A semantic network analysis of the preposition by between space and time

Shione Takahama
University of Tsukkuba
shionet1031@gmail.com

Keywords: polysemy, image schema, semantic network, preposition

Most previous studies regard prepositions as polysemous (e.g., Lakoff (1987), Tyler and Evans (2003), Lindstromberg (1998, 2010)). As for *by*, Hirasawa (2019) argues that English native speakers acquire semantic uses of *by* by considering elements it collocates with, denying Hanazaki's (2005) semantic network approach. However, there are at least some relations between spatial and temporal meanings of *by* because they have semantic similarities, so such an approach is justifiable.

Hanazaki and Kato (2004) and Hanazaki (2005) develop image schemas for each meaning of *by* through Tyler and Evans's (2003) approach, which involves the process of extracting distinct meanings of prepositions from the context. Their semantic network is established through predominance (i.e., frequency) and pragmatic strengthening. Spatial meanings of *by* are classified into the <Near/Out-of-the-domain> type, and its temporal meanings into the <Near/Out-of-the-domain> and <Till> types.

However, there are some problems with their analysis. First, they establish only one schema for spatial meanings of *by*, the <Near/Out-of-the-domain> schema. It does not describe some differences between *by* and *near*, as illustrated in (1), or cannot deal with spatial meanings of *by*, such as those in (2) and (3), which involve the notion of movement/transfer.

(1) a. There are a few benches near/by the river…
b. A robot submarine is developed near/*by the sea floor.
(Shimada (2013:28), with some modifications)

(2) A train bellowing by just over my head, a train that would probably be dropping some nice hot sparks into my hair and down back of my neck… (S. King, *The Body*, p. 79, underline is mine)

(3) My name is Joey Gladstone. I'll be by to pick the tickets up this afternoon.
(*Full House*, Season 5, Episode 6, cf. Hirasawa (2019:128-129), underline is mine)

Furthermore, the two temporal senses are not directly related to each other in Hanazaki's semantic network of *by*. The *by* illustrated in (4) is classified into <Near/Out-of-the-domain> as a metaphorical extension from space to time, while *by* in (5) is sorted into <Till>. However, the two meanings should be located closer to each other in the network, since they share some similarities.

(4) A week had gone by since she had first approached him.
(G. Orwell, 1984, p. 114, underline is mine)

(5) Your papers are to be handed in by next week. (Quirk et al. (1985:692), underline is mine)

This study concentrates on considering semantic relations between spatial and temporal meanings of *by* based on a more elaborate image-schema (semantic-network) approach (Lakoff (1987) and Dewell (1994)) than Hanazaki's, taking some ideas from Takahama et al. (to appear), which analyze spatial meanings of *by* with data including 1320 instances collected from seven novels. As for the spatial meaning, by incorporating notions such as "bounded area" and "horizontal proximity" into Hanazaki's schema, the <Vicinity in the horizontal plane> schema is constructed, which illustrates differences between *by* and *near* (lack of "bounded area"). Also, the schemas of <Going across> and <Dropping in> are established to describe "movement/transfer" situations like those in (2) and (3). As for the temporal meaning, the schemas of <Going across in time> and <Result stage continuing after reference point> are established to express situations like those in (4) and (5). Their difference comes from profile shift (Dewell (1994)). The former schema makes the property of [TR's horizontal movement] more prominent while the latter makes [TR's getting out of the bounded area] more prominent. The network of relevant meanings of *by* is given in Figure 1. <Vicinity in the horizontal plane> is identified as the central meaning through predominance and extends to <Going across> and <Dropping in> through inheritance of some semantic properties. The two temporal meanings of <Going across in time> and <Result stage continuing after reference point> derive from the spatial meaning of <Going across> through metaphorical extension.

References

Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar. Vol. 1: Theoretical Prerequisites*. Stanford: Stanford University Press.

Dewell, Robert B. 1994. Over Again: Image-Schema Transformations in Semantic Analysis. Cognitive Linguistics (5). 351-80.

Hanazaki, Miki. & Kozo Kato. 2004 The Semantic Network of *By* (2). Studies in Humanities: Culture and Communication (38) 23-38. Shinshu University.

Hanazaki, Miki. 2005. Toward a model of principled polysemy. English Linguistics (22) 412-442.

Hirasawa, Shinya. 2019. Zenchishi by no Imi o Shitteirutowa Nani o Shittteiru to Iukoto Nanoka Tagiron kara Tashiyouron e. Tokyo: Kuroshio.

Lakoff, George. 1987. Women, Fire, and Dangerous Things. Chicago: University of Chicago Press.

Lindstromberg, Seth. 1998. English Prepositions Explained. John Benjamins Publishing Company. Amsterdam.

Lindstromberg, Seth. 2010. English Prepositions Explained: Revised Edition. Amsterdam: John Benjamins Publishing Company.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. 1985. A comprehensive grammar of the English language. London: Longman.

Shimada, Hiroshi. 2013. Zenchishi by no Imi–Hitotsu no Imi o Motomete. Gunma Zyoshi Daigaku Kiyou (34). 27-38.

Shione Takahama, Haruka Shimura & Takuto Kimura. to appear. On the spatial meanings of by: A semantic network analysis based on schema and predominance. JELS (40). Japan: The English L. S. of J.

Tyler, Andrea. & Vyvyan Evans. 2003 The Semantics of English Prepositions: Spatial Scenes, Embodied Meaning and Cognition, Cambridge: Cambridge University Press.

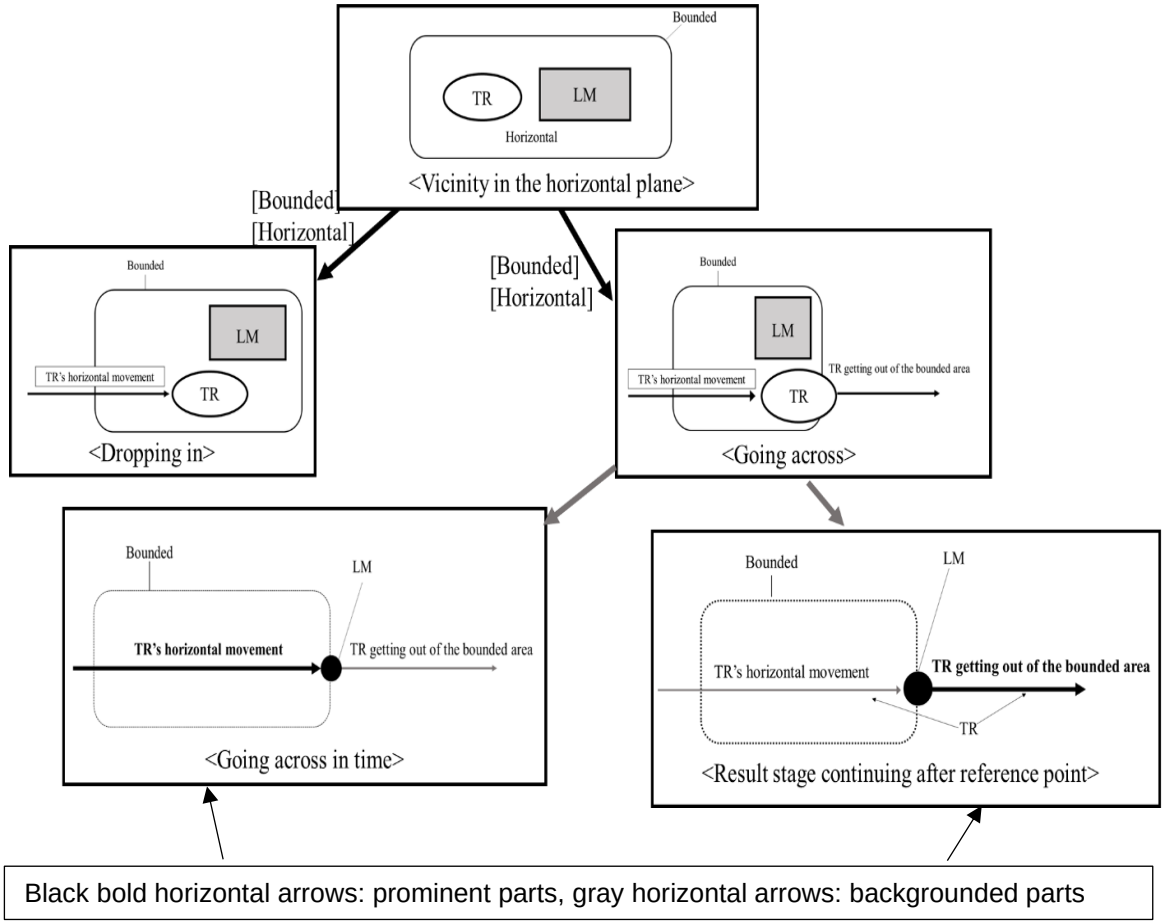

Fig **1:** A semantic network for the spatial and temporal meanings of the preposition *by*

(Black slanting arrows denote inheritance of semantic properties and gray slanting metaphorical extension.)