

# A Semantic Analysis for Korean Echo Questions

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## 1 Introduction

*Echo questions* (henceforth, *EQs*) are sentences that require and partially repeat (“echo”) a previously uttered sentence and convey a question whose answer needs confirming or repeating what has been previously said (cf. Banfield 1982; Comorovski 1996; Dayal 1996; Noh 1998; Artstein 2002; Sudo 2010; Beck and Reis 2018, a.o.). For instance, if Speaker A utters the declarative sentence in (1-a) and stumbles over the object nominal *candy* making it hard for Speaker B to understand (as marked by the smaller font), Speaker B can reply with (1-b).

- (1)    a. Speaker A: Mina bought candy.  
      b. Speaker B: Mina bought what?  
      c. Speaker A: (Mina bought) candy.

Although (1-b) looks syntactically identical to (1-a), except for the *wh*-word *what* replacing *candy*, it is uttered with rising intonation rather than falling and is interpreted as a question rather than a statement. In fact, Speaker A is expected to answer to (1-b) with something like (1-c). (1-b) is an example of an EQ in English, while (1-a) is the declarative clause acting as the discourse antecedent of the EQ.

EQs have received less attention in the literature than ordinary inter-

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rogative sentences. This is the case for the most studied Indo-European languages, let alone a language like Korean. In this paper, we provide what is, to the best of our knowledge, the first formal semantic analysis of Korean EQs. We believe that the nature of EQs is more transparently revealed in Korean than in other languages by the special clause-type marking that characterizes Korean EQs and clearly distinguishes them from ordinary declarative or interrogative clauses. We argue that this property of Korean EQs cannot be easily accounted for by existing analyses for EQs in other languages. Therefore, the study of Korean EQs may shed new light on EQs in general.

The present paper is structured as follows. Section 2 introduces the main morphosyntactic properties of Korean EQs with special emphasis on the Korean rich clause-typing system. Section 3 proposes a compositional semantic analysis of Korean EQs. Section 4 provides an overview of existing semantic analyses of EQs for English and similar languages, highlighting how they are not fully adequate for Korean EQs. Section 5 concludes.

## 2 Clause-type Markers and Echo Questions in Korean

In this section, we introduce some basic aspects of the Korean clause-typing system to then show why clause-type markers are relevant to uniquely characterize Korean EQs.

Korean is an SOV language with a rich system of clause-type markers (often labeled as *final endings* in Korean grammars<sup>1</sup>). Clause-type markers are required in both matrix and embedded clauses, mark clause types and speech levels, and appear clause-final as the right-most verbal suffix (Sohn 2020). For the purpose of our investigation, we focus on three clause-type markers. The marker *ta* obligatorily marks plain-register matrix declarative clauses, as shown in (2-a). The marker *ni*, instead, uniquely and necessarily characterizes plain-register matrix polar/*wh*-interrogative clauses (*polar/wh*-INTs, henceforth), as shown in (2-b) and (2-c).<sup>2</sup>

- (2) a. Mina-ka sathang-ul sa-ss-\*(**ta**). (declarative)  
 Mina-NOM candy-ACC buy-PST-DEC  
 ‘Mina bought candy.’<sup>3</sup>

<sup>1</sup> The precise syntactic status of *final endings* in Korean has triggered significant discussion (Cho 1995; Choe 2003; Lee et al. 2016; Suh 2016; Ceong 2019, a.o.).

<sup>2</sup> Some clause-type markers don’t mark clause type, but only discourse register, e.g., the markers *e* and *yo*, signaling intimacy and politeness, respectively.

<sup>3</sup> This paper uses the Yale romanization system to transcribe Korean examples. The acceptability of each Korean example is judged by the first author and non-linguist consultants, who are native speakers of Korean. Abbreviations: ACC = Accusative; C = Complementizer; DEC = Declarative; EQ = Echo Question; EXH = Exhortative; IMP = Imperative; INT = Interrogative; NOM = Nominative; PRES = Present Tense; PST = Past Tense; QT = Quotative;

- b. Mina-ka sathang-ul sa-ss-\*(**ni**)↑? (polar-INT)  
 Mina-NOM candy-ACC buy-PST-INT  
 ‘Did Mina buy candy?’
- c. Mina-ka mwue-lul sa-ss-\*(**ni**)? (wh-INT)  
 Mina-NOM what-ACC buy-PST-INT  
 ‘What did Mina buy?’<sup>4</sup>

Although characterizing different clause types, both *ta* and *ni* signal the same discourse register, which we labelled “plain register” following Sohn (2020): the speaker uttering (2) conveys an informal, non-intimate, non-deferential attitude towards the addressee. Polar interrogative clauses like (2-b) involve an obligatory rising final intonation (high boundary tone, marked with an upward arrow ↑), while declarative clauses and *wh*-interrogative clauses involve falling final intonation (Jun 2005), which we leave unmarked. Korean is a *wh*-in-situ language, as can be seen by comparing (2-a) and (2-c): the *wh*-word for ‘what’ in (2-c) occurs in the same syntactic position as the regular nominal object ‘candy’ in (2-a). Thus, the main morphosyntactic difference between declarative and interrogative clauses lies in the clause-type marker and the intonation.

The third and last clause-type marker we focus on is the one that uniquely characterizes EQs: *tako*↑ (sometimes Romanized as *dago*) with an obligatory rising final intonation (high boundary tone, marked with the already familiar upward arrow ↑). The marker *tako*↑ characterizes a polar EQ, as in (3-b), a single-*wh* EQ with just one *wh*-expression<sup>5</sup>, as in (4-b), or a multiple-*wh* EQ with more than one *wh*-expression, as in (5-b).

- (3) a. Mina-ka sathang-ul sa-ss-ta.  
 Mina-NOM candy-ACC buy-DEC  
 ‘Mina bought candy.’
- b. Mina-ka sathang-ul sa-ss-**tako**↑? (polar-EQ)  
 Mina-NOM candy-ACC buy-EQ  
 ‘Mina bought CANDY?’
- (4) a. Mina-ka sathang-ul sa-ss-ta.  
 Mina-NOM candy-ACC buy-DEC  
 ‘Mina bought candy.’
- b. Mina-ka mwue-lul sa-ss-**tako**↑?(single-*wh* EQ)  
 Mina-NOM what/something-ACC buy-PST-EQ  
 Reading 1: ‘Mina bought WHAT?’  
 Reading 2: ‘Mina bought SOMETHING?’

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VOC = Vocative.

<sup>4</sup> If the clause-type marker *ni* is replaced by *ni*↑ (with rising final intonation), then the *wh*-expression is likely to be interpreted as an indefinite and the whole clause as a polar interrogative ‘Did Mina buy something?’

<sup>5</sup> We use ‘*wh*-expression’ as a cover term for both ‘*wh*-word’ (e.g., *who*) and ‘*wh*-phrase’ (e.g., *which new book*).

- (5) a. Mina-ka sathang-ul sa-ss-ta.  
 Mina-NOM candy-ACC buy-PST-DEC  
 ‘Mina bought candy.’
- b. Nwuka mwue-lul  
 who/someone.NOM what/something-ACC  
 sa-ss-**tako**↑? (multiple-*wh* EQ)  
 buy-PST-EQ  
 Reading 1: ‘WHO bought WHAT?’  
 Reading 2: ‘SOMEONE bought SOMETHING?’  
 Reading 3: ‘WHO bought SOMETHING?’  
 Reading 4: ‘SOMEONE bought WHAT?’

(3-a) shows a declarative sentence that is uttered without any particular mispronunciation or mumbling and, therefore, can act as the antecedent of the polar EQ in (3-b). Speaker B utters the EQ in (3-b) to convey their surprise about (3-a) and ask Speaker A to confirm its truth. (4-a), instead, can be an appropriate antecedent for (4-b), since the object ‘candy’ is uttered in a way to make it difficult for Speaker B to understand it. Finally, (5-a) can be the antecedent of (5-b) since Speaker A mumbles both its subject and its object.

As highlighted by the different translations, the EQ in (4-b) allows for two readings and the EQ in (5-b) for four because of the two interpretations that are available for each Korean *wh*-expression in general, not just in EQs: either as a plain “interrogative” *wh*-expression, along the line of a *wh*-expression in an interrogative clause or an EQ in English, or like an indefinite.<sup>6</sup> To the best of our knowledge, there has been no study that has precisely looked at the difference between the two possible readings of *wh*-expressions in EQs. We leave this open issue to further investigation. From now on, we focus on EQs with an “interrogative” interpretation of their *wh*-expressions, as in English.

## 2.1 On the Morphosyntactic Status of *Tako*↑

We have assumed that *tako*↑ is the monomorphemic clause-type marker characterizing EQs in Korean without further internal morphosyntactic structure nor semantic composition. In this section, we briefly touch upon two other possible analyses, argue against one, and tentatively conclude that the other is viable and deserves further investigation.

<sup>6</sup> Korean *wh*-indefinites are formed by attaching an indefinite-forming suffix *nka* to *wh*-words (e.g., *mwue* ‘what’ - *mwue-nka* ‘something’, *nwukwu* ‘who’ - *nwukwu-nka* ‘someone’). However, bare *wh*-words can be interpreted as *wh*-indefinites depending on the context and/or intonation. Interrogative clauses involving one or more bare *wh*-words are interpreted as polar-INTs with *wh*-indefinite reading when accompanied with sharp rising final intonation (Lee 1997). When accompanied with falling final intonation (as ordinary *wh*-INTs), prosodic properties on each *wh*-word (such as pitch and phrase boundaries) are taken into consideration in distinguishing the reading, although under debate (for an overview, see Yun (2019)).

The first alternative analysis treats *tako* in EQs as the same as homophonous clause-type marker/complementizer introducing declarative clauses embedded under a verb like ‘say’ and analyzes EQs as embedded declarative clauses with a silent/elided ‘say’ matrix predicate. Such an analysis has been pursued by Noh (1995) and H. Lee (2010) and is the predominant one. Its main support comes from the fact that the marker *tako*↑ looks morphosyntactically identical to the combination of the declarative clause-type marker *ta* we mentioned in the previous section with the marker *ko*. This latter marker exhibits at least three different uses in Korean: (i) as the clause-final marker of a matrix or a subordinate clause, (ii) as the conjunction connecting two clauses or two smaller phrases, and (iii) as the indirect quotation marker immediately following to the right of the declarative marker/complementizer *ta* on the embedded declarative clause acting as the indirect quotation. This third use is the one that has inspired the predominant view of *tako*↑ in EQs. The core idea is that EQs are a type of indirect speech: the quotative particle *ko* attaches to the declarative marker/complementizer *ta* of the embedded (quoted or reported) clause, while the matrix verb (some kind of verb of saying) is omitted or silent. The examples in (6), inspired by H. Lee (2010: ex. 22) illustrate this view: (6-a) is the plain declarative clause acting as the antecedent of the EQ in (6-b), while (6-c) is the interrogative sentence with the matrix predicate ‘say’ introducing a clausal complement that looks identical to the EQ in (6-b).

- (6) a. Mary-ka John-ul salangha-n-ta.  
 Mary-NOM John-ACC love-PRES-DEC  
 ‘Mary loves John.’  
 b. Mary-ka nwukwu-lul salangha-n-**ta-ko**↑? (EQ)  
 Mary-NOM who-ACC love-PRES-DEC-**QT**  
 ‘Mary loves WHO?’  
 c. Mary-ka nwukwu-lul salangha-n-**ta-ko**  
 Mary-NOM who-ACC love-PRES-DEC-**QT**  
**malha-yss-ni?** (INT with an indirect quotation)  
**say-PST-INT**  
 ‘Did you say Mary loves who?’

According to this approach to EQs, (6-b) is just the same as (6-c): they look the same, except for having a silent ‘say’ as its matrix predicate rather than an overt one as in (6-c)<sup>7</sup>, and they mean the same, as shown by the fact that they both license the same true short constituent answer (‘John’).

We find this analysis unsatisfactory since it cannot account for important differences in intonation, interpretation, and use between EQs and ‘say that’ sentences. An EQ with the marker *tako*↑ as (6-b) is character-

<sup>7</sup> Korean is a subject pro-drop language with no subject agreement on the verb; so person information is not morphosyntactically marked in (6-c) either.

ized by obligatory rising intonation, only allows for a constituent answer (e.g., ‘John’), and requires a previously-uttered declarative sentence as its antecedent (e.g., 6-a). On the other hand, rising intonation is absent on the indirect quotation marker *tako*, as in (6-c).<sup>8</sup> As for the whole sentence in (6-c), it is interpreted as conveying a constituent question whose answer can be ‘John’ only if the sentence clause-type marker *ni* is accompanied by falling—not rising—intonation. If rising intonation is used, instead, then the whole sentence can only be interpreted as conveying a polar question like ‘did you say Mary loves someone?’. Finally, while EQs like (6-b) always require a discourse antecedent like (6-a), sentences with an indirect quotation like (6-c) can be uttered out of the blue. In sum, since intonational, semantic, and pragmatic features of EQs are different from those of interrogative sentences with an indirect quotation, the proposal that EQs should be equated to a kind of interrogative sentences with an indirect quotation is problematic.<sup>9</sup>

Moreover, if a matrix predicate like ‘say’ can be silent/omitted, this option should not be limited to EQs, but should be attested in other constructions as well. This prediction does not seem to be borne out. For instance, a declarative sentence like (7-b), uttered as a negative reaction to the question conveyed by (7-a), should be derivable from (8), which contains matrix ‘say’ predicate and what looks like (7-b) as its complement clause, and (7-b) and (8) should convey the same meaning. (7-b) and (8) receive two very different interpretations, instead. The *wh*-word (‘what’) in object position can only be interpreted as the negative quantificational NP ‘nothing’ in (7-b) (another intriguing fact deserving further investigation), while it can only be interpreted as the indefinite NP ‘something’ in (8).

- (7) a. Mina-ka sathang-ul sa-ss-ni?  
Mina-NOM candy-ACC buy-PST-INT  
‘Did Mina buy candy?’  
b. Mina-ka mwue-lul sa-ss-**ta-ko**.  
Mina-NOM what-ACC buy-PST-DEC-**QT**  
‘Mina bought nothing. (*lit.* Mina bought what.)’<sup>10</sup>
- (8) Mina-ka mwue-lul sa-ss-**ta-ko malha-yss-ta**.  
Mina-NOM what-ACC buy-PST-DEC-**QT say-PST-DEC**  
‘(I/you/they/etc.) said that Mina bought something.’

<sup>8</sup> The rising intonation on *tako* in (6-c, as *tako*↑) would indicate that a sentence has ended there, splitting (6-c) into two separate sentences (‘Mary loves WHO? Did you just say something?’).

<sup>9</sup> P. Lee (1993) has already argued that the difference in the answers to *tako*-final questions such as (6-b) and sentences with an indirect quotation that involve the string *tako* and a matrix predicate such as (6-c) implies that the function and the meaning of EQs and sentences with an indirect quotation are not the same. We agree with this claim.

<sup>10</sup> Even though the string *tako* occurs, the EQ reading is never possible in sentences like (7-b) due to the falling final intonation.

Thus, the view that EQs are derived from omitting the matrix predicate in a sentence with a quoted embedded clause is unwarranted, for it overlooks intonational, semantic, and pragmatic differences between EQs and quoted clauses.

The other alternative analysis of *tako*↑ would treat it as a complex string resulting from the combination of two functional elements: the declarative clause-type marker *ta* and *ko*↑, a specialized operator (different from the three homophonous ones mentioned above) that takes a declarative clause and turns into an EQ. In order to evaluate the plausibility of this approach, it would be necessary to check how productive this alleged EQ marker *ko*↑ is in forming EQs with discourse antecedent other than declarative clauses (e.g., interrogative clauses, imperative clauses, etc.). We are currently pursuing this investigation, and we do not discuss it further and continue with our initial analysis of *tako*↑ as a monomorphic clause-type marker characterizing Korean EQs.

To summarize, we have established that Korean EQs have the following properties: (i) they require the existence of a previously uttered sentence (antecedent) and (ii) they must be introduced by the specialized clause-type marker *tako*↑. Property (i) is also common to English and all the other languages whose EQs have been studied. Property (ii), instead, is peculiar of Korean and characterizes Korean EQs morphosyntactically as well, on top of their semantic and pragmatic properties.

### 3 A Compositional Analysis of the Meaning of Korean Echo Questions

In this section, we present a compositional semantic analysis for Korean EQs. As shown in the previous section, Korean EQs look like interrogative clauses morphosyntactically, except for their clause-type marker and their intonation. At the semantic/pragmatic level, they behave like matrix interrogative clauses as well, by requiring an answer and by imposing the same constraints of the nature of their (short) answers (e.g., yes/no vs. constituent, single vs. pair, single pair vs. pair list). Unlike ordinary matrix interrogative clauses, though, EQs require a discourse antecedent in order to be uttered felicitously. Our basic idea to capture these similarities and differences is to analyze EQs in Korean as sentences sharing the core morphosyntax and semantics of ordinary interrogative sentences, but enriched with an EQ pragmatic operator, denoted by *tako*↑, that marks the clause type and adds to the pragmatic content. Both ordinary interrogative clauses and EQs denote sets of propositions—the set of their possible answers. The EQ operator applies to this set of propositions to return the very same set iff a presupposition is satisfied—that at least one proposition in the set has already been introduced in the discourse.

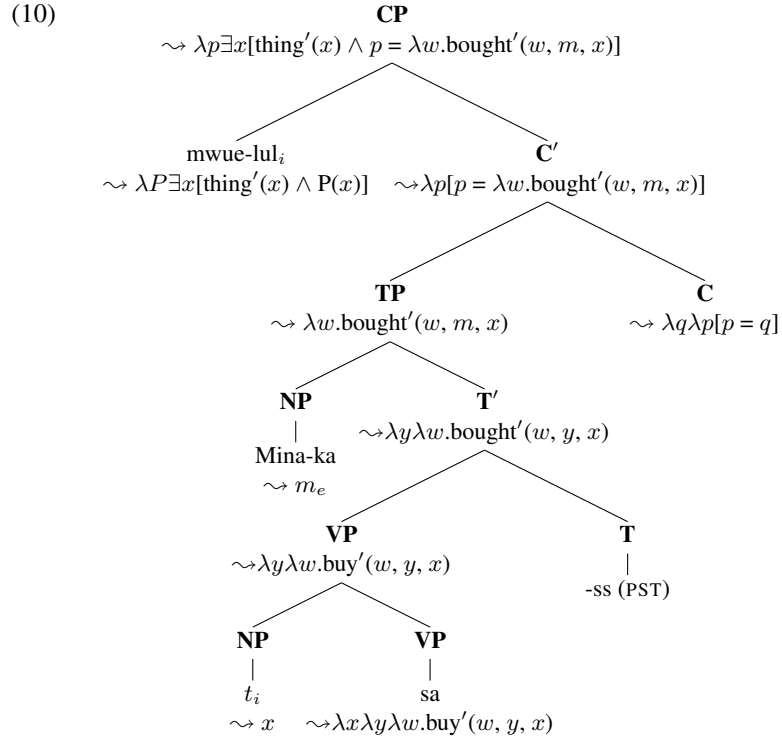
Let us look at concrete examples. (9-a) shows a declarative sentence in Korean acting like the antecedent of the *wh*-EQ in (9-c). (9-b), instead, shows the corresponding ordinary (non-echo) *wh*-interrogative sentence.

The bottom line of each example provides its logical translation.

- (9) a. Mina-ka sathang-ul sa-ss-ta. (EQ antecedent)  
 Mina-NOM candy-ACC buy-PST-DEC  
 ‘Mina bought candy.’  
 $\leadsto \lambda w_{<s>}.bought'(w, m, c)$
- b. Mina-ka mwue-lul sa-ss-ni? (*wh*-INT)  
 Mina-NOM what-ACC buy-PST-INT  
 ‘What did Mina buy?’  
 $\leadsto \lambda p_{<st>}\exists x_{<e>}[thing'(x) \wedge p = \lambda w.bought'(w, m, x)]$
- c. Mina-ka mwue-lul sa-ss-tako↑? (*wh*-EQ)  
 Mina-NOM what-ACC buy-PST-EQ  
 ‘Mina bought WHAT?!’  
 $\leadsto \lambda p:\exists q_{<st>}[\textbf{uttered}'_{<st,t>}(q) \wedge$   
 $\exists x[\textbf{thing}'(x) \wedge q = \lambda w.\textbf{bought}'(w, m, x)]]$ .  
 $\exists x[thing'(x) \wedge p = \lambda w.bought'(w, m, x)]$

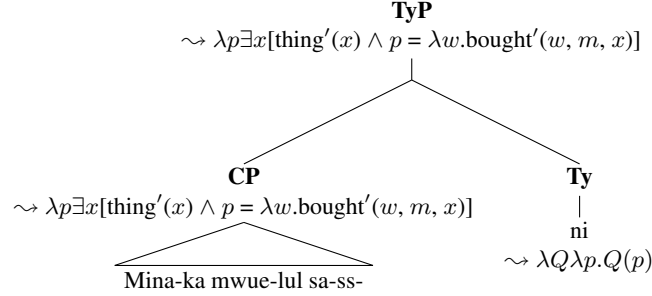
(9-a) denotes a proposition, as expected from a regular declarative sentence. The ordinary *wh*-interrogative sentence in (9-b), instead, denotes a set of propositions, along the line of Hamblin’s (1973) and Karttunen’s (1977) seminal proposals and subsequent works. We propose that the *wh*-EQ in (9-c) denotes the same set of propositions as the ordinary *wh*-interrogative sentence in (9-b). The only difference is that the EQ in (9-c) also triggers presuppositional content, highlighted in bold in the logical translation. In particular, (9-c) presupposes that at least one of the propositions in the denotation of the EQ is the proposition denoted by a sentence uttered soon before the EQ.

Since (9-b) and (9-c) are morphosyntactically identical except for their clause-type markers and intonations, we assume that the combination of those two elements (clause-type marker and intonation) form a unit which is responsible for the difference in content and use between (9-b) and (9-c) in particular, and between ordinary interrogative sentences and EQs in general. Specifically, we propose that the two kinds of sentences share the same syntactic structure and the same semantic derivation all the way up to the projection where *wh*-expressions move, as shown in (10).

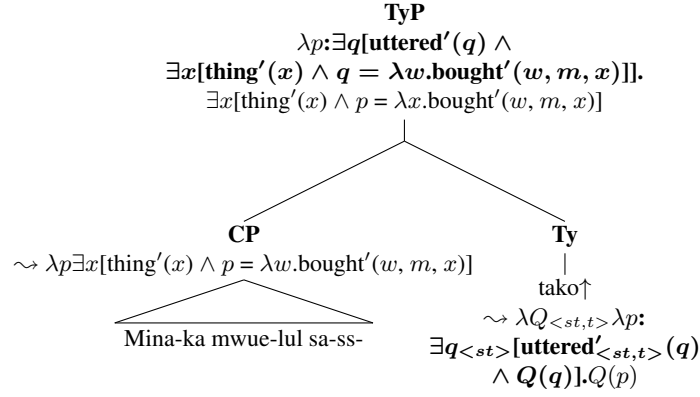


As shown in (10), we assume that *wh*-movement to Spec,CP does occur in Korean as well, but covertly (after spell-out), in order for a *wh*-expression to be semantically combined with the remainder of its sentence. Next, we assume that the three clause-type markers we have focused on are heads of a functional projection right above CP, which we call **TyP** (for clause-type phrase). The interrogative clause-type marker *ni* is truth-conditionally and presuppositionally inert: it applies to a set of propositions and just returns the very same set, as shown in (11). The EQ marker *tako*↑, instead, adds the presupposition that at least one of the propositions in the set needs to have been previously uttered, as shown in (12) with the presuppositional content in bold.

- (11) Logical translation of the *wh*-INT in (9b) (‘What did Mina buy?’)



- (12) Logical translation of the *wh*-EQ in (9c) (‘Mina bought WHAT?!’)



#### 4 Problems with Previous Analyses of Echo Questions

In this section, we briefly touch on previous analyses of EQs in languages other than Korean that have inspired our investigation to conclude that they are not fully suitable for Korean. Previous studies have focused on the fact that *wh*-expressions in EQs in languages like English do not undergo *wh*-movement, unlike those in ordinary interrogative clauses (e.g., Dayal 1996; Sobin 2010; Sudo 2010; Beck and Reis 2018). This and other differences have been taken as evidence that EQs are completely different constructions from ordinary interrogative clauses.

EQs have been analyzed as *wh*-clauses with a phonologically null functional head denoting an EQ operator that combines with a CP complement and triggers an EQ interpretation (Dayal 1996; Sudo 2010). *Wh*-expressions in EQs have been assumed to denote different semantic objects from those in ordinary interrogative clauses (Dayal 1996; Beck and Reis 2018). In particular, Dayal (1996) argues for an EQ operator with a variable semantic type, which occurs as the head of a higher func-

tional projection dominating CP. Dayal (1996) also assumes that *wh*-expressions in EQs introduce free variables that are bound by the EQ operator, while ordinary (non-echo) *wh*-expressions introduce existentially bound variables.

Sudo (2010), instead, adopts a metalinguistic approach and proposes two different phonologically null complementizers/operators for polar-EQs and *wh*-EQs, which relate the meaning in an EQ to its antecedent and restricts possible answers. The difference between the two EQ operators is that the polar EQ operator restricts the answer set to a proposition and its negation, while the *wh*-EQ operator does not (Sudo 2010, 9–10).

Beck and Reis (2018), instead, focus on distinct intonational properties of *wh*-expressions in EQs to argue that, while *wh*-expressions in ordinary interrogative clauses trigger a set of alternatives that in the end produces a set of propositions as the denotation of the whole *wh*-clause, *wh*-expressions in EQs denote a free variable *z* that can only be deictically/anaphorically interpreted as referring to a unique contextually salient entity.

These proposals are partially at odds with the core properties of Korean EQs. First of all, Korean does not provide any straightforward evidence that EQs and ordinary interrogative clauses are separate constructions: they are morphosyntactically the same all the way to their TP/CP level—the different clause-type markers occur as the head of higher functional projections (above the TP/CP layers), which, we argue, does not affect the semantic content (but only the presuppositional one).

Second, all the *wh*-expressions that occur in EQs are attested in ordinary interrogative clauses and vice versa in Korean, including *wh*-expressions in multiple-*wh* EQs and multiple-*wh* interrogative clauses (see ex. 5-b with Reading 1). This would be unexpected and purely accidental if the two constructions were unrelated. Our proposal, instead, assumes that they are the same all the way up to CP included. It follows that their *wh*-expressions must be the same as well.

Third, *wh*-expressions in EQs and ordinary *wh*-interrogative clauses exhibit the same intonational profile, without the prosodic differences attested in English and German according to Beck and Reis (2018). A strong accent on *wh*-expressions is not a necessary feature that distinguishes EQs from ordinary interrogative clauses in Korean. Although *wh*-expressions in EQs often involve higher amplitude than those in ordinary interrogative clauses, *wh*-expressions with such higher amplitude seem to be easily perceived as ordinary *wh*-expressions (Jun and Oh 1996). Thus, the prosody of Korean *wh*-expressions doesn't bring evidence in support for different lexical meanings between *wh*-expressions in EQs and those in ordinary interrogative clauses. Our proposal captures this fact by assigning identical meanings to the morphosyntactically identical *wh*-expressions in both constructions.

Fourth, generalizations about EQs in English and German in Beck and Reis (2018) do not hold in Korean. For instance, rising final intonation is

obligatory in Korean, while Beck and Reis (2018) argue that it is optional in English and German. Also, Korean EQs do not need “echoing” the adjacent (immediately preceding) utterance but can pick their discourse antecedent further away, unlike English and German (according to Beck and Reis (2018)). (13), inspired by Beck and Reis (2018), shows that Korean EQs do not have to “echo” the immediately preceding utterance.

- (13) a. A: thom-i wuli taythonglyeng-ul nayil pam  
 A: Tom-NOM our president-ACC tomorrow night  
 cenyek siksa-ey chotay.ha-ess-e.  
 dinner-to invite.do-PST-DEC  
 ‘Tom invited our president for dinner tomorrow night.’  
 b. B: cenyek siksa chotay — thom-un phyengso-ey  
 B: dinner invitation — thom-TOP usually-at  
 cengmal cceyceey.ha-e! (**kuntey**) **thom-i nwukwu-lul**  
 so stingy.be-DEC (**but**) **Tom-NOM who-ACC**  
**chotay.ha-ess-tako↑?**  
**invite.do-PST-EQ**  
 ‘A dinner invitation — usually Tom is so stingy! (But) Tom  
 invited WHO?’

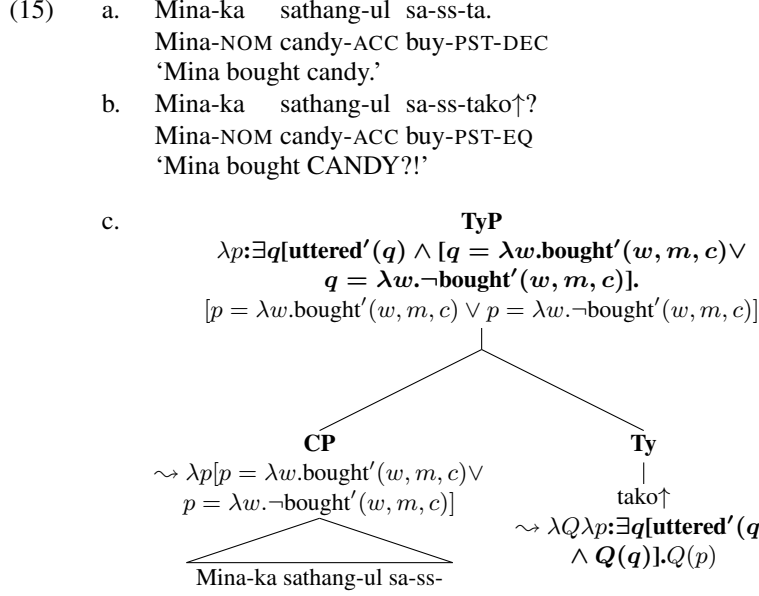
Although the EQ ‘Tom invited WHO?’ is not immediately adjacent to the antecedent, it is fully felicitous in Korean, as shown in (13-b). Korean EQs are even allowed to “echo” what has been said in previous discourse, say, several days or months ago. Let us imagine a scenario where Mina once told her father that she would be traveling to Nagoya in the summer. A couple of months later, Mina’s father suddenly realizes that he has forgotten the name of the city where his daughter will be traveling in the summer, because he lacks familiarity with the names of Japanese cities. Under this scenario, he can ask Mina the following EQ, out of the blue:

- (14) ne yelum-ey eti ka-n-tako↑?  
 you summer-in where go-IND-EQ  
 ‘You’re going WHERE in the summer?’

Mina can remind her father of the name of the city with a short constituent answer—‘Nagoya.’ To the best of our knowledge, no language has been reported to allow an EQ to “echo” an antecedent outside the current discourse. Although further investigation is needed in order to understand how far away an EQ is allowed to be from its antecedent in Korean, the current version of our proposal only requires a previously uttered sentence to act as the antecedent of an EQ without further specifying how close to the EQ it has to have been uttered.

Fifth, Korean makes use of the same clause-type marker for polar and *wh*-EQs, which doesn’t support Sudo’s (2010) proposal of a different operator for each kind of EQ. On the other hand, our proposal treats polar and *wh*-EQ in the same way once they reach the CP level, at which both

denote a set of propositions. The derivation of the polar EQ in (15-b) according to our proposal is given in (15-c), with (15-a) being its antecedent.



To sum up, existing analyses of EQs in languages other than Korean cannot be extended to Korean EQs straightforwardly, since they build on morphosyntactic and prosodic differences between EQs and ordinary interrogative clauses that are not attested in Korean.

## 5 Conclusion and Future Work

We have argued that Korean provides evidence that EQs are morphosyntactically and semantically close to ordinary interrogative sentences. Their main difference is in their higher functional heads that mark clause type and denote two different operators: the EQ marker *tako*↑ adds presuppositional content to the meaning of the sentence, while the interrogative marker *ni* does not. Our analysis doesn't need to make any special assumption about the semantic contribution of *wh*-expressions nor the way their meaning is combined with the remainder of the sentence in which they occur.

In future work, we are planning to discuss further similarities between EQs and interrogative sentences like the availability of both single-pair and pair-list readings in both constructions when they contain two *wh*-expressions, contra the common assumption that pair-list readings are not available in EQs (e.g., Dayal 2016; Chernova 2017).

We are also planning to investigate EQs with discourse antecedents

other than declarative clauses and show how our analyses can be extended to those. In Korean, there is a total of four types of EQs, based on the clause-type markers that characterize them, which in turn correlates with the clause type of the antecedent of the EQ. On top of the now familiar marker *tako*↑ occurring in EQs with a declarative clause as their antecedent, there are three more markers: *nyako*↑, which characterizes EQs with an interrogative sentence as their antecedent, as shown in (16), *lako*↑, which occurs in EQs with an imperative clause as their antecedent, as shown in (17), and *cako*↑, which occurs in EQs with an exhortative (propositive) sentence as their antecedent, as shown in (19).

- (16) a. Mina-ka <sub>sathang-ul</sub> sa-ss-ni? (interrogative)  
 Mina-NOM candy-ACC buy-PST-INT  
 ‘Did Mina buy candy?’  
 b. Mina-ka mwue-lul sa-ss-nyako↑?  
 Mina-NOM what-ACC buy-PST-EQ  
 ‘Did Mina buy WHAT?!’
- (17) a. Mina-ya, <sub>sathang-ul</sub> sa-la. (imperative)  
 Mina-VOC candy-ACC buy-IMP  
 ‘Mina, buy candy.’  
 b. mwue-lul sa-lako↑?  
 what-ACC buy-EQ  
 ‘Buy WHAT?!’
- (18) a. Mina-ya, <sub>sathang-ul</sub> sa-ca. (exhortative)  
 Mina-VOC candy-ACC buy-EXH  
 ‘Mina, let’s buy candy.’  
 b. mwue-lul sa-cako↑?  
 what-ACC buy-EQ  
 ‘Let’s buy WHAT?!’

In work that we are currently developing, we show how the analysis we presented here can be extended to these types of EQs as well.

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