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How do Typological Studies Explain the Semantic Changes of English Complex Prepositions?

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Abstract
The purpose of this study is to investigate the semantic changes of English complex prepositions and to argue that they are explained on the basis of two possible mechanisms of semantic change.

Keywords
English complex preposition, Semantic Schema Preservation, Causal Meaning Orientation, typology, semantic change (shift).

Introduction

This study discusses the semantic changes of English complex prepositions and argues that they are explained on the basis of two possible mechanisms of semantic change: one is the Semantic Schema Preservation pathway (SSP) and the other Causal Meaning Orientation (CMO).

1. On English complex prepositions

The purpose of this study is to reveal possible linguistic and psychological mechanisms behind semantic shifts of English complex prepositions on the basis of cross-linguistic research. More specifically, this study argues that these semantic changes can be illuminated by the typological research of Yamaguchi (2005). The following kind of example would be relevant to begin our discussion:

> *(1) We came **in view of** (=were able to see) a wide plain below.*

View in the example above displays its literal meaning, describing the situation in which a feature of the landscape or a building comes within range of eyesight. Hoffmann (2005) studied how *in view of* has been used since 1650 and found that in many cases this was used in the literal sense until about 1850, but its literal meaning steadily decreased and has been rare in Present-day English. Now this complex preposition almost always carries a meaning which can be paraphrased by other complex prepositions such as 'in consideration' or 'on account of' as in (2).

> *(2) It is hard to see what else they could have done **in view of** the Secretary of State's decision.*

In view of above has lost its original compositional meanings and has been regarded as a single unit. As Hoffmann argues, linguistic phenomena such as layering of meanings, semantic bleaching or generalisation, subjectification and context-induced reinterpretation are the driving force behind the semantic shift of *in view of*. Based on empirical data, previous studies on grammaticalisation and the usage-based theory (or model) have argued that the use of utterances in actual contexts determine the representation of grammatical units in a speaker's mind. So the elements which frequently co-occur have a high probability of being merged as a single unit morphologically and also semantically.
Although the previous studies above shed light on some aspects of the semantic nature of English complex prepositions, there has

not been any research suggesting their general semantic change pathways applicable to all English complex prepositions. The purpose of this study is to suggest general paths of semantic change of English complex prepositions from the macro-perspective and to argue that these changes can be explained linguistically and psychologically on the basis of the cross-linguistic research of Yamaguchi (2005). In Section Two, after a brief introduction of the previous research on English complex prepositions, we will argue that their semantic changes can be classified into two general patterns: the first general semantic shift is what may be called the Semantic Schema Preservation pathway and the second one is what may be called Causal Meaning Orientation. In Section Three, we will argue that these two general pathways are in harmony with general patterns of semantic shifts of adpositions (cases and pre/postpositions) found in the languages of the world: this would be obvious, as English complex prepositions, after being frequently used and becoming one unit, are categorised as prepositions.

2. On semantic shifts of English complex prepositions

English complex prepositions consist of simple prepositions and noun(s), and many are regarded as single-unit or chunk in terms of their syntax and semantics. As for their syntactic properties, through the mechanisms of chunking of contiguous units, they came to lose their compositionality, triggering decategorisation of their components. Semantically, meanings of each component of complex prepositions gradually came to be bleached, finally developing one generalised meaning. These kinds of linguistic changes have been discussed in the contexts of usage-based theory and grammaticalisation, and therefore this study is regarded as an attempt to make a contribution to these fields. According to Akimoto (2002, p.162), English complex prepositions have not been widely researched. The pioneering work was Quirk and Mulholland (1964), who showed that modern English has many complex prepositions, as follows. The following lists of English complex prepositions are taken from Quirk, et al. (1985, p.671):

> *(3) [in + noun + of]: in aid of, in back of, in behalf of (AmE), in case of, in charge of, in consequence of, in (the) face of, in favor of, in front of, in lieu of, in (the) light of, in need of, in place of, in (the) process of, in quest of, in respect of, in search of, in spite of, in view of;*
>
> *(4) [in + noun + with]: in accordance with, in common with, in comparison with, in compliance with, in conformity with, in contact with, in line with;*
>
> *(5) [by + noun + of]: by dint of, by means of, by virtue of, by way of;*
>
> *(6) [on + noun + of]: on account of, on (the) grounds of, on the matter of, on pain of, on the part of, on the strength of, on top of;*

As mentioned above, the purpose of this study is to study the semantic shift of English prepositions, trying to find general paths of semantic change, and an observation on the list above seems to reveal that there are two general pathways of semantic change traced by English complex prepositions. One is what might be called the Semantic Schema Preservation pathway (henceforth SSP): basic meanings of their component parts do not change when they change into single units or chunks. The other is what might be referred to as Causal Meaning Orientation (henceforth CMO). We will follow Luraghi (2003, p.30) for the definition of causal meaning in (7);

> *(7) Causal roles are roles taken by participant(s) that initiate, or play a part in bringing about, a certain state of affairs.*

Causal meaning (or concept) is not a simple concept but consists of many different ones (on the way in which this concept has been discussed in the field of linguistics and philosophy, see, for example, Lakoff and Johnson, 1999). According to Luraghi (2003, p.30), "major causal roles are Agent, Instrument, and Cause, to which Reason, Force, Means, and/or Intermediary are usually added." Quirk, et al. (1985, p.695) urges that the causal and purposive senses should be regarded not as two discrete categories but as two ends of the spectrum, including the following functions: Reason (e.g. 'He was fined for drunken driving') and Motive (e.g. 'She did it out of kindness').

Whether the semantic shift of individual English complex prepositions above is either SSP or CMO was determined on the basis of

the author's intuition and the definition in (7), but as in other scientific fields, other researchers can easily re-examine the plausibility of the following semantic classification. And the examples for CMO below will help readers to evaluate if these complex prepositions indeed came to express causal meanings, as defined in (7).

Table 1: [in + noun + of]

in aid of (The concert is given *in aid of* the blind.)	SSP, CMO
in (at, on) back of (=the part furthest from the direction that something moves in or faces)	SSP
in (on) behalf of (The money was raised in behalf of the strikers.)	CMO
in case of (In case of fire, ring the alarm bell.)	CMO
in charge of (=a position of care, control, or responsibility)	SSP
in consequence of (An investigation was initiated *in consequence of* the naval disaster.)	CMO
in (the) face of (He showed his courage in the face of danger.)	CMO(negative causative)
in favor of (=approving of, in support of)	SSP
in front of (=in the position directly before)	SSP
in lieu of (=instead of)	CMO(negative causative)
in (the) light of (*In light of* the bad weather report, we should leave early.)	CMO
in need of (=the condition in which something necessary is missing)	SSP
in place of	CMO(negative causative)
in (the) process of (=performing)	SSP
in quest of (=search)	SSP
in respect of (He will be paid 100 pounds in respect of the work.)	CMO
in search of (They went in search of Miss Packard.)	SSP, CMO
in spite of (=despite)	CMO(negative causative)
in view of (In view of recent developments we do not think this step advisable.)	CMO

Table 2: [in + noun + with]

in accordance with (=in a way that agrees with)	SSP
in common with (=shared with someone)	SSP
in comparison with (=the act of comparing)	SSP
in compliance with (=obedience)	SSP
in conformity with (=agreement)	SSP
in contact with (=the state of having connection)	SSP
in line with (=straight or level compared with)	SSP

Table 3: [by + noun + of]

by dint of (We took the underground at Paddington and, by dint of changing at Fenchurch,…)	CMO
by means of (He escaped *by means of* a secret tunnel.)	CMO
by virtue of (*By virtue of* the authority vested in me, I here pronounce you man and wife.)	CMO
by way of (Jamison's constables came in by way of the front door.)	CMO

Table 4: [on + noun + of]

on account of (Was it *on account of* what I said yesterday?)	CMO
on (the) grounds of (The youth was rejected by the Air Force *on the grounds* of ill-health.)	CMO
on pain of (They were forbidden to leave, *on pain of* death.)	CMO
on the part of (of or by someone)	CMO
on the strength of (I bought it on the strength of his advice.)	CMO
on top of (He lost his job and *on top of* that his wife left him.)	SSP, CMO

3. On semantic change of English simple prepositions

Then how can we explain this? The fact to be noticed is that English complex prepositions came to be categorised as prepositions, so these came to display the properties of this category. So what are properties of prepositions? In Yamaguchi (2005), based on the following 64 different languages, I proposed the following macro-structure of semantic roles displayed by cases and pre/postpositions of natural languages:

The classification of languages used in Yamaguchi (2005) below is based on Voegelin and Voegelin (1978): Abipon (Ge-Pano-Carib), Abkhaz (Caucasian), Alyawara (Australian), Arabic (Afroasiatic), Baka (Afroasiatic), Bari (Nilo-Saharan), Bihari (Indo-European), Buriat (Ural-Altaic), Burushaski (Language Isolates), Chacobo (Andean-Equatoria), Cheyenn (Macro-Algonquian), Dakota (Macro-Siouan), Diyari (Australian), Dogon (Niger-Kordofanian), English (Indo-European), Evenki (Ural-Altaic), Ewe (Niger-Kordofanian), Finnish (Ural-Altaic), French (Indo-European), Ga (Niger-Kordofanian), German (Indo-European), Guaymi (Macro-Chibchan), Hausa (Afroasiatic), Hualapai (Hokan), Hungarian (Ural-Altaic), Indonesian (Austronesian), Inuit (Unaffiliated), Island Carib (Andean-Equatorial), Japanese (Unaffiliated), Kannada (Dravidian), Karok (Hokan), Kashimiri (Indo-European), Koho (Austroasiatic), Korean (Unknown), Kui (Dravid-ian),!Kung (Khoisan), Lahu (Sino-Tibetan), Lingala (Niger-Kordofanian), Malayalam (Dravidian), Maltese (Afroasiatic), Marathi (Indo-European), Margi (Afroasiatic),

Mongolian (Ural-Altaic), Modern Greek (Indo-European), Motu (Austronesian), Mwera (Niger-Kordofanian), Ngiyambaa (Australian), Palantla Chinantec (Oto-Manguean), Papago (Aztec-Tanoan), Punjabi (Indo-European), Spanish (Indo-Eurorpean), Shuswap(Salish), Slave (Na-dene), Sumerian (Language Isolates), Tibetan (Sino-Tibetan), To'aba'ita (Austronesian), Turkish (Ural-Altaic), Tok Pisin (Creoles), Yagaria (Indo-Pacific), Vayu (Sino-Tibetan), Welsh (Indo-European), Yoruba (Niger-Kordofanian), Zande (Niger-Kordofanian), Zuni (Penutian).

The macro-structure in Figure 1 displays their semantic changes from the spatiotemporal domains to non-spatiotemporal domains.

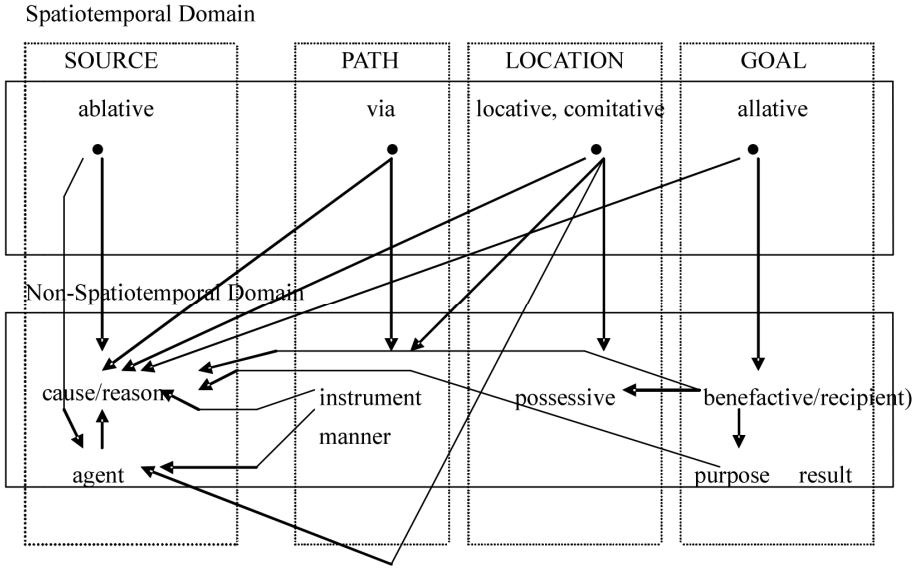

Fig.1 (Yamaguchi, 2005, p.151)

This study assumes that spatial relations are linguistically and psychologically more basic than non-spatial ones and other senses may be appropriately hypothesised as ultimately derived from the spatial senses (see, for example, Anderson, 1971; Lyons, 1977, p.718; Stassen, 1985, pp.36-37; Croft, 1991). One might ask why the spatial senses should be the sources for other, more abstract senses. Regarding this question, Jackendoff (1983, p.210), for example, argues that "if there is any primacy to the spatial field, it is because this field is so strongly supported by non-linguistic cognition; it is the common ground for the essential faculties of vision, touch, and action. From an evolutionary perspective, spatial organization had to exist long before language." And spatial relations are more fundamental to our experience, so that they are the basis for conceptualisation of non-spatial relations (see also Lakoff and Johnson, 1980; Lakoff 1987; Heine, et al., 1991; Langacker, 1991).

The intimate relation between spatial and temporal concepts, however, causes a serious problem to our study; as they are so closely related to each other, and often difficult to distinguish, it is very often the case that we cannot tell whether either spatial functions or temporal functions are responsible for later developments of other abstract functions. Therefore, we will treat these two concepts as a single concept (spatiotemporal concept) and do not attempt to answer the question of whether either spatial or temporal functions are responsible for creation of other rather abstract senses.

The semantic roles in the same vertical box inside dotted lines share the same semantic structure: SOURCE, PATH, LOCATION, or GOAL, although they may belong to different domains (the spatiotemporal or non-spatiotemporal domain), as indicated in the horizontal boxes. These four different semantic structures can be schematically expressed as follows:

Table 5: Schematic structures and semantic functions

Schematic Structure	Gloss	Semantic Function
<● (●)>	LOCATION	locative, comitative, possessive
< ●→o >	SOURCE	ablative, (passive) agent, cause/reason
< o→● >	GOAL	allative, benefactive, purpose, result

< o→o >	VIA	via, instrument, manner

The semantic roles or functions on the right of Table 6 possess the schematic structures on the left. As for correspondence between the schematic representations and semantic functions, this study follows previous studies (for LOCATION, see Quirk, et al., 1985, p.674; Sweetser, 1988, p.393; for SOURCE, see Langacker, 1991; Lindstromberg, 1998, p.26; Quirk, et al., 1985, p.674; Sweetser, 1988, p.393; for GOAL, see Langacker, 1991, p.399; Lindstromberg 1998, p.26; Quirk, et al., 1985, p.674; Sweetser, 1988, p.393; for VIA, see Langacker, 1991, p.404; Lindstromberg, 1997, p.26). It is worth noting that there have been very few objections to these correspondences between semantic functions and semantic structures; even in the case of scholars who do not use schematic representations, their explanations agree with the correspondences in Table 6.

The meanings of the semantic roles above can be expressed by the following *simple* English prepositions (apart from the possessive meaning, for which the verb *has* is used).

(8) (a) ablative: e.g. 'Apples fell from the tree.'
(b) (passive) agent: e.g. 'Taro was kicked by Jiro.'
(c) allative: e.g. 'He goes to the office by bus.'
(d) benefactive: e.g. 'She did the shopping for her mother.'
(e) cause: e.g. 'He died from starvation.'
(f) comitative: e.g. 'He had dinner with his friends.'
(g) instrument: e.g. 'She squashed the spider with a slipper.'
(h) locative: e.g. 'He played in the yard.'
(i) manner: e.g. 'He completed the job with great skill'
(j) path: e.g. 'He flew to Paris via London.'
(k) possessive: e.g. 'Taro has a dog.'

Figure 1 reveals that there are two general pathways of semantic change traced by the semantic roles of nominal grams when meaning shifts occur from the spatiotemporal domain to the non-spatiotemporal domain. And as belonging to the category of adposition, English complex prepositions are required to follow these general pathways of semantic changes found in pre/postpositions of languages in the world.

Conclusions

As a concluding remark, let us restate the significance of our findings to the study of semantic aspects of English complex prepositions. English complex prepositions have not been researched as much as English simple prepositions, and then their semantic nature has not been well understood. Concerning this, our study suggests two possible mechanisms behind their semantic changes: one is Semantic Schema Preservation change and the other is change towards Causal Meaning. Semantic changes that preserve the original meanings have been proposed by many linguists. (e.g. Sweetser, 1988; Croft, 1991; Heine, et al., 1991), but as far as the author's knowledge goes, no researchers have ever argued that semantics of adpositions always change towards causal meanings. Then, what is the motivation behind CMO? One possible answer for this can be attributed to the fact that the experience of causal relations between events in the world is fundamental to the representation of human knowledge and other cognitive processing such as explaining, comprehending and reasoning (Noordman, et al., 2000, p.36). Taking the assumption of most cognitive-oriented studies, that is, our linguistic structures somehow reflect our knowledge or mental representation, then it is very natural for function words such as prepositions to come to express some kind of causality. Notice that causal concepts may be unique to human beings; Tomasello (1999, p.18) argues that nonhuman primates do not have an understanding of the intentionality of conspecifics and the causality of inanimate objects and events, and then "they just do not understand the world in intentional and causal terms" (1999, p.19). On the contrary, children at an early stage learn to use causal schemes in reasoning processes (Noordman, et al., 2000, p.36).

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