

Grammaticalization of Spatio-Temporal Postpositions in Korean*

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Terms denoting space and/or time have grammatical significance across languages because many of them grammaticalize into adpositions as well as other tense, aspect, and modality markers. Drawing on the data from primary postpositions, secondary postpositions, and corresponding Sino-Korean postpositions, this paper explores the roles of source lexemes, source construction, semantic components, formal transparency, and specialization with reference to grammaticalization. It argues that there exists a close relationship among these components, and each of which either constrain or promote the grammaticalization processes. It also suggests that from the evidence of specialization phenomena displayed by the native and Sino-Korean postpositional systems, the notion of push-chain in terms of conceptual abstraction is not viable. (Hankuk Univ. of Foreign Studies)

Key words: postposition, grammaticalization, spatial terms, temporal terms

1. Introduction

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Adpositions often grammaticalize from the terms that originally denote spatial concepts as has been widely attested in numerous studies across languages (cf. Heine et al. 1993, Heine & Kuteva 2002). It is also seemingly universal that spatial terms are recruited to express temporal concepts, a process characterizable as metaphorization along the ontological continuum as suggested in Heine et al. (1991). Therefore, it is often true that on the synchronic dimension, linguistic forms denoting both spatial and temporal concepts are often obscure as to their primacy in these two closely related functions. Terms denoting space and/or time have grammatical significance across languages because many of them grammaticalized into adpositions as well as the markers of tense, aspect, modality and other important grammatical concepts.

Korean postpositions share some of these characteristics but they exhibit interesting differences from the adpositional systems in other languages. The objectives of this paper are threefold: (i) To examine eleven primary postpositional particles developed from spatial terms in Korean; (ii) To analyze six secondary postpositional particles, or postpositionoids, in Present Day Korean developed from spatial terms that are undergoing grammaticalization processes, which exhibit various characteristics of the incipient grammaticalization; and (iii) To illustrate the differences between the grammaticalization phenomena exhibited by the grams involving nominal spatial terms and those involving movement verbs, which comprise another major category of lexical sources for postpositions in Korean.

This paper describes the linguistic forms inclusive of primary postpositions and secondary postpositions, analyzes them with respect to their sources, and discusses the theoretical implications of such findings.

2. Data

In contemporary Korean there are numerous postpositional particles but

their classificational system and even the membership in each category are of considerable controversy. The difficulties of the classification are even more complicated by other conceptually related grammatical categories. The present study is based on the list of Korean morphemes that appear in Suh (n.d.). The total number of the postpositional particles in the list is 72, and our primary focus is on 11 of those that have been developed from spatial nominals, as shown in (1).

(1) Primary Postpositional Particles from Spatial Sources

Form	Meaning	Lexical Source Meaning
<i>-taylo</i>	as/like	place
<i>-pakkey</i>	only [Negative Polarity]	outside
<i>-kkaci</i>	to/until/up.to	edge
<i>-ey</i>	to/at	middle
<i>-hanthey</i>	to	one place
<i>-eykey</i>	to	middle place
<i>-kkey</i>	to [+honorific]	that place
<i>-kkeyse</i>	Nominative [+honorific]	that place + exist
<i>-eyse</i>	from/at	middle + exist
<i>-hantheyse</i>	from	one place + exist
<i>-eykeyse</i>	from	middle place + exist

There are two things to note with reference to the source lexemes of the postpositional particles listed in (1), i.e., the source meaning of *-ey* has not been firmly established, but Kim (1995, 2004) claims that it was derived from OK noun *auy* 'middle/center'; and it has been suggested in Yi (1993[1988]: 55–60) that the honorified subject marker *-kkeyse* in Present Day Korean came from two different sources, i.e. one from *kveyse*, which is derived from lexically honorified verb *kyeta*, the honorific suffix *-si-*, and a non-finite marker *-e*, and the other from *skusye*, a particle comprised of a locative noun and an ablative marker.

In addition to the primary postpositions, we also have a group of secondary postpositional constructions that were developed from spatial sources, even though they do not appear in the list (Suh, n.d.) since they are not monolexic but periphrastic, as shown in (2):

(2) Secondary Postpositional Constructions from Spatial Sources

Form	Meaning	Lexical Source Meaning
-uy <i>aphey</i>	before	front
-uy <i>twiey</i>	behind	back
-uy <i>wiey</i>	over/above/on top of	top
-uy <i>alay(ey)</i>	under/below	lower region
-uy <i>mithey</i>	under/below/beneath	bottom
-uy <i>kawuntey(ey)</i>	among/between/amidst	center

2.1 Grammaticalization of Primary Postpositions

Primary postpositions listed in (1) have been developed from various sources, as is evident from the list. One striking aspect of the source characteristics is that a large number of them are from the nominal sources denoting 'place' i.e. *kuy* and *tA* (7 out of 11 cases), mostly affixed with a locative marker. The use of PLACE is not at all singular, since there are other languages that use the same source lexeme for developments of locative marker, as in Vai (Westermann 1924), Gurenne (Rapp 1966), Finnish (Blake 1994), and Lingala (Everbroeck 1958); and of genitive or possessive marker, as in Ewe (Claudi and Heine 1986, Heine and Reh 1984, Heine et al. 1991). From a broader perspective, however, this phenomenon of using PLACE is peculiar crosslinguistically because adpositions denoting relational or directional concepts typically recruit nominals that already have relational concepts from either an anthropomorphic or zoomorphic models, prominently body-parts, or verbals that have motional concepts with diverse deictic notions associated with them.

Another important aspect with respect to the grammaticalization process is that there is a high degree of non-isomorphism, i.e., there are multiple terms to encode the grammatical concept of allative/dative 'to', and ablative 'from'. There exists a division of labor among them, based on fine-grained semantic and pragmatic distinctions of the goals such as spatiality, animacy, colloquiality, humanness, and honorification. For example, the allative/dative function is carried by multiple terms with a division of labor as a result of different 'specialization' (a la Hopper 1991) as shown in (3).

- (3) *-kkaci* 'to/until/up.to' [+terminative]
-ey 'to/at' [-animate], normally [+spatial]
-eykey 'to' [+animate]
-hanthey 'to' [+human], largely [+colloquial]
-kkey 'to' [+human] [+honorific]

The functional differentiation indicated in (3) is a schematic generalization glossing over enormous amount of subtleties that will be easily revealed in a more detailed analysis. This generalization, however, suggests that linguistic forms that come in acute competition for 'survival' and try to acquire primacy in carrying a grammatical function may divide up the function in a number of subcategories by way of various semantic properties and settle the conflict of interest with a seemingly peaceful arrangement by distributing the subcategorized functions among them.

An analogous specialization phenomenon is also attested with the ablatives as shown in (4):

- (4) *-eyse* 'from/at' [-animate]
-eykeyse 'from' [+animate]
-hantheyse 'from' [+human], largely [+colloquial]
-kkeyse NOM [+human] [+honorific]

As shown above, the functional division is based on not only a semantic notion of animacy and humanness but also genre and pragmatic notions of colloquiality and honorification. The inclusion of nominative case marker may seem, *prima facie*, inappropriate for the lack of immediate relevance. However, the development of nominative from *-kkeyse* has to do with the crosslinguistic conceptual chain of [ablative-status-instrument-source-comitative] (cf. Rhee 1996, Nichols & Timberlake 1991). The conceptual chain seems to have been motivated by the following metonymic inferential processes.

(5) a. ablative > status

If A is from B, A has the status derivable from B.

b. status > instrument

If A has a status B, A's status B can be instrumental.

c. instrument > source

If A is instrumental in creation of B, A is the source of the existence of B.

d. source > comitative

If A is the source of B, A is with B.

Nominative case is closely related to the designation of an agent in cases where the predicate requires an agentive argument, and of a theme of focus in cases where the predicate is non-dynamic. The former relates to instrumentality and source, i.e. the source of the force, and the latter relates to the status.

The next issue involves the relationship between honorific forms and distal demonstratives. In list (1) we have two forms that are inherently marked with honorification, and they recruit distal demonstrative form as shown in (6).

(6) a. *-kkey* 'to' [+honorific]

- (<that place) [-s GEN + *kungekuy* 'that place']
- b. *-kkeyse** NOM [+honorific]
- (<that place) [-s GEN + *kungekuy* 'that place' + *se* 'from']

As was noted in the previous discussion, there are two sources that have been generally acknowledged as sources of *-kkeyse*: one is the one presented here; and the other is involving an existence verb *kyesita* 'to exist'. The existential-verb source may not concern us here. According to the current analysis, lexical expressions of distal deixis is used to refer to an honorifiable person. This is an instance of metonymization, i.e., referring to honorable persons by their associated location. This is a strategy to avoid pin-pointing honorable persons, where direct mention or direct pointing of honorable persons is avoided, which is still obvious in that people never utter the names of their parents in full forms (typically two syllables in succession) and instead present the names syllable by syllable each followed by *-ca* 'character'. This custom is replicated by courteous service-providers when they use the names of their clients.

The use of distal demonstrative for honorification is also an instance of metaphorization, i.e., respect maintained by distancing ('negative face') is encoded by linguistic expression of distance. Encoding discourse participant's face relates to intersubjectification (Traugott 1982, Traugott and König 1991, Traugott and Dasher 2002, Traugott 2003). In this instance, encoding intersubjectification is realized by way of metaphorization.

2.2 Grammaticalization of Secondary Postpositionoids

Grammaticalization of secondary postpositions (or postpositionoids), as is evident in its classificatory nomenclature with the label 'secondary', shows lesser degree of grammaticalization in certain aspects. The secondary postpositions and their sources are as shown in (7).

(7) Secondary Postpositional Particles from Spatial Sources

Form	Meaning	Lexical Source Meaning
-uy <i>aphey</i>	before	front
-uy <i>twiey</i>	behind	back
-uy <i>wiey</i>	over/above/on top of	top
-uy <i>alayey</i>	under/below	lower region
-uy <i>mithey</i>	under/below/beneath	bottom
-uy <i>kawunteyey</i>	among/between/amidst	center

In terms of their construction, secondary postpositionoids are built with a genitive *-uy*, and a relational noun (RN) affixed with a locative marker *-ey*. These morphologically complex constructions exhibit on-going grammaticalizing phenomena in morpho-syntactic and phonological reduction, orthographic change, functional specialization and semantic specialization, to the discussion of each of which we now turn.

The first issue addresses their formal reduction. I.e., the reduction in their phonological and/or morpho-syntactic shapes is common. This reductive process can be diagrammatically represented as in (8).

$$(8) [-uy \text{ GEN} + \text{RN} + -ey \text{ 'at'}] \gg [\text{RN}]$$

As is evident in (8), the particles *-uy* and *-ey* are deleted from the source construction. This common type of reduction is exemplified in the following:

- (9) a. X-uy aph-ey >> X-aph
 X-Gen front-at X-front
 'at the front of X' 'in front of X'
- b. X-uy twi-ey >> X-twi
 X-Gen back-at X-back
 'at the back of X' 'behind X'

- c. X-uy wi-ey >> X-wi
 X-Gen top-at X-top
 'at the top of X' 'on X'
- d. X-uy alay-ey >> X-alay
 X-Gen lower.region-at X-lower.region
 'at the lower region of X' 'under X'
- e. X-uy mith-ey >> X-mith
 X-Gen bottom-at X-bottom
 'at the bottom of X' 'below X'
- f. X-uy kawuntey-ey >> X-kawuntey
 X-Gen center-at X-center
 'at the center of X' 'amid X'

The derivational pattern is uniform in all cases illustrated above. One aspect relevant to this process is that the formation of the final product resembles compounding, and in fact, there is no theoretically sound way of separating these two processes, because the resultant form from the above process is composed of two nouns in juxtaposition, and they can be used as full-fledged nouns instead of prepositional phrases. It is possible that compounding and grammaticalizing univerbation (see below) converge in these instances.

As has been often pointed out, discourse is the locus of grammaticalization (Hopper & Traugott 2003[1993]), and signs of grammaticalization of linguistic forms first surface in colloquial data (Rhee 2004). Thus, we can reasonably expect that the reduced forms should be common in spoken data. This is definitely true, but the reductive process is so prominent across genres and registers, though it is relatively less so in written data, even in balanced corpora the use of reductive forms is very

common. This is well illustrated in (10), where the more conservative forms, i.e. the non-reductive forms, and the more innovative forms, i.e. the reductive forms, are contrasted in terms of their token frequency.

(10) *-ey* Deletion (*a la* KAIST KORTERM Corpus)

	RN	RN- <i>ey</i>	RN- \emptyset
<i>aph</i>	'front'	14,211	2,531
<i>twi</i>	'back'	9,824	11,066
<i>wi</i>	'top'	15,837	24,400
<i>alay</i>	'below'	1,114	5,216
<i>mith</i>	'bottom'	2,936	452
<i>kawuntey</i>	'middle'	476	17,123

The statistics given in (10) is suggestive of a number of interesting aspects with the use of secondary postpositions in PDK such as relative frequency among the postpositionoids. Of more immediate relevance, however, is the fact that both the more conservative forms and the more innovative forms are used in contemporary Korean, and that there is a subtle pattern with the deletion of the particle *-ey*. I.e., the relational nouns ending in an open syllable, such as *twi* 'back', *wi* 'top', *alay* 'below' and *kawuntey* 'middle', more commonly delete the final locative particle *-ey*. This seems to be attributable to the common tendency that language users delete a segment from a string of successive vowels to economize the articulatory gestures.

Another relevant issue is that the morphological/phonological reduction is applicable not only to the particles but also to their stems. The reductive process operated on some of the relational nouns as *aph* 'front', *twi* 'back', and *wi* 'top'. In historical data the modern *aph* had its predecessors *alp* and *alph* from which a lateral liquid or aspirational feature was deleted, respectively. Likewise, *twi* had its historical form *twih*, from which the phonologically weak and often imperceptible glottal fricative /h/ was deleted.

According to the idiosyncrasy of Korean phonology, when /h/ is situated at the syllable final position and is not followed by a vowel, it assumes the phonetic value of /t/ (i.e. [dʷit]), a considerably more salient phoneme than /h/. However, even this strengthened phoneme became subject to a loss. A slightly different picture emerges with the case of *wi* 'top'. The middle Korean counterpart of *wi* /wi/ was *wuh* /uh/ [ut] by itself or /uh/ [uh] when followed by a vowel. Therefore, the reductive process occurred in such a direction that the final consonant was dropped and the remaining vowel was compensated by way of diphthongization. Despite the fact that the account given above involves complexity in historical phonological change, and that this process is not grammaticalization-specific but of more general process in Korean historical phonology, it is true that the stem forms under current consideration have undergone phonological reduction.

Still another issue concerns Korean orthography. One unique feature of Korean orthography is that it makes use of spaces to designate word group boundaries. A word group may consist of a word, or a word and its satellite morphemes that carry diverse grammatical functions. Deletion of spaces between word groups reflects that the language users perceive the two adjacent forms as forming a single unit. When this orthographic space deletion is coupled with particle deletion, the outcome can be strikingly different from the source structure as illustrated in (11):

- (11) a. san-uy <space>alay-ey
 mountain-Gen bottom-at
 'at the bottom of a mountain'
- b. san-alay
 mountain-below
 'below the mountain'

This type of space deletion is characterizable as an instance of univerbation

(Lehmann 2002[1982]), a process whereby multiple linguistic forms begin to behave as a single unit (cf. 'cognitive packaging'; Givón 1991).

Still another issue with respect to grammaticalization of spatio-temporal postpositionoids in Korean involves functional specialization. In this context, a very interesting aspect surfaces because these secondary postpositionoids come into competition with their Sino-Korean counterparts, i.e. those that have Chinese origin. Therefore, this comparison relates to inter-systemic specialization, i.e. functional competition between two different systems over a set of identical grammatical functions. These competitors are as listed in (12).

(12)

Relational Concept	Native Korean	Sino-Korean
BEFORE	<i>-uy aphey</i>	<i>ceney</i>
AFTER	<i>-uy twiey</i>	<i>hwuey</i>
ON	<i>-uy wiey</i>	<i>sangey</i>
UNDER	<i>-uy alayey</i>	<i>haey</i>
	<i>-uy mithey</i>	
AMONG	<i>-uy kawunteyey</i>	<i>cwungey</i>

As we can see in (12) The notion of 'under' is expressed by two forms in native Korean, i.e. *-uy alayey* and *-uy mithey*, and one form in Sino-Korean, i.e. *-haey*. A subtle distinction between *-uy alayey* and *-uy mithey* is that, while both can designate spatially inferior regions, the latter can designate an area immediately contiguous to the referenced entity as English 'beneath' does, e.g. *chayk-uy mithey* 'beneath the book', whereas the former typically cannot.

One peculiarity with the Sino-Korean system, as compared with the native Korean system, is that unlike the latter, where the formal variations occur between the full forms and those without the possessive *-uy*, the forms in the Sino-Korean system have a very strong tendency for use without the possessive *-uy*, thus resembling compounding. That cognitive

mechanisms involved in compounding may be operative in this process is supported by the facts that these Sino-Korean forms prefer the occurrence with Sino-Korean nominals, and that these forms tend to be written without a space in between. Considering that the core element of the Sino-Korean postpositionoids are categorically nouns; that Korean compounding exhibits strong preference for native-native or borrowed-borrowed combinations except for a handful of rare exceptional cases; and that borrowed-borrowed combinations (typically Sino-Korean combinations) are normally written without spaces, the use of Sino-Korean postpositionoids seems to be strongly influenced by nominal compounding.

Since the given relational concepts are encoded by two different sets of postpositional systems, their respective use frequency should reveal their relative supremacy in carrying the grammatical functions concerned here. A relative token frequency of these forms were taken from the KAIST KORTERM Corpus. Since this Corpus is flawed with inconsistent tagging, the exact numbers could not be presented with reasonable accuracy. For this reason, the Corpus was used to retrieve the instances that reveal particular use patterns only and their frequency counts were rounded. The adjusted statistics of the token frequency of the two secondary postpositional systems as given in (13) below should then be taken to compare the relative frequency only.

(13) Approximate Token Frequency (a la KAIST KORTERM Corpus;
Numbers rounded)

Meaning	Native Korean	Sino-Korean
BEFORE	17,000	25,000
AFTER	21,000	11,000
ON	40,000	600
UNDER	10,000	400
AMONG	18,000	8,000
Total	106,000	45,000

As is evident in the statistics, with an exception of the BEFORE-word, Sino-Korean derivatives are less frequently used than the native postpositionoids. From this we can see that in general the native Korean postpositionoids have the primacy in encoding the grammatical concepts of positional relationships as compared to the Sino-Korean counterparts. We shall return to a discussion of this issue in Chapter 3.

A similarly related specialization phenomenon relates to semantic specialization, i.e. division of labor between the native and Sino-Korean systems depending on their semantics. Any serious semantic analysis of postpositions should consider the use contexts of the forms involved. However, a macroscopic analysis for comparison of the overall system cannot avoid over-simplification to a certain degree. Putting aside such methodological problems, the general semantics of the two systems can be tabulated as in (14). The primary meanings of these forms are determined on the basis of the use frequency in the KAIST KORTERM Corpus.

(14)

Meaning	Native Korean	Sino-Korean
BEFORE	<i>aphey</i> : spatial anteriority	<i>ceney</i> : temporal anteriority
AFTER	<i>twiey</i> : spatial/temporal posteriority	<i>hwuey</i> : temporal posteriority
ON	<i>wiey</i>	<i>sangey</i>

	spatial superiority	abstract relations
UNDER	<i>mithey.</i> spatial inferiority (often in contact)	<i>haey.</i> abstract relations
	<i>alayey.</i> spatial inferiority (often apart)	
AMONG	<i>kawuntey.</i> spatial/abstract inclusion	<i>cwungey.</i> abstract inclusion

A look at the semantic comparison of the two systems reveals an intriguing phenomenon. Sino-Korean words were primarily referring to spatial location in Chinese, and the speakers of Chinese typically associate these forms with spatial meanings as their primary semantic designation (Yoon Jeong. Kim, p.c.). This association is very robust, even though it is less so with *cwungey* 'among', which is almost equally associated with the abstract meaning. Therefore, it is reasonable to suggest that the Sino-Korean forms were, or have been, primarily designating spatial concepts in the source language. When they were brought into Korean, their specialization is predominantly on encoding temporal and/or abstract (i.e., non-spatial) relations. This is interesting because according to the widely accepted idea of semantic change, space terms are metaphorically used for spatial or quality terms, usually accompanying grammaticalization, not vice versa. In other words, the grams encoding temporal relations can be said to be more grammaticalized than the grams encoding spatial relations. However, in (14) we see that the borrowed terms are encoding more grammaticalized notions. We shall return to this issue in the following discussion.

3. Discussions

In the preceding discussion, we have seen a general description of the primary postpositions and secondary postpositionoids that derived from the spatio-temporal terms. In the course of exposition, we briefly touched on some issues that may have theoretical implications. We now turn to a discussion more in detail of each of those issues.

3.1 Source Lexemes and Grammaticalization

We have seen the grammaticalization of the postpositionoids with reference to their semantic characteristics. These postpositionoids develop into grammatical markers that designate relationships between the referenced entity (normally encoded as the host NP; the 'Ground') and the entity in question (normally encoded as the external argument; the 'Figure'). Of particular interest with reference to the semantics of the postpositionoids is the fact that their relationships are largely static, such as LIKE, AT, TO, FROM, BEFORE, AFTER, BEHIND, ON, UNDER, BELOW, AMONG, etc. Except for TO and FROM, they lack dynamicity in their semantics. Even these TO and FROM may be said to be relatively weak in their dynamism in that they simply encode directionality instead of making direct relevance to motions. On the other hand, postpositionoids developed from verbal sources such as *-neme* 'over' (<*nemta* 'to go over'), *-ey tayko* 'at' (<*tayta* 'to touch'), *-pwuthe* 'from' (<*pwutha* 'to attach'), *-taka* 'onto/into' (<*takuta* 'to draw near'), *-cocha* 'even [counter-expectation]' (<*cochta* 'to follow'), *-ttala* 'on' [adversative] (<*ttaluta* 'to follow') encode highly dynamic concepts beyond designating simple topographic or relational contour, and often encoding speaker's attitude (cf. subjectification; Traugott 1982, Traugott & König 1991, inter alia). This is in good contrast with the postpositionoids developed from the spatial terms addressed here because they encode relatively static concepts. What this phenomenon suggests is that the semantics of the source lexemes determines the dynamicity of the final grammaticalized marker. This is in consonance with the principles, such as 'persistence'

(Hopper 1991) and 'source determination' (Bybee et al. 1994) that effectively say that the meaning of the source lexemes is largely responsible for the grammaticalization processes in terms of their paths and resultant semantics.

3.2 Source Construction and Grammaticalization

In the preceding discussion we have seen that the postpositionoids developed from the spatial terms make use of relational nouns. These relational nouns often recruit a locative marker *-uy* as a connector between the host nominal and the relational nouns. This possessive connector has a strong tendency to resist assimilating into either the host noun or the relational noun (with a rare exception of *na-uy* 'I-GEN' that changed into *naγ* 'my'). When the possessive marker is eroded or deleted, it rarely causes any change in the adjacent forms. Consequently, the nominal-derived postpositionoids tend to maintain formal transparency. This is in contrast with the postpositionoids, and grammatical markers in general, developed from the verbal sources. Grammaticalization from verbal sources inevitably involve non-finite markers which often obscure formal transparency and conceptual relatedness, a process which consequently paves the way to a greater range of semantic change; whereas nominal source lexemes, especially relational nouns, tend to maintain formal transparency and keep their semantics relatively stable, because the nominal source lexeme remains intact. This may have to do with the preceding discussion about the relative static nature of the semantics of the postpositionoids developed from spatial nominals.

3.3 Semantics and Formal Transparency

The relation between semantics of a grammatical form and its formal transparency has been often pointed out in literature. It is widely accepted that semantic generalization and formal reduction occur in parallel (the

parallel reduction hypothesis; Bybee et al. 1994). It has been also pointed out that there exists the effect of the transparency in grammaticalization. For examples, Rhee (1996), in a discussion of Korean existence verb *keyysita*, suggested a series of causal relations of [the conservative phonological shape] > [transparent semantics] > [restriction on cooccurrence] > [limited textual frequency] > [lesser degree of grammaticalization] (Rhee 1996: 158). With reference to the spatio-temporal postpositionoids discussed in the present study, we see that most non-relational nominal sources have high level of opacity (*-taylo*, *-kkaci*, *-ey*, *-eykey*, *-kkey*, *-kkeyse*, *-eyse*, *-eykeyse*); some non-relational nominal sources have medium level of transparency (*-pakkey*, *-hanthey*, *-hantheyse*); all relational nominal sources have high level of transparency (*-uy aphey*, *-uy twiey*, *-uy wiey*, *-uy alayey*, *-uy mithey*, *-uy kawuntey*). It is interesting to note that the postpositionoids from the non-relational nominal source group with highest level of opacity are those that have the highest use frequency in general; those with lower level of opacity are those that belong to the next group in terms of use frequency; and the postpositionoids from the relational nominals are used with the lowest frequency. This supports the hypothesis that semantic generality, formal transparency and use frequency are closely related in grammaticalization. In other words, formal transparency contributes to semantic persistence because formal transparency invokes the semantics associated with the source lexeme in the course of language processing. This lends support to the notion 'persistence' as proposed by Hopper (1991).

3.4 Specialization and Grammaticalization

It has been pointed out that there is a large amount of non-isomorphism between form and meaning among the postpositionoids discussed here. For example, there are multiple forms for allative/dative and ablative. Each of the forms carries specialized subcategorical functions, and this division of

labor, as previously indicated, resorts to various semantic distinctions and other pragmatic and textual notions.

Our interest lies in the specialization of the two competing systems within the same grammatical domain of marking the spatio-temporal notions, i.e. the division of labor between the native and Sino-Korean postpositional systems. We have noted that in general the native Korean postpositionoids are more frequently used than the Sino-Korean postpositionoids. The primacy of the native Korean postpositionoids over the Sino-Korean counterparts is expected because, except for a small number of exceptions across languages, the native forms are more commonly used when native forms and the forms of foreign origin come into competition. However, the BEFORE-word in the two systems shows the opposite, i.e., the notion of BEFORE is expressed more frequently by the Sino-Korean *ceney* than the native Korean *-uy aphey*. This is peculiar for the reason stated above. One thing we may suspect is that the physical vs. non-physical dichotomy between the native Korean *aphey* and the Sino-Korean *ceney* is more strict than other pairs (cf. *twiey* and *hwuey*, both of which can express non-physical relationship), and in real-life language use reference to non-physical relationship (i.e. 'before') is more common than the physical relationship (i.e. 'in front of'). This claim, however, needs to be empirically tested for validation.

Another issue with respect to the specialization of native Korean vs. Sino-Korean systems involves the universal pattern of semantic change attested in grammaticalization. In their seminal work, Heine et al. (1991: 55) proposed a direction of metaphorization along the ontological continuum as follows:

(15) PERSON > OBJECT > PROCESS > SPACE > TIME > QUALITY

The above scale shows the direction of metaphorical transfer, i.e. unidirectionally from left to right. This directionality seems to have

crosslinguistic validity. The directionality can be interpreted that if a grammatical form carries spatial meaning while another carries the temporal meaning, the latter can be reasonably assumed to have undergone more grammaticalization process. This general directionality is well illustrated with English preposition *before* and *in front of*. Historically *before* had the source construction of something like 'by the fore of', where *fore* meant 'front'. When this construction has undergone a univerbation process with on-going grammaticalization, its meaning became more abstract. As a result, a new periphrastic form *in front of* came into existence to designate physical spatial location. Coexistence of these two forms show that the older gram has the function of marking the more abstract concept, whereas the newer gram has the function of marking the less abstract concept. It is interesting, however, that the general semantic distinction between the native Korean and Sino-Korean postpositional systems is such that the native Korean system predominantly specializes in spatial concepts whereas the Sino-Korean system largely specializes in temporal concepts. This is an anomaly, because we can reasonably suppose that the native Korean terms should have a longer history of grammaticalization as compared to the borrowed terms from Chinese. In other words, the grams having older grammaticalization history are carrying the less developed semantic notions while the grams having shorter grammaticalization history are carrying the more developed semantic notions.

This anomaly does not seem to be easily explained away. Such situations have not been addressed in grammaticalization literature, and thus there is no empirically reliable sources of explanation or of analogy. However, what this situation suggests is that when a new competing system is imported for a certain grammatical paradigm, the extant system may not have to be pushed up to encode more abstract grammatical notions, i.e. the push-chain in grammaticalization is not plausible. Instead, the extant system may specialize in its robust function, giving a new domain to the new system, regardless of the relative degree of the abstraction the

semantics of the new domain may have. In other words, there may be no strict rule of division of labor in terms of the level of abstraction, when linguistic forms come into competition and the competitors choose their functions for their specialization.

4. Conclusions

In this paper we have looked at a special group of postpositionoids in Korean, i.e. those that encode spatio-temporal concepts. In terms of space-time division, there are no grams that were developed from the temporal lexemes—they all seem to have developed from spatial terms. We noted that the primary postpositions have semantic generality and relative formal opacity, whereas the secondary postpositionoids were derived from relational nouns. We compared various aspects of the secondary postpositionoids with the competing Sino-Korean system and addressed certain issues that may have theoretical implications. We also compared the grammaticalization processes of those that involve nominal sources with those that involve verbal sources, in terms of their source constructions and source meanings, and concluded that there exists a close relationship among semantic generality, formal opacity, and use frequency. Further, we saw that the Sino-Korean postpositional system exhibits an anomaly as to the direction of metaphorization, and suggested that the notion of push-chain in grammaticalization is not supported.

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