Vocabulary Acquisition Process in Second Language Acquisition

Norifumi Ueda
Waseda University
Kota Kodachi
Shiba Junior/Senior High School

Abstract

In this study, we examine the acquisition process in vocabulary acquisition by Japanese high school students and whether image schemata in cognitive linguistics can be applied to teaching prepositions. In Ueda (2003), it is found that, from the result, image schemata given to second language learners of English can give effect to understanding polysemous verbs by using Multidimensional analysis (MDA). In the experiment, we examined (1) Can Image schemata give any effects to SLLE in understanding the meanings of prepositions, *in* and *at*?: and (2) how do SLLE get effects in understanding the meanings of prepositions by image schemata? We found that image schemata can give some effects to Japanese high school students in the process of understanding prepositions.

1. Introduction

The notion of Image schema in cognitive linguistics can be useful for teaching foreign languages, because the usage of prepositions can be easy for students to understand by image schema. The purpose of his study is to investigate how the second language learners of English (SLLE) acquire meanings of English prepositions, *in* and *at* through the instruction by using image schemata based on cognitive linguistics.

1.1. Characteristics of Prototypical Meaning

According to Hatch and Brown (1995), the characteristics of the prototype are defined as follows:

1. Items judged to be typical members of a concept can be categorized more efficiently than atypical ones.
2. Typical members are learned first by children.
3. Prototypes are named first when subjects are asked to give examples of members of a concept.
4. Prototypes serves as cognitive reference points.

(Hatch and Brown 1995:52)

1.2. Prepositions in Cognitive Linguistics

In Cognitive linguistics, prepositions are considered polysemous words, the meanings of which have gradience, fussiness of boundaries, and partial overlap. (Shclesinger, 1995) And also, in Cognitive Linguistics, word meanings have semantic networks. (Lakoff 1987, Dewell 1994) Dewell (1994) explain each usage of *over* from the perspective of semantic network. This can be explained as follows: *over* has some attributes, and each usage of *over* contains particular attributes.

2. Preliminary Study

Before conducting the experiment, the meanings of prepositions *in* and *at* in 21 sentences as the material were examined. Each preposition were categorized into some usages such as 'place', 'state', time' and 'target' .(Table 1) As is shown in Table1, it was found that each usage of prepositions have different meanings, even if some usages are labeled by the same notion, for example, 'Time' and 'Place'. For example, 'in the country' in Sentence 1 and 'in the darkness' are categorized into 'Place', but 'in the country' has more concrete notion than 'in the darkness'.

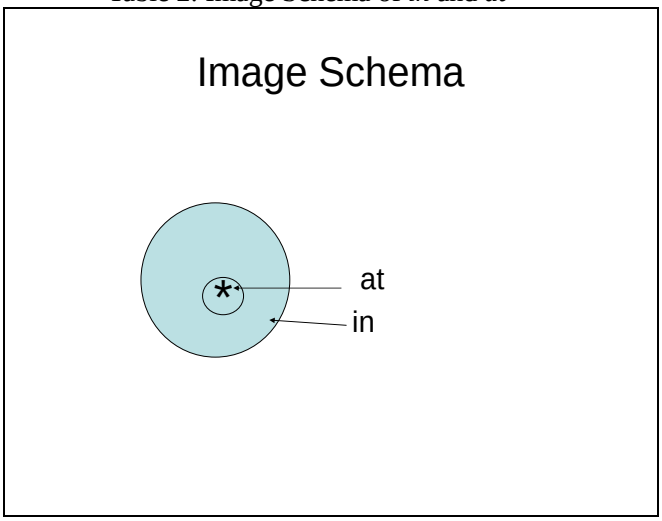
We also investigated what kinds of characteristics individual sentences containing the prepositions have and found followings: 'time', 'place', 'domain size', 'metaphoric meaning', 'concrete meaning', 'movement' ,'state', 'specific meaning', 'common meaning', and 'idiomatic expression'. Each label in Table 1 contains some typical characteristics as attributes: For example, prototypical attributes of 'Place' are 'place', domain size', 'concrete meaning', 'state', 'specific meaning'.

Table 1: Sentences used in Experiment

S1	This is the highest mountain in this country.	Place
S2	They were swimming in the pool then.	Place
S3	He dipped a pen in the ink.	Place
S4	He was sitting alone in the darkness.	Place
S5	I am in love.	State
S6	The boys dressed in their best clothes.	Wearing
S7	The letter was written in English.	Means
S8	The conference was held in 1998.	Time
S9	She returned in a few minutes.	Time
S10	The building is at the corner.	Place
S11	She works at the hospital.	Time
S12	We woke at night.	Time
S13	What are you doing at the weekend?	Age
S14	You can retire at 60.	Target
S15	He aimed the ball at the hole.	Target
S16	She looked at me.	Target
S17	Our country is now at war.	Time
S18	I think Mr. Smith is at lunch.	Place
S19	I bought this coat at 50% discount.	Price
S20	He is good at playing the piano.	ability
S21	He drove his car at full speed.	speed

And the critical difference between *in* and *at* is in 'domain size': *in* has wider domain size than *at*. This difference can be easily expressed by using image schema in Table 2.

Table 2: Image Schema of *in* and *at*



Notes: Each circle shows the domain *in* and *at* can indicate, and *in* can show the wider domain than *at*.

3. Experiment

In the experiment, we examined how the attributes contained in the sentences in Table 1 can be changed by Image Schemata.

3.1. Research Questions

In the experiment, we examined (1) Can Image schemata give any effects to SLLE in understanding the meanings of prepositions, *in* and *at*?: and (2) how do SLLE get effects in understanding the meanings of prepositions by image schemata?

3.2. Participants and Method

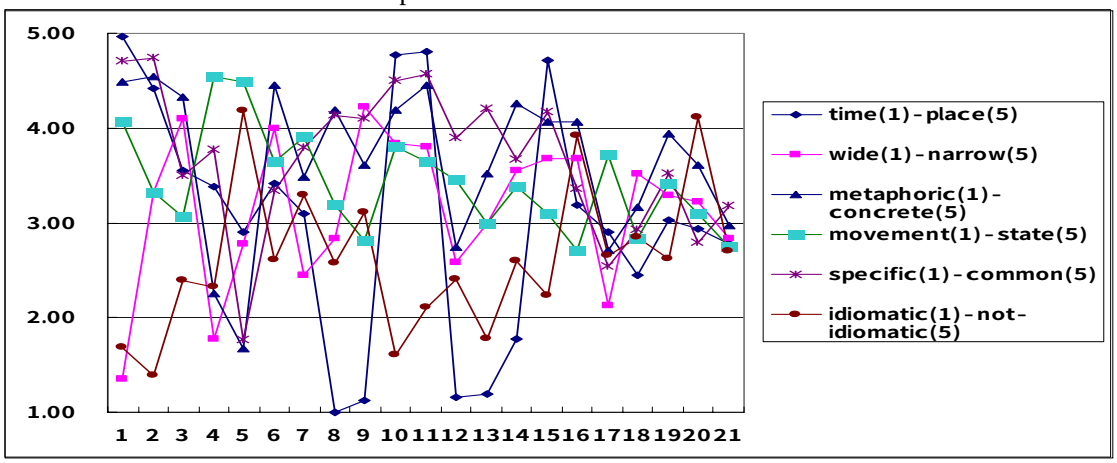
Two experiments, Pretest and Posttest, were conducted. 31 Japanese high school students participated in the experiment. In Pretest, the participants were asked to judge 6 images of the sentences according to the 5-point scalings. Each image consisted of contrastive notions as follows: (1) time – place, (2) wide – narrow, (3) metaphoric – concrete, (4) movement – state, (5) specific – common, and (6) Idiomatic – not-idiomatic. And in Posttest, the participants were given the instruction about the prepositions by using Image schemata, then they were asked to make judgment by 5-point scaling. Each result was analyzed using correspondence analysis to make it clear how different the image participants have in their mind is.

3.3. Results

Firstly, the result was analyzed to examine how participants understand the images of the sentences. As is shown in Table 3, it was found that participants understand the meanings of each sentence from the various perspectives. For example, participants considered that, *in* in S1: “This is the highest mountain in this country” has the images such as ‘place’, ‘wide’, ‘concrete’,

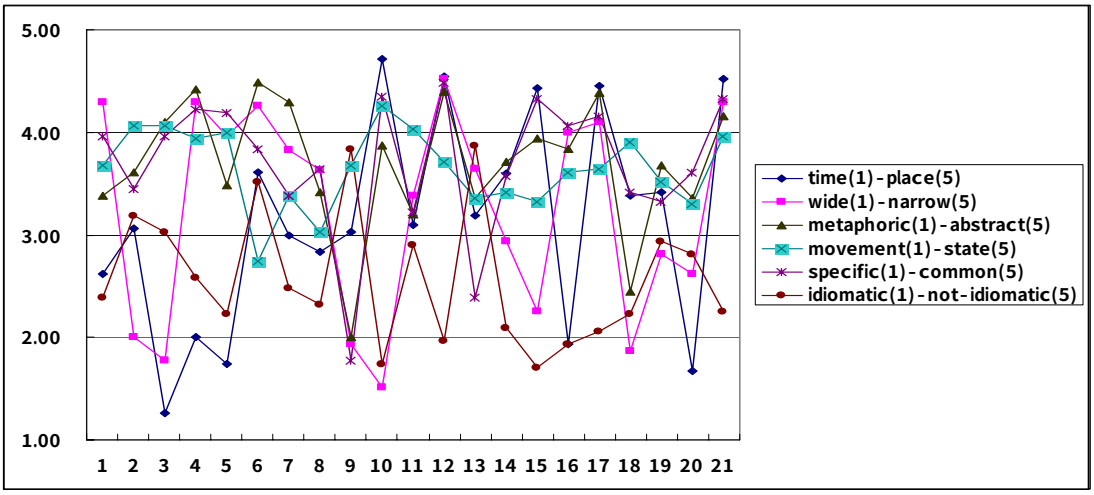
‘state’, ‘common’, and ‘idiomatic’. On the other hand, though *in* in S4 is labeled by the same notion, ‘Place’, participants judged that it contained the characteristics: ‘wide’, ‘metaphoric’, ‘state’, ‘common’ and ‘idiomatic’. From the results, we can say that participants understand the prepositions by using various images and that they can give different responses to the meanings of prepositions even if they are categorized into the same label.

Table3: The Results of Pretest in Experiment



Note: Horizontal axis represents sentence number and vertical axis, scaling.

Table 4: The Results of Posttest in Experiment

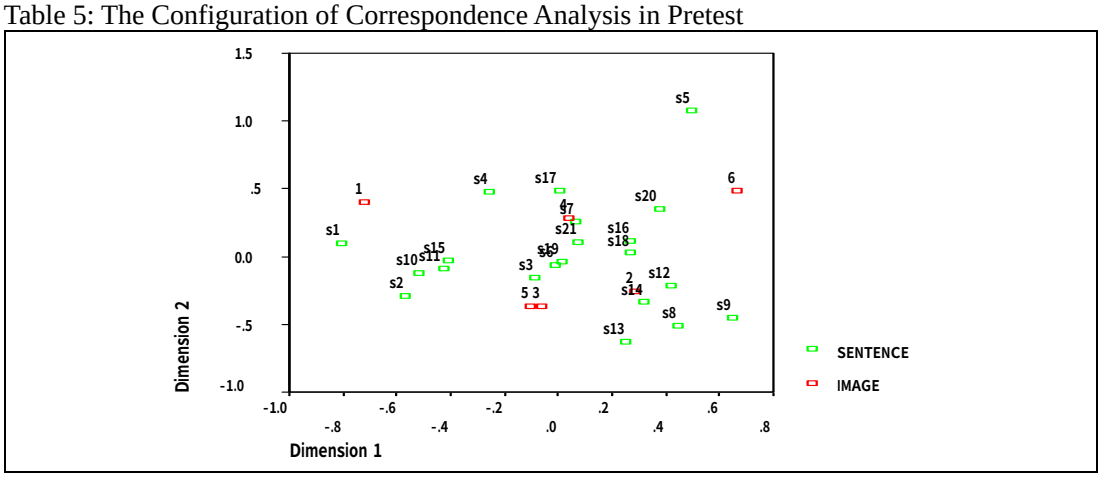


Note: Horizontal axis represents sentence number and vertical axis, scaling.

Secondly, we analyzed the results by correspondence analysis to examine how the image schemata can give effects to understanding the prepositions by participants. For the analysis, we could utilize only scores for the following variables: (1)place, (2)narrow, (3)concrete, (4)state, (5)common, and (6)not-idiomatic. Hence, the configurations of correspondence analysis in Table 5 and 6 represent the relations between usages of the prepositions and images. After the treatment, participants got some effects by the image schema in the images of some prepositions. For example, S 2 and S17 shifted near to Image (1), ‘place’. This means that participants came to think

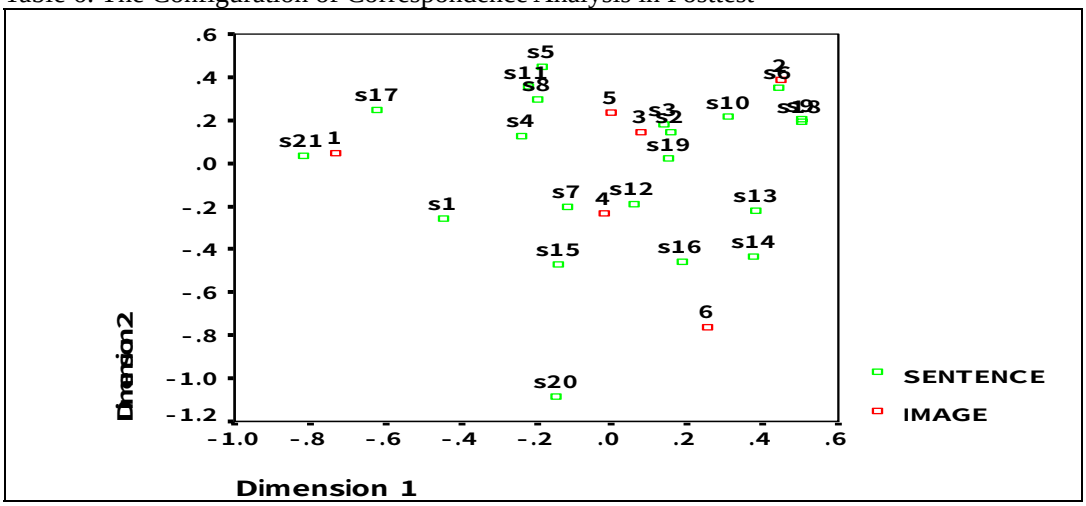
the meanings of the prepositions in S2 and S17 were similar to Image (1). And especially, S17 shifted from Image (4) to Image (1). The meanings of S6 and S10 were also judged similar to Image (2), 'narrow'.

Table 5: The Configuration of Correspondence Analysis in Pretest



Notes: 1-6 show each image: 1 represents 'place'; 2, 'narrow'; 3, 'abstract'; 4, 'state'; 5, 'common'; and 6, not-idiomatic'.

Table 6: The Configuration of Correspondence Analysis in Posttest



Notes: 1-6 show each image: 1 represents 'place'; 2, 'narrow'; 3, 'abstract'; 4, 'state'; 5, 'common'; and 6, not-idiomatic'.

4. Conclusion

The results from the experiment support the hypothesis in cognitive grammar that each usage of the prepositions has particular attributes and create the semantic network. We find that presenting Image schemata can give some effects on the understanding of prepositions by second language learners of English. Hence, image schemata in cognitive linguistics can be useful tools in teaching settings.

References

Dewell, Robert B. (1994). “over Again”: Image－Schema Transformations in Semantic Analysis.” *Coginitive Linguistics 5: 351-380*.

Schlesinger, Izachak M. (1995). *Cognitive Space and Linguistic Case*. Cambridge: Cambridge University Press.

Hatch, E. M. and Brown, C. (1995). *Vocabulary, Semantics, and Language Education*. Cambridge: Cambridge University Press.

Lakoff, George. (1987). *Women, Fire, and Dangerous Things: What Categories Reveal about the mind*. Chicago: University of Chicago Press.

Ueda, Norifumi (2003). “How do the SLA Learners Understand the Deictic Verb, *Come*? : from the perspective of cognitive semantics.” *Proceedings of the 8th conference of Pan-Pacific Association of Applied Linguistics*. Pp.524-528