Korean KE compounds as novel evidence for phrase-to-word compounding in the syntax

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Abstract. This paper reports on undocumented Korean data, dubbed as KE compounds and analyzes the structure thereof syntactically by alluding to detailed nominal structure and previous (re)analyses of compounding in the syntax, especially addressing the debate between Lexicalism and Anti-lexicalism. Korean KE compounds cannot be analyzed as typical CPs, despite surficial similarities, and they require an analysis with finer nominal structure and compounding in the syntax. Therefore, Korean KE compounding advocates the idea of finer nominal structure and syntactic operations substituting for lexical processes. The paper goes as follows. Firstly, I will outline the ongoing question in linguistic architecture around the lexicon, by addressing the major points and analysis on compounding that Lexicalism and Anti-lexicalism provide, respectively. Secondly, I will report Korean KE compounds data and show how they differ from typical Korean CP constructions. Lastly, I will analyze Korean KE compounding using finer nominal structure and the ideas of forming compounds using syntactic operations. That is, Korean KE compounding is an AspP-to-nP nominalization.

Keywords. compounding; phrasal compound; lexicon; nominal structure; nominalization; Korean

1. Introduction. Whilst the existence of the lexicon in language architecture has hardly been questioned, whether it is an autonomous, self-ruling component of the language has been an ongoing debate in the literature. In this paper, the idea that the lexicon is an autonomous component that has its own grammar will be referred to as Lexicalism, and Anti-Lexicalism signifies the idea that the lexicon is simply a list of words without independent operations. Anti-lexicalist literature (Halle & Marantz 1993, Marantz 1997, Alexiadou 2001, Harley 2006, Bruening 2018, inter alia) examines previous accounts on lexical operations such as noun incorporation, compounding or Romance reflexive verbs, and attempts to incorporate such operations into the syntax. Vis-à-vis compounding, which had been considered strictly lexical, an alternative aperture to look at it has been suggested for English phrase compounds (Harley 2008), e.g. I don’t like his “holier-than-thou” attitude or Romance VN compounds (Barrie 2011), e.g. lave-mains ‘wash basin’. The fulcrum of this alternative account is that the syntactic operation merge is sufficient to account for these data; hence, the lexical operation ‘compounding’ can be dispensed with. However, the previous accounts are not entirely convincing in that other simpler accounts, for instance the quotation approach (Wiese 1996) to English phrase compounds, are as compatible with the data as the former. Therefore, in order to corroborate the syntax-driven approach to compounding, data that can only be accounted thereby should be explored first. I argue that Korean KE compounding, whereby words that resemble ordinary CPs are built, is an AspP-to-nP process that turns an Aspect Phrase into a compound-like word. In this paper, Korean KE compounds refer to phrases that involve the Korean complementizer/nominalizer ke, as shown in (1).

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I explain how these CP-looking phrases differ from ordinary CPs, and why they cannot be dealt with purely in the lexicon. This paper is organized in the following order. Firstly, I will discuss the background literature regarding the debate between Lexicalism and Anti-lexicalism and the analysis of Korean Complementizer ke(s). Secondly, I will present data of Korean KE compounds and their behavior. Lastly, the analysis thereof will be delineated.

2. Background. This section will mainly discuss the following three points:

- Lexicalism vs. Anti-lexicalism
- Korean Nominalizer/Complementizer kes
- Syntactic Analysis of Compounding

2.1. LEXICALISM VS. ANTI-LEXICALISM. The lexicon is in essence a repository of lexical items, but morphological processes, such as blending, compounding or noun incorporation suggests the idea that the lexicon is a productive component of grammar. However, this “strong” lexicalism is at variance with the spirit of the minimalist program (Chomsky 1995) because in the MP, productivity can and should be reduced to merge. The corollary to the minimalism is anti-lexicalism, or weak lexicalism, whereby lexicon-specific processes are reanalyzed in terms of syntactic processes. See Siddiqi 2014 for a compendious review of the virtual war between these two sides.

The three most compelling arguments of Lexicalism are limited productivity of lexical items, idiosyncrasy and blocking. Unlike syntactically built phrases, words or lexically formed items, e.g. compounds or blends, are not as productive (Chomsky 1970). Moreover, interpretation of lexical items is idiosyncratic and hardly inferable, while meanings syntactic phrases are usually sums of smaller phrases. Besides, traditionally the blocking effect is explained as a process by which existing words blocks deriving new synonymous words, e.g. *stealer is blocked by thief (Kiparsky 1982).

On the other hand, Anti-lexicalism put forth the three following reasons to counter Lexicalism. Firstly, the principle of parsimony, a tall order in the minimalist program, compels grammar into maximum simplicity. That is, a grammar without lexicon-specific operations is superior to one therewith. Secondly, agglutinative languages equate certain suffixes with syntactic primitives. For instance, while Aspect, Tense, Complementizer are all suffixes in Korean, they do not combine randomly like ordinary “lexical” suffixes but follow syntactic rules, i.e. the former being c-commanded by the latter. Therefore, separating suffixation from the syntax makes it less clear to explain agglutinative languages. Lastly, the notions like words or compounds have not been thoroughly defined, and it is worth examining so-called lexical items from the syntactic point of view. Korean KE compounds are closely related to this debate between Lexicalism and Anti-lexicalism as compounds that involves a verb and a noun (e.g. Romance VN compounds) falls in the exact gray area between words and phrases. Korean KE compounds have both syntactic and lexical flavors—they look like phrases yet are interpreted like a word. The structural
similarity between ordinary verbal phrases and VN compounds make two different components of grammar work in tandem.

2.2. KOREAN NOMINALIZER/COMPLEMENTIZER KES. Despite the extensive research of the behavior of the Korean nominalizer/complementizer kes (Kim 1979, Kang 2006, Kim 2004, Kim & Sells 2007, Yoon 2012, among many others), the nature of kes has not been agreed on between a nominalizer and a complementizer. On the one hand, kes is a nominalizer in that i) it comes from a word that means thing, e.g. i kes ‘this thing’, ce kes ‘that thing’, ii) phrases with kes can take Case markers, iii) it is equivalent to English gerund suffix -ing. On the other hand, kes appears to head internally headed relative clauses (IHRC) and is used in pseudo-cleft constructions, as shown in (2).

(2) Complementizer-like kes in Korean
   Chelswu-TOP [thief-NOM run.away-IMPF KES]-ACC catch-PST-DECL
   ‘Chelswu caught a thief who was running away’
b. [Yenghi-ka manna-n kes]-un wuli emma-ta
   [Yenghi-NOM meet-PRF KES]-TOP 1π.PL mother-DECL
   ‘Who Yeonghi met was my mother.’

Given that the bracketed part in (2a) is an IHRC and Korean is a head-final language, kes seems to head the CP. Besides, in pseudo-cleft, kes referring to a human (mother) rather than a thing meanse that it differs from a nominalizer because the canonical nominalizer use of kes can only refer to nonhuman things.

2.3. SYNTACTIC ANALYSIS OF COMPOUNDING. In the literature, compounds that contain verbs in different languages have been analyzed syntactically (Ferrari-Bridgers 2003, Harley 2006, Barrie 2011, Bruening 2018). The primary conclusion of these analyses is that compounds can and should be constructed in the syntax. If compounding is assumed to be built in the syntax, two aspects of compounds should be explained: part of speech and distinction from regular syntactic phrases. For instance, both Romance VN compounds and ordinary VPs have the structure in which a verb takes a nominal complement, but the former is a nominal compound while the latter is a verb phrase. If one adopts the lexicalist approach to compounds, compounds project their nominal category since their parts of speech are already stored in the lexicon. However, if compounds are built in the syntax, the part of speech should be determined during syntactic derivation. Simply put, the problem of part of speech is dealt with by the Marantz’s (1997) assumption that the category of a phrase is determined as a categorical feature (e.g. n, v, a) merges with an existing phrase. That is whatever XP is, the structure in (3) is construed as a noun in the syntax. With English phrase compounds (e.g. his “I’m holier than thou” attitude), XP is CP.

(3) Categorical nP
   [nP n0 [XP …]]

The previous analyses are not without flaws. Firstly, both English phrase compounds and Romance VN compounds have to assume a phonologically null n0. Unless there is crosslinguistic evidence for assuming n0 for compounds, their explanation can be considered ad-hoc. Moreover, these data do not necessitate the syntactic account of compounding. For instance, English phrase compounds can be analyzed as quotes are selected by a noun (Wiese 1996), and the lexical nature of Romance VN compounds, such as unproductivity, remains unexplained. Therefore, data
that can corroborate the compounding head \( n^0 \) with explicit evidence and also can only be explained syntactically are necessary to bolster up Anti-lexicalism.

3. **Data.** I will present some data of Korean KE compounds and their characteristics thereof in this section.

3.1. **KOREAN KE COMPOUNDS.** Some real-life examples of Korean KE compounds are presented in (4) (including data in (1)). Note that Korean KE compounds are highly colloquial.

(4) Korean KE compounds
a. ankeng-takk-nun ke
   glasses-clean-IMPF KE
   ‘glasses cloth’
b. nwun-ci-wu-nun ke
   eye-erase-CAUS-IMPF KE
   ‘eye-makeup remover’
c. nongyak-ppwu-li-nun ke
   pesticide-spray-CAUS-IMPF KE
   ‘pesticide sprayer’
d. ipswul-balul-nun ke
   lip-apply-IMPF KE
   ‘lip cream’ or ‘lip balm’
e. kulim-kuli-nun ke
   picture-paint-IMPF KE
   ‘equipment for painting’

It is apparent that the Korean KE compound consists of a nominal complement, verb (transitive or causative), imperfect aspect marker -\( \text{nun} \), and \( ke \). Note that only the colloquial form \( ke \), not the original form \( kes \), is used. This sequence of morphemes is not bound to KE compounds only, but can be observed in ordinary CPs. For instance, (4e) can be used as a CP subject in a sentence like *kulim kuli-nun ke kwichanta* ‘Painting pictures is cumbersome.’

3.2. **SYNTACTIC CHARACTERISTICS.** Korean KE compounds differ from ordinary CPs in the following regards:

- The complement NP is opaque to pre-modifiers
- The complement NP cannot receive accusative case
- The verb cannot be passivized
- The verb cannot host a honorific suffix -\( si- \)

The corresponding data are presented in (5). Note that if these were construed as ordinary CPs, then all of the characteristics are reversed, e.g. the complement NP can be modified by a pre-modifier.

(5) Syntactic Characteristics of KE compounds
a. ppalkan/kacwuk ankyeng-takk-nun ke
   red/leather ankyeng-takk-nun glasses-cleaning-IMPF KE
   ‘red/leather glasses cloth’ (only the cloth is red or leather, not the glasses)
b. i(*-lul)-takk-nun ke, encey sa-ss-ni?
    tooth(-ACC)-erase-IMPF KE when buy-PST-Q
    ‘When did you buy the toothbrush and toothpaste?’

c. i-takk-i-nun ke
    tooth-clean-pass-IMPF KE
    ‘that teeth are (being) cleaned’ (ordinary CP reading)

d. moki phulleku mos chac-usi-myen, ppuli(*-si)-nun ke TV ale iss-eyo
    mosquito plug cannot find-HON-if spray(-HON)-IMPF KE TV under exist-POL
    ‘If you can’t find electric mosquito repellent, you’ll find a spray-type under the TV’

In (5a), pre-NP modifiers like red or leather cannot modify the immediately following noun, i.e. ankyeng ‘glasses.’ It can only modify the whole, suggesting that the whole phrase differs from ordinary CPs. (5b) shows that the object of the verb in the KE compound cannot receive Accusative Case. Passivization and the honorific suffix -si are disallowed in KE compounds, as shown in (5c) and (5d) respectively, suggesting lack of external arguments in those compounds.

3.3. SEMANTIC CHARACTERISTICS. KE compounds have properties of semantic Noun Incorporation (Dayal 2011). The object of the KE compound cannot be modified by a premodifier (5a), cannot be referential (6a), and should be number-neutral (6b).

(6) Semantic Characteristics of KE compounds
   a. *[nwuni-ji-wu-nun ke], kukes>*ey-man sse-yo?
      eye-erase-CAUS-PRS KE that-to-only use-POL
      (int.) ‘Eyei make-up removerj, should I use it only for themi?’
   b. i ipswul(*-tul)/(*hana)-balu-nun ke(*-to) silhe
      this lip(-PL)/(*one)-apply-IMPF KE(-too) hate
      ‘I hate this (*one-)lip(*s) balm’

(6a) shows that the pronoun kukes can only refer to the whole compound, not the noun complement in the KE compound. In (6b), the noun complement ipswul ‘lip’ cannot host a number like hana ‘one’ or a plural suffix, -tul.

Moreover, it should be noted that the meaning of the KE compound is not compositional. For instance, although ankyeng-takk-nun ke contains the same morphemes as a KE compound and as a CP, they do not mean the same thing. The meaning of the CP is determined by the sum of the meanings of the included morphemes, while that of the KE compound refers to a specific object, namely glasses cloth. The two sentences in (7) show this contrast clearly.

(7) KE compound vs CP in meaning compositionality
   a. ankyeng(*-tul)(*-ul)-takk-nun ke-ka telep-ta/*mwul-i-ta
      glasses(*-PL)(*-ACC)-clean-IMPF KE-NOM dirty-DECL/*water-COP-DECL
      ‘The glasses cloth is dirty/water’
   b. ankyeng(-tul)(*ul) takk-nun ke(s)-ulo-nun mwul-ina binwu-ga iss-ta
      glasses(-PL)(-ACC) clean-IMPF KE-for-top water-or soap-NOM exist-DECL
      ‘As for what can clean glasses, one can use water or soap.’

In (7a), ankyeng-takk-nun ke cannot be equated with water because it is cloth by nature. On the other hand, in (7b), water and soap are suggested for ankyeng-takk-nun ke ‘what can clean glasses.’ This clearly shows that KE compounds have specific, corresponding referents, beyond the meaning derived compositionally, which distinguishes KE compounds from similar CP constructions.
3.4. MORPHOPHONOLOGICAL CHARACTERISTICS. One notable morphophonological characteristic is that only the colloquial form *ke* can be used not the original form *kes*. Secondly, KE compounds often undergo obligatory fortition, also known as *t*-epenthesis. Some Korean compounds show obligatory fortition between two compounding elements, whereby lenis stop consonants acquire a glottal quality (Kim-Renaud 1974, Ahn 1985). Some KE compounds show obligatory fortition as well, as shown in (8).

(8) KE compounds with obligatory fortition and the corresponding CP without it
   a. [angdü *(t amore)*]nìŋòga tɔɾɛptʰa]  
      ‘The glasses cloth is dirty’
   b. [angdü (%t)daŋìŋòga kwitɛntʰa]  
      ‘Cleaning glasses is cumbersome.’
   c. [it*(t)akŋìŋòg ðɛzom ðaɾa ðzule]  
      ‘Could you please bring me a set of a toothbrush and toothpaste?’
   d. [it(%t)aŋìŋòg ðɛzom haðzima]  
      ‘Please stop brushing your teeth.’

In (8a) and (8c), obligatory fortition is observed (underlined), while fortition is illicit or optional depending on the contexts in (8b) and (8d) despite their linear identicality. Though the exact conditions of obligatory fortition remain unspecified, one outstanding condition is that obligatory fortition takes place within a phonological word.

4. Analysis. I will depict and explain the structure of the KE compound. Firstly, I argue that Korean Ke compounds contain a vP yet it does not host an external argument. Therefore, it is impossible to have horrific suffixes in a KE compound, nor can a KE compound be passivized. However, KE compounds can appear with causative suffixes, suggesting that the verb part in the KE compound is not simply the verbal root. Hence, the external argument introducer and the v head that determines the flavor of the verb should be distinguished, corroborating Voice-v distinction (Krazer 1996, Pylkkänene 2008, Legate 2014). Secondly, I argue that the nominal object within the vP is NP, crucially not DP or KP, because, based on the data above, it should be differentiated from regular argument objects. Pre-N modifiers cannot modify NP (or √P) in Korean unless it is dominated by nP or DP, and as shown above the object NP cannot be modified. Furthermore, Danon (2006) argued that in order for a nominal phrase to be Case-marked, it should be of a certain size, namely, DP (or KP). Hence, treating the nominal object as NP solves the issue of Case-marking in Korean KE compounds. Thirdly, the imperfect aspect marker -*nun*- is used to denote habituality and non-eventivity, following Ferrari-Bridgers’ analysis of the tense marker in Italian VN compounds. Thirdly, I argue that *ke* is the nominalizer, n0, which takes an AspP that contains a vP and turn it into a compound. The tree structure of the KE compound looks as follows:
Assuming the nominal object to be an NP rather than a DP can also explain why Korean KE compounds have properties of semantic noun incorporation and why obligatory fortition (t-epenthesis) takes places along with KE compounding. Firstly, KE compounds resemble PNI constructions, and in KE compounds “the incorporated noun” is an NP. As explained in Massam 2001, in this case, the NP is expected to lack a referent and to be number-neutral. Secondly, as for t-epenthesis, I argue that obligatory fortition between two elements is disallowed when there is a phase boundary between them. The simplified context for t-epenthesis in compounds is as follows:

(10) simplified context of t-epenthesis/obligatory fortition in Korean compounds

\[
\text{NP} \rightarrow [t] / [+\text{sonorant}] \quad + \quad [-\text{obstruent}] (+: \text{morpheme boundary}) \\
[+\text{obstruent}] \rightarrow [+\text{constricted glottis}] / [t] 
\]

As shown in (10), an alveolar stop sound is inserted after a sonorant and before an obstruent when the obstruent is after a morpheme boundary. Then the obstruent attains a glottal sound after the inserted [t], which results in obligatory fortition. Note that (10) only takes places within a phonological word, which includes compounds. That means, if there is a phase boundary, meaning that there is more than one phonological word, t-epenthesis/obligatory fortition does not occur. My analysis of the Korean KE compounds expects there to be t-epenthesis between the NP and the V because the phase head (D) is not there, and as described in (8), my prediction is borne out.

Korean KE compounding is better evidence for the idea that compounding can take place in the syntax and there is such a thing as the compounding head n. Korean KE compounds can only be analyzed in the syntax for two reasons. Firstly, Korean KE compounds does not incur blocking effects, unlike other derived lexical items. For instance, ankyeng-takk-nun ke ‘glasses cloth’ has its equivalent word ankyeng-takk-ki, and nwun-ci-wu-nun ke ‘eye makeup remover’ lip-en-ai li-mwu-be. Secondly, the interpretation of the NP that in KE compounds is not as idiosyncratic as that in pure compounds. Take (11) for example.

(11) Purely lexical compounds

a. komwu cwiwukay
rubber eraser
‘an erase made of rubber’

b. yenphil cwiwukay
pencil eraser
‘an eraser on top of a pencil’
The noun before *ciwukay* ‘eraser’ can be considered material (11a) or location (11b), while in KE compounds, the noun part is interpreted as the direct object.

5. **Conclusion.** I have reported on KE compounding in Korean, which has not been documented. I analyzed KE compounding as AspP-to-nP nominalization. KE compounds have the structure of NP-V-*nun-ke*, and should be distinguished from ordinary CPs for their syntactic, semantic and morphophonological characteristics. Based on the previous attempts to account for compounding in the syntax, I proposed that KE compounds are constituted by a compounding head n0 merging with an Aspect Phrase. I argued that *ke* is the compounding head, which is assumed in analyses of other compounds in different languages. I also argued that the KE compound consist of a vP, which denotes transitivity but cannot host an external argument, assuming Voice-v distinction. Moreover, I argue that the complement of the verb is an NP, not a DP since the N of the KE compound is opaque to pre-modifiers, cannot be Case-marked, cannot be referential. My analysis of the structure of KE compounds contributes to the growing body of recent research which aims to re-analyze compounds syntactically. Moreover, the Korean compounding head *ke* can corroborate the idea of assuming a phonologically null head to analyze Romance VN compounds and English “phrase” compounds. Based on Korean KE compounds I dealt with the issues regarding the debate between Lexicalism and Anti-Lexicalism. I side with Anti-Lexicalism in that KE compounds are clear instances of the syntax engaging in word formation. Moreover, the “lexical-like” property of KE compounds, namely, form-meaning arbitrariness, is attributed to the inherent existential reading of KE compounds.

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