

On Korean *what*-exclamatives*

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1. Introduction

The present paper offers a compositional semantic analysis of Korean *what*-exclamatives like that in (1B)¹.

- (1) A: Mimi-ka lampolukini-lul sa-ss-tay.
Mimi-NOM Lamborghini-ACC buy-PST-DECL
'(I heard that) Mimi bought a Lamborghini.'
B: wa, *mwe-l kulehkey pissan cha-lul sa-ss-e!*
wow what-ACC so expensive car-ACC buy-PST-EXCL
'Wow, what an expensive car she bought!'
A: kulekey!
yeah
'Yeah!'

To my knowledge, such examples are unstudied in the literature. This work provides meaningful insights into our current understanding of cross-linguistic variation in *wh*-exclamatives.

2. A compositional semantic analysis

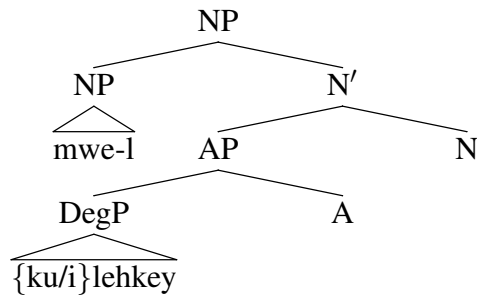
2.1 Structure and meaning of an exclamative *wh*-phrase

I begin by analyzing the sequence of *mwe-l* + {*ku/i*}*lehkey* + Adj + N as an exclamative *wh*-phrase with the internal structure given in (2).

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¹The sentence ending particle *e* is used to informally mark declaratives, interrogatives, exclamatives, imperatives, and exhortatives (see Mun 2013 and references therein).

(2)



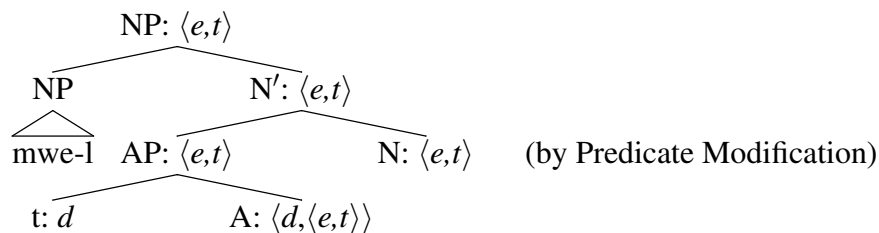
The gradable adjective takes as its complement a DegP headed by the degree adverb $\{ku/i\}lehkey$ ‘so’. The head noun then combines with the AP, resulting in the N' , which in turn combines with $mwe-l$ as its specifier.² Clear evidence for the assumed internal structure comes from the scrambling paradigms presented in (3): (3a) is a baseline, well-formed *what*-exclamative.

- (3) a. ecey [NP mwe-l kulehkey pissan cha-lul] sa-ss-e!
 yesterday what-ACC so expensive car-ACC buy-PST-EXCL
 ‘What an expensive car you bought yesterday!’
 b. *[pissan cha-lul] ecey mwe-l kulehkey sa-ss-e!
 expensive car-ACC yesterday what-ACC so buy-PST-EXCL
 c. *[mwe-l] ecey kulehkey pissan cha-lul sa-ss-e!
 what-ACC yesterday so expensive car-ACC buy-PST-EXCL

(3b) is bad due to the overt scrambling of the non-constituent sequence *pissan cha-lul*. (3c), where $mwe-l$ base-generated in Spec-NP has scrambled on its own, falls out as a violation of Left Branch Constraint.

In terms of the semantics of an exclamative *wh*-phrase, a gradable adjective, which is assumed to be a function from degrees to a set of individuals (Kennedy and McNally 2005), composes with a degree-denoting trace of $\{ku/i\}lehkey$, which undergoes movement for type reasons. The AP then intersectively composes with the head noun, and the resulting N' composes with $mwe-l$, which denotes an identity function (i.e., $\lambda P.P$), forming an exclamative *wh*-phrase of type $\langle e,t \rangle$. This semantic derivation is illustrated in (4).

(4)



²The unreduced form *mwues-ul* ‘what’ is not permitted in Korean *what*-exclamatives. I assume that the accusative Case on $mwe-l$ is an inherent Case, not a structural Case. This assumption is supported by the ability of the *wh*-expression to occur in a strict transitive clause with the accusative-marked object.

On this analysis, for instance, the exclamative *wh*-phrase in (3a) is interpreted as denoting a set of individuals x such that x is a d -expensive car ($\lambda x . \text{car}(x) \wedge \text{expensive}(d)(x)$).

Note that non-gradable adjectives, like relational adjectives, are not permitted in Korean *what*-exclamatives, as shown in (5).

- (5) *mwe-l kulehkey suphochu cha-ul sa-ss-e!
 what-ACC so sports car-ACC buy-PST-EXCL
 ‘What a sports car you bought!’

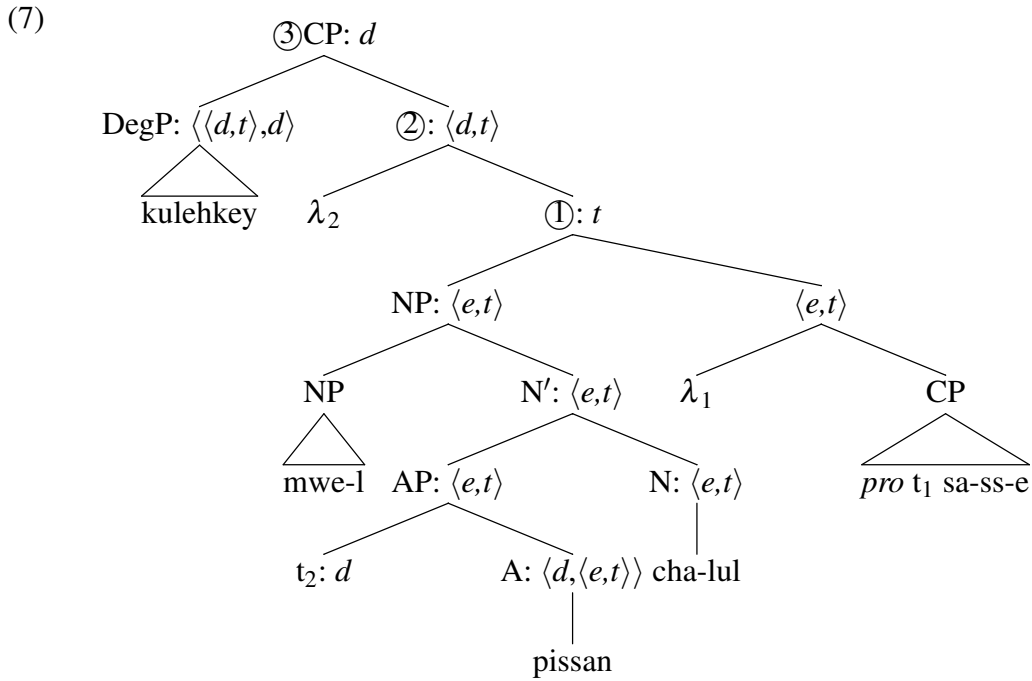
This is because the relational adjective *suphochu* (type $\langle e, t \rangle$) cannot take as its argument the degree-denoting trace of *kulehkey*.

2.2 Maximality operator $\{ku/i\}lehkey$

I propose to treat the degree adverb $\{ku/i\}lehkey$ as a maximality operator, a function from a set of degrees to a unique maximal degree in the given set, as defined in (6) (Rullmann 1995).

- (6) $[[\{ku/i\}lehkey]] = \lambda D_{\langle d, t \rangle} . \text{MAX}(D)$, where $\text{MAX}(D) = \iota d [d \in D \wedge \forall d' \in D [d' \leq d]]$.

The maximality operator plays a pivotal role in deriving maximal degree readings of Korean *what*-exclamatives. To illustrate, consider the compositional derivation in (7) for (1B).



- $[[\textcircled{1}]] = \rightsquigarrow_{\exists \text{closure}} \exists x [\text{car}(x) \wedge \text{expensive}(d)(x) \wedge \text{bought}(x)(M)]$
 $[[\textcircled{2}]] = \lambda d . \exists x [\text{car}(x) \wedge \text{expensive}(d)(x) \wedge \text{bought}(x)(M)]$
 $[[\textcircled{3}]] = \text{MAX}(\lambda d . \exists x [\text{car}(x) \wedge \text{expensive}(d)(x) \wedge \text{bought}(x)(M)])$

The exclamative *wh*-phrase that has undergone Quantifier Raising to resolve type mismatch composes with the derived property via Predicate Modification, yielding the open proposition—that Mimi bought a *d*-expensive car—after the individual variable is bound by existential closure (see [[①]]). The LF-moved maximality operator *kulehkey* introduces lambda abstraction over its trace of type *d*, resulting in the degree property (see [[②]]). This degree property in turn feeds the maximality operator, yielding the maximal degree *d* such that Mimi bought a *d*-expensive car (see [[③]]).

Example (8) illustrates the inability of *maywu* ‘very’ to be used in place of $\{ku/i\}$ *lehkey* ‘so’.

- (8) *mwe-l maywu pissan cha-lul sa-ss-e!
 what-ACC very expensive car-ACC buy-PST-EXCL
 ‘(int.) What an expensive car you bought!’

In the semantics developed above, the *wh*-clause needs to be mapped onto a maximal degree. Such a mapping, however, cannot be effected by the degree modifier *maywu* (type $\langle\langle d,t \rangle, \langle d,t \rangle\rangle$) that takes a set of degrees and yields a more restricted set of degrees, not a unique maximal degree in the set; this is why (8) is deviant.

Further evidence for the treatment of $\{ku/i\}$ *lehkey* as a maximality operator comes from the fact that Korean *what*-exclamatives are incompatible with negation:

- (9) *John-un mwe-l kulehkey pissan cha-lul sa-ci anh-ass-e!
 John-TOP what-ACC so expensive car-ACC buy-CONN not-PST-EXCL
 ‘What an expensive car John didn’t buy!’

On the analysis, the *wh*-clause in (9) should denote $\text{MAX}(\lambda d[\text{John didn't buy a } d\text{-expensive car}])$. The problem with this denotation, however, is that the given set of degrees, namely $\lambda d[\text{John didn't buy a } d\text{-expensive car}]$, has no maximum since the relevant scale is open-ended at the top; as a result, the meaning of the *wh*-clause is undefined, hence unacceptable (Rullmann 1995).

The maximality operator $\{ku/i\}$ *lehkey* projects a presupposition such that there exists a unique maximal degree in a given set of degrees. For example, what is presupposed in (1B) is that Mimi bought a *d*-expensive car, where *d* refers to the maximal degree. This view is consistent with Michealis and Lambrecht’s (1996) assumption that *wh*-exclamatives denote a presupposed open proposition with a free degree variable, except that in my analysis the degree in question should be maximal.

2.3 Korean *what*-exclamatives as assertions

I argue that Korean *what*-exclamatives count as assertions, given that their content can be rejected/denied, as in (10), or can be referred to by the propositional anaphor *kulehkey* ‘so’, as in (11), and they can be used as responses to information-seeking questions, as in (12).

On Korean what-exclamatives

- (10) A: mwe-l ilehkey pissan senmwul-ul sa-ss-e!
what-ACC so expensive gift-ACC buy-PST-EXCL
'What an expensive gift you bought!'
B: ani. pyello an pissa.
not much not expensive
'No. It's not that expensive.'
- (11) A: Mimi-ka ecey lampolukini-lul sa-ss-tay.
Mimi-NOM yesterday Lamborghini-ACC buy-PST-DECL
'(I heard that) Mimi bought a Lamborghini yesterday.'
B: wa, mwe-l kulehkey pissan cha-lul sa-ss-e!
wow what-ACC so expensive car-ACC buy-PST-EXCL
'Wow, what an expensive car she bought!'
A: na-to kulehkey sayngkakhay!
I-also so think
'I think so!'
- (12) A: nay senmwul ettay?
my gift how
'How do you like my gift?'
B: mwe-l ilehkey yeypun inhyeng-ul sa-ss-e! komawe!
what-ACC so pretty doll-ACC buy-PST-EXCL thank.you
'What a pretty doll you bought! Thank you!'

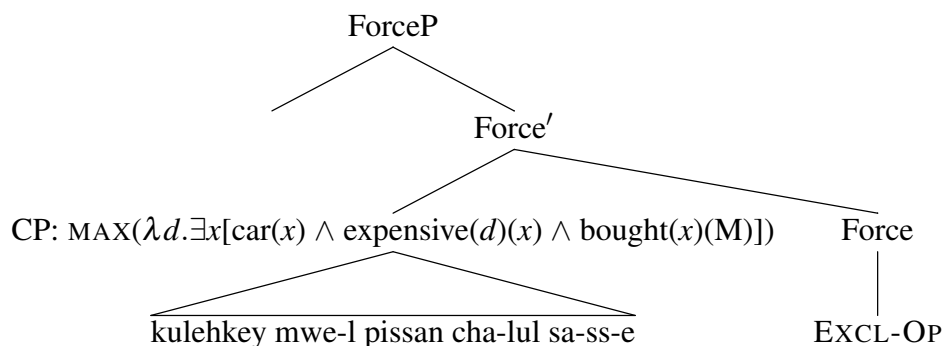
In order to capture the assertive act of Korean *what*-exclamatives, I propose to analyze them as involving an assertive force operator in the Force head, which is defined below:

- (13) EXCL-OP(d) = $d \geq s$, where s refers to a contextually provided standard established by the speaker's expectations.³

The assertive operator takes the maximal degree denoted by the *wh*-clause and returns an assertion that the maximal degree exceeds a standard established by the speaker's expectation. On this view, the *what*-exclamative in (1B) with the LF structure in (14) conveys an assertion that the maximal degree d such that Mimi bought a d -expensive car exceeds a standard established by the speaker's expectation.

³The speaker's expectations could follow common-ground norms or socially-accepted standards, or they could be ones reflecting his/her personal assessment (Gutiérrez-Rexach 2008).

(14)



In (10), using the negative particle *ani*, the speaker B negates A's assertion, thereby asserting that the maximal degree of expensiveness of the gift in question does not exceed A's expectation, meaning that the gift is not that expensive. In (12), the speaker B's assertion—that the maximal degree of prettiness of the doll in question surpasses her expectations—is taken to mean that the doll is very pretty, expressing her gratitude to the speaker A.

Korean *what*-exclamatives, as with their counterparts in other languages, express a sense of surprise or amazement on the part of the speaker. This is evidenced by their incompatibility with a continuation like *I'm not surprised at all*:

- (15) #mwe-l kulehkey pissan cha-lul sa-ss-e! cenhye nollap-ci
 what-ACC so expensive car-ACC buy-PST-EXCL at.all surprise-CONN
 ahn-a.
 not-DECL
 'What an expensive car you bought! I'm not surprised at all.'

The speaker's emotional attitude can be captured by the present analysis. The assertive content ($d \geq s$) yielded by EXCL-OP entails a violation of the speaker's expectation, since the standard of comparison is consistent with the speaker's expectations. The speaker unexpectedness in turn naturally gives rise to a sense of surprise, amazement or awe (Zanuttini and Portner 2003).

2.4 The speaker's evaluation of $d \geq s$

Another remarkable property of Korean *what*-exclamatives is that depending on the context, the speaker evaluates the assertive content expressed by EXCL-OP as positive or negative. Consider (16).

- (16) Context 1: My parents gave me a very expensive gift that I wanted for my birthday.
 Context 2: I wanted John to buy a cheap gift, but he bought a very expensive gift.
 Me: mwe-l ilehkey pissan senmwul-ul sa-ss-e!
 what-ACC so expensive gift-ACC buy-PST-EXCL
 'What an expensive gift you bought!'

The assertive content of the exclamative—that the maximal degree of expensiveness of the gift in question exceeds the standard established by the speaker’s expectation—is evaluated by the speaker as positive in Context 1; the speaker feels very happy to receive the very expensive gift. The same assertive content, on the other hand, is judged negatively in Context 2; the speaker thinks that the gift is too expensive; that is, the actual price of the gift should not have surpassed his threshold.

Notice that such evaluative attitudes do not arise if the *wh*-expression *mwe-l* is absent. For example, by uttering (17), the speaker just expresses his/her surprise at the extreme/high price of the gift in question.

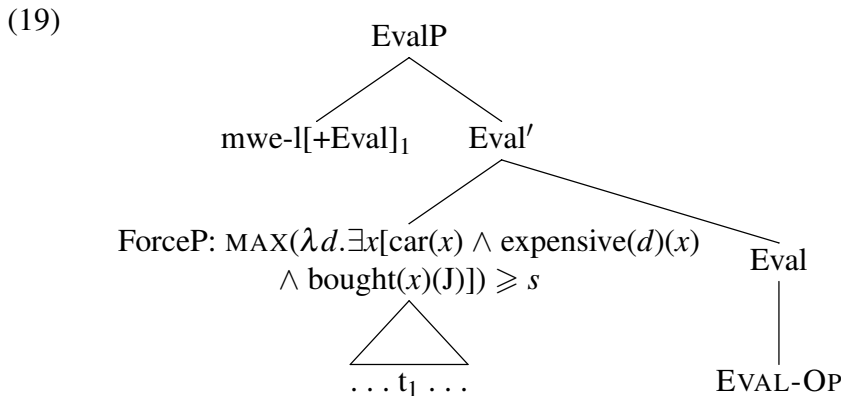
- (17) kulehkey pissan senmwul-ul sa-ss-e!
 so expensive gift-ACC buy-PST-EXCL
 ‘You bought such an expensive car!’

This fact indicates that the *wh*-phrase *mwe-l* may contribute to expressing the speaker’s evaluative attitudes. But how?

In answering the question, I propose that Korean *what*-exclamatives involve an evaluative operator EVAL-OP in the Eval head, which denotes the function given in (18).

- (18) EVAL-OP(p) = The speaker evaluates p as E , where $E \in \{\text{positive, negative}\}$.

The assertive proposition ($d \geq s$) derived via EXCL-OP is taken to serve as input to the evaluative operator, yielding the speaker’s evaluative attitude towards it, as illustrated in (19).

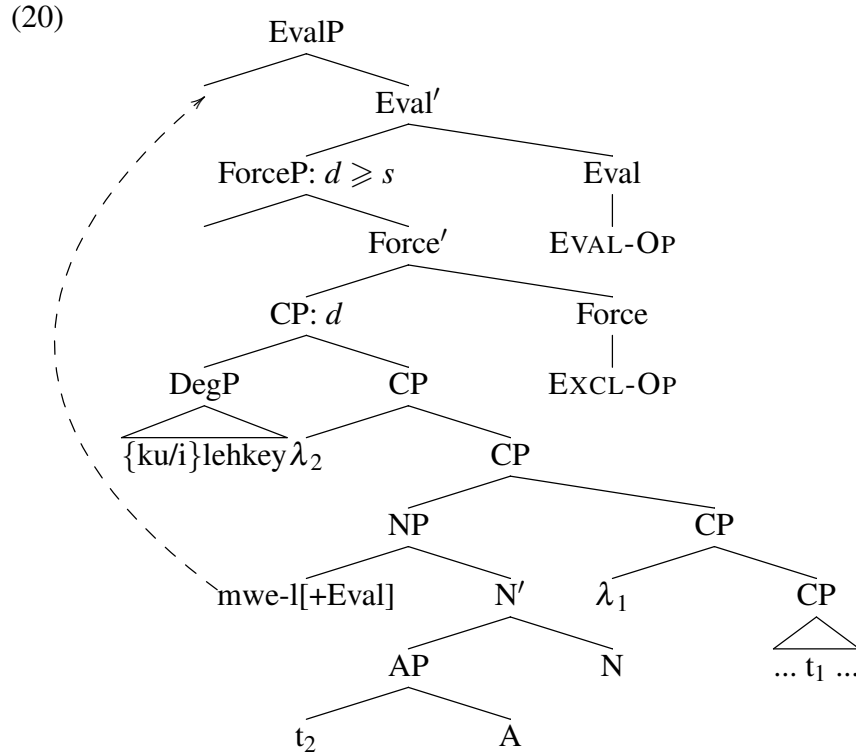


As we can see in the above LF structure, the *wh*-expression endowed with [+Eval] is assumed to undergo covert movement (from Spec-NP) to Spec-EvalP to activate EVAL-OP by feature checking.⁴ This syntactic mechanism helps account for why examples like (17) do not evoke evaluative attitudes on the part of the speaker: since there is no *wh*-expression with [+Eval], EVAL-OP involved fails to be activated.

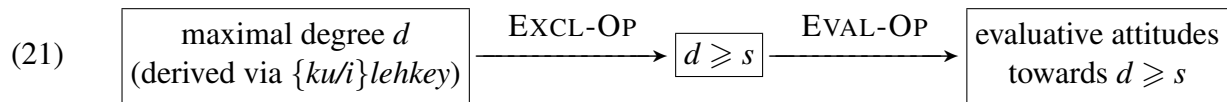
⁴I assume that the *wh*-expression in Spec-EvalP obligatorily reconstructs to its original position for interpretation.

2.5 LF structure of Korean *what*-exclamatives

Taken together, Korean *what*-exclamatives are assumed to involve the LF structure presented in (20)



The compositional semantic derivation of Korean *what*-exclamatives that I have proposed so far is sketched in (21).



The maximal degree denoted by the *wh*-clause feeds the assertive force operator (EXCL-OP), resulting in an assertion that the maximal degree exceeds a standard established by the speaker’s expectation. The assertive content then feeds the evaluative operator (EVAL-OP) and returns the speaker’s evaluative attitude towards it.

3. Korean *what* vs. English *what*

Rett (2011) argues that English *what*-exclamatives denote degree properties derived via a degree operator *what* whose range is underspecified, as defined in (22).

(22) $[[\text{what}]] = \lambda P_{\langle \tau, t \rangle} \lambda x_{\langle \tau \rangle} . P(x)$ (for any type τ) (Rett 2011:423)

According to her analysis, the *what*-exclamative in (23) is derived as in (24).⁵

(23) What delicious cookies John baked!

- (24) a. $[\text{what}_j \llbracket [t_{j(d)} \text{ delicious cookies}]_i \text{ John baked } t_{i(x)} \rrbracket]$
 b. $\llbracket [\text{what}] (\lambda d j. \llbracket [t_{j(d)} \text{ delicious cookies John baked } t_{i(x)} \rrbracket]) \rrbracket$
 $= \lambda d \lambda x. \text{baked}'(j, x) \wedge \text{cookies}'(x) \wedge \text{delicious}'(x, d)$
 c. $\rightsquigarrow \exists_{\text{closure}} \lambda d \exists x [\text{baked}'(j, x) \wedge \text{cookies}'(x) \wedge \text{delicious}'(x, d)]$

As seen in (24a), the degree operator *what* undergoes movement, leaving behind a trace of type *d*. This degree-denoting trace composes with the gradable adjective *delicious*, and the result intersectively composes with the head noun *cookies*. The moved degree operator introduces lambda abstraction over its trace, resulting in the degree property in (24b), and the individual variable *x* in the degree property undergoes existential closure as in (24c).

As to Korean *what*-exclamatives, their apparent structural difference from their English counterparts is that the *wh*-expression *mwe-l* cannot be adjacent to a gradable adjective; the two expressions are separated by the degree adverb $\{ku/i\}$ *lehkey* ‘so’ (cf. **What so delicious cookies John baked!*). This makes it implausible to treat *mwe-l* ‘what’ as a degree operator in Korean *wh*-exclamatives. Instead, I have argued that the degree adverb $\{ku/i\}$ *lehkey* acts as a degree operator, whose trace serves as a degree argument of the gradable adjective and is lambda-abstracted over to yield the degree property.⁶

The claim that *mwe-l* ‘what’ in Korean *wh*-exclamatives does not function as a degree operator receives support from examples like (25), where they only denote propositions, just like English sentence exclamations, even in the presence of *mwe-l*.

- (25) *mwe-l tto suphochu cha-lul sa-ss-e!*
 what-ACC again sports car-ACC buy-PST-EXCL
 ‘You bought a sports car again!’

The lack of degree reading here is evidenced by the occurrence of the non-gradable adjective *suphochu* ‘sports’ without leading to ungrammaticality (cf. (5)). The propositional reading of (25) is easily captured by the proposed analysis: since the non-degree adverb *tto* cannot function as a maximality operator, the sentence is not able to receive the degree interpretation, i.e., it cannot denote a maximal degree. I leave to future work a detailed discussion of *wh*-exclamatives like (25).⁷

⁵See Rett (2011) for the full derivation.

⁶A similar point has been made by Castroviejo (2021), who argues that in Catalan *quin*-exclamatives, the degree quantifier *tan* ‘so’, but not the determiner *quin* ‘what/which’, plays a pivotal role in obtaining their degree properties.

⁷Nouwen and Chernilovskaya (2015) propose that there are two types of *wh*-exclamative, one with *i*-level exclamation and the other with *e*-level exclamation. *i*-level *wh*-exclamatives express the exclamative attitude towards the ‘*wh*-referent’, while *e*-level *wh*-exclamatives express the exclamative attitude towards the ‘event’ the *wh*-referent takes part in. I assume that *mwe-l kulehkey* exclamatives and *mwe-l tto* exclamatives are considered as *i*-level and *e*-level *wh*-exclamatives, respectively.

4. Summary

There is an ongoing debate in the literature about whether *wh*-exclamatives denote sets of propositions (Zanuttini and Portner 2003), just like *wh*-interrogatives, or degree properties (Rett 2011 and Castroviejo 2021). This paper has presented fresh insight into the issue by analyzing Korean *what*-exclamatives as denoting a maximal degree derived via the maximality operator $\{ku/i\}$ *lehkey* ‘so’. It has also been controversial whether *wh*-exclamatives count as expressives (Rett 2011 and Castroviejo 2021) or assertions (Trotzke and Giannakidou 2021). Regarding this issue, this paper has proposed to treat Korean *what*-exclamatives as assertions. I hope the current study has developed our understanding of cross-linguistic variation in *wh*-exclamatives and filled in a gap in the description of Korean *wh*-exclamatives.

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