**Summaries of the Papers Read at the 34th Annual Meeting of
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A Typological Survey of Linking Elements and Their Classification
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A morpheme has been defined as a minimal unit of form and meaning and regarded by researchers adopting a morpheme-based approach as an atomic element. To argue against its role as a grammatical primitive, several researchers including Anderson (1992) pointed out the presence of semantically empty elements. One of these is called Linking Elements (LEs). The followings are representative examples of LEs ((1a) is cited from Ralli (2009) and (1b) from Lieber (2009)):

(1) a. Modern Greek: domat-*o*-salata lit. tomato-LE-salad 'tomato salad'
     b. English: children-*'s* hour, oar-*s* man

In (1), the LEs -*o*- and -*'s* or -*s* make no contribution to the meanings of whole words. The semantic emptiness of LEs thus urges us to revise or dismiss the definition and role of morphemes.

To keep the morpheme's definition and role intact, based on the framework of Distributed Morphology (DM), Okubo (2014) argues that LEs are expletives. This view explains the semantically empty property of LEs because expletives are checkers of uninterpretable EPP features but have no lexical contents. In addition, Okubo classifies LEs into LEs of stem-based type and those of word-based type. In the former type, LEs are attached to stems that cannot be independently used, whereas in the latter one, those are attached to words that can be independently used. Okubo argues in the framework of DM that LEs of stem-based type are merged with category-free Roots, whereas those of word-based type with words.

By viewing Okubo's analysis as correct and extending it to many other languages, we aim to investigate a correlation between the two types of languages and types of LEs and to find out the morphemes functioning as LEs, i.e. expletives. Our research strongly supports Okubo's analysis in a typological way.

First, we show that Okubo's view can be extended to many languages. We surveyed 23 languages. Among them, stem-based languages are Czech, Hindi, Japanese, Korean, Latin, Modern Greek, Modern Hebrew, Polish, Warlpiri, and Welsh. The others are word-based languages including Chinese, English, Finnish, French, Hausa, Hungarian, Japanese, Korean, Maori, Portuguese, Russian, Swedish, Tagalog, Vietnamese, and Warlpiri. The typical examples are shown in (2)-(4):

(2) a. Latin: agr-*i*-cola lit. field-LE-cultivate 'a farmer'   (Allen (2000:154))
     b. Japanese: nak-*i* sakebu lit. cry-LE weep 'cry and weep'

(Shimada (2013:93))

(3) a. Finnish: vet-tä pitävä lit. water-LE holding 'waterproof'

(Niemi (2009:244-245))

  b. Hungarian: bün-be esés lit. sin-LE falling 'fall into sin'

(Kiefer (2009:539))

  c. Japanese: ama-no gawa lit. heaven-LE river 'milky way'

(Mukai (2008:189))

(4) a. Maori: waiata-ā-ringa lit. song-LE-hand 'action song'

(Bauer (1997:309))

  b. French: un camion de pompiers lit. a truck of firefighters 'a fire truck'

(Nicoladis (2002:46))

The examples in (2) are languages of stem-based type and those in (3) and (4) are languages of word-based type. In stem-based languages, stem-formative vowels are used as LEs. In (2), the vowel -i is an LE. By contrast, in word-based languages, syntactic elements like cases and prepositions function as LEs. For example, in (3c), the genitive case particle -no is used as an LE and in (4a), the preposition -$ā$- acts as an LE.

  The behavioral difference between LEs in stem-based languages and those in word-based languages supports Okubo's view. LEs in stem-based languages as in (2) stick to a stem that corresponds to a Root in DM. Accordingly, they correspond to LEs of stem-based type. In contrast, LEs in word-based languages as in (3)-(4) are attached to words, which means that they are LEs of word-based type. In addition, the fact that LEs have various forms as shown in (2)-(4) supports the view of LEs as expletives because phrasal expletives share this property. Consider that in English, not only the pro-forms *it* and *there* but also *do* and *much* (Shimada (2004)) can function as expletives.

  Next, we show the presence of languages that have both types of LEs and point out the parameterization of such LEs. Looking at (2)-(4) again, it is found that Japanese is a stem-based language as well as a word-based language. The same situation is also observed in Korean and Warlpiri, as shown in (5) and (6):

(5) Korean

  a. ca-n soli lit. small-LE voice 'scolding, grumbling'（Sohn (1994:422))

  b. chi-eta-pota lit. raise-LE-see 'look up'   (Sohn (1994:426))

(6) Warlpiri

  a. ngulya-ngka nyina-ngu lit. burrow-LE sit-AGEN 'hole-dwellers'

(Simpson (2009:614))

b.   yuka-nja yirra-rnu lit. enter-LE put-PST 'put something in'

<div align="right">(Simpson (2009:616))</div>

LEs in (5a) and (6a) are those of stem-based type and those in (5b) and (6b) are those of word-based type.   With respect to the usage of LEs, such languages share an interesting property.   Namely, the usage of LEs are parameterized with respect to lexical categories.   For instance, in Japanese, a vowel *-i* creating an adverbial form is used as an LE if verbs are used to form a compound, as shown in (2b).   However, as shown in (3c), a genitive case particle *-no* is used as an LE when nouns are used to form a compound.   In this way, language has parameters concerning differences in morphological properties.

The presence of such parameters is supported by the presence of a morphological parameter of dvandvas that is proposed by Shimada (2008).   According to Bauer (2008:2), a dvandva is defined as "being a new unity made up of the whole of the two entities named."   Based on his definition, Shimada argues that Japanese compounds like *oya-ko* in (7a) correspond to dvandvas.   Likewise, Korean and Hindi have dvandvas as shown in (7b) and (7c), respectively:

(7)   a.   Japanese: oya-ko lit. parent-child 'parents and children'
      b.   Korean: olk-mayta lit. bind-tie 'fasten'   (Sohn (1994:426))
      c.   Hindi: choṭa-bəɽa lit. small-big 'small and big; all ages or sizes'

<div align="right">(Kachru (2006:120))</div>

In addition, Shimada proposes an important morphological parameter of dvandvas: only stem-based languages have dvandvas.   According to this parameter, word-based languages like English turn out to have no dvandvas.   This is supported by the fact that English coordinated compounds are not dvandvas:

(8)   English: singer-songwriter

Shimada (2013:79) claims that "*singer-songwriter* is understood as an intersection of the set of singers and that of songwriters, but not the whole of the two sets."   Accordingly, English does not have dvandvas.

Finally, we would like to suggest that some languages have phonological changes regarded as LEs.   With respect to the examples like (2)-(4), LEs occur overtly, so that we can judge the expressions with such LEs as compounds.   However, there are many compounds that do not include overt LEs.   For instance, a Japanese compound *inuẑini* 'useless death' composed only of *inu* 'dog' and *sini*

'death' does not have an overt LE. This puzzle is solved by Itô and Mester (1986). According to them, *inužini* shows a certain phonological change called *rendaku* or sequential voicing and this change functions as an LE, as shown in (9):

(9)　　Japanese: inu+šini lit. dog+death → inužini 'useless death'

(Itô and Mester (1986:54))

Their analysis implies that phonological changes function as LEs in other languages. This is confirmed by Welsh compounds using mutation to mark compound-hood:

(10)　Welsh: glas+bryn = glasfryn lit. green+hill 'green hill'　(Thorne (1993:340))

As shown in (10), when *glas* is combined with *bryn* to form a compound, the top segment of the second constituent changes into /f/.

In (9) and (10), we showed that phonological changes to segments can be considered as LEs. However, there are other compounds that do not show the same pattern. For example, an English compound *blackboard* does not show any phonological changes to segments, so that it seems that there is no such element as marking compound-hood. Nevertheless, its compound-hood is ensured because of the presence of a stress pattern found only in a compound, as shown in (11a):

(11)　a.　English: bláckbòard vs. black bóard
　　　b.　Modern Greek: θalasólikos lit. sea-LE wolf 'sea dog, jack tar' < θálas(a) 'sea' líkos 'wolf'　　　　　　　　　(Ralli (2013:186))
　　　c.　Vietnamese: ^{0}bà con lit. grandmother child 'be related to' (cf. bà con 'child's grandmother')　　　　　　　　　(Thompson (1987:127))

In (11a), the left expression is a compound because its stress pattern is different from that of the right expression which is a phrase. In our research, it is found that Modern Greek and Vietnamese use a similar strategy to mark compound-hood.

In this joint research, we surveyed LEs in 23 languages and showed the certain difference in forms of LEs between stem-based languages and word-based languages. Stem-based languages use stem-formative vowels as LEs, whereas word-based languages use syntactic elements like cases and prepositions as LEs. This difference provides good and substantial evidence to Okubo's (2014) proposal that there are LEs of stem-based and word-based types. Moreover, we have argued for the presence of morphological parameters and pointed out the possibility that phonological changes to segments or suprasegmentals function as LEs.