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Self-Corrected Comprehension of Near-Synonymous Verbs via Comparative Visualizations

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Abstract

Building from previous studies, this paper explores the nature of English conceptual structure of state differentiation for the holding/carrying near-synonyms in random and paired sessions. To test for such conceptual differences, Imai & Saji's (2013) instrument was adopted where 56 monolingual English speakers were asked to name the holding/carrying near-synonyms in random and paired sessions. In each session, the order of stimuli presentation was manipulated. In random session, the stimuli was randomized in a way that a holding action may or may not be successively followed by a carrying action; whereas, in the paired session, the stimuli was paired in a way that a holding action must be successively followed by a carrying action. The qualitative data were coded to indicate multiple cognitive categories as to how state and manner distinctions were perceived for further quantitative analysis. Overall, the results demonstrated that native English speakers have a differentiated conceptual structure for the state of holding and carrying near-synonyms and that structure is sensitive to the order of stimuli presentation. Implications for such results were discussed in terms of near-synonymous difficulty and pedagogical recommendations for L2 English learners.

Keywords: conceptual structure, conceptual distinctions/differentiations, cosslinguisticcross linguistic differences, near-synonyms.

Introduction

Languages differ in the level of lexical and conceptual distinctions they make in a specific domain (Bowerman, 2005; Choi & Bowerman, 1991; Imai & Saji, 2013; Saji, et. Al, 2011). Choi & Bowerman (1991), for example, noted that the English verb 'put on' for clothing is further differentiated in Korean. Korean language differentiates between different types of putting. *Ssuta* is used for putting on for objects like glasses, face mask, and umbrella). For putting on the trunk or legs, Koreans use *ipta* (e.g., coat, pants, shirts, and skirts). For putting on the feet, they use *sinta* (e.g., shoes, roller skates, socks). Also, for putting on their waist or wrist, they use *chata* (e.g., belts or bracelets). Moreover, Bowerman (2005) noted that the Japanese language represents different conceptual distinctions. Japanese use *kaburu* for putting on the head; they use *kiru* for upper torso and *haku* for lower torso (Bowerman, 2005). In the domain of consumption, English speakers differentiate between solid food (e.g., eat), liquids (e.g., drink), and tobacco (smoke) (Bowerman, 2005). However, German has similar differentiation but it distinguishes between human eating (e.g. essen) and animal eating (e.g., fressen). Moreover, Tzeltal Mayan language uses different verbs of eating according to what is eaten. They use the verb (*ti*') for meat; they use (*we*') for grained-based food and tortillas and (*lo*') for soft things like bananas (Brown, 2001).

On the other hand, Saji & associates (2011) investigated how Chinese children undergo the conceptual development of near-synonymous verbs for the domain of holding and carrying. Mandarin Chinese makes finer conceptual distinctions in the manner of these verbs than English does; there are 13 Chinese verbs of carrying/holding that represent different denotata in the real world. For example, an action of carrying/holding on one's head is denoted by 'ding', whereas carrying/holding an object on one's shoulder is 'kang'. Moreover, carrying/holding with two arms is denoted by 'bao' whereas if the object was held with one arm at one side of the body, this action is denoted by 'jia'. Other Chinese verbs such as (*na*), (*ti*) , and (*lin*) can refer to carrying/holding actions by the use of one hand; whereas some other verbs rely on the shape of the hand that holds the object. Although all of these actions are conceptually distinct in Mandarin Chinese and given 13 different verbs, they are conceptually indistinct in English and given two verbs only 'carrying/holding', as to whether the doer of the action is moving (then, carrying) or standing-still (then, holding). In a follow up study, Imai & Saji (2013) were interested in how L1 Chinese children learners and adult L2 Japanese and Korean learners of Chinese learn the near-synonyms of the carrying/holding verbs and develop their meanings to resemble adult Chinese native speakers. They were concerned with the way the naming verb patterns of adult L2 Japanese and Korean learners of Chinese was done in comparison with the Chinese children learners and, whether they both follow the same word learning mechanism. However, although the main assumption was tested across Mandarin Chinese, Korean and Japanese, this assumption was not tested for English to provide an empirical evidence for the state differentiation.

Research Objective

The study seeks to figure out the conceptual representations of the holding/carrying domain for monolingual English native speakers.

Research Questions

For the purpose of the study, two research questions were constructed:

1. Do Monolingual English Native Speakers (MES) have a differentiated conceptual structure in terms of the state of holding/carrying near-synonyms?
2. Do Monolingual English Speakers (MES) have a constant conceptual structure in terms of the state of holding/carrying near-synonyms?

Research Design

Method

This research adopted the psycholinguistic-intersubjective approach to the study of cross linguistic influence where cross sectional design had been employed. The psycholinguistic-intersubjective approach was adopted because it concerned the investigations of the internal language processing and representation of language users where the main emphasis is directed to a large scale and well defined groups of language users (Jarvis & Pavlenko, 2008).

Sampling

Sixty questionnaires were distributed to Monolingual English Native Speakers (MES). After data filtration (e.g., empty & incomplete questionnaires), the response rate for MES was 93% (e.g., 56 participants), which is considered statistically acceptable (Sekaran, 1998). The Monolingual English data were collected from different places in Palestine and Malaysia (e.g., Marna House, Gurney Plaza, & Dynamic Language Center) based on accidental sample.

Procedure

Monolingual English speakers were asked to name the verb actions in their L1 English. The visual stimuli used in the questionnaire were twenty six video-clips, where thirteen video-clips represented the action of holding and another thirteen represented the action of carrying (see table 1.0 below). The main assumption underlying the stimuli was that the domain of holding and carrying was differentiated among native English speakers according to whether the doer of the action is standing-still (henceforth, holding) or moving (henceforth, carrying) whereas the manner in which the action was performed was not important (Saji & Imai, 2013).

To test such assumption, the researcher divided the data collection into two sessions to ensure that any observed differentiation is systematically motivated by differentiated conceptual structures and not by the order of presentation. That is, because differentiation can occur as a result of the order of presenting the stimuli (e.g., online recognition for the difference between 'hold' and 'carry' if they were presented in successive order) (Malt, 2013), the researcher followed two sessions of data collection: random and paired presentation of stimuli for all the two groups. For the random session, the researcher presented the stimuli (e.g., 26 video-clips: 13 video-clips represented actions of holding & 13 video-clips represented actions of carrying) in a randomized order where the participants were asked to name these actions. Such randomization ensured that the participants were going to provide a naming pattern that was not affected by the order of presentation. For the paired session, the researcher presented the same stimuli (26 video-clips) in a paired presentation (13 video-clips represented actions of holding & 13 video-clips represented actions of carrying) where the participants were asked to name them. In sum, while the random presentation of stimuli eliminated any influence of task effects on the data, the paired presentation of the stimuli ensured whether the participants differentiated the stimuli if they were presented in successive order.

Validity and Reliability

Different considerations were taken to maintain the various types of validity and reliability. To maintain construct validity, the researcher adopted an established instrument (the stimuli for Saji & Imai's 2013) for measuring the construct in interest. To maintain face validity, the researcher used visual stimuli examples (e.g., three pictures) before conducting the actual study because participants seemed unfamiliar to such instrument. Furthermore, the researcher had taken different procedures to maintain internal validity. First, the researcher had matched the groups of participants on the same English proficiency level so as any differences in L2 English performance cannot be attributable to differences in the proficiency level. Second, the researcher took into consideration a quiet location for collecting the data in the research. Third, the researcher ensured that the surveys employed have clear task instructions and questions. The researcher ensured that the test instructions and questions are clarified to participants by showing them examples of similar actions presented on three pictures to describe. The first picture showed a boy riding a bicycle, the second a girl eating an ice-cream, and a rabbit eating a carrot. The participants were told that the description sought in the actual study was to describe the actions themselves and not the individual objects presented in the stimulus. Fourth, to maintain external validity in relation to the type of sampling being used, the researcher included biodata information for the readers so as they know to which group of adult L2 English learners the findings would be generalizable. Moreover, biodata information was also included for replication purposes so as other researchers can replicate the findings and make judgments about their generalizability.

Research Hypotheses

Two hypotheses were developed for the study:

1- Monolingual English Speakers do not have a differentiated conceptual structure in terms of the state of holding/carrying near-synonyms?
2- Monolingual English Speakers have a constant conceptual structure in terms of the state of holding/carrying near-synonyms?

Data Analysis

For the Monolingual English speakers (MES), there were 2912 responses (56 participants multiplied by 52 video-clips equaled 2912). Because the participants' responses were qualitative in nature, they were to be coded for quantitative statistical analysis. Basically, the whole data were coded in terms of semantic, stative and locomotive levels where certain and consistent criteria were considered at each level. The data were coded in a way that it can be testable for the conceptual structure of holding/carrying in terms of state and manner differentiations. For the semantic coding, the basic criterion was semantic interchangeability. That is, if two answers were semantically interchangeable in a flexible manner, they were coded under the same code but if they were non-interchangeable, they were coded under two different codes. The first procedure for semantic coding was to give codes (letters & numbers) for the same answer and a different code for a different answer. Specifically, after the data entry process was complete, where the columns represented the video-clips and the rows represented the number of students, the researcher gave the letter (e.g., C) to stand for the carrying actions and the letter (e.g., R or P) to stand for the random or paired session), while the numbers were used to stand for different semantic meanings. Similarly, the researcher gave the letter (e.g., H) to stand for the holding actions and the letter (e.g., R or P) to stand for the random or paired session), while the numbers were used to stand for different semantic meanings. For stative coding, the basic criterion was to

indicate the state of the action of holding and carrying. It was assumed that the domain of holding and carrying was differentiated among native English speakers according to whether the doer of the action is standing-still (henceforth, holding) or moving (henceforth, carrying) whereas the manner in which the action was performed was not important (Saji & Imai, 2013). Therefore, the letter (e.g., S) for the state of action and individual minus and plus symbols (e.g., -/+) or a combination of them were used to indicate the state of the actions vis-à-vis the semantic codes across the four naming patterns. Stative coding enables the researcher to test such assumption across the participant groups. Finally, for the locomotive coding, the basic criterion was to indicate the manner of the action of holding and carrying. It was assumed that the domain of holding and carrying was differentiated among native English speakers according to whether the doer of the action is standing-still (henceforth, holding) or moving (henceforth, carrying) whereas the manner in which the action was performed was not important (Saji & Imai, 2013). Therefore, the letter (e.g., M) for the manner of action and individual minus and plus symbols (e.g., -/+) or a combination of them were used to indicate the manner of the actions vis-à-vis the semantic codes across the two naming patterns. Manner coding enables the researcher to test such assumption across the participant groups.

Results

As noted earlier, the main research objectives were to test whether (MES) have a differentiated conceptual structure in terms of the state of holding/carrying near-synonyms and whether such conceptual structure is constant or dynamic. To test for state differentiation in terms of standing-still or moving, the correct and incorrect responses in relation to each action (e.g., hold or carry actions) and session (e.g., random or paired) were counted for their percentages and tested for their statistical significance. First, to test for standing-still differentiation in the random session, the mean of percent for the correct responses (e.g., the use of holding words for the holding actions) was 47.25 % whereas to the mean of percent for the incorrect responses (e.g., the use of holding words for the carrying actions) was 25.82%. In other words, the mean of percent for the correct responses for holding actions in the random session was 47.25 % and the mean of percent for the incorrect responses for the holding actions in the random session was 25.82%. To test for any statistical differences for the responses, the means of percent for correct and incorrect responses were tested by related Samples T-test where the t value equaled 4.346, and the significance level equaled 0.000. This means that there are statistical significant differences at 0.05 level between mean of percent of correct use and mean of percent for incorrect use for holding actions and these differences equaled 21.43%, favoring the correct responses, which indicated that the correct responses were significant in the data. Second, to test for the moving differentiation in the random session, the mean of percent for the correct responses (e.g., the use of carrying words for the carrying actions) was 54.4 % whereas to the mean of percent for the incorrect responses (e.g., the use of carrying words for the holding actions) was 35.16 %. In other words, the mean of percent for the correct responses for carrying actions in the random session was 54.4 % and the mean of percent for the incorrect responses for the carrying actions in the random session was 35.16 %. To test for any statistical differences for the responses, the mean of percent for correct and incorrect responses were tested by related Samples T-test where the t value equaled 4.195, and the significance level equaled 0.000. This means that there are statistical significant differences at 0.05 level between mean of percent of correct use and mean of percent of incorrect use for carrying actions and these differences

equaled 19.24 %, favoring the correct responses, which indicated that the correct responses were significant in the data.

Third, to test for the standing-still differentiation in the paired session, the mean of percent for the correct responses (e.g., the use of holding words for the holding actions) was 72.53 % whereas to the mean of percent for the incorrect responses (e.g., the use of holding words for the carrying actions) was 20.88 %. In other words, the mean of percent for the correct responses for holding actions in the random session was 72.53 % and the mean of percent for the incorrect responses for the holding actions in the random session was 20.88 %. To test for any statistical differences for the responses, the mean of percent for correct and incorrect responses were tested by related Samples T-test where the t value equaled 9.039 and the significance level equaled 0.000. This means that there are statistical significant differences at 0.05 level between mean of percent of correct use and mean of percent of incorrect use for holding actions and these differences equaled 51.65 %, favoring the correct responses, which indicated that the correct responses were significant in the data. Fourth, to test for the moving differentiation in the random session, the mean of percent for the correct responses (e.g., the use of carrying words for the carrying actions) was 77.47 % whereas to the mean of percent for the incorrect responses (e.g., the use of carrying words for the holding actions) was 24.73 %. In other words, the mean percent for the correct responses for carrying actions in the random session was 77.47 % and the mean percent for the incorrect responses for the carrying actions in the random session was 24.73 %. To test for any statistical differences for the responses, the means of percent for correct and incorrect responses were tested by related Samples T-test where the t value equaled 9.378, and the significance level equaled 0.000. This means that there are statistical significant differences at 0.05 level between mean of percent for correct use and mean of percent of incorrect use for carrying actions and these differences equaled 52.74 %, favoring the correct responses, which indicated that the correct responses were significant in the data.

Discussion

This study was motivated by two main objectives. The first objective was to test Saji & Imai's (2013) assumption regarding the state differentiation for holding/carrying near-synonyms for native English speakers. The second objective was to test whether state differentiation of near-synonyms differs as a function of order of stimuli presentation. The results have demonstrated that native English speakers have a differentiated conceptual structure for holding/carrying near-synonyms in terms of state differentiation. In other words, native English speakers differentiate or recognize a difference for holding/carrying near-synonyms as to whether the action is standing-still or moving. The results supported Saji and Imai's (2013) assumption that the defining conceptual criterion for the near-synonyms of hold and carry verbs was the state differentiation. Unexpectedly, however, the state differentiation was fully represented in the data, meaning that not all native English speakers were able to differentiate near-synonyms of hold and carry verbs. Such result came in line with Jarvis' (2007) theoretical observation that even native speakers show differences in language use and do not necessarily have to show a full agreement on object naming. The mean of percent for the correct responses for the holding actions in the random session was 47.25 %, which reached significance level, whereas the remaining percent was for the incorrect responses. Similarly, the mean of percent for the correct responses for the carrying actions in the random session was 54.40 percent which reached significance level, whereas the remaining percent was for the incorrect responses. That

is, although correct responses for either holding or carrying actions reached significance level, the data demonstrated that there was not unanimous agreement among native English speakers for synonymous action description. This disagreement of action description indicates that correct near-synonymous description are still difficult for native speakers, where such difficulty might be due to the ostensible similarity of near-synonyms themselves. Interestingly, however, there was an increase of the mean of percent for either holding or carrying in the paired session as compared to the random session. That is, the mean of percent for the correct responses for the holding actions in the paired session was 72.53 %, indicating an increase of 25.28 %, whereas the remaining percent was for the incorrect responses. Similarly, the mean of percent for the correct responses for the carrying actions in the random session was 77.47 %, indicating an increase of 23.07 %, whereas the remaining percent was for the incorrect responses. The increase of the mean of percent for either holding or carrying actions in the paired session indicated that the conceptual structure of state differentiation is not constant and can be changeable as a function of stimuli presentation order. When two actions that shared the same manner but differed in state as to whether the doer of the action was standing-still or moving were presented in successive order, the conceptual differentiation of state increased. This increase of conceptual distinction recognition designated an important implication for the teaching and learning of near-synonyms. In the paired session where every holding action was visually presented with its corresponding carrying action in successive order and comparative manner, participants were able to recognize the state difference as a defining conceptual criterion between the near-synonyms of hold and carry. This increase of conceptual recognition was due to the comparative order of visual presentation. This result comes in line with the generative theory of multimedia learning (Mayer, 1997, 2001) and with many empirical studies that investigated visual aids and vocabulary acquisition and comprehension (Al-Seghayer, 2001; Chun & Plass, 1996; Jones & Plass, 2002; Plass, Chun, Mayer, & Leutner, 1998; Yanguas, 2009; Yeh & Wang, 2003; Yoshii, 2006).

In conclusion, this study demonstrated that comparative visual aids (e.g., video-clips) can motivate and even enhance self-correction, leading to a better near-synonymous descriptions because participants were sensitized to the differences visually in a comparative manner. Therefore, as the result indicated, comparative visualizations are recommended teaching method for better use of near-synonyms.

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Appendixes

Table 1.Action Stimuli Videos

		Random Session		Paired Session	
Manner	Object	Carrying	Holding	Carrying	Holding
An object in both arms	Stuffed animal	Vid. 26	Vid. 10	Vid. 2	Vid. 1
An object on the back	Rucksack	Vid. 19	Vid. 8	Vid. 4	Vid. 3
An object on the top of head	Wooden bowl	Vid. 6	Vid. 20	Vid. 6	Vid. 5
An object horizontally level with both hands	Glass bowl with water	Vid. 13	Vid. 18	Vid. 8	Vid. 7
An object under one arm	Square bag	Vid. 9	Vid. 14	Vid. 10	Vid. 9
An object by lifting the object over the head	Square box	Vid. 23	Vid. 24	Vid. 12	Vid. 11
An object on the shoulder	Pipe	Vid. 2	Vid. 5	Vid. 14	Vid. 13
An object, hanging it on the shoulder	Tote bag	Vid. 22	Vid. 17	Vid. 16	Vid. 15
An object, dangling it with one hand	Plastic bag	Vid. 1	Vid. 16	Vid. 18	Vid. 17
An object with one hand	Plastic bottle	Vid. 25	Vid. 3	Vid. 20	Vid. 19
An object cautiously in both arms	Bouquet	Vid. 15	Vid. 11	Vid. 22	Vid. 21
An object, dangling it around the arm	Handbag	Vid. 7	Vid. 12	Vid.24	Vid. 23
An object in the palm(s)	Tray	Vid. 21	Vid. 4	Vid. 26	Vid. 25

Table 2. T Test for the differences of mean of percent for state differentiation in the random session

Use	**State**	**Mean**	**SD**	**T-Value**	**Sig.**
Correct Use	Hold on Hold	47.25%	25.89%	4.346	0.000
Incorrect Use	Hold on Carry	25.82%	22.46%		
Incorrect Use	Carry on Hold	35.16%	20.68%	4.195	0.000
Correct Use	Carry on Carry	54.40%	29.84%		

Table 1.1

Table 3. T Test for the differences of mean of percent for state differentiation in the random session

Use	State	Mean	SD	T-Value	Sig.
Correct Use	Hold on Hold	72.53 %	19.83%	9.039	0.000
Incorrect Use	Hold on Carry	20.88 %	28.21%		
Incorrect Use	Carry on Hold	24.73 %	19.50%	9.378	0.000
Correct Use	Carry on Carry	77.47 %	27.28%		

Table 1.2