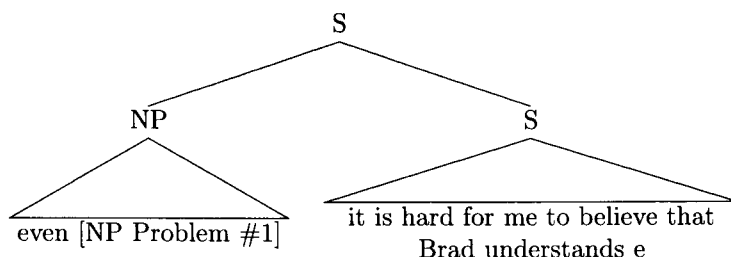
Furthermore, Wilkinson (1996) proposes that this ambiguity is an instance of scope ambiguity that results from different movement options for *even*, as illustrated in the following:

- (20) *Narrow scope interpretation*
 It is hard for me to believe that



- (21) *Wide scope interpretation*
 It is hard for me to believe that

⁵ Note that we have discussed in section 1 that (14b) is felicitous, in discord with An's observation.



→ P1 is the least likely thing that it is hard for me to believe that Brad understands.

That is, different scope positions of *even* are led to different scalar presuppositions. Accordingly, interpretation (20) could be paraphrased as ‘Since I believe that P1 is hard, the likelihood of Brad’s understanding it is low, and it is hard for me to believe that Bill understands P1.’ In contrast, interpretation (21) could be paraphrased as ‘Since I believe that P1 is easy, the likelihood of me not believing that Brad understands P1 is low, and it should be easy for me to believe that Brad understands P1.’

Resorting to K & P’s and Wilkinson’s analyses of *even*, An proposes the following scope properties for the emphatic particles *to* and *rato*:

- (22) a. *To* cannot scope over other scope-bearing items, but it must scope over negation. In addition, it cannot scope outside of its minimal clause.
 b. *Rato* must scope over other scope-bearing items, but it cannot scope over negation.

To see how (22a, b) works, consider the following examples recited from An (2007, 327-328).

- (23) Bill-i Syntactic Structure-**to** ihayhayss-tako mitki eryepta.
Bill-Nom SS-TO understand-Comp to-believe difficult
 ‘It is difficult to believe that Bill understood even Syntactic Structures.’
 → SS is the least likely book for Bill to understand.
- (24) %Bill-i Mother Goose-**to** ihayhayss-tako mitki eryepta.
Bill-Nom MG-TO understand-Comp to-believe difficult
 ‘It is difficult to believe that Bill understood even Mother Goose.’
- (25) Bill-i Mother Goose-**rato** ihayhayss-tako mitki eryepta.
Bill-Nom MG-RATO understand-Comp to-believe difficult
 ‘It is difficult to believe that Bill understood even Mother Goose.’
 → MG is the least likely book that it is hard for me to believe that Bill understands.

According to An, since *to* takes narrow scope with respect to the DE predicate *mitki eryepta* ‘it is difficult to believe,’ (24) sounds unnatural.⁶ On the other hand,

⁶ As for (24), contrary to An’s observation, it seems to be a perfectly acceptable sentence.

(25) with *rato* sounds natural, since *rato* takes wide scope over the DE predicate *mitki eryepta*.

Fourth, An (2007) further resorts to Lahiri's (1998) analysis of Hindi NPIs and Guerzoni's (2002; 2004) analysis of rhetorical questions, in order to further support his analysis.

According to Lahiri's analysis, Hindi NPIs are composed of an indefinite element *ek* or *koi*, which is tantamount to English *any*, and an emphatic particle *bhii*, which is equivalent to *even*. Lahiri also assumes that *bhii* introduces a set of focus-induced alternative propositions, similar to *even*, and moves in LF by an operation like quantifier raising. The indefinite elements *ek* and *koi* correspond to the cardinality predicate *one*, which is the weakest possible predicate that is true of anything that exists, and the focus-induced alternatives to *one*, triggered by *bhii*, are **two**, **three**, **four**, etc.

Given all these assumptions, (26a) asserts (26b) and induces the scalar presupposition in (27).⁷

(26) a. *Koi bhii nahiiN aayaa.*
anyone didn't come
 'No one came.'

b. $\lambda w. \neg \exists x[\mathbf{one}(x) \wedge \text{came}(x)(w)]$

(27) $\text{likelihood}(\lambda w. \neg \exists x[\mathbf{Z}(x) \wedge \text{came}(x)(w)])$
 $> \text{likelihood}(\lambda w. \neg \exists x[\mathbf{one}(x) \wedge \text{came}(x)(w)])$
 (\mathbf{Z} represents cardinality predicates other than **one**.)

In general, since **one** is the weakest predicate, the following entailment relation (28) and likelihood relation (29) hold:

(28) $\exists x[\mathbf{Z}(x) \wedge \text{came}(x)] \rightarrow \exists x[\mathbf{one}(x) \wedge \text{came}(x)]$

(29) $\text{likelihood}(\lambda w. \exists x[\mathbf{one}(x) \wedge \text{came}(x)(w)])$
 $\geq \text{likelihood}(\lambda w. \exists x[\mathbf{Z}(x) \wedge \text{came}(x)(w)])$

⁷ Lahiri (1998) assumes the logical form (ii) for (i):

(i) **Koi bhii aayaa.*
 'Anyone came.'

(ii) $[\text{IP}_1 [\text{Det } koi \text{ bhii}]_i [\text{IP}_2 [\text{NP } [\text{Det } t_i]_F \varphi]_j [\text{IP}_3 t_j \text{ aayaa}]]$

Lahiri further assumes that IP2 in (ii) translates as (iii) via the operation of Existential Closure, following Heim (1982):

(iii) $\lambda \mathbf{P}[\exists x[\mathbf{P}(x) \wedge x \text{ came}]]$

The focal closure of (iii) in line with Rooth (1985) is (iv):

(iv) $\lambda p[\exists \mathbf{P}[p = \hat{\ } \exists x[\mathbf{P}(x) \wedge x \text{ came}]]]$

If the translation of the indefinite element *koi*, namely, **one**, is applied to (iii), we get (v):

(v) $\exists x[\mathbf{one}(x) \wedge x \text{ came}]$

As can be seen, the definite element *koi*, which is translated as **one** by Lahiri, and the intension operator $\hat{\ }$ in (iv) is tantamount to λw in (26b).

Based on these, the unacceptability of sentence (30a) could be accounted for. (30a) asserts (30b) and induces the scalar presupposition in (31).

- (30) a. *Koi bhii aayaa.
 anyone came
 ‘Anyone came.’
- b. $\lambda w. \exists x[\mathbf{one}(x) \wedge \text{came}(x)(w)]$

- (31) $\text{likelihood}(\lambda w. \exists x[\mathbf{Z}(x) \wedge \text{came}(x)(w)])$
 $> \text{likelihood}(\lambda w. \exists x[\mathbf{one}(x) \wedge \text{came}(x)(w)])$

However, (31) conflicts with the general entailment and likelihood relation of **one** in (28) and (29), which explains why NPIs like *koi bhii* are not allowed in affirmative sentences as in (30a).

When it comes to Guerzoni’s (2002) analysis of questions with minimizers, it assumes the following:

- (32) a. *Yes/no*-questions involve a hidden *whether*.
- b. *Whether* denotes an existential quantifier that quantifies over functions of type $\langle \text{st}, \text{st} \rangle$.
- c. *Whether* comes with an implicit restrictor—the set containing the identity $(\lambda p. p)$ and the negation $(\lambda p. \sim p)$ functions; i.e., *whether* means *which of yes or no*.
- d. *Whether* moves over the set-creating Q morpheme, leaving a trace of type $\langle \text{st}, \text{st} \rangle$ in its base position.
- e. The resulting denotation for a *yes/no*-question is a Hamblin set, i.e., the set containing the possible answers.
- f. Questions containing *even* are scopally ambiguous—*even* can take either narrow or wide scope with respect to the trace of *whether*.

Based on (32a-f), Guerzoni comes up with the following two LF representations (34a, b) for question (33a) with a minimizer in focus.

- (33) a. Can Sue even [add 1 to 1]_F?
- b. For any alternative *x* to ‘adding 1 to 1,’ that
 Sue can do *x* is less likely than that she can add 1 to 1.
- (34) a. [_{whether}₁ [Q [_t₁ [even [Sue can add 1 to 1]]]]] (_t_{whether} > *even*)
- b. [_{whether}₁ [Q [even [_t₁ [Sue can add 1 to 1]]]]] (*even* > _t_{whether})

(35) shows the semantic composition of (34a), in which the trace of *whether* scopes over *even*:

- (35) a. Result of composition: { $\llbracket \text{even} \rrbracket(p), \sim \llbracket \text{even} \rrbracket(p) \}$
 b. $\llbracket \text{no} \rrbracket = \sim \llbracket \text{even} \rrbracket(\text{Sue can add 1 to 1})$
 ScalarP: *Sue can add 1 to 1* is the least likely proposition among the alternatives.
 c. $\llbracket \text{yes} \rrbracket = \llbracket \text{even} \rrbracket(\text{Sue can add 1 to 1})$
 ScalarP: *Sue can add 1 to 1* is the least likely proposition among the alternatives.

According to (35a-c), (33a) is interpreted to ask whether Sue can do adding 1 to 1, which is the least likely thing among the alternatives, or she cannot do the least likely thing. And yet, Guerzoni argues that the scalar presupposition for both the negative and affirmative answer is not felicitous, so that the interpretation should be ruled out.

On the other hand, (36) shows the semantic composition of (34b), in which *even* scopes over the trace of *whether*:

- (36) a. Result of composition: { $\llbracket \text{even} \rrbracket(p), \llbracket \text{even} \rrbracket(\sim p) \}$
 b. $\llbracket \text{no} \rrbracket = \llbracket \text{even} \rrbracket(\text{Sue cannot add 1 to 1})$
 ScalarP: *Sue cannot add 1 to 1* is the least likely proposition among the alternatives.
 c. $\llbracket \text{yes} \rrbracket = \llbracket \text{even} \rrbracket(\text{Sue can add 1 to 1})$
 ScalarP: *Sue can add 1 to 1* is the least likely proposition among the alternatives.

According to (36a-c), (33a) is interpreted to ask whether *Sue cannot add 1 to 1*, which is the least likely proposition among the alternatives, or *Sue can add 1 to 1*, which is the least likely proposition. Guerzoni argues that the proposition *Sue can add 1 to 1* is, in fact, the most likely proposition so that the affirmative answer (36c) is not available for (33a), whereas the proposition *Sue cannot add 1 to 1* is least likely so that the negative answer (36b) is available for (33a). Hence, question (33a) should receive negative-biased interpretation, and this is the kind of interpretation that questions with minimizers generally receive.

Furthermore, Guerzoni resorts to the notion of context in order to rule out answers like (35b, c) and (36c) for questions with minimizers like (33a).⁸

In the following section, we will discuss some of the problems of An's account of the distribution of *amu-(N)-to* and *amu-(N)-rato* based on the theories presented above.

3. Discussion

As discussed above, An (2007), similar to Chung et al., observes that *amu-(N)-to* and *amu-(N)-rato* are complementarily distributed, and proposes that this distri-

⁸ For a detailed discussion on the issue of presupposition and possible answers in a context, we refer the reader to Guerzoni (2002).

bution can be accounted for by the opposite scope properties of the emphatic particles *to* and *rato*.

First, An observes that in affirmative sentences, neither *amu-(N)-to* or *amu-(N)-rato* is allowed, as in (37a, b), which An attempts to account for by the opposite scope properties of *to* and *rato* and Lahiri's (1998) analysis of Hindi NPIs.

- (37) a. *John-un **amu-chayk-to** ilk-ess-ta.
John-Top any-book-TO read-Past-Dec
 '(lit.)John read any book.'
- b. *John-un **amu-chayk-irato** ilk-ess-ta.
John-Top any-book-RATO read-Past-Dec

And yet, (37b) seems to be felicitous, different from An's observation. The following similar example also sounds acceptable.

- (38) Na-nun muryohayse ancasa **amu-chayk-irato** ilk-ess-ta.
I-Top being bored sitting any-book-RATO read-Past-Dec
 'Being bored, I read some book(s) while sitting.'

What (38) means is such that I, being bored, read some book(s). On the other hand, the following similar example means that I, being bored, read all the books, no matter how tedious or complicated they are.

- (39) Na-nun muryohayse ancasa **amu-chayk-irato** ta ilk-ess-ta.
I-Top being bored sitting any-book-RATO all read-Past-Dec

Without recognizing the existence of acceptable examples like (37b), (38), and (39), An argues that the LF representation of (37a, b) is identical as in (40), and that the semantics of *to* and *rato* in (13), repeated below as (41), induces the presupposition that *John read one book* is the least likely proposition among the alternatives, which entails (42). And yet, (42) conflicts with the general entailment and likelihood relation of **one** in (43), which explains, according to An, the disallowance of *to*-NPIs and *rato*-NPIs in affirmative sentences.

- (40) [**to** [_P John-un amu-chayk ilkessta]] (*p* = John read one book)

$$(41=13) \llbracket \text{to/rato} \rrbracket = \lambda C_{\langle st, t \rangle} . \lambda p_{\langle st \rangle} : \forall q_{\langle st \rangle} [q \in C \wedge q \neq p \rightarrow q >_{\text{likely}} p] . p$$

- (42) likelihood($\lambda w . \exists x [\mathbf{Z}(x) \wedge \text{book}(x)(w) \wedge \text{read}(x)(J)(w)]$)
 > likelihood($\lambda w . \exists x [\mathbf{one}(x) \wedge \text{book}(x)(w) \wedge \text{read}(x)(J)(w)]$)

- (43) likelihood($\lambda w . \exists x [\mathbf{one}(x) \wedge \text{book}(x)(w) \wedge \text{read}(x)(J)(w)]$)
 ≥ likelihood($\lambda w . \exists x [\mathbf{Z}(x) \wedge \text{book}(x)(w) \wedge \text{read}(x)(J)(w)]$)

Second, An observes that the so-called *to*-NPIs are licensed in negative sentences, whereas the so-called *rato*-NPIs are not, as illustrated in (44a, b).

- (44) a. **Amu-to** an wa-ss-ta.
anyone-TO not come-Past-Dec
 'No one came.'
- b. ***Amu-rato** an wa-ss-ta.
anyone-RATO not come-Past-Dec
 'No one came.'

However, compare (44b), which sounds a bit awkward, to the following similar examples, which sound natural.

- (45) a. **Amu-rato** ta an wa-ss-ta.
anyone-RATO all not come-Past-Dec
 'No one came.'
- b. **Amu-rato** oci mothay-ss-ta.
anyone-RATO come cannot-Past-Dec
 'No one could come.'
- c. **Amu-rato** mot-wa-ss-ta.
any-RATO cannot-come-Past-Dec
 'No one could come.'

What (45a) means is such that no one came regardless of whether the person was the most likely one to come. As for (45b), one meaning is such that at least someone should have come, but could not, so that no one came. Another reading is such that no one could come regardless of whether the person was the most likely one to come. These two readings also seem to be available for (45c).

Again, without recognizing the existence of acceptable examples like (45a, b, c), An argues that *to* takes scope over negation while negation scopes over *rato* so that the reverse grammaticality between *amu-(N)-to* and *amu-(N)-rato* occurs as in (44a, b).

Third, An argues that the so-called *to*-NPIs are not licensed in interrogative sentences, while the so-called *rato*-NPIs are allowed in the same contexts, as in the following examples.

- (46) a. *Nay-ka **amu-chayk-to** hwumchi-ess-ni?
I-Nom any-book-TO steal-Past-Q
 'Did I steal any books?'
- b. Nay-ka **amu-chayk-irato** hwumchi-ess-ni?
I-Nom any-book-RATO steal-Past-Q
 'Did I steal any books?'

An argues that the presupposition of (46a) clashes with the general entailment and likelihood relation of **one**, which leads to its ungrammaticality. When it comes to (46b), An argues that *rato* scopes over the trace of *whether*, and that the LF of (46b) and its compositional derivation are like the following.

- (47) a. $[(v) \text{ whether } [_{(iv)} I [_{(iii)} Q [_{(ii)} \text{rato} [_{(i)} t [p \text{ nay-ka amu-chayk hwumchi-ess}]]]]]]]$
 (p = I steal one book)

b. Result of composition at the level of (v): { $[[\text{rato}]](p)$, $[[\text{rato}]](\neg p)$ }

Two choices are given at node (v) in (47a), but the affirmative answer leads to a presupposition clash while the negative one does not. Consequently, An claims that the question (46b) is negatively biased. And yet, if we have a third person subject instead of a first person subject as in (48b), the question is no longer negatively biased. Both affirmative and negative answer are possible for (48b). It seems unclear how An explains this.

- (48) a. *Jerry-nun **amu-chayk-to** ilk-ess-ni?
Jerry-Top any-book-TO read-Past-Q
 'Did Jerry read any books?'
 b. Jerry-nun **amu-chayk-irato** ilk-ess-ni?
Jerry-Top any-book-RATO read-Past-Q
 'Did Jerry read any books?'

Fourth, An argues that in other contexts such as relative clauses headed by a universal quantifier, conditionals, and complements of adversative predicates, *amu-(N)-rato* is allowed, while *amu-(N)-to* is not.

- (49) a. **Amu-chayk-irato** ilkun motun haksayng-un hapkyekha-ess-ta.
any-book-RATO read every students-TOP pass-Past-Dec
 'Every student who read any books passed the exam.'
 b. Nay-ka **amu-rato** po-myen, allie cwu-keyss-ta.
I-Nom anyone-RATO see-if, inform give-Future-Dec
 'If I see anyone, I will let you know.'
 c. Ney-ka **amu-chayk-irato** ilk-ess-tani nolapkuna.
you-Nom any-book-RATO read-Past-Comp is-surprising
 'It is surprising that you read any books.'
- (50) a. ***Amu-chayk-to** ilkun motun haksayng-un hapkyekha-ess-ta.
any-book-TO read every students-TOP pass-Past-Dec
 b. *Nay-ka **amu-to** po-myen, allie cwu-keyss-ta.
I-Nom anyone-TO see-if, inform give-Future-Dec
 c. *Ney-ka **amu-chayk-to** ilk-ess-tani nolapkuna.
you-Nom any-book-TO read-Past-Comp is-surprising

Again, An tries to explain the unacceptability of sentences in (50a, b, c) by assuming that the quantifier raising of *to* is clause-bound, as stipulated in (22a).

Fifth, An argues that his analysis is able to confirm the prediction that in certain well-defined contexts, a *yes/no*-question can also be biased towards a positive

answer. This prediction was noted in Guerzoni’s (2002; 2004) work, but could not be confirmed, since English *even* is scopally ambiguous. To show this, An discusses the sentences in (52a, b), based on the table (51), adapted from Guerzoni (2004, 340).

(51)		(a) $\text{trace}_{\text{whether}} > \text{even}$	(b) $\text{even} > \text{trace}_{\text{whether}}$
	Easy P.	(i) # Yes # No	(i) # Yes No
	Hard P.	(ii) Yes No	(ii) Yes # No

According to An, in (51), column (a) corresponds to *to* and column (b) to *rato*, and row (i) corresponds to the cases of NPIs and minimizers in *yes/no*-questions. In (51), ‘Easy P.’ indicates that the *yes-no* questions containing NPIs and minimizers have the so-called easy presupposition in the sense that the NPIs and minimizers occupy the lowest positions on the relevant scales, while ‘Hard P.’ indicates that the *yes-no* questions containing those nouns that occupy the highest points of the relevant scales have the so-called hard presupposition in the sense that the nouns are the hardest objects to be achieved.⁹

(51b.i) indicates that the *yes-no* questions containing NPIs and minimizers with *rato* are biased towards negative answers. As for (51a.ii), which involves a noun with *to*, the hard presupposition remains unaffected by the trace of *whether*, so that both positive and negative answers are possible in this case. On the other hand, in (51b.ii), which involves a noun with *rato*, since *rato* scopes over the trace of *whether*, the hard presupposition is affected depending on whether the question is positively answered or negatively answered. That is, if negatively answered, it would lead to the presupposition that $\neg p$ is the least likely, which is equivalent to the easy presupposition. However, if the question under discussion is positively answered, the hard presupposition is preserved. Hence, the question is positively biased. An’s argument is so far so good, but let us consider the following examples which are discussed to confirm his argument.

- (52) a. Ne Syntactic Structures-*to* ilk-ess-ni?
you SS-TO *read-Past-Q*
 ‘Did you even read Syntactic Structures?’
- b. Ne Syntactic Structures-*rato* ilk-ess-ni?
you SS-RATO *read-Past-Q*

In (52a, b), “Syntactic Structures” is assumed to occupy the high end point of the relevant scale. An argues that both of the two sentences seem to convey a sense of surprise, and that (52a) allows both positive and negative answers while (52b) is positively biased. For (52b), simple ‘No’ answer is not possible. And yet, intuitively, (52b) does not seem to be biased towards a positive answer. Consider the following my own examples.

⁹ Here, the term “achieved” is intended to mean, for example, an object is the hardest to read, the hardest to show up, the hardest to solve, etc.

- (53) a. Ne kwisin-**irato** po-ass-ni?
you ghost-RATO see-Past-Q
 (lit.) 'Did you even see a ghost?'
 b. Ne lotto-**rato** tangchem-toy-ess-ni?
you lottery-RATO win-Passive-Past-Q
 (lit.) 'Did you even win a lottery?'

Both (53a) and (53b) belong to (51b.ii). However, the speaker of questions like these does not seem to expect any answer, positive or negative, from the addressee. That is, (53a) could be uttered in a situation where, say, the addressee looks terribly scared or tired, as illustrated in (54). (53b) could also be uttered in situations like (55).

(54) A: You look like hell. Did you see a ghost?

B: I just ran into the Math teacher.

B': Oh, I just didn't sleep a wink last night.

(55) A: You spend a lot of money these days. Did you win a lottery?

B: I hope I did.

B': I just bought a couple of Hugo Boss, that's all.

Consequently, An's claim that questions like (52b) and (53a, b) are positively-biased does not seem to be intuitively supported. Furthermore, in some cases, these questions are not real questions to ask for an answer. It is rather that in those cases, the obvious answer for these questions is a negative one, and that they are uttered to simply ask for an explanation or comment about a certain situation.

Another issue is related to category (51a.i) and (51b.i). In line with An's argument, minimizers seem to conform to the generalizations in (51a.i) and (51b.i). That is, question (56a) with a minimizer, which is cited from An (2007, 344), is negatively biased. And yet, contrary to An's argument, question (56b) with a so-called NPI is a neutral question, not a negatively biased question.

- (56) a. Mary-ka sonkarak hana-**rato** kattakha-ess-ni?
Mary-Nom finger one-RATO click-Past-Q
 'Did Mary even lift a finger (to help you)?'
 b. Ne **amu-chayk-irato** ilk-ess-ni?
you any-book-RATO read-Past-Q
 'Did you read any book?'

Sixth, An argues that in line with his analysis, *to*-NPIs are allowed in negative interrogative sentences, while *rato*-NPIs are not, as in the following. However, contrary to An's observation, (57b) seems to sound natural.

- (57) a. Ne **amu-chayk-to** an ilk-ess-ni?
you any-book-TO not read-Past-Q
 'Didn't you read any books?'
- b. *Ne **amu-chayk-irato** an ilk-ess-ni?
you any-book-RATO not read-Past-Q
 'Didn't you read any books?'

Seventh, An admits himself that he does not provide any syntactic or semantic explanation for the complementary distribution of *amu-(N)-to* and *amu-(N)-rato*, so that his analysis based on the scopal differences between *to* and *rato* remains as a stipulation. Furthermore, in sum, we have discussed in this section that *amu-(N)-to* and *amu-(N)-rato* do not really seem to be complementarily distributed. As we have seen, *amu-(N)-to* is licensed in quite limited contexts, whereas *amu-(N)-rato* is allowed in quite various contexts.

Given this, in the following section, we will try to provide a semantic analysis of *amu-(N)-to* and *amu-(N)-rato*, which could persuasively account for their different distributions.

4. *To* vs. *Rato*

As discussed above, Chung et al. as well as An observe that *amu-(N)-to* and *amu-(N)-rato* are licensed in complementary contexts. Hence, they argue that *to* and *rato* are basically the same kind of morphemes with the same meaning. Chung et al. propose that *amu* is an arbitrary choice quantifier and the particles *to* and *rato* are both concessive markers. Chung et al. further argue that based on the pragmatics of scalar implicature, the apparent ambiguity of PSIs between universal and existential readings are accounted for. An also argues that both *to* and *rato* in *amu-(N)-to/rato* are emphatic particles tantamount to English *even*, and that their complementary distribution is accounted for by their opposite scope properties.

On the other hand, Lee (1992) argues that the so-called *amu-(N)-to/rato* NPIs are not in complementary distribution, based on the following observations.

- (58) a. Both *to-* and *rato-*NPIs can be licensed in counterfactual *before* clauses.
 b. Both *to-* and *rato-*NPIs can be licensed in the protasis of conditionals.

An argues, however, that neither of (58a) and (58b) is true. First, An argues that (59) is ungrammatical, contrary to Lee's intuition.

- (59) ***Amu-to** oki-ceney ese tte-naca.
anyone-TO come-before quickly leave-let's
 'Let us leave before anyone comes.'

On the other hand, Chung et al. argue that (60a) is acceptable while (60b) is not.

- (60) a. Koni-nun **amu-to** chacaoki-ceney cip-ul nase-ess-ta.
Koni-TOP anyone-TO visit-before house-ACC leave-Past-Dec
 'Koni left home before anyone came to his house.'

- b. *Koni-nun **amu-rato** chacaoki-ceney cip-ul nase-ess-ta.
Koni-TOP anyone-RATO visit-before house-ACC leave-Past-Dec
 ‘Koni left home before anyone came to his house.’

To sum up, An argues that *amu-(N)-to* is not licensed in *before* clauses while *amu-(N)-rato* is licensed. Chung et al. argue that *amu-(N)-to* is licensed in *before* clauses while *amu-(N)-rato* is not. Lee argues that both *amu-(N)-to* and *amu-(N)-rato* are licensed in *before* clauses. My informants and I agree with Lee’s observation (58a). That is, we judge that (59) and (60a, b) are all grammatical.

Second, An argues that (58b) is not true, as illustrated in the following example.

- (61) ***Amu-kes-to** mek-umyen, kumpang cichiko malkes-ita.
any-thing-TO eat-if soon tired end-up-Dec
 ‘If you eat anything, you will end up being tired.’

That is, An argues that *amu-(N)-to* is not allowed in the antecedent clause of a conditional. As An argues, *amu-(N)-to* in affirmative contexts, contrary to *amu-(N)-rato*, seems unacceptable in the protasis of conditionals.

Given all these and what we have discussed in the previous section, we should admit that our intuitions seem to vary in some contexts. Nevertheless, in sections 2 and 3, I have tried to show that *amu-(N)-to* and *amu-(N)-rato* are not complementarily distributed, and that *amu-(N)-rato*, contrary to *amu-(N)-to*, is licensed in quite various contexts. Furthermore, I observe that if appropriate forms and contents of sentences with *amu-(N)-rato* meet appropriate utterance contexts, *amu-(N)-rato* seems to be licensed in all the reported types of contexts in question.

Based on all these observations and discussions, I will try to provide a semantic and distributional account of *amu-(N)-to* and *amu-(N)-rato*, in the following paragraphs. First of all, based on the observation in section 3 that *amu-(N)-to* and *amu-(N)-rato* are not in complementary distribution, I propose that *to* and *rato* are two different particles with different meanings. First, consider the following examples.

- (62) a. Helen-**to** o-ko Phil-**to** wa-ss-ta.
Helen-TO come-and Phil-TO come-Past-Dec
 ‘Helen and Phil also came.’
 b. Ku party-ey-nun taythongryeng-**to** chamsekhay-ss-ta.
the party-at-TOP President-TO attend-Past-Dec
 ‘As for the party, also/even the President attended.’

As generally known, *to* in (62a) means *also*. As for *to* in (62b), it also means *also*, in a neutral context. On the other hand, in an emphatic context, the NP *taythongryeng* is presupposed to be the least likely person to attend the party, so that it is implicated that all the relevant people attended the party.¹⁰ Here, the

¹⁰ As Francescotti (1995) proposes, it is not necessary for the emphatic NP to be less likely or more surprising than all of its alternatives in the context, but it suffices that the NP is less likely than most of its alternatives. For more details on this issue, refer to Bennett (1982), Barker (1991), and Berckmans (1993), including Francescotti (1995).

NP, which refers to the most surprising or the least likely entity, combined with *to* meaning *also*, creates a generalized emphatic statement such that all people in the context including the President attended the party. In other words, the President, who is the least likely person to attend, also attended the party, which implicates that all the other people under discussion, including the President, attended the party.

Also consider the following sentences with *to*.

- (63) a. Ku party-ey-nun taythongryeng-to chamsekhaci-anh-ass-ta.
the party-at-TOP President-TO attend—Neg-Past-Dec
 ‘As for the party, the President also did not attend.’
- b. Ku party-ey-nun party-kwang-in Phil-to chamsekhaci-anh-ass-ta.
the party-at-TOP party-freak-is Phil-TO attend—Neg-Past-Dec
 ‘As for the party, also/even the party freak Phil did not attend.’
- c. Ku party-ey-nun party-kwang-in Phil-to chamsekhay-ss-ta.
the party-at-TOP party-freak-is Phil-TO attend-Past-Dec
 ‘As for the party, the party freak Phil also attended.’

As for (63a), if you can find a scale on which *taythongryeng* takes up the highest end point, the whole sentence leads to the generalization that none of the people under discussion including the most likely person to come, the President, attended the party. However, if you cannot find such a scale, then (63a) cannot be interpreted as such a generalized emphatic statement. Instead, it just means that the President also did not attend the party.

When it comes to (63b), a scale on which the party freak, Phil, takes up the highest end point can be easily found, since party freaks like to attend parties. Hence it is easily implicated that none of the people under discussion including the most likely person to come, the party freak Phil, came to the party. Or it could be implicated that most of the people under discussion including Phil did not attend the party, in line with Francescotti (1995).

For (63c), it can only mean that Phil also attended the party. Since Phil takes up the highest end point, it cannot lead to an implication that all or most people under discussion including Phil attended the party.

Now consider some examples with *rato*.

- (64) a. Phil-un amuri eryewun chayk-irato ilk-ess-ta.
Phil-TOP no-matter-how difficult book-RATO read-Past-Dec
 ‘Phil read (all the) books no matter how difficult they are.’
- b. Phil-un amuri shiwun chayk-irato ilkci-anh-ass-ta.
Phil-TOP no-matter-how easy book-RATO read-Neg-Past-Dec
 ‘Phil did not read any books no matter how easy they are.’

First, as for (64a), *rato* has a concessive meaning such as *although* and *no matter how*, and, combined with an NP which takes up the lowest end point of a relevant scale, it implicates that Phil read (all the) books including the most

difficult book. On the other hand, in (64b), the concessive marker *rato*, combined with the NP occupying the highest end point of the scale, leads to the implication that Phil did not read (any of the) books including the easiest book.

But consider the following examples.

- (65) a. ?Phil-un amuri eryewun chayk-irato ilkci-anh-ass-ta.
Phil-TOP no-matter-how difficult book-RATO read-Neg-Past-Dec
- b. Phil-un (amuri) shiwun chayk-irato ilk-ess-ta.
Phil-TOP (no-matter-how) easy book-RATO read-Past-Dec
 ‘Phil (at least) read a book (or books) although it is an easy book (or they are easy books).’

(65a), which is the same sentence as (64a) except that it is negated, sounds unnatural. It is because the concessive marker *rato* and the NP *amuri eryewun chayk* are semantically in conflict with each other. That Phil did not read a very difficult book (or very difficult books) is not a concessive statement. On the other hand, (65b) sounds natural, since it is a concessive statement in the sense that Phil at least read some book(s) although the book or books are easy or trivial books, say, compared to other boys who did not read any book at all.

Consider more examples with the concessive marker *rato*.

- (66) a. Helen-irato wa-ss-ta.
Helen-RATO come-Past-Dec
 ‘At least, Helen came.’
- b. Na-nun achim-ey wuwyu han-can-irato masi-ess-ta.
I-Top morning-at milk one-glass-RATO drink-Past-Dec
 ‘At least I drank a glass of milk in the morning.’

(66a) is a concessive statement in that at least someone, Helen, came although, say, she was not a great add on the guest list, or although just one person coming in did not meet our expectation. As for (66b), it means that although, say, a glass of milk is not much to be counted as a meal, at least I ate something for breakfast.

To summarize what we have observed so far in this section, *to* and *rato* are two different particles with two different meanings. First, *to* is a particle with a meaning *also*. Even in emphatic sentences like (62b) and (63b), *to* means *also*. When the NP combined with *to* takes up the highest (or a fairly high) or the lowest (or a fairly low) point of a relevant scale, depending on the context, the whole sentence leads to a generalized emphatic implication. On the other hand, *rato* is a concessive marker, so that it always combines with the highest (or a fairly high) or the lowest (or a fairly low) point on a relevant scale to induce an emphatic statement.¹¹

I further propose that these meanings of *to* and *rato* are maintained in sentences with *amu-(N)-to/rato* with some slight differences, unlike Chung et al.’s and An’s

¹¹ Although we have been assuming that the emphatic NP combined with *to* or the NP combined with *rato* occupies the highest or the lowest end point of a relevant scale, the NP’s taking up a fairly high or low point on a scale seems to suffice intuitively, as pointed out in footnote 9.

proposals among others. As we have discussed above, Chung et al. propose that both *to* and *rato* in *amu-(N)-to/rato* are concessive markers, and An proposes that both of them are equivalent to English *even*.

Amu is a personal pronoun or a pre-noun that refers to an undefined person or entity. As is well known, *amu* is usually used with negative predicates when combined with a particle *to*, whereas it can be used with affirmative predicates when combined with a particle *rato* or *na*. In the above examples like (62b), (63b), (64a, b), (65b), and (66a, b), the NPs combined with *to* or *rato* are easily interpreted to occupy the highest or the lowest point on a relevant scale. On the other hand, *amu* does not really say much about its identity, i.e., about what entity it refers to. I propose that this non-specific indefinite reference of *amu* leads to an interesting distribution of *amu-(N)-to* and *amu-(N)-rato*, as will be illustrated in the following. But, before that, one thing to note is that in Korean, similar particles *etten* and *enu* in addition to *amu* exist. Both *etten* and *enu* have several functions, but they are indefinite particles, roughly tantamount to English *some*. And yet, one difference between *amu* and *etten* or *enu* is that the former signals emphatic statements, contrary to the latter, as also observed by other linguists including An and Chung et al. Another difference is that *amu* has a non-specific indefinite reference, whereas *etten* or *enu* could have both a specific and non-specific indefinite reference.

First, consider a couple of examples with *amu-(N)-to*.

- (67) a. ***Amu-to** wa-ss-ta.
 anyone-TO come-Past-Dec
- b. **Amu-to** oci-anh-ass-ta.
 anyone-TO come-Neg-Past-Dec
 ‘Nobody came.’

In (67a), *amu* does not specify what kind of person or who s/he was. Hence the sentence amounts to mean that some unspecified and undefined person also came, which, however, does not mean much and does not lead to an emphatic statement. On the other hand, (67b) could mean either that some unspecified person also did not come, or that it is not the case that any unspecified and undefined person came. The former reading does not lead to an emphatic statement, whereas the latter reading implicates that no one came and leads to a total negative emphatic statement. Consequently, only the latter reading survives. Furthermore, (67b) is acceptable, while (67a) is not.

This time, consider examples with *amu-(N)-rato*.

- (68) a. **Amu-rato** wa-ss-ta.
 anyone-RATO come-Past-Dec
 ‘At least someone came.’
- b. **Amu-rato** ta wa-ss-ta.
 anyone-RATO all come-Past-Dec
 ‘Everyone came.’

- c. **Amu-rato** (ta) oci-anh-ass-ta.
anyone-RATO (all) come-Neg-Past-Dec
 ‘Nobody came.’

In (68a), *amu* means some unspecified person and *rato* is a concessive marker. How is it possible for *amu-rato* to be licensed here, contrary to *amu-to*? Here, again, *amu-rato* does not refer to either the most likely or the least likely person to come. What *rato* concedes here is the quantity, not the quality. That is, (68a) is interpreted to mean that at least there exists someone who came, although, say, not many people came. On the other hand, in (68b), *rato* concedes the quality. That is, (68b) is interpreted to mean that just anyone came, regardless of whether the person was the least likely one to come. (68c) is just the negative version of (68b). In the following example (69), as indicated by the gloss, *rato* concedes the quantity.

- (69) Cinanhay kinyemsik-ey-nun wuri kikwan-eyse **amu-rato**
last year ceremony-at-Top our institution-from anyone-RATO
 chamsekhay-ss-ciman, olhay-nun **amu-to** chamsekha-lsuka-eps-ta.
participate-Past-Conces this year-Top anyone-TO participate-can-Neg-Dec
 ‘Although at least someone from our institution was present at the
 ceremony last year, no one can participate in the ceremony this year.’

Consider more examples with *amu-(N)-to/rato*.

- (70) a. *Na-nun keki ancasa **amu-chayk-to** ilk-ess-ta.
I-Top there sitting any-book-TO read-Past-Dec
- b. Na-nun keki ancasa **amu-chayk-irato** ilk-ess-ta.
I-Top there sitting any-book-RATO read-Past-Dec
 ‘I read at least some book(s) sitting there.’
 ‘I at least read some book(s) sitting there.’
- c. Na-nun keki ancasa **amu-chayk-irato** ta ilk-ess-ta.
I-Top there sitting any-book-RATO all read-Past-Dec
 ‘I read all of the books sitting there, no matter how trifling or boring
 they are.’

In (70a), the NP *amu chayk* is non-specific indefinite. In other words, what kind of book it refers to or what part of a relevant scale it occupies is not specified. Hence (70a) amounts to mean that I also read some undefined book, sitting there. This is neither informative enough nor qualified as an emphatic statement. On the other hand, in (70b), *rato* concedes the quantity at least in two ways. One is the existence of the book(s) I read, and the other is the existence of what I did while sitting there. That is, as indicated by the gloss, one meaning of (70b) is that I read at least some book(s) while sitting there, although they were not much. The other meaning is such that I at least did something while sitting there, i.e., reading some book(s), although, say, I didn’t do something very important. Here, these two interpretations are emphasizing the existence of books read by the speaker and

the existence of work done by the speaker while sitting there, respectively. If *ta* is added as in (70c), *rato* concedes the quality, which leads to mean that I read all the books while sitting there, regardless of whether, say, the book is the most difficult or the most boring book.

Similarly, (71a) does not say much about the correlation between the cause described by the NP and the effect described by the predicate. It is not clear what companies were sued, since how *amu* should be interpreted is not clear. That is, (71a) is tantamount to mean that every company that fired some unspecified employee also was sued. Consequently, (71a) does not mean much and is not an emphatic statement, which leads to its unacceptability. In (71b), *rato* concedes the quantity. That is, (71b) is interpreted to mean that every company that fired at least some employee was sued. This is a generalized emphatic statement in the sense that the proposition that every company that fired one employee was sued is the least likely proposition, which leads to implicate that every company that fired two, ten, or all employees was sued. On the other hand, in (71c), where *ta* is added, *rato* concedes the quality, which leads to mean that every company that fired all the employees, regardless of, say, how much contribution they had made for the company, was sued.¹²

- (71) a. ***Amu-to** haykoha-n hoysa-nun motwu kiso-tanghay-ss-ta.
anyone-TO fire-Adn company-Top all sue-Passive-Past-Dec
- b. **Amu-rato** haykoha-n hoysa-nun motwu kiso-tanghay-ss-ta.
anyone-TO fire-Adn company-Top all sue-Passive-Past-Dec
 'Every company that fired any employee was sued.'
- c. **Amu-rato ta** haykoha-n hoysa-nun motwu kiso-tanghay-ss-ta.
anyone-TO all fire-Adn company-Top all sue-Passive-Past-Dec
 'Every company that fired just all the employees no matter how able they were was sued.'

Before we close this section, let us consider some more examples with *amu-(N)-to/rato*. First, the following examples are modals. (72a) roughly means that some unspecified person also can do the work, which does not mean much and is not an emphatic statement. On the other hand, in (72b), *rato* can be interpreted to concede either the quantity or the quality. As indicated by the gloss, if the quantity is conceded, (72b) means that there exists at least someone who can do the work, although not many people can do it. If the quality is conceded, it means that just anyone, including, say, the least skillful or the least physically strong person, can do the work.

- (72) a. ***Amu-to** ku il-ul halsuiss-ta.
anyone-TO the work-Acc can do-Dec

¹² One thing to note here is that An might argue that *rato* in sentences like (68a), (69), and (70b) induces the so-called SFL reading, but that this reading is irrelevant to our discussion on NPIs. And yet, this concessive reading of *rato* on the quantity scale is also observed in sentences like (71b), (74b), and (75b), which induce the typical readings of NPIs.

- b. **Amu-rato** ku il-ul halsuiss-ta.
anyone-RATO the work-Acc can do-Dec
 ‘Anyone can do the work. / There is at least someone who can do the work.’

The following imperatives could also be explained in a similar way. (73a) is unacceptable, since it cannot be interpreted as an emphatic statement presupposed by *amu*. And yet, (73b) and (73c) contain a concessive marker *rato*, which could be interpreted to concede either the quantity or the quality. In (73b), *rato* concedes the quantity, whereas in (73c), it concedes the quality. (73b) means, ‘Read at least some book(s), although it is better that you read more books.’ (73c) is interpreted to mean, ‘Read all the books, say, no matter how difficult, boring, or long they are.’

- (73) a. ***Amu-chayk-to** ilk-era.
any-book-TO read-Imp
- b. **Amu-chayk-irato** ilk-era.
any-book-RATO read-Imp
 ‘Read at least some book(s).’
- c. **Amu-chayk-irato ta** ilk-era.
any-book-RATO all read-Imp
 ‘Read all the books.’

Also consider the following interrogatives. (74a) roughly means, ‘Did you hear some unspecified news also from Matthew?’ And yet, it does not satisfy the presupposition of *amu*, which differentiates it from *etten* or *enu*. As for (74b), due to *rato*, it is interpreted to mean, ‘Did you hear at least some news, any news at all, from Matthew, although it would be better if you heard more news from Matthew?’

- (74) a. ***Matthew-ropwuthe amu-sosik-to** tul-ess-ni?
Matthew-from any-news-TO hear-Past-Q
- b. **Matthew-ropwuthe amu-sosik-irato** tul-ess-ni?
Matthew-from any-news-RATO hear-Past-Q
 ‘Did you hear any news from Matthew?’

Lastly, consider the following conditionals. Again, in (75a), *amu* does not live up to its presupposed function, which leads to the unacceptability of (75a). On the other hand, in (75b), *rato* is interpreted to concede either the quantity or the quality.

- (75) a. ***Amu-to** o-myen, na-hantey alye-cwue.
anyone-TO come-if, I-to inform-Req
- b. **Amu-rato** o-myen, na-hantey alye-cwue.
anyone-RATO come-if, I-to inform-Req
 ‘Please inform me, if anyone comes.’

To summarize, in this section, I have tried to show that *to* and *rato* are two different particles with two different meanings. I have proposed that *to* just means *also*, whereas *rato* is a concessive marker that could concede either the quantity or the quality. Furthermore, *amu* has a non-specific reference and is presupposed to evoke an emphatic statement, different from *etten* and *enu*, which have a similar meaning with *amu*.

Although An (2007) proposes the same scalar presupposition for *to* and *rato* as in the following (76), when their host noun induces an emphatic reading, we need to have two different denotations for *to* and *rato*, based on what we have discussed above in this section.

$$(76=41) \llbracket \text{to/rato} \rrbracket = \lambda C_{\langle \text{st}, \text{t} \rangle} . \lambda p_{\langle \text{st} \rangle} : \forall q_{\langle \text{st} \rangle} [q \in C \wedge q \neq p \rightarrow q >_{\text{likely}} p] . p$$

As for *to*, *amu-(N)-to* does not satisfy (76) in an affirmative context like (67a), (70a), and (71a), as discussed above, so that the distribution of *amu-(N)-to* is quite limited, almost only to negative contexts. And yet, we could keep (76) as the denotation of *to* in general with an emphatic reading, as in (77).

$$(77) \llbracket \text{to} \rrbracket = \lambda C_{\langle \text{st}, \text{t} \rangle} . \lambda p_{\langle \text{st} \rangle} : \forall q_{\langle \text{st} \rangle} [q \in C \wedge q \neq p \rightarrow q >_{\text{likely}} p] . p$$

On the other hand, the meaning of *rato*, which always induces an emphatic concessive reading, should be two-fold, as in the following.

$$(78) \llbracket \text{rato} \rrbracket =$$

a. $\lambda C_{\langle \text{st}, \text{t} \rangle} . \lambda p_{\langle \text{st} \rangle} :$
 $\forall q_{\langle \text{st} \rangle} [q \in C \wedge q \neq p \rightarrow q >_{\text{likeliness based on quality}} p] . p$

or

b. $\lambda C_{\langle \text{st}, \text{t} \rangle} . \lambda p_{\langle \text{st} \rangle} :$
 $\forall q_{\langle \text{st} \rangle} [q \in C \wedge q \neq p \rightarrow q >_{\text{likeliness of satisfaction based on quantity}} p] . p$

That is, it is proposed that (78a) is satisfied by propositions like (64a), (64b), (68b), and (68c). First, for affirmative propositions like (64a), the host noun occupies the lowest end point of a relevant scale, i.e., the least likely book to read, and *rato* concedes the quality, so that the least likely proposition *p* leads to implicate that Phil read all the books. As for negative propositions like (64b), the host noun occupies the highest end point of a relevant scale, i.e., the most likely book to read, and *rato* concedes the quality, but the proposition is negated. Hence, *p* becomes the least likely proposition based on the quality, and the proposition leads to implicate that Phil did not read any book. Concerning affirmative propositions with *amu* like (68b), it is not explicitly specified which part of a scale is occupied by *amu*. And yet, *amu* is interpreted to concede the quality, as hinted by *ta*, and could be interpreted to occupy the lowest end point of a scale. Hence the least likely proposition *p* leads to implicate that everyone came. As for negative propositions with *amu* like (68c), again, it is not explicitly specified which part of a scale *amu* occupies. And yet, *amu* is interpreted to concede the quality, and it could be interpreted to

occupy the highest end point of a scale. Hence the negative proposition *p*, which is the least likely proposition, leads to implicate that nobody came.

On the other hand, it is proposed that (78b) is satisfied by propositions like (66a, b), (68a), and (70b), (71b), and (72b). First, what (78b) means is that proposition *p* is the least likely satisfaction based on the minimum quantity indicated by the host noun, so that all the alternative propositions of *p*, i.e., *q*, are more likely satisfactions based on more quantities. Hence, here, *rato* concedes the quantity, and induces a proposition that emphasizes the minimum satisfaction. For example, the minimum quantity, i.e., the existence of one person who came in (66a) and the existence of a glass of milk consumed by the speaker in (66b), is conceded by *rato* as the minimum satisfaction. Furthermore, this leads to implicate that all the other alternatives of this proposition would have been more satisfactory. Propositions like (68a) and (70b) with *amu* also lead to similar implications. That is, the minimum quantity, i.e., the existence of some person who came in (68a) and the existence of some book read by the speaker in (70b), is conceded by *rato* as the minimum satisfaction, and the propositions are led to implicate that all the other alternatives were more likely to satisfy the situational expectation. If we consider two more propositions with *amu*, (71b) and (72b), the minimum quantity, i.e., the existence of one employee fired by a company in (71b) and the existence of one person who can do the work in (72b), is conceded by *rato* as the minimum satisfaction. Hence, in (71b), the proposition *p* leads to implicate that every company that fired one or more than one employee was sued. That is, those companies that fired more than one employee are more likely to satisfy the condition for being sued. Similarly, for (72b), the proposition *p* is also led to implicate that all the other alternatives are more likely to satisfy the situational expectation.

5. Conclusions

As observed in sections 3 and 4, although there exist different intuitive judgments among native speakers of Korean about the acceptability of sentences with *to* and *rato*, the argument that *amu-(N)-to* and *amu-(N)-rato* are complementarily distributed seems difficult to be accepted by most Korean speakers. Starting from this observation, it has been argued that previous theories including Chung et al. (2002) and An (2007) that provide a flip-flop analysis for *to* and *rato* are not well motivated.

Although the main focus of this paper has been to review An's analysis and to point out the flaws in An's analysis of the distribution of *amu-(N)-to* and *amu-(N)-rato*, an alternative analysis of *amu-(N)-to* and *amu-(N)-rato* which relies on the different semantics of *to* and *rato*, not on the different scopal properties of *to* and *rato* as argued by An, has also been proposed.

Two reviewers point out that they have qualms about the intuitive judgments of some examples such as (49), (59), (60), and (68). They further point out that arguing for an analysis over another one, based on different intuitive judgments, should be supported with evidence. Concerning this problem, I briefly pointed out at the beginning of section 4 that "I observe that if appropriate forms and contents of sentences with *amu-(N)-rato* meet appropriate utterance contexts, *amu-(N)-rato*

seems to be licensed in all the reported types of contexts in question.” This does not mean that all those examples with *amu-(N)-rato* are always licensed in all the contexts in question. It might be possible that some types of examples sound less appropriate than other types of examples, and that if appropriate utterance contexts are given, their felicity improves. Furthermore, the intuitive judgments of the same type of examples could diverge, depending on the words and the forms of the sentences used, among other factors. Consequently, more discussion should be needed on this issue, which I hold off for future research. Besides, to carry out a large-scale survey on the intuitive judgments of sentences with *amu-(N)-to* and *amu-(N)-rato* could also help clarify the issue.

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