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Proximity in Space and Mind: Grammaticalization and Semantic Change of *by**

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Rhee, Seongha. 2009. Proximity in Space and Mind: Grammaticalization and Semantic Change of *by*. *Studies in Modern Grammar* 58, 183-201. This paper analyses the semantic change of preposition *by* in the history of the English language from the grammaticalization perspective. Among the semantic change mechanisms that are widely subscribed to by grammaticalization scholars are metaphor and metonymy, with the former being more prominent than the latter. This paper shows, however, drawing upon historical data and panchronic methodology, two major facts with reference to grammaticalization mechanisms of *by*: (i) that metaphorization may operate without significant temporal depth in emergence of grammatical notions; and (ii) that behind apparent metaphorization are numerous metonymic processes, thus lending support to the idea of post hoc metaphor. Among the implications that bear significance is that metaphor may not be the driving force of grammaticalization, but rather metonymy is. Metonymy operates in meaning negotiation of the interlocutors in all speech situations, and thus metonymy is a ubiquitous phenomenon in language use. (Hankuk University of Foreign Studies)

Key words: grammaticalization, proximity, *by*, spatial preposition, conceptual change, metaphor, metonymy, semantic change mechanisms

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1. Introduction

Human conceptualization of relations is fundamentally based on the perception of spatial relationships of objects in the physical world (Lyons 1967, 1990[1977], 1995, Diehl 1975, Brisard 1991). This is well illustrated by the fact that abstract relations are often linguistically encoded by means of markers of spatial relations, resulting in synchronic polysemy across diverse semantic domains.

Many scholars in grammaticalization studies, or cognitive linguists in general, have argued for human cognitive mechanisms that operate across and within semantic domains, notably metaphor and metonymy. Numerous studies confirmed universalistic nature of metaphorization that occurs across ontological domains such as [PERSON > OBJECT > PROCESS > SPACE > TIME > QUALITY] (Heine et al. 1991a). However, the more prevalent and powerful micro-level processes of metonymization have not received as much attention to date, and this paper intends to fill this gap, with reference to the grammaticalization of English preposition *by*, the primary marker of agency and instrumentality in contemporary English. This paper intends to show that metonymy, or more precisely metonymization, is the driving force of semantic change contra the widely recognized metaphorization.

This paper is organized in the following manner: it presents semantic change typology, semantic change mechanisms, and intracategorical change vs. decategorialization as preliminaries in Section 2; shows semantics of *by* by semantic domains in Section 3; discusses two major issues, i.e. metaphor and time depth, and multiplicity of metonymic processes, in Section 4; and presents conclusion in Section 5.

2. Preliminaries

2.1 Semantic change typology

It is a trite remark that language changes at all levels and at all times. Particularly interesting is the fact that semantic change is not random, and thus can be characterized in terms of certain conceptual patterns. With the involvement of human cognition, the changes are often motivated. Room (1986) suggests eleven different types of semantic change as the following:

- (1) a. Functional transfer of meaning
- b. Narrowing of meaning
- c. Deterioration of meaning
- d. Expansion of meaning
- e. Associated transfer of meaning
- f. Abstraction of meaning
- g. Improvement of meaning
- h. Weakening of meaning
- i. Scientific correction or adjustment of meaning
- j. Artificial deletion of meaning
- k. Strengthening of meaning

The suggested typology is by no means intended to be exhaustive or as having clear-cut boundary. For instance, an instance of semantic change that can be characterized as 'narrowing of meaning' does not, in principle, exclude its being characterized as 'deterioration of meaning.' Despite such limitations, however, most instances of semantic change may be captured by this classification. The typology shall be further discussed with respect to *by* in the following discussion.

2.2 Semantic change mechanisms

In the history of studies in grammaticalization, or in semantic change in general, diverse mechanisms have been proposed. The mechanisms notably include metaphor and metonymy. Other mechanisms such as analogy, inference, reanalysis, generalization, and subjectification were also included in the analyses of semantic change.

Three major mechanisms, i.e. metaphor, metonymy and subjectification, are of particular importance in the present discussion. Metaphor, which operates across domains based on similarity, is often thought to be the primary cognitive mechanism that enables semantic expansion. On the other hand, metonymy, which typically, but not necessarily, operates within a domain based on contiguity (Heine et al. 1991a: 61), is often thought to be of minor importance. However, when the concept is extended to include conceptual contiguity, metonymy becomes an indispensable mechanism.¹ This shall be further discussed in §4.

2.3 Intracategorical change vs. decategorialization

Grammaticalization typically involves semantic change as well as formal change, because any grammaticalization phenomenon, by definition, involves functional change with semantic change, even though grammaticalization and semantic change cannot be equated. The intimate relationship between functional change and semantic change often leads to erroneous equating of the two notions. Therefore, a categorial change, typically from a major to a

¹ For instance, Rhee (2004: 405) shows that the most frequent metonymic change attested in semantic change of English prepositions involves the conceptual contiguity representable as POSITION-DIRECTION-MOTION, whereby any of these concepts is viewed as a part of this series of the related concepts.

minor category, termed as ‘decategorialization’ is used as a necessary condition of grammaticalization in order to differentiate it from an instance of simple semantic change. It is this situation where a problem arises, when semantic change of a linguistic form that does not cross the inter-categorical border is addressed from a grammaticalization perspective.

With respect to semantic change of a linguistic form not involving category change, Rhee (2002: 563-564), in addressing semantic change of English preposition *against*, argues that semantic change of a grammatical form must be included in the topics of grammaticalization studies, unless the change violates the unidirectionality principle. The two supporting facts are: (i) that there is considerable fluidity of ‘categoriality’ both category-internally and across categories (Heine 1997, Rhee 1998), and (ii) that the linguistic forms toward the end of the grammaticality continuum are very susceptible to change due to their relative bleaching of meaning and thus their inability to resist contextual forces, which often results in active and numerous changes overcrowding the category. In the latter case, Rhee (2002: 564) argues, exclusion of such changes from the scope of grammaticalization studies will make the framework academically uninteresting. Following this line of argument, the semantic change of *by* is investigated from the grammaticalization perspective, even though it does not meet the traditional criteria to be considered as an instance of grammaticalization.

3. Semantics of *by*

3.1 Source Meaning

Oxford English Dictionary (henceforth OED, 1991, second edition)² lists the entries of *by* in nouns (substantives), prepositions/adverbs, and adjectives.

The nominal usage includes two homonyms, one signifying ‘habituation, village, town’ and the other ‘secondary or subsidiary object, course, or undertaking; a side issue; something of minor importance, chiefly contrasted with main) (OED vol. 2: 725).

The former is of Old Norse origin and is retained in such place names as *Whitby*, *Grimsby*, *Derby*, etc. This is clearly unrelated to the modern day preposition *by*. The latter form is originated from ‘elliptical use of the adjective (or adverb), when *by* is contrasted with main, some such word as object, road, course, part, etc., or stake, throw, being understood’ (OED vol. 2: 725). The adjectival use also has this ‘contra-main’ or subsidiary meaning. In the sense that it contrasts with the notion of main, this seems to be semantically related to preposition *by*. This seems to be a coincidence because OED does not suggest their relation. However, it is quite possible that this coincidental semantic relatedness could have affected the semantic change in the course of time.

It seems unlikely, however, that *by* of the ‘subsidiary’ meaning was the lexical origin of the adverb/preposition. Considering that OED presents exemplars with a principle that possible earliest instance is selected for listing, and that this nominal usage dates back to the early 17th century whereas adverb/preposition use dates back to as early as the 9th century, the latter could not have originated from the former. Likewise, the adjectival usage dating back to the 14th century could not have been the origin of the adverb/preposition simply because the latter predates the former.

It is reasonable, therefore, to assume that the earliest extant use of *by* in English is that of adverb and preposition. According to OED (vol. 2: 725),

² Unless otherwise noted, the examples are taken from OED (2nd edition). The sense designations are presented according to the semantic domain. However, the order of listing of its member senses does not necessarily follow that of OED, to highlight chronological order of emergence of the senses within the semantic domain.

this form is related to Old Frisian, Old High German, and Old Teutonic forms. Their primary signification was ‘about, near’, and the oldest prepositional meaning makes reference to ‘side’. Therefore, the departure point of the discussion of the semantics of *by*, in the absence of counter-argument, shall be ‘side, near’.

3.2 Spatial Proximity

As is indicated in the preceding section, the earliest sense of adverb and preposition of *by* makes reference to the position or action near or adjacent to (OED, vol. 2: 725). The representative exemplars of the sense are as shown in the following:

(2) Of position in space

- a. At the side or edge of, in the vicinity of (9th c.)
- b. Direction/vague localization; In the region or general direction of (9th c.)
- c. In the presence of (in forms of swearing or adjuration) (10th c.)
- d. By God; by our Lady; by my life (elliptical) (13th c.)
- e. By oneself; by himself; by themselves, etc. (in one’s own company) (13th c.)
- f. By the side of; In addition to (14th c.)
- g. In comparison with; In proportion to (14th c.)
- h. In the presence of; at the house of; beside, with, in possession of (14th c.)
- i. In the writings of, in (a specified passage) (15th c.)
- j. Beyond; Against; Contrary to; In spite of (15th c.)
- k. Abide by; stick by; stand by (16th c.)
- l. By the sight of, by view of (16th c.)

- m. More than; Beyond; In preference to; Outside of; Without (16th c.)
- n. Apart from; Away from (17th c.)
- o. In names of places (Bromley-by-Bow; St. Stephen's-by-Saltash; Stanton-by-Bridge) (not dated)

As shown in the above, under the general heading of 'position in space' are the diverse sense designations that are closely related conceptually. The discussion on this conceptual relatedness within and across the semantic domains will be presented in §4.

3.3 Motion in Space

Senses closely related to the position in space are those that make reference to motion in space. The position-motion relation is very strongly motivated by human conceptualization (Rhee 2004: 409, see also Gambarotto & Muller 2008). Examples of 'motion in space' meaning are as follows:

- (3) Of motion in space
 - a. Motion alongside/along/over a course; alongside of; along; down over; up over (9th c.)
 - b. In passing along incidents on a journey (by the way) (11th c.)
 - c. Near to; Close up into presence of (come by) (12th c.)
 - d. Through the extent of; Throughout (13th c.)
 - e. Defining space passed over in order to reach a point (13th c.)
 - f. Amount of excess, etc. as result of comparison (13th c.)
 - g. Through; So as to pass (14th c.)
 - h. Motion alongside & beyond; On alongside of; Into vicinity of and on beyond (nearness in passing; passing without contact;

avoidance/alooofness) (14th c.)

- i. (figuratively) In passing incidentally (chance idea) (16th c.)

3.4 Mental/Ideal Proximity

The next category makes reference to mental and ideal proximity. As compared with the previous senses in a more physical domain, the domain change is conspicuous. Dating back to the earliest available English data, i.e. 9th century, this group of significations also belongs to the old layer. Examples of *by* with such meanings are as follows:

(4) Of mental/ideal proximity

- a. Accordance to model/standard; In imitation of; After (call by, name by) (9th c.)
- b. According to; In harmony with (11th c.)
- c. Succession of number of groups (by two and two; by little and little) (13th c.)
- d. Object about with physical/mental activity engaged about; Concerning (12th c.)
- e. Against (with pejorative force) (14th c.)
- f. Relation to circumstance with respect to; In matter of (14th c.)

3.5 Temporal Proximity

The next category of significations has the semantic component of temporal proximity. The examples of such senses are as follows:

(5) Of time

- a. In the course of; In; On physical conditions of time (by day, by

- night) (11th c.)
- b. Completion of time required for performance of action; On, before, not later than (14th c.)
- c. During; For (space of time) (15th c.)

3.6. Medium-Related Senses

Still another category of significations is in a domain where diverse meanings belong. They include medium, means, instruments and agents. Such examples are given in the following:

- (6) Of medium, means, instrumentality, agency
 - a. (of life) Food and means of obtaining it (10th c.)
 - b. Part as medium for action applied to the whole (11th c.)
 - c. Means of identification (by the name of) (11th c.)
 - d. Means, instrumentality (by means of) (13th c.)
 - e. Intermediate/subordinate agent viewed as medium/channel (14th c.)
 - f. Principal agent (15th c.)
 - g. Qualities, attributes, natural agency as principal agent (16th c.)
 - h. Author/painter/sculptor (16th c.)
 - i. Keeper of public house, etc. (19th c.)

3.7 Circumstance-Related Senses

The final category is a collection of circumstance-related senses.³ In this

³ OED lists another category whose nature cannot be properly labeled in terms of its collective semantics. This is a collection of set phrases of diverse semantics. Even though they shall constitute an excellent in-depth research topic, this is not pursued here.

semantic domain are the senses that make reference to, in addition to circumstance, condition, manner and cause, as exemplified below:

- (7) Of circumstance, condition, manner, cause
 - a. Physical circumstance of action becoming condition, essential element of performance (essential element >> means) (walk by moonlight, ready by moonlight) (11th c.)
 - b. From, after, according to (a model) (means >> attendant circumstances >> manner) (14th c.)
 - c. Because of; Through (means >> cause/reason) (14th c.)

4. Discussion and Implications

4.1 Metaphor and Time Depth

Metaphor, by definition, operates across domains. Heine et al. (1991a&b) argue that there is unidirectionality in metaphorical mappings of tenor and vehicle as in the following:

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

Semantic changes across these ontological domains are common. For instance, in the semantic change typology, functional transfer, expansion of meaning, and abstraction of meaning are all semantic change types amenable with metaphORIZATION, since the change is likely to occur across semantic domains.

It is, however, not clear how many conceptual domains are there. If metaphor and metonymy are both a process of transfer, where the only

difference is whether it occurs across or within domains, the division of domain is a very critical issue. Admittedly, the notion of semantic domains (Fillmore 1975; Langacker 1987, Lakoff 1987) is a useful one in both theory and practice for dealing with the meanings of words, as it enables categorization and comparisons with respect to similarities and differences. As Rhee (2004: 401) noted, such an act of categorizing things, both linguistic and non-linguistic, is believed to be deeply embedded in human perception and cognition.

Similarly, cognitive linguists largely agree on the fundamental tenets that the basic semantic unit is a mental concept, and that concepts cannot be understood independent of the domain in which they are embedded (Clausner & Croft 1999). Thus the domain refers to the background knowledge structure of concepts. However, since domains are thought to be dependent on, and formed by, human experience, which is largely represented image-schematically, they cannot be either exhaustively listed or unambiguously delineated.

Likewise, in a discussion of cognitive domains, Barcelona (2003: 230) notes that Langacker (1987: 154-158), Taylor (1995: 83-87), and most other cognitive linguists understand them as encyclopedic domains and, thus, that they will vary in breadth from person to person and may have no precise boundaries.

However, many of the names of image schemas are also used by lexicographers (Clausner & Croft 1999) in their semantic designation and classification, thus showing certain level of convergence in cognitive linguistics and lexicography. Therefore, the concept of the domain in the present discussion will be following the practice of the OED lexicographers. The division of semantic domains in OED suggests the following:

(9) Semantic Domains	First attestation in OED
a. Position in Space	898
b. Motion	888
c. Mental/Ideal Proximity	893
d. Temporal Proximity	1000
e. Medium	1000
f. Circumstance	1000

It is therefore worthwhile to investigate when the metaphORIZATION occurred in the history of English *by*. English *by*, as a grammatical marker, was attested as early as in the late 9th century, when it was primarily marking the spatial relationship of proximity. It is noteworthy that it is also at this time that it was used, also as a preposition, to mark the mental/ideal proximity. The attestation of its use as a temporal marker is slightly later, i.e. around 1000, which coincides with the time when it was used for medium-related notions and for circumstance-related notions. If the cross-domain semantic change occurred in the time span of about a century, such a shallow time depth suggests that metaphORIZATION does not take much time and that it is rather instantaneous than gradual.

To recapitulate, this state of affairs suggests that metaphORIZATION may not occur along with the temporal lapse, i.e. it may occur rather instantaneously, not requiring temporal depth to accumulate the use tokens and create an optimal circumstance to make a leap to the next ontological domain. This instantaneousness of metaphORIZATION is largely in consonance with Bybee et al.'s (1994) claim that among diverse grammaticalization mechanisms metaphor is most active at the early stages to extend the use scope, thus contributing to the semantic generalization process.

4.2 Multiplicity of Metonymic Processes

In addition to metaphorical semantic extension as discussed in the preceding section, there are numerous micro-processes that lead the semantics of *by* to a richer diversity creating semantic networks within a broader category, e.g. medium-means-instrumentality-agency and circumstance-condition-manner-cause, or more universally, position-motion-direction (Rhee 2004), etc., along which intricate inferences operated, and among which there were delicate competition of supremacy ('specialization': Hopper & Traugott 2003[1993]). There are complications in tracing the semantic paths of *by* in historical data, largely due to the interaction with other grammatical markers that form different layers in this grammatical domain. However, an exploration of semantic change, albeit within a limited scope, reveals an interesting pattern of human conceptualization driven by metonymic processes of inferences.

For instance, most of the semantic change types listed in (1), egs. narrowing, deterioration, expansion, associated transfer, improvement, weakening, scientific correction or adjustment, artificial deletion, and strengthening, all tend to involve contiguity. The change from (2a) 'side, edge, vicinity' to (2b) 'direction, vague localization' is a typical generalization process, where metonymic transfer occurs. Likewise, the change into the 'presence' sense in (2c) also is a metonymic extension, and so is the case of the change into (2g) 'comparison, proportion' meaning. This list can be truly endless with other semantic domains. The semantic transfer between the sense designations under the same semantic domain, as listed from (2) through (7) is all instantiations of metonymization.

With respect to metaphor vs. metonymy as semantic change mechanism, Rhee (2002: 569-570) shows that some research (e.g. Hopper & Traugott 1993) persuasively argued that cases where SPACE>TIME metaphor is the

apparent change mechanism, as, for instance, in the case of English *be going to*, can be more amenable explained as ones involving pragmatic inferences triggered by the components of the source construction, such as, again e.g. English *be going to*, 'present' in *be*, 'progressive' in *be -ing*, 'purpose' in *to*, collaborate for emergence of imminent-futurity marking function. This kind of allegedly epiphenomenal metaphor is so widely recognized that this type of metaphor even acquired a special designation as 'post hoc metaphor,' which refers to the kind of metaphor that is suspected to have operated in a certain change, which, however, upon scrutiny is only a description at the resultant state, rather than a dynamic force in the said change, thus disqualifying metaphor as the mechanism of change.

Another relevant point involves subjectification. Since the now-classic Traugott's (1982) exposition on semantic-pragmatic tendencies, which dealt with speaker involvement in semantic change, the notion of subjectification has been widely resorted to for explaining grammaticalization phenomena. Traugott (1982, 1988) and Traugott & König (1991) further claimed that the subjectification process is unidirectional, a claim later challenged by Herring (1991), who presented a case that suggests that subjectification may be bi-directional. What is important in the present discussion is that subjectification may be a subtype of metonymy (Rhee 2002: 577). Subjectification is driven by language users in the course of its active search for meaningfulness of an event to the self. The meaningfulness is usually attained by finding links between the event and the self. These links may have cognitive or experiential basis, and the links between the event and the self provide contiguity, which is traced by the human cognition. For this reason, metonymy seems to be prevalent in grammaticalization (Rhee 2002: 577).

In the case of semantic change of *by*, there are many instances of subjectification. For instance, construing the 'essential element' in (7a) as a

‘means’, or the series of conceptual change from ‘means’ to ‘attendant circumstances’ and further to ‘manner’, or the ‘means’ getting construed as ‘cause, reason’ in (7c) are all excellent examples of subjectification.

Considering all these aspects with reference to metaphor and metonymy, it can be said that numerous metonymization processes drive semantic change, and their accumulated effect brings forth metaphorization. In terms of semantic change modeling, therefore, the Metonymic-Metaphorical Model suggested by Heine et al. (1991a) should best capture the dynamic interaction of metaphor and metonymy in semantic change of English preposition *by* or, more generally, of most grammaticalizing linguistic forms.

5. Conclusion

Semantic change of English preposition *by* offers interesting insights about semantic change mechanisms in grammaticalization. There are diverse semantic designations in various semantic domains, all of which developed out of the core sense of *by*, i.e. 'side, near'. Semantic change is enabled by diverse cognitive mechanisms, notably metaphor (or metaphorization) and metonymy (or metonymization), depending on whether the change involves crossing of domains by virtue of similarity (i.e. per metaphor) or shifting to adjacent entity by virtue of contiguity (i.e. per metonymy).

This paper, drawing upon historical data and panchronic methodology, has argued for two major facts with reference to grammaticalization of *by*: (i) that metaphorization may operate without temporal depth in emergence of grammatical notions; and (ii) that behind apparent metaphorization are numerous metonymic processes. Therefore, metaphorization seems to occur rather instantaneously as a problem-solving strategy and metonymization is the significant mechanism that enables small-step changes in the scene of

communicative linguistic exchange.

It remains to be seen, however, what subtypes of metonymy are involved in individual instances of semantic change of English *by*. For example, Rhee (in press), evaluating eighteen mechanisms thus far proposed in grammaticalization studies, suggests ten 'true' semantic change mechanisms, metonymy being one of the major mechanisms which encompasses seven subtype metonymic relationships: schematicization, reinterpretation, prototype extension, perspectivization, frame-of-focus variation, subjectification and intersubjectification. An in-depth exploration using these mechanisms as a tool should constitute an excellent future research topic.

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