Korean NPIs *amu*-(NP)-*to* vs. *amu*-(NP)-*irato*: An analysis within Inquisitive Semantics

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1. Introduction

Natural language expressions like English *any*-NP need to be licensed in negative, downward-entailing, or non-veridical environments (see (1a) vs. (1b)–(1f)) and are thus labeled as **NPIs** (**Negative Polarity Items**, see Giannakidou 2011, 2017 for a review).

(1)   English *any*-NP is an NPI:

    a.   *Junhyuk saw any sloths.   ⤳ no licensing environment here

    b.   Junhyuk didn't see any sloths.   Negation

    c.   Did Junhyuk see any sloths?   Interrogative

    d.   If Junhyuk has seen any sloths, he would let us know.   Conditional antecedent

    e.   Every kid who saw any sloths took a picture of them.   Restrictor of ∀

    f.   I am surprised that Junhyuk saw any sloths in this area.   Adversative predicate

Korean ***amu*-(NP)-*to*** and ***amu*-(NP)-*irato*** are similar to English *any*-NP in requiring a special licensing environment and are thus considered NPIs. As illustrated in (2), without a licensing environment, these positive episodic sentences in past tense sound degraded.[1]

(2)   *amu*-(NP)-*to* and *amu*-(NP)-*irato* require licensing: (An 2007: (43a) and (43b))

    (2a)/(2b): Intended: 'John read any books.'   ⤳ no licensing environment here

    (This corresponding English translation is also ungrammatical, see also (1a).)

    a.   * John-un   amu chayk-to ilk-ass-ta

        John-TOPIC any book-also read-PAST-DECL

    b.   * John-un   amu chayk-irato ilk-ass-ta

        John-TOPIC any book-also read-PAST-DECL

Intriguingly, as already noted in the literature (e.g., An 2007), *amu*-(NP)-*to* and *amu*-(NP)-*irato* show a complementary distribution in typical NPI-licensing environments (see (3)–(7)):

(3)   *amu*-(NP)-*to* under negation: (An 2007: (10a) and (11a))

    John-un   { amu chayk-to / * amu chayk-irato } ilk-ci   anh-ass-ta

    John-TOPIC any book-also   any book-also   read-COMP not-PAST-DECL

    'John didn't read any books.'

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[1] According to An (2007), although (2b) (i.e., (43b) in An 2007) sounds degraded when *amu chayk-irato* ('any books') is interpreted as an NPI, (2b) sounds good under the free choice interpretation of the *irato*-phrase.

(4)   *amu*-(NP)-*irato* in an interrogative: (An 2007: (10b) and (11b))

Ne   { * amu chayk-to   / amu chayk-irato } ilk-ess-ni?
You   any book-also   any book-also   read-PAST-Q

'Did you read any books?'

(5)   *amu*-(NP)-*irato* in a conditional antecedent: (An 2007: (10c) and (11c))

Nay-ka { * amu-to / amu-rato } po-myen, allie   cwu-keyss-ta
I-NOM   anyone   anyone   see-if,   inform give-will-DECL

'If I see anyone, I will let you know.'

(6)   *amu*-(NP)-*irato* in the restrictor of a universal quantifier: (An 2007: (10d) and (11d))

{ * amu chayk-to   / amu chayk-irato } ilk-un   motun haksayn-tul-un
    any book-even any book-even   read-PAST.REL every students-PL-TOPIC
hapkyekha-ess-ta
pass-PAST-DECL

'Every student who read any books passed the exam.'

(7)   *amu*-(NP)-*irato* under an adversative predicate: (An 2007: (10e) and (11e))

Ney-ka   { * amu chayk-to   / amu chayk-irato } ilk-ess-tani   nolapkuna
You-NOM   any book-even any book-even   read-PAST-COMP is-surprising

'It is surprising that you read any books.'

Table (8) sums up these contrasts in (3)–(7) and demonstrates the exact opposite distribution patterns of *amu*-(NP)-*to* and *amu*-(NP)-*irato* (see also Lee et al. 2000):

(8)   *amu*-(NP)-*to* vs. *amu*-(NP)-*irato*: complementary distribution (based on An 2007)

Licensor	*amu*-(NP)-*to*	*amu*-(NP)-*irato*
negation	✓	✗
interrogative	✗	✓
conditional antecedent	✗	✓
restrictor of a universal quantifier	✗	✓
adversative predicate like *surprise*	✗	✓

One potential view is that *amu*-(NP)-*to* is a genuine NPI, but *amu*-(NP)-*irato* is rather a **free choice item** (**FCI**). Indeed, cross-linguistically, NPIs and FCIs are often related, e.g., English *any* has both an NPI use and an FCI use (see Giannakidou 2011, 2017; see also footnote 1 of this paper and An 2007's footnote 33). However, simply labeling *amu*-(NP)-*to* and *amu*-(NP)-*irato* as NPIs or FCIs is not explanatory. We want to explain how the distinct distribution and meaning interpretation of *amu*-(NP)-*to* and *amu*-(NP)-*irato* are based on and derived from these individual elements: indefinite **amu**, additive particle **to**, copula **i**, and declarative marker **ra**. The current paper aims to provide a novel analysis by combining our existing understanding of these elements and the notion of **inquisitiveness** in **Inquisitive Semantics**.

In the following, Section 2 presents intuitions behind the interpretation of the data in (3)–(7). Section 3 presents the main proposal. Section 4 summarizes the paper, briefly comparing the current proposal with existing accounts and addressing broader theoretical implications.

2. Intuitions behind the main data

Intuitively, (3) contrasts with (4)–(7) with regard to Question-under-discussion (QUD).

As shown in (9), (3) directly addresses a *wh*-question that corresponds to the part *amu chayk-to* ('any books') in (3), so that (3) is a directly relevant reply to question (9).

(9)   (3) is a felicitous and directly relevant reply to this *wh*-question:

John-un   mwusun chayk-ul ilk-ess-ni
John-TOPIC what   book-ACC read-PAST-Q

'What books did John read?'   (3): John didn't read any books.

In contrast, as shown in (10)–(13), this kind of QUDs, i.e., a *wh*-question that corresponds to the part *amu chayk-irato* ('any books') or *amu-rato* ('anyone'), is less relevant for (4)–(7). With the use of *amu*-(NP)-*irato*, the speaker of (4)–(7) conveys rather that s/he has no interest in what books John / students read (see (10), (12), (13)) or who s/he sees (see (11)). Thus, (4)–(7) are not directly relevant replies to these corresponding *wh*-questions in (10)–(13). The replies (4)–(7) suggest rather a change of interest/QUD in these conversations.

(10)   John: What books did I read?
        (4): Did you read any books?   ⤳ not a directly relevant reply

(11)   John: Who do you see?
        (5): If I see anyone, I will let you know.   ⤳ not a directly relevant reply

(12)   John: What books did students read?
        (6): Every student who read any book passed the exam. ⤳ not a directly relevant reply

(13)   John: What books did I read?
        (7): It is surprising that you read any books.   ⤳ not a directly relevant reply

Relevantly, there is a further contrast between (3) and (4)–(7).

With the use of *amu chayk-to* ('any books'), an indefinite that scopes under negation, sentence (3) eventually conveys **distributivity** or **universality** in addressing the corresponding *wh*-question in (9): in the contextually relevant domain of books, every book is the same in having the property of '$\lambda x.\neg[\text{John read } x]$' (see (14)).

(14) $[\![(3)]\!] \rightsquigarrow \neg\exists x[\text{book}(x) \wedge \text{John read } x]$ $= \forall x[\text{book}(x) \rightarrow \neg[\text{John read } x]]$

In contrast, with regard to the *wh*-questions in (10)–(13), (4)–(7) do not convey this kind of distributivity or universality in the domain of the *wh*-item.

For example, with regard to the question in (11), sentence (5) does not mean that every person in the domain has the same property of '$\lambda x.\text{I see } x$' or '$\lambda x.\neg[\text{I see } x]$'. In fact, by uttering (5), the speaker suggests that it doesn't matter who s/he sees, because no matter who s/he sees, s/he would inform the interlocutor (here John in (11)).

In this sense, sentences (4)-(7) are similar to **unconditionals** in conveying **orthogonality / relational indifference** (see Lewis 1988, Rawlins 2013). As shown in (15)–(18), all the grammatical sentences with the use of *amu*-(NP)-*irato* in (4)–(7) can be paraphrased into a (*wh*)-unconditional: no matter how the issue raised by the conditional antecedent is resolved, the truth of the consequent is guaranteed, i.e., 'the independence of the truth of the consequent from the antecedent (Rawlins 2013).'

(15) *amu*-(NP)-*irato* in an interrogative: 'Did you read any books?'
      (4) ⤳ Whatever books they are, did you read them?

(16) *amu*-(NP)-*irato* in a conditional antecedent: 'If I see anyone, I will let you know.'
      (5) ⤳ Whoever I see, I will let you know.

(17) *amu*-(NP)-*irato* in the restrictor of ∀: 'Every student who read any books passed the
      exam.' (6) ⤳ For every student, whatever books they read, they passed the exam.

(18) *amu*-(NP)-*irato* under an adversative predicate: 'It's surprising that you read any books.'
      (7) ⤳ Whatever books you read, it's surprising.

It is worth noting that although (4) (see also (15)) is just a yes/no question, this yes/no question is interpreted like a conditional and strongly biased towards a negative answer (see also An 2007): i.e., whatever books they are, you didn't read them. Actually, (4) is most naturally used as a rhetorical question.

To sum up, when the connection between (i) a sentence containing *amu*-(NP)-*to* or *amu*-(NP)-*irato* and (ii) their corresponding *wh*-question is taken into consideration, *amu*-(NP)-*to* conveys the distributivity / universality of the items in the relevant domain associated with the corresponding *wh*-question, while *amu*-(NP)-*irato* conveys the indifference / orthogonality of making a distinction among items in this kind of domain.

3. Proposal

Based on the notion of orthogonality, Zhao (2019) provides a unified account for Chinese particle *dōu*, connecting its (i) distributivity-use and (ii) free-choice/unconditional-use. Inspired by Zhao (2019), I propose a similar account for (i) the distributivity of *amu*-(NP)-*to* and (ii) the orthogonality of *amu*-(NP)-*irato* and sketch out the account within Inquisitive Semantics.

3.1 Zhao (2019)'s analysis of Chinese *dōu*   Chinese *dōu* has both a distributive and a free-choice use (see (19) and (20)).[2] The semantics of *dōu* sketched out in (21) includes (i) a presuppositional plurality requirement and (ii) distributivity. The distributivity use in (19) is immediately accounted for: the predicate '$\lambda x.x$ read 3 books' holds true for each subpart of $[\![\text{they}]\!]$.

(19) The distributivity use of Chinese *dōu*:

      tāmen dōu dú-le   sǎn-běn   shū
      they   DOU read-PRF three-CLASSIFIER book

      'They all/each read three books.'   (Zhao 2019: (1a))

(20) The universal free-choice use of Chinese *dōu*:

      (wúlùn   (shì))   shénme shǔiguǒ Yuēhàn dōu kěyǐ chī
      (no-matter (COPULA)) what   fruit   John   DOU may eat

      'John may eat any fruit.' ⤳ whatever fruit it is, John may eat it.   (Zhao 2019: (3b))

(21) $[\![\text{dōu}]\!] \stackrel{\text{def}}{=} \lambda P_{\langle e,st\rangle} \lambda x_e \lambda w_s \underbrace{\exists C.Cov(x,C) \wedge |C| > 1}_{\text{plurality requirement}} . \underbrace{\forall y \in C.P(y)(w)}_{\text{distributivity effect}}$ (Zhao 2019: (7))

      ($Cov(x,C)$ means that C is a cover of x.)

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[2]Chinese *dōu* has another use, which is similar to English *even*. This use is not much discussed in Zhao (2019).

127   Zhao (2019) adopts the notion of *issues* in Inquisitive Semantics to show that the free-
128 choice use of *dōu* in (20) also involves plurality and distributivity.

129   Roughly speaking, the *wh*-expression (*wúlùn (shì)*) *shénme shǔiguǒ* ('whatever fruit it
130 is') is considered an issue that serves as the antecedent of a conditional, and for each alternative
131 within this issue, the conditional consequent – the part *Yuēhàn kěyǐ chī* ('John may eat (it)') in
132 (20) – follows, i.e., {it's a peach → John may eat it, it's an apple → John may eat it...}. Thus
133 the free-choice use of *dōu* requires the plurality of alternatives in the issue raised by the condi-
134 tional antecedent, and these alternatives constitute the sorting key for distribution. Eventually,
135 due to this kind of distributivity, the free-choice use conveys orthogonality: how the issue raised
136 by the conditional antecedent is resolved is orthogonal to the truth of the consequent.

137 ### 3.2 The notion of issues and the meaning of dōu in Inquisitive Semantics   Formally, Zhao
138 (2019) adopts Inquisitive Semantics to implement the analysis of the free-choice use of *dōu*.
139   Within Inquisitive Semantics (see Ciardelli et al. 2018),

140 (22)   a.   An *information state* s (of type $\langle st \rangle$) is a set of possible worlds, i.e., $s \subseteq W$.
141   b.   An *issue* I is a non-empty, downward-closed set of information states.
142   c.   The maximal elements of an issue I are called the *alternatives* in I.
143   d.   The *informative content* of an issue is the union of its alternatives, i.e., $\mathsf{info}(I) =$
144            $\bigcup \{ \alpha \mid \alpha \in \mathsf{alt}(I) \}$.

145   Thus a proposition is lifted from a set of possible worlds to a set of sets of possible worlds.
146 A sentence P is (i) *inquisitive* iff $|\mathsf{alt}(P)| > 1$ (see 'A or B' in (23)) and (ii) *non-inquisitive* iff
147 $|\mathsf{alt}(P)| = 1$ (see 'A', 'B', and 'not (A or B)' in (23)).

148 (23)   Illustrations of Inquisitive Semantics: $\llbracket A \rrbracket = \{\{w_3, w_4\}\}, \llbracket B \rrbracket = \{\{w_2, w_4\}\}$

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$\{\{w_3, w_4\}\}$ $\{\{w_2, w_4\}\}$ $\{\{w_3, w_4\}, \{w_2, w_4\}\}$ $\{\{w_1\}\}$
$\llbracket A \rrbracket$: non-inquisitive $\llbracket B \rrbracket$: non-inquisitive $\llbracket A$ or $B \rrbracket$: inquisitive $\llbracket \text{not}(A$ or $B) \rrbracket$: non-inquisitive

150   Material implication $\Rightarrow$ is defined between two information states as shown in (24), and
151 the meaning of a conditional can be characterized accordingly (see (25)).

152   Based on these, the meaning of the free-choice use of *dōu* is shown in (26): the inquis-
153 itiveness of the antecedent Q reflects plurality, and the universal quantifier in the conditional
154 meaning (see (25)) captures distributivity. Eventually, (26) shows that the inquisitiveness of the
155 antecedent Q does not project to the entire *dōu* sentence. In other words, at the entire sentence
156 level, for a free-choice *dōu* sentence, the inquisitiveness of the antecedent Q is dropped.

157 (24) $s \Rightarrow t := \{w \in W \mid w \in W \backslash s \text{ or } w \in t\}$ Material implication

158 (25) $I > I' := \{s \mid \forall \alpha \in \mathsf{alt}(I) : \exists \beta \in \mathsf{alt}(I').s \subseteq \alpha \Rightarrow \beta\}$ Semantics of a conditional

159 (26) $\llbracket \text{dōu}_{\text{FREE-CHOICE}} \rrbracket \stackrel{\text{def}}{=} \lambda P_{\langle s, \langle st \rangle \rangle} \lambda Q_{\langle s, \langle st \rangle \rangle}. \underbrace{|\mathsf{alt}(Q)| > 1}_{\text{plurality}}. \{s \mid \underbrace{\forall \alpha \in \mathsf{alt}(Q) : s \subseteq [\alpha \Rightarrow \mathsf{info}(P)]}_{\text{distributivity}}\}$

160 ### 3.3 Basic ingredients of amu-(NP)-to and amu-(NP)-irato   Basic ingredients of *amu*-(NP)-
161 *to* and *amu*-(NP)-*irato* are shown in (27) (see e.g., Lee 1996, 1997, Lee et al. 2000, An 2007).

(27) a. *amu*-(NP)-*to* = unspecific indefinite *amu* + (NP) + additive particle *to*
      b. *amu*-(NP)-*irato* = *amu* + (NP) + copula *i* + declarative marker *ra* + additive *to*

In the existing literature on Korean NPIs, *to* is often considered a concessive particle similar to English *even* (see e.g., Lee 1996, 1997, Lee et al. 2000, An 2007). However, I propose to analyze *to* as an additive particle similar to English *also* or *too*, as shown in (28). The difference between an *even*-like particle and an *also*-like particle is that the former is usually considered having both an additivity and a likelihood presupposition, while the latter has only an additivity presupposition, as illustrated in (29).[3] If the distribution and interpretation of *amu*-(NP)-*to* and *amu*-(NP)-*irato* can be accounted for without building on the likelihood presupposition, it is unnecessary to analyze Korean *to* as an *even*-like particle.

(28) $\llbracket to \rrbracket \overset{\text{def}}{=} \lambda P_{\langle e,st \rangle} \lambda x_e \lambda w_s. \underbrace{\exists y \in \mathsf{alt}(x).P(y)(w)}_{\text{additivity pre-/post-supposition}} .P(x)(w)$ $\rightsquigarrow x$ is parallel to y

(29) *Even* vs. *also*: the same assertion with different presuppositions
      a. Even Mary came.   Assertion: Mary came
          (i)   Additivity presupp.: Someone other than Mary came.
          (ii) Likelihood presupp.: Compared to others, Mary was less likely to come.
      b. Mary also came.   Assertion (i.e., Mary came) + Additivity presupposition

There is also empirical evidence to support the view that Korean *to* should be an *also*-like additive particle. Cross-linguistically, additive particles often have both a single and a double use, and both uses indicate parallelism (e.g., Japanese *mo*, Chinese *yě*, and (28). See Kobuchi-Philip 2009, Brasoveanu & Szabolcsi 2012, Szabolcsi 2015, a.o). As illustrated in (30), Korean *to* patterns with this kind of additive particles and expresses the parallelism between Mary and John here. Even if the single use in (30a) can sometimes involve a likelihood-related implicature, likelihood plays no role at all in the double use in (30b).[4]

(30) Single and double use of Korean *to*:
      a. (Mary-ka   wa-ss-ta)   John-to   wa-ss-ta
          (Mary-NOM come-PAST-DECL) John-also come-PAST-DECL
          '(Mary came.) John also came.'   Single use of Korean *to*
      b. John-to   Mary-to   wa-ss-ta
          John-also Mary-also come-PAST-DECL
          'Both John and Mary came.'   Double use of Korean *to*

Analyzing (i) *amu* as an *any*-like unspecific indefinite and (ii) *to* as an *also*-like additive particle naturally explains why *amu*-(NP)-*to* and *amu*-(NP)-*irato* require licensing.

As an indefinite, *amu* invokes alternatives (i.e., it introduces inquisitiveness). However, due to unspecificity, *amu* is referentially too vague and unable to identify or maintain a specific referent (see Giannakidou 2011, 2017). As a consequence, the inquisitiveness raised by *amu* cannot project to the sentence level and requires being dropped. Thus *amu* requires licensing.

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[3]In fact, it is likely that *even* has no intrinsic additivity presupposition (see Szabolcsi 2017, Zhang 2022).

[4]For (30a), suppose that only the sentence bearing *to* is uttered and the additivity presupposition is accommodated. Then between a person whose coming is more expected (say Mary) and another person whose coming is less expected (say John), uttering *John also came* is more informative than uttering *Mary also came*. Thus upon hearing *John also came*, pragmatic interlocutors can derive the likelihood implicature. Of course, this kind of likelihood implicature disappears when there is no need to accommodate (see (30b)). See also An (2007)'s footnote 6.

On the other hand, without licensing, in *amu*-(NP)-*to* and *amu*-(NP)-*irato*, the use of additive *to* is semantically trivial. As illustrated in (31), the parallelism in the use of additive particles requires some salience of items involved (see Kripke 1990/2009, Beaver & Clark 2008). Evidently, given that *amu* is unspecific and referentially too vague, the additivity requirement in using *to* is not built on salient items and thus trivially satisfied, leading to degradedness.

(31) a. Sam is having dinner in New York tonight, (#too). (Kripke 1990/2009: (14))
      b. Priscilla is eating supper, (#again). (Kripke 1990/2009: (15))

3.4 *amu*-(NP)-*to* and *amu*-(NP)-*irato*   The discussion so far indicates that *amu* introduces inquisitiveness, which cannot project to the sentence level and needs to be canceled along derivation. I propose that this is the fundamental reason for *amu* to require a licensing environment. An appropriate licensing environment removes the inquisitiveness introduced by *amu*.

According to Ciardelli et al. (2018), some syntactic conditions are sufficient for non-inquisitivity. In particular, as shown in (32), negating a proposition φ or making it a conditional antecedent guarantee that the potential inquisitiveness of φ does not project further. In the following, I show that the licensing of *amu*-(NP)-*to* corresponds to the case of negation in (32a), and the licensing of *amu*-(NP)-*irato* corresponds to the case of conditional antecedent in (32b).
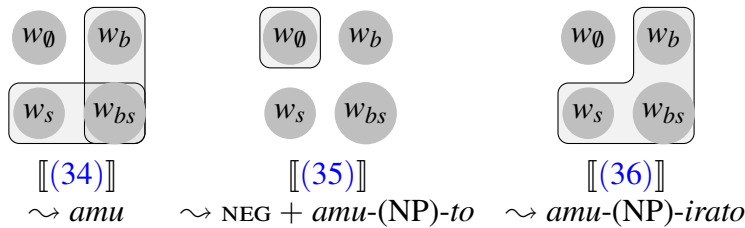
(32) Sufficient conditions for non-inquisitivity (Ciardelli et al. 2018: Fact 4.17)
      a. $\neg\varphi$ is always non-inquisitive.
      b. If ψ is non-inquisitive, then so is $\varphi > \psi$ for any antecedent φ.   (see also (25))

As sketched out in (33)–(36), the use of *amu* is a source of inquisitiveness, leading to an existential sentence P (of type $\langle s, \langle st \rangle \rangle$) such that $\mathsf{alt}(P) \geq 1$ (see (34)).

For *amu*-(NP)-*to*, the application of a negation operator on (34) yields a proposition that is a singleton set of alternatives, canceling the inquisitiveness of (34) so that the alternatives in (34) do not project further (see (35)). The resultant sentence means that John didn't read any books (see (3)).

For *amu*-(NP)-*irato*, I propose a silent COND operator (see (36)). A sentence like (34) serves as the first argument of this operator, becoming the antecedent of an unconditional and meaning 'whatever books John read'. Due to the universal quantifier in this COND operator, the inquisitiveness of this antecedent also does not project to the entire sentence level.

(33) Removing the inquisitiveness introduced by *amu*

$\llbracket (34) \rrbracket$ $\llbracket (35) \rrbracket$ $\llbracket (36) \rrbracket$
$\rightsquigarrow amu$ $\rightsquigarrow$ NEG + *amu*-(NP)-*to* $\rightsquigarrow amu$-(NP)-*irato*

(34) $\llbracket$John read *amu* book$\rrbracket$
      $= \{\{w \mid$ John read Batman in $w\}, \{w \mid$ John read Sandman in $w\}, \ldots\}$

(35) Negation licenses *amu*-(NP)-*to*
      $\llbracket \text{NEG} \rrbracket \stackrel{\text{def}}{=} \lambda P_{\langle s, \langle st \rangle \rangle}.\{\{w \mid w \notin \mathsf{info}(P)\}\}$ $\rightsquigarrow$ (32a)

(36) Being the antecedent of a conditonal licenses *amu*-(NP)-*irato*   (see also (25))
      $\llbracket \text{COND} \rrbracket \stackrel{\text{def}}{=} \lambda I_{\langle s, \langle st \rangle \rangle} \lambda I'_{\langle s, \langle st \rangle \rangle}.\{s \mid \forall \alpha \in \mathsf{alt}(I) : \exists \beta \in \mathsf{alt}(I').s \subseteq \alpha \Rightarrow \beta\}$ $\rightsquigarrow$ (32b)

Under the current analysis, the driving force behind the licensing phenomena of *amu*-(NP)-*to* and *amu*-(NP)-*irato* is *amu* alone. *Amu* is considered an indefinite, but due to its referential vagueness, this inquisitiveness cannot further project. Licensing is based on the non-inquisitiveness of negation and conditional antecedent. Thus, under the current analysis, additive particle *to*, copula *i*, and declarative marker *ra* do not semantically contribute to the licensing of *amu*. Then what roles do they play?

In *amu*-(NP)-*irato*, the use of copula *i* is reminiscent of the optional presence of copula *shì* in the free-choice use of Chinese *dōu*. According to Zhao (2019), the overt or covert use of copula *shì* imposes an identity question like *whatever it is*. In the free-choice example of Chinese *dōu* in (20), the antecedent is interpreted as 'whatever fruit it is'. I propose that the use of copula *i* in Korean *amu*-(NP)-*irato* plays a similar role as Chinese *shì* and imposes an identity question. In (4) and (6), *amu chayk-irato* is interpreted as 'whatever book it is'; in (5), *nay-ka amu-rato po-myen* is interpreted as 'whoever it is that I saw'; in (7), *ney-ka amu chayk-irato ilk-ess-tani* is interpreted as 'whatever book it is that you read'. Thus in *amu*-(NP)-*irato*, the use of *i(ra)* syntactically contributes to the well-formedness of a conditional antecedent and the bi-clausal structure of the entire unconditional sentence. As a further consequence, the QUD for the entire *amu*-(NP)-*irato* sentence is no longer about the antecedent part that contains *amu*.

For the role of additive particle *to* in *amu*-(NP)-*to* and *amu*-(NP)-*irato*, I follow the view of Szabolcsi (2015): just like this kind of particles in other languages, Korean *to* 'imposes semantic requirements that are satisfied when their contexts are interpreted (Szabolcsi 2015: (14)).'

Eventually, under their respective licensing environment, *amu*-(NP)-*to* expresses distributivity / universality, and *amu*-(NP)-*irato* expresses orthogonality or indifference. These meanings guarantee that parallelism holds between any two relevant items in the domain, meeting the requirement of using additive particle *to*. The use of *to* is based on salience and not trivial in the sense that it targets all relevant items in the domain, indicating exhaustiveness among them (cf. (31)). Then this use of *to* becomes obligatory if we adopt Heim (1991)'s principle of Maximize Presupposition, according to which, when a presuppositional requirement can be satisfied, marking the presupposition (e.g., here adding *to*) is preferred.[5]

4. Summary and discussion

To sum up, I provide a new account for the distribution and interpretation of Korean *amu*-(NP)-*to* and *amu*-(NP)-*irato* within Inquisitive Semantics. Essentially, *amu* is an unspecific indefinite and referentially too vague, so that the inquisitiveness introduced by *amu* is not projectable and needs to be canceled in sentence derivation. For *amu*-(NP)-*to* and *amu*-(NP)-*irato*, negation and the status of being a conditional antecedent cancel the inquisitiveness of *amu* respectively.

Many existing literature on *amu*-(NP)-*to* and *amu*-(NP)-*irato* (e.g., Lee 1996, 1997, 1999, 2003, Lee et al. 2000, An 2007) adopt a view similar to Lahiri (1998): *amu* is considered similar to a minimizer (e.g., Hindi *koii* or Korean *hana* means 'one'), and *even* imposes the requirement

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[5]This is also reminiscent of the use of Chinese *dōu* along with a universal quantifier (here *měi-yī-gè* 'everyone'):

(i) měi-yī-gè   rén   dōu lái-le
     every-one-CLASSIFIER human DOU come-PRF
     'Everyone came.'

According to Liu (2021), the example (i) suggests that *dōu* does not contribute distributivity, and distributivity is from the universal quantifier here. Liu (2021) proposes that *dōu* imposes the requirement that its prejacent is the strongest among its alternatives, and it is Maximize Presupposition (see Heim 1991) that makes '*dōu p*' block '*p*'.

that its prejacent is the least likely among its alternatives. Given that '$\exists x[Z(x) \wedge \mathsf{came}(x)]$ (here Z > 1)' entails '$\exists x[\textsc{one}(x) \wedge \mathsf{came}(x)])$', as shown in (37), '$\textsc{one}$' under negation satisfies the requirement of $\textsc{even}$ (see (37b)), but without negation, the derivation crashes (see (37a)).

(37)   a.   *Even one came. $\rightsquigarrow$ the requirement of *even* is <u>not</u> satisfied
             $\lambda w.\exists x[\textsc{one}(x) \wedge \mathsf{came}(x)(w)] \geq_{\textsc{likely}} \lambda w.\exists x[Z(x) \wedge \mathsf{came}(x)(w)]$ $\rightsquigarrow$ crash
       b.   Not even one came. $\rightsquigarrow$ the requirement of *even* is satisfied
             $\lambda w.\neg\exists x[Z(x) \wedge \mathsf{came}(x)(w)] \geq_{\textsc{likely}} \lambda w.\neg\exists x[\textsc{one}(x) \wedge \mathsf{came}(x)(w)]$

This analysis that basically decomposes NPIs/FCIs like English *any* into '$\textsc{even+one}$' can be extended to account for *amu*-(NP)-*irato* as well. The sketch in (38) is parallel with Korean data (5) in that *even* is attached to the entire antecedent clause of a conditional.

(38)   Even if I saw (only) one person, I will let you know.   (see also (5))

Actually, the current proposal is not necessarily incompatible with this '$\textsc{even+one}$'-based analysis, if we redefine the notions like entailment and likelihood in Inquisitive Semantics (see also Ciardelli et al. 2018). The current proposal is advantageous in that it is based on fewer assumptions. Crucially, the likelihood presupposition of *to* does not need to be assumed.[6] Presumably, NPIs/FCIs phenomena are solely rooted in the referential vagueness or scalarity (for minimizers) of lexical items. A more detailed comparison of analyses is left for future work.

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[6]Recently, this 'least likely' view of *even* has also been challenged by Greenberg (2016), Zhang (2022).

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