

Motivation for Selecting a Preposition from a Synonymous Pair:

A Case Study of *Influence On* and *Influence Over**

Fumino HORIUCHI

1. Introduction

The aim of this paper is to demonstrate the mechanism of selecting an English preposition from a synonymous pair, examining the differences in the usage of the expressions *influence on* and *influence over* as a case study. Most English prepositions are highly polysemous and some of them include similar meanings, i.e., seem to be interchangeable in some cases. The following sentences, in which the prepositions *on* and *over* are used with the noun *influence*, exemplify this characteristic.¹

- (1) a. man's *influence on* the earth's surface seems incommensurate with his scale [ODE2]
b. He will retain some *influence over* the company. [OBED]

In these examples, both of the complements of *on* and *over*, the earth's surface in (1a) and the company in (1b), are the entities being influenced by man. The example (2), which is taken from a Japanese-English dictionary, also suggests the interchangeability between these prepositions.

- (2) have an indirect *influence on* [*over*] X [KNJED5]

While these examples suggest the similarity between *on* and *over* in the collocation with *influence*, it is not clear how the speaker/writer chooses between these prepositions in language use. This paper closely examines the differences between the expressions *influence on* and *influence over* based on quantitative research using the *British National Corpus* (BNC), and attempts to show how the speaker/writer uses these expressions.

* I would like to express my sincere gratitude to Professor Ipeei Inoue and Professor Ryoko Suzuki of Keio University for their insightful comments and suggestions on this paper. I am also grateful to Misaki Akimoto of Keio University for her suggestions on this paper.

¹ Underlines, italics, and boldface of the examples in this paper have been added by the author.

The organization of the rest of this paper is as follows. Section 2 introduces previous studies about the meanings of *on* and *over*. Section 3 explains the methodologies of the research using the *BNC* and section 4 shows the results. Based on the results, section 5 discusses how the differences between *influence on* and *influence over* are motivated from the viewpoint of the spatial senses of *on* and *over*, and also from the usage-based view (cf. Langacker 2000). Section 6 presents concluding remarks.

2. Previous Studies on Semantics of *On* and *Over*

2.1 Polysemous Characteristics of *On* and *Over*

Polysemy of English prepositions has been studied in the field of cognitive linguistics from its inception (e.g., Brugman 1981; Lakoff 1987; Dewell 1994; Tyler and Evans 2001, 2003; Deane 2005). These studies examine the relation among the various senses attached to a preposition and demonstrate the motivation of semantic extensions of prepositions based on cognitive processes like metaphor or metonymy.

Just like other prepositions, *on* and *over* have various senses. In the *Longman Dictionary of Contemporary English (LDOCE)*, for instance, 30 senses of *on* and 16 senses of *over* are listed.² The examples in (3) and (4) are only a part of their usage listed in the dictionary.

- (3) a. Leave your things **on** the table over there.
b. Matt kissed her **on** the cheek.
c. They'll be here **on** Tuesday.
d. his influence **on** young people
e. Do you have any books **on** India?
f. they live mainly **on** beans, lentils and rice.
g. He played a short piece **on** the piano.
- (4) a. A lamp hung **over** the table.
b. She wore a large jacket **over** her sweater.
c. a bridge **over** the River Thames
d. Will you be home **over** the summer vacation?
e. He's having problems **over** his income tax.
f. She had great personal influence and power **over** her followers.
g. I heard the news **over** the radio.

[LDOCE]

² These numbers include only the senses of the prepositional use of *on* and *over*; that is, the number of the senses associated with their adverbial usage is not included here.

The similarity between these prepositions can be observed in the examples (3a) and (4a), in which *on* and *over* indicate a physical location “higher than”, or (3d) and (4f), in which *on* and *over* co-occur with the same noun *influence*.

2.2 Semantic Extension from Spatial to Control Sense

According to the *Oxford English Dictionary (OED)*, the original (i.e., oldest or primary) senses of *on* and *over* are the one expressing spatial relation as in (3a) and (4a); the original meaning of *on* is defined as “above and in contact with”, and the one of *over* is defined as “above, higher up than” in the dictionary.

On the other hand, *on* and *over* in (1) are used to express not spatial but abstract meaning. The studies of the semantics of prepositions, as mentioned above, consider abstract senses of prepositions as being derived from their spatial (i.e., basic or concrete) senses through metaphors. First, let us look at the previous studies for the abstract senses of *over*. The usage of *over* as in (1b), or (5) below, is thought to be derived from its spatial meaning through the metaphor “HAVING CONTROL or FORCE IS UP; BEING SUBJECT TO CONTROL or FORCE IS DOWN” (Lakoff and Johnson 1980: 15).

(5) She has a strange power *over* me. (Lakoff 1987: 435)

In (5), the referent of the subject noun, *she*, exerts power to the referent of the complement of *over*, *me*. Tyler and Evans (2003) also treated the sentence (5) and called this usage of *over* “control sense”. On this basis, the sense of *on* and *over* co-occurring with the noun *influence* can also be regarded as control sense because they express the relation in which one thing exerts power to the other.

While Lakoff (1987) suggested that the control sense of *over* is derived from its spatial characteristics “up”, Tyler and Evans (2003) compared *over* with *above* and claims that the notion of contact or closeness is important as well for the semantic extension to control sense. According to them, *above* is typically used to express a spatial relation in which one thing is higher than and distal to the other, and such characteristics reflect the semantic extensions of *above*. Tyler and Evans (2003) explained that *above* does not have a control sense because it is difficult to exert power when one thing is located far from the other even if it is in a higher position. They indicated that the meaning of *above* cannot be understood as control sense even in a sentence like (6), in which *above* occurs just after the noun *power*.

- (6) ?She has a strange power *above* me. (Tyler and Evans 2003: 68)

This sentence is unnatural and hard to understand because the meaning of *above* in (6) can be interpreted only as illustrating the physical location of the person referred to by *she*; that is, the interpretation of this sentence is that *she* is physically in a higher position than *me* and has a strange power. In contrast, according to Tyler and Evans (2003), the primary sense of *over* includes the meaning that the upper thing is close to, and possibly touching the lower one, which might be a key factor of the semantic extension to control sense. In (7), for example, *over* is used to express the situation in which something is in contact with the other.

- (7) a. She put a blanket *over* the sleeping child. [OALD7]
b. ladle this sauce *over* fresh pasta [ODE2]

Many studies have argued that the preposition *on* also has the meaning of “contact”, as shown in the definition in the *OED*. For instance, Lindstromberg (2010) claimed that the central meaning of *on* contains the elements of contact and support as shown in the following examples.

- (8) a. the book *on* the table.
b. the mirror *on* the wall.
c. the bug *on* the ceiling. (Lindstromberg 2010: 51-52)

All of the referents of the complements of *on* in (8), the table, the wall or the ceiling are in contact with the book, the mirror or the bug respectively. In (8b) and (8c), the mirror and the bug are not even higher than the wall or the ceiling; however, the meaning of contact is reserved so *on* can be used here. These examples show how tightly the sense of contact is connected with the preposition *on*.

The comparison between *above* and *on/over* clearly shows that the notion of contact or closeness is significant to the semantic extension to control sense. That is, the usage of *on* and *over* with the noun *influence* is motivated by their spatial meaning: one thing is higher than and possibly touching the other one. However, if their control sense is derived from similar spatial meanings through the same metaphor, the following questions arise: (i) Aren't there any differences between the expressions *influence on* and *influence over*? (ii) If there are some differences, how are they derived? That is, while the metaphor “HAVING CONTROL or FORCE IS UP; BEING SUBJECT TO CONTROL or FORCE IS DOWN” can explain

why the meanings of *on* and *over* are both extended to control sense, it cannot explain the differences between *influence on/over*.

To answer these questions, this paper quantitatively examines the semantic and grammatical differences between *influence on* and *influence over* using the *BNC*, attempting to show how a speaker/writer selects one of the synonymous prepositions in a particular phrase.

3. Data and Methods

This research examines data extracted from the *British National Corpus (BNC)*, which is comprised of over 100 million words of written and spoken British English. This study collected the data through the following procedure.

First, all examples in which *influence* and *on* or *over* co-occur in one sentence were extracted. When extracting the sentences, the part-of-speech of *influence* was set as the “noun” to exclude the data of *influence* being used as a verb. In addition, the option of searching on lemma was set to collect examples of the plural form *influences* as well. As a result, the 1,421 examples of *influence on* and 423 examples of *influence over* were extracted from the corpus. Second, the extracted data were annotated with the following features:

(i) Semantic type of the entity exerting influence (INF-er)

This feature was annotated based on the semantic type of the entity which exerts influence on something, which is called an influencer (INF-er) in this paper. To annotate the data, this study uses the following variables.³

- (a) Human (e.g., man's *influence on* the earth's surface)
- (b) Organization⁴ (e.g., Parliamentary *influence over* these appointments)
- (c) Inanimate thing⁵ (e.g., university matriculation still exercises any kind of *influence on* examinations at the age of 16)
- (d) Not occurring in the clause (N/A) (e.g., there was another very important *influence on* policy.)

³ All the examples without reference to the literature are extracted from the *BNC*.

⁴ The nouns indicating the group of people (e.g., *family, government, company*) are categorized as “organization” in this research.

⁵ This category includes not only thing(s) but also event(s).

(ii) Semantic type of entity being influenced by something (INF-ee)

This feature was annotated in terms of the semantic type of entity being influenced by something, which occurs as a complement of the prepositions *on* and *over*. The examples were annotated with one of the following variables.

- (a) Human (e.g., we are particularly interested in the *influence on* women)
- (b) Organization (e.g., He will retain some *influence over* the company)
- (c) Inanimate thing (e.g., man's *influence on* the earth's surface)

(iii) Grammatical status of NP headed by *influence*

This feature was annotated based on the grammatical status of the noun phrase headed by *influence* in a clause. The grammatical status was annotated with the following variables.

- (a) Subject (e.g., man's *influence on* the earth's surface **seems** incommensurate with his scale)
- (b) Object of a transitive verb (e.g., He will **retain** some *influence over* the company)
- (c) Complement of a copular verb (e.g., it **was** the major *influence on* Conservative and Labour)
- (d) Within adjunct (i.e., Complement of a preposition) (e.g., **In view of** this *influence on* patient management, a positive diagnosis of 30.6% in patients with non-cardiac chest pain justifies its use.)

This study examined all the extracted data and annotated them manually with these features.

4. Results: Differences between *Influence On* and *Influence Over*

This section shows the results of the quantitative research on the *BNC*.⁶

4.1 The Characteristics of Entity Exerting Influence (INF-er)

To examine the differences between *influence on* and *influence over*, this section first demonstrates the characteristics of the entity exerting an influence, which is called INF-er here. Table 1 illustrates the distribution of semantic type of INF-ers.

⁶ The characteristics of INF-ers/INF-ees of the expression *influence over* are also shown in Horiuchi and Otani (to appear), which closely examines the control senses of the prepositions *over* and *under*.

Table 1 : Semantic Type of INF-er

	a. Human	b. Organization	c. Inanimate	d. N/A	Others ⁷	Total
<i>on</i>	406 (28.6%)	166 (11.7%)	<u>776</u> (54.6%)	69 (4.9%)	4 (0.3%)	1421 (100%)
<i>over</i>	<u>194</u> (45.9%)	123 (29.1%)	65 (15.4%)	41 (9.7%)	0 (0%)	423 (100%)

As shown in Table 1, the expression *influence on* tends to exhibit the influence exerted by something inanimate as in (9)-(11). While the INF-er typically occurs as a subject in the transitive construction (e.g., (9)), it also can occur in the possessive form (e.g., (10)) or in the *of* phrase (e.g., (11)).

- (9) a. Your basal metabolic rate (ie when you are resting) has an *influence on* how much energy you expend when you are doing anything that doesn't involve very much physical activity.
- b. But in the absence of high stress they find no reason to conclude that emotional support has any general *influence on* mental health.
- c. It will be argued that such factors may have had considerable *influence on* what are widely believed to have been exclusively political decisions.
- (10) Tourism and its *influence on* the environment is clearly of great interest to CPRW, however no recent work has been done on the subject.
- (11) Yes, we set up a unit affiliated to the University of Salzburg to look into the question of stress in music-making; and also the *influence of music on* the mind and the body, of healthy people and sick people.

When *over* follows the noun *influence*, on the other hand, it tends to be associated with the situation in which a human (people) or an organization (organizations) has power (human: 45.9%, organization: 29.1%). In other words, INF-ers tend to be agentive, i.e., entities which can act intentionally or decide their behaviour themselves.

- (12) a. You have some *influence over* what you use, and so the size of the bill.

⁷ The category "others" here includes instances in which the INF-ers are animals (e.g., Many Rottweilers were imported prior to the Second World War but their (=Rottweilers') *influence on* the breed today is negligible...).

- b. America's new attitude towards India may result in its (=America's) having a great ***influence over*** that country ...

Among the examples of *influence over*, 15.4% of the examples express the influence from an inanimate thing. Even in such examples, however, the INF-er tends to be something constituent to human disposition; for instance, personality, mind, or feelings.

- (13) a. Even in orthodox circles, the idea that our state of mind and personality has an ***influence over*** our physical health is beginning to gain credence once again.
 b. ...yet such feelings may not exert such a strong ***influence over*** decisions as to whether to steal from a larger and less personal victim.

As in (12) and (13), the INF-er of *influence over* most frequently occurs as a subject in a transitive construction, just like the examples of *influence on*. It also can appear in the possessive form (e.g., (14)) and in the *of* phrase (e.g., (15)), while such cases are much fewer than the cases occurring in the subject position.

- (14) But something has to be done about his ***influence over*** Matthew.

- (15) Moreover under William III, who was a foreigner, and Anne, who was a woman and a stupid one, the ***influence of Parliament over*** foreign policy grew rapidly.

To show the contrasting characteristics of these expressions more clearly, this study reclassifies the semantic type of INF-er in terms of agentivity. That is, “human” and “organization” are grouped into the same category “agentive”, while “inanimate”, “N/A” and “others” are categorized in “non-agentive”. Table 2 shows the results of recalculating the data based on agentivity.

Table 2: Distribution of the INF-er Based on Agentivity

	Agentive	Non-Agentive	Total
<i>on</i>	572 (40.3%)	<u>849 (59.7%)</u>	1421 (100%)
<i>over</i>	<u>317 (74.9%)</u>	106 (25.1%)	423 (100%)

As shown in this table, the INF-er of *influence over* tends to be agentive compared with that of *influence on*.

4.2 The Characteristics of Entity Being Influenced (INF-ee)

Following the characteristics of the INF-ers, this section then shows the differences observed in the INF-ees, i.e., the entities which are influenced by the INF-ers. The distribution of the semantic type of INF-ees is summarized in Table 3.

Table 3 : Semantic Type of INF-ee

	a. Human	b. Organization	c. Inanimate	Others ⁸	Total
<i>on</i>	211 (14.8%)	65 (4.6%)	<u>1145 (80.6%)</u>	0 (0%)	1421 (100%)
<i>over</i>	<u>99 (23.4%)</u>	<u>62 (14.7%)</u>	<u>259 (61.2%)</u>	3 (0.7%)	423 (100%)

The INF-ee, as illustrated in this table, tends to be inanimate regardless of the prepositions.

(16) Your basal metabolic rate (ie when you are resting) has an *influence on* how much energy you expend when you are doing anything that doesn't involve very much physical activity. (=9a)

(17) You have some *influence over* what you use, and so the size of the bill. (=12a)

However, observing the results in detail allows us to find that the frequencies of “human” and “organization” are higher in the case of *influence over* than the case of *influence on*. The following sentences exemplify the animate INF-ee occurring as a complement of *over* (*her* in (18), and *callow Americans* in (19)).

(18) ... she bitterly resented the fact that he, Adam Burns should have that kind of *influence over* her .

(19) Too many smooth-talking foreigners, it was said, were able to exercise an hypnotic and manipulative *influence over* callow Americans.

4.3 The Grammatical Status of NP Headed by *Influence*

This section then compares the grammatical aspect, focusing on the syntactic status of the noun phrases headed by *influence* in a clause. The following table shows the results.

⁸ The category “others” in Table 3 includes examples in which the complement of *over* is an animal (e.g., Your *influence over* another dog...).

Table 4: The Grammatical Status of NP Headed by *Influence*

	a. Subj.	b. Obj.	c. Copular-Comp.	d. Within Adjunct	Others ⁹	Total
<i>on</i>	207 (14.6%)	<u>793</u> (55.8%)	<u>185</u> (13.0%)	216 (15.2%)	20 (1.4%)	1421 (100%)
<i>over</i>	53 (12.5%)	<u>275</u> (65.0%)	8 (1.9%)	<u>84</u> (19.9%)	3 (0.7%)	423 (100%)

These results show that the noun phrase headed by *influence* most frequently occurs as an object of a transitive verb, both in the cases of *influence on* and *influence over*. The transitive verbs tend to be one related to possession or power execution, such as *have*, *obtain*, *exercise*, or *exert*.

- (20) a. This had a direct *influence on* elements such as the sloping bonnet line, steeply raked windscreen, curved roof and tapered rear section.
 b. The assumption that university matriculation still exercises any kind of *influence on* examinations at the age of 16 should be excised.
- (21) a. ... the firm's managers were able to obtain *influence over* the banks, ...
 b. ... such feelings may not exert such a strong *influence over* decisions as to whether to steal from a larger and less personal victim.

Comparing the results of *on* and *over* more closely, however, some different tendencies have been observed. While *influence over* rarely appears as a complement of copular verbs (1.9%), 13% of the examples of *influence on* occur in that syntactic position. In that case, an adjective like *important* in (22) frequently precedes the noun *influence*.

- (22) Probably, demand in the loan market and the perceived risk associated with a loan are the two most *important influence on* spread sizes.

Influence over, in contrast, appears within an adjunct (i.e., prepositional phrase) more frequently than *influence on*.

⁹ The category "others" in Table 4 includes examples such as (i) a noun phrase headed by *influence* is used as an independent phrase as a title or a headline, or (ii) it is just inserted in a clause with commas and the grammatical status cannot be specified.

(23) But something has to be done about his *influence over* Matthew. (=14)

These results demonstrate that, even though the phrases *influence on* and *influence over* are considered to be a synonymous pair, they tend to express different types of influence and tend to show different grammatical behaviour.

4.4 Differences between *Influence On* and *Influence Over*

This section summarizes the results of the quantitative research and considers them in terms of transitivity (Hopper and Thompson 1980). When the noun *influence* is followed by the preposition *on*, both of the INF-er and INF-ee tend to be inanimate (i.e., non-agentive). When the noun *influence* is followed by *over*, on the other hand, the INF-er tends to be agentive, and the INF-ee, which is typically inanimate (i.e., non-agentive), also can be agentive more frequently than is the case with *on*. Regarding its grammatical status, *influence on* appears in a complement of a copular verb more frequently than *influence over*, while *influence over* tends to occur within a transitive construction as an object of a transitive verb.

As discussed in Hopper and Thompson (1980), agentivity is closely related to high transitivity. An agentive INF-er, which can exert power actively or intentionally, is more transitive than a non-agentive one, which cannot exert power actively or intentionally. This suggests that situations expressed by *influence over* tend to be more transitive than is the case with *influence on*. Furthermore, these semantic tendencies seem to correspond to their grammatical tendencies. In the usage of *influence over*, the noun phrase headed by *influence* tends to occur in a transitive construction, and in that case, the INF-er usually appears in the subject position. On the other hand, the collocation *influence on* more frequently appears in the complement of a copular verb, which tends to express a state rather than a transitive action. In sum, examples of the noun *influence* being followed by *over* tend to express higher transitive events than the cases of *on*.

Although this study focuses only on the collocation with the noun *influence*, a similar tendency has been observed in collocations with other nouns. For instance, 1,946 examples of the collocation *control over* (i.e., the noun *control* co-occurs with *over* in one sentence) could be found in the *BNC*, while there were only 187 examples of the collocation *control on*. Compared with *influence*, *control* tends to express the relation in which people/organizations with authority exert force intentionally. It matches the typical situation expressed by the

control sense of *over*; therefore, it is plausible and seems semantically motivated that the noun *control* frequently co-occurs with the preposition *over* rather than *on*.¹⁰

5. Discussion

Based on the results of the research on *BNC*, this section discusses the reasons of the differences observed in *influence on* and *over* from the perspective of metaphorical semantic extension of the prepositions (section 5.1). Then, this study also attempts to discuss the idiomatic nature of the collocations *influence on* and *influence over* (section 5.2).

5.1 Motivation of the Differences in Metaphorical Use of *On* and *Over*

This section discusses the characteristics of the prepositions *on* and *over*, which are components of the expressions *influence on* and *influence over*. As explained in section 2, *on* and *over* have common characteristics in their spatial sense like “one thing is higher than and possibly touching the other”, which motivate their common semantic extension to control sense. However, on the other hand, the differences between *influence on/over* cannot be explained by such a general meaning of *on* and *over*. To reveal how their differences have been derived, this section examines more detailed characteristics of the spatial sense of *on* and *over*.

To observe the senses of *on* and *over* more closely, let us review example (8), which is shown here as example (24) again.

- (24) a. the book **on** the table.
b. the mirror **on** the wall.
c. the bug **on** the ceiling. (=(8))

In these examples, the referents of the complements of *on* ((24a) the table, (24b) the wall, (24c) the ceiling) are much larger than the book, the mirror, or the bug respectively. In contrast, in (25a), the complements of *over* (the sleeping child) is covered with a blanket larger than the child, and in (25b), the painted ceiling is covered with a plastic sheet.

- (25) a. She put a blanket **over** the sleeping child. (=(7a))
b. They put a transparent plastic sheet **over** the painted ceiling of the chapel

¹⁰ According to the quantitative research conducted in Horiuchi and Otani (to appear), controllers of the events expressed by using the phrase *control over* tend to be agentive as well as the cases of *influence over*.

during repair.

(Tyler and Evans 2003: 91)

Kreitzer (1997), based on the examples in (26), indicated that *over* can be interpreted as covering something while *on* can not; this is suggested by the contrastive behavior in (24) and (25) as well.

- (26) a. I have put a cloth ***over*** a table.
b. I have put a cloth ***on*** a table. (Kreitzer 1997: 302)

According to Kreitzer, *over* in (26a) means a cloth covers a table and functions as a tablecloth, while *on* in (26b) just expresses the location of a cloth, i.e., the cloth can be rolled or folded.

The conventionalized expression *all over* also suggests that covering sense is attached to *over*. In the sentence (27), for instance, the chaotic distribution of the coffee is illustrated by the phrase *all over* (cf. Queller 2001; Taylor 2006).

- (27) The coffee went ***all over*** my skirt. [OALD7]

Now, let us turn to the differences between *influence on* and *influence over* again, and consider the relation between the control and the spatial sense of these prepositions. Taking our daily experience into consideration, when something small is in slight contact with a larger thing (as in the typical spatial situation expressed by *on*), the larger thing tends not to be influenced by the smaller thing. In contrast, when something large covers a smaller thing (as in the typical situation expressed by *over*), the smaller thing tends to be influenced by the larger thing in certain ways. For instance, in the situation expressed in (25a), the child might feel the weight of the blanket, and sleep well in a warm and comfortable conditions due to being covered by the blanket; that is, the state of the child is influenced and changed by the blanket. In the situation of (25b) and (26a), the ceiling or the table is protected by a sheet and a tablecloth as well. When a cloth is folded and put on the table as in (26b), in contrast, the cloth does not function as a tablecloth to protect the table. That is, even in the “spatial” sense, *over* tends to express the situation in which something larger covers and influences a smaller thing to some degree; that is, the power is exerted from the upper to the lower entity more strongly than the situation expressed by *on*. Such a covering characteristic of *over* seems to be reflected in the behaviour of *influence over*, which tends to express the event with higher transitivity than *influence on*. The differences between *influence on/over* and their

correspondence with the spatial senses suggest that the abstract senses of prepositions reflect our daily experience of the world at a more detailed level than we may have assumed; the abstract sense of *over*, for instance, reflects not only the physical location but also the functional aspect and energy transmission of covering. This study has quantitatively demonstrated the importance of the notion of experiential basis (cf. Lakoff 1987) and embodied view (cf. Tyler and Evans 2003; Evans and Green 2006) of language, and emphasizes that we can better understand the differences between synonymous prepositions by focusing more closely on our experiences.

5.2 Collocation and Idiomatic Behaviour

5.2.1 Idiomatic Nature of Language

The previous section mainly focuses on our experimental and cognitive basis of the metaphorical senses of *over* and *on*, which are the components of the expressions *influence on* and *influence over*. Some differences between *influence on* and *influence over* are considered to correspond to their spatial senses, i.e., they are motivated by our spatial experience of the world and cognitive processes like metaphors.

However, on the other hand, the behaviour of the whole expressions *influence on* and *influence over* cannot be fully predicted and explained only by the spatial senses of *on* and *over*. As claimed in many studies of cognitive linguistics (e.g., Fillmore, Kay and O'Connor 1988; Langacker 1987, 2000, 2008; Taylor 2006, 2012), there are thousands of familiar collocations, formulaic expressions, and standard usages memorized as one unit in our language. They are stored as a lexical item even though they consist of multiple words; therefore, they are considered to be located intermediate between lexicon and grammar. Langacker (1987: 42) indicated that “general statements and particular statements can perfectly well coexist in the cognitive representation of linguistic phenomena, just as we learn certain products by rote in addition to mastering general procedures for multiplication. To the extent that this is so, an accurate linguistic description claiming psychological reality must contain both rules expressing generalizations and specific forms learned as a fixed unit, even if the specific forms accord fully with the rules.” Based on this assumption, the expressions *influence on* and *influence over* could contain both the rule-based aspect, which is derived from or motivated by the meanings of the components *influence* and *on* or *over*, and the characteristic as a fixed unit, which is conventionally associated with the units of *influence on* and *influence over*.

5.2.2 Idiomatic Nature of *Influence On and Influence Over*

To examine the idiomatic nature of the expressions *influence on/over*, this study compares their grammatical characteristics with the expressions including the spatial use of *on/over*. To compare them, this research additionally extracted the data of the spatial use of *on* and *over* phrases, which express a physical location or a path of concrete entities as in (24) and (25), and examined their grammatical status. More concretely, this research first extracted 500 examples of each preposition from the *BNC* using a random sampling method without specifying the part-of-speech (i.e., the extracted data includes the adverbial use of *on* and *over*, such as *come on* or *over there*). Then, the extracted data was annotated manually based on the meanings of *on* and *over*, spatial or non-spatial. As a result, 115 examples of *on* and 136 examples of *over* used in a spatial sense were collected. Then, this research annotated the collected data based on the grammatical status in which *on* and *over* phrases occur.

As a result, in the spatial use, both *on* phrases and *over* phrases most frequently appear as a complement or an adjunct of a verb: 71 examples of *on* phrases (62%) and 105 examples of *over* phrases (77%) occur in that syntactic position. On the other hand, only 30 examples of *on* phrases (26%) and 14 examples of *over* phrases (10%) occur within a noun phrase as a modifier of a noun. Furthermore, among these examples, the noun phrases including *on* and *over* phrases most frequently occur within an adjunct, i.e., as a complement of a preposition (e.g., *she would invite Lucy to choose a sweet from the box on the counter*) as summarized in Table 5.

Table 5: The Grammatical Status of NP Including the Spatial Use of *On/Over* Phrase

	a. Subj.	b. Obj.	c. Copular-Comp.	d. Within Adjunct	Others	Total
<i>on</i>	4 (13.3%)	6 (20.0%)	2 (6.7%)	<u>16 (53.3%)</u>	2 (6.7%)	30 (100%)
<i>over</i>	0 (0%)	1 (7.1%)	1 (7.1%)	<u>12 (85.7%)</u>	0 (0%)	14 (100%)

Comparing the result in Table 5 with that in Table 4, it is clear that the distributions of the grammatical status of noun phrases including *on/over* phrases are different between the spatial and control domains. Moreover, *on* and *over* in a spatial sense are often used as adverbs, i.e., not followed by any complement nouns (e.g., *come on*), while all examples of *on* and *over* co-occurring with *influence* appear as a preposition, i.e., take a nominal complement. In summary, the grammatical differences between *influence on/over* do not

correspond to those between the expressions including *on* and *over* indicating the spatial senses, and thereby cannot be fully predicted from the spatial senses of *on* and *over*.

This suggests that, in the knowledge of English native speakers, the whole units of *influence on* and *influence over* are paired with the larger constructions (e.g., copula or transitive construction) in which they tend to occur, and are also connected with the type of influence they usually express to some degree. According to the results of the quantitative research, it does not seem that speakers/writers always select one of the prepositions after *influence* based on the original meanings of *on* and *over*, depending on how they construe a particular situation (for instance, how they feel about the strength or weakness of the power of influence at that time). Rather, the type of situation which *influence on/over* usually express and the constructional patterns in which they tend to occur (e.g., [Agentive INF-er + Verbs of possession/power execution + *influence over* + Non-agentive INF-ee]) are conventionally fixed to each expression in some degree.

Previous studies of the polysemy of English prepositions tended to focus on the meaning of prepositions themselves, i.e., the linguistic unit being analyzed is limited to one word. According to the usage-based model, on the other hand, the knowledge of lexicon and grammar is stored in our knowledge along with the contextual information in which they occur. Based on this model, it is important to examine the linguistic unit beyond one word (such as with collocation or larger constructions) to reveal our linguistic knowledge associated with prepositions. This study demonstrated the differences between *influence on* and *influence over* in terms of the type of INF-er, INF-ee, and the grammatical constructions in which they occur. The approach should match the notion of the usage-based model, and can be an effective way to reveal the knowledge of language user associated with each preposition.

6. Conclusion

This paper has demonstrated the differences between the synonymous expressions *influence on* and *influence over*. As a result of the quantitative research, this study has shown that *on* tends to be used when expressing the influence between inanimate things, while *over* is more frequently used to express the influence from a human or an organization (i.e., agentive INF-er). Their difference has corresponding aspects to the spatial senses of *on* and *over*, which are considered to be their basic/primary senses and the source of their semantic extension. It suggests that our daily experiences associated with the spatial meanings of *on* and *over* motivate the characteristics of their extended/abstract senses at a fine-grained level.

At the same time, the grammatical differences between *influence on* and *influence over* cannot be fully explained and predicted only by the spatial senses of *on* and *over*; that is, their grammatical tendencies and the types of influence they frequently express are conventionally associated with each expression to some degree. This research suggests the importance of examining not only the senses of the prepositions themselves but also the contextual information in which they occur to reveal our knowledge of prepositions.

Works Cited

- Brugman, Claudia M. 1981. *The Story of Over: Polysemy, Semantics and the Structure of the Lexicon*. MA thesis, University of California, Berkeley. Published from New York and London: Garland Press in 1988.
- Deane, Paul D. 2005. Multimodal spatial representation: on the semantic unity of *over*. In Beate Hampe (ed.), *From Perception to Meaning: Image Schemas in Cognitive Linguistics*, 235-282. Berlin: Mouton de Gruyter.
- Dewell, Robert B. 1994. Over again: image-schema transformations in semantic analysis. *Cognitive Linguistics* 5(4): 351-380.
- Evans, Vyvyan and Melanie Green. 2006. *Cognitive Linguistics: An Introduction*. Edinburgh: Edinburgh University Press.
- Fillmore, Charles J., Paul Kay and Mary C. O'Connor. 1988. Regularity and idiomaticity in grammatical constructions: the case of *let alone*. *Language* 64: 501-538.
- Hopper, Paul J. and Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56: 251-299.
- Horiuchi, Fumino and Naoki Otani. To appear. The control senses revisited: the case of the prepositions *over* and *under*. *Selected Papers from the 5th UK-CLA Conference* 3. Available at: <http://uk-cla.org.uk/proceedings>
- Kreitzer, Anatole. 1997. Multiple levels of schematization: a study in the conceptualization of space. *Cognitive Linguistics* 8(4): 291-325.
- Lakoff, George. 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about Mind*. Chicago: The University of Chicago Press.
- Lakoff, George and Mark Johnson. 1980. *Metaphors We Live By*. Chicago: The University of Chicago Press.
- Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*, Vol.1: *Theoretical Prerequisites*. Stanford: Stanford University Press.
- Langacker, Ronald W. 2000. A dynamic usage-based model. In Michael Barlow and Suzanne Kemmer (eds.), *Usage-based Models of Language*, 1-63. Stanford: CSLI Publications.
- Langacker, Ronald W. 2008. *Cognitive Grammar: A Basic Introduction*. Oxford: Oxford University Press.
- Lindstromberg, Seth. 2010. *English Preposition Explained*. Revised edition. Amsterdam: John Benjamins.
- Queller, Kurt. 2001. A usage-based approach to modeling and teaching the phrasal lexicon. In Martin Pütz, Susanne Niemeier and Rane Dirven (eds.), *Applied Cognitive Linguistics II: Language Pedagogy*, 55-83. Berlin: Mouton de Gruyter.
- Taylor, John R. 2006. Polysemy and the lexicon. In Gitte Kristiansen, Michel Achard, Rene Dirven and Francisco J. Ruiz de Mendoza Ibanez (eds.), *Cognitive Linguistics: Current Applications and Future Perspectives*, 51-80. Berlin: Mouton de Gruyter.
- Taylor, John R. 2012. *The Mental Corpus*. Oxford: Oxford University Press.
- Tyler, Andrea and Vyvyan Evans. 2001. Reconsidering prepositional polysemy networks: the case of *over*. *Language* 77(4): 724-65.
- Tyler, Andrea and Vyvyan Evans. 2003. *The Semantics of English Prepositions*. Cambridge: Cambridge University Press.

Corpus and Dictionaries

British National Corpus [BNC]

Kenkyusha's New Japanese-English Dictionary, 5th edition. 2003. Tokyo: Kenkyusha. [KNJED5]

Longman Dictionary of Contemporary English Online. Available at: <http://www.ldoceonline.com>
[LDOCE]

Oxford Advanced Learner's Dictionary, 7th edition. 2005. Oxford: Oxford University Press. [OALD7]

Oxford Business English Dictionary for Learners of English. 2005. Oxford: Oxford University Press.
[OBED]

Oxford Dictionary of English, 2nd edition. 2003. Oxford: Oxford University Press. [ODE2]

Oxford English Dictionary Online. Available at: <http://www.oed.com> [OED]

