Yi-chen Chen* and Huei-ling Lai

Developing EFL learners' metaphoric competence through cognitive-oriented methods

Abstract: This study evaluated two cognitive-oriented methods for learning figurative language in an EFL context to develop metaphoric competence. Sixty-eight Taiwanese university students participated in the experiment and were separated into two groups: one group received instruction involving conceptual metaphors, while the other group received instruction involving metaphoric mappings. A test was designed to measure the participants' ability to recognize metaphors and metonymies. The data collected from the pre-tests and post-tests were analyzed using a multiple regression model. The results demonstrated that both methods improved learners' awareness and retention of figurative language, confirming the beneficial influence of explicit instruction; in addition, the instruction on metaphoric mappings was more helpful in facilitating learners' awareness of expressions involving more abstract concepts with complicated mapping relationships. The findings shed light on the effectiveness of cognitive-oriented methods in the EFL teaching and learning of figurative expressions.

Keywords: metaphoric competence, cognitive linguistics, EFL, explicit instruction, metaphor and metonymy

1 Introduction

Metaphoric competence refers to the ability that a language user needs in terms of comprehending and utilizing figurative language, including metaphors and metonymies (Littlemore 1998, 2001). Such competence is important for facilitating efficient communication (Ortony 1975), as well as for revealing insights into a culture (Lantolf 1999). Littlemore and Low (2006) have suggested that metaphoric competence should be considered as equally important as *communicative competence.* By the same token, for L2 language learners, metaphoric competence is

---

*Corresponding author: Yi-chen Chen, Department of Foreign Languages and Applied Linguistics, Yuan Ze University, 135 Yuan-Tung Road, Chung Li 32003, Taiwan,
E-mail: yicc@saturn.yzu.edu.tw
Huei-ling Lai, Department of English, National Chengchi University, Taipei City, Taiwan

knowledge that must be acquired in the language learning process to reach a higher level of proficiency.

There have been several studies in the last two decades on ways to develop L2 learners' metaphoric competence. These have involved learning the etymology of the metaphorical language (Boers 2001; Boers et al. 2004, 2007; Dong 2004), inferring metaphoric meanings from context (Boers 2000a; Dong 2004), guessing the meanings of imageable metaphorical expressions (Boers and Demecheleer 2001; Boers and Stengers 2008), and participating in explicit discussions concerning cross-linguistic comparisons (Deignan et al. 1997; Low 1988). Among those methods, Boers' (2000a, 2000b, 2001) cognitive-oriented method, which implements metaphoric themes – a.k.a. conceptual metaphors – during the learning process, has provided a great amount of empirical evidence on its beneficial effects on L2 learners' awareness and retention enhancement in learning figurative expressions.

Boers' cognitive-oriented method involving conceptual metaphors has led to the need for further investigation. First, the method focuses mainly on raising learners' awareness of semantic motivation, without addressing possible gaps between different cultures and languages; figurative language is rooted not only in languages but also in cultures and conventions (Kövecses 2000). Conflicts between L1 and L2 knowledge may cause great difficulties in learning (Kövecses 2001), let alone the interferences caused by L1-to-L2 transfer due to their similarities. Second, Boers' studies were conducted primarily in European countries. The question of whether the method involving conceptual metaphors could also be effective for learners of other native tongues, such as Chinese, is in need of further research. If no cross-linguistic similarities can be perceived, or if the similarities are not salient enough for learners to perceive, there is normally little or no transfer, or even erroneous transfer (Boers and Demecheleer 2001). Such problems caused by the universality and specificity of a culture require further discussion.

To bridge the methodological and pedagogical gaps existing in Boers' cognitive-oriented method, an alternative method, which involves integrating *metaphoric mappings* into L2 learners' learning process, is proposed (Kövecses and Szabó 1996; Kövecses 2001). Presumably, *ontological mappings* that characterize the correspondences between basic constituent elements in the source and target domains may help learners to create links between distinct linguistic expressions of the two languages. In addition, *epistemic mappings* that carry over knowledge about elements in the source domain onto elements in the target domain may help learners to apply inference from one domain to another. The idea of using metaphoric mappings as explicit instruction not only follows the trend of cognitive linguistics, which values awareness and motivation, but also deals with possible linguistic and cultural gaps by utilizing learners' already-

existent world knowledge and universal concepts. However, this idea has not yet been tested empirically, and hence researchers have not been able to establish its effects on L2 learning.

The present study, therefore, aims to evaluate the two cognitive-oriented methods in teaching Chinese EFL learners metaphoric and metonymic expressions, determine the methods' effects on L2 figurative language learning, and find an appropriate way to teach EFL learners who speak different native languages. The two methods under investigation include the method of conceptual metaphor (CM), which focuses on providing conceptual metaphors so that learners can compare two domains to find associative characteristics, and the method of metaphoric mapping (MM), which emphasizes mapping processes that learners can use to map between domains and between cultures. The present study targeted native Chinese speakers who are learning English as a foreign language to investigate their ability to find figurative expressions and their retention of what they have learned.

2 Background

2.1 Method of conceptual metaphor (CM)

Boers has complied with the cognitive linguistics' contention that language is *motivated* when it is neither arbitrary nor fully predictable (Lakoff 1987) and has suggested that insightful L2 learning through the process of understanding semantic motivations behind expressions should be implemented often in language classrooms (Boers and Lindstromberg 2006). Boers (2013) has defined the underlying motivation of figurative expressions as *conceptual metaphor* (i.e., *metaphoric theme* or *source domain*), the conceptual projection of the concrete and familiar domain of life onto an abstract and unfamiliar domain. Boers' research has mainly been based on cognitive linguists' contention that figurative language, including metaphors and metonymies, formulates the conceptual system that employs conceptual mechanisms "by which we understand and structure one domain of experience in terms of another domain of a different kind" (Johnson 1987: 15). This contention accords with the cognitive views of SLA, which emphasize learners' conscious reflections on semantic motivations behind expressions.

In Boers' (2000a) study, one group of participants studied a set of figurative expressions with a glossary that gave explanations in terms of conceptual metaphors, like *gradually stop breastfeeding a baby* for the expression *wean off*, while the other group studied the same set of expressions with a glossary

that gave the figurative senses directly, such as *disengage and make independent* for the same expression. The results of an immediate comprehension test and a post-test given three days later both showed that learners who were given explanations of figurative expressions in terms of conceptual metaphors out-performed learners who received explanations of figurative senses of expressions in inferring the expressions' meanings, as well as in reproducing the figurative expressions after three days. Boers thus concluded that enhancing learners' awareness by making explicit reference to the conceptual metaphors of figurative expressions could facilitate L2 learners' comprehension in reading and retention of expressions. In another study by Boers (2000b), the participants in one group received a list organized by the metaphoric themes of given figurative expressions (i.e., conceptual metaphors), such as ANGER IS A HOT FLUID IN A CONTAINER for the expression *I am boiling with anger*; the other group received a list with the same figurative expressions organized in terms of figurative senses, such as *to describe anger as a process*. Boers found that the learners who studied the list of lexis organized by conceptual metaphors were more likely to reproduce the expressions compared with the learners who studied the list organized by traditional functional meanings. These findings supported Boers' claim that providing conceptual metaphors can enhance learners' awareness of novel expressions, and hence facilitate retention of the expressions.

Despite these positive findings, learning figurative expressions by finding source domains and their associative characteristics still has limitations. Even though figurative meaning extensions are believed to be motivated rather than arbitrary, this does not mean that their origins are fully predictable (Boers et al. 2007: 45). Difficulties come mainly from different degrees of conventionalization in the target language and in differences existing between the cultures of the two languages. In the early stage of learning, both similarities and differences between L1 and L2 may facilitate L2 learning (Kellerman 1977; Odlin 1989; Ringbom 1987). With advances in the L2 learning process, conflicts between L1 and L2 knowledge may cause greater difficulties, such as figurative language learning that involves not only languages but also cultures and conventions (Kövecses 2001). In Boers' studies, the participants were either French (Boers 2000a, 2000b) or Dutch (Boers 2000a) speakers whose native language originated from a language family similar to English, meaning the differences between their cultures and languages were relatively smaller compared with other languages. When considering learners whose native languages are relatively more different from English in origin and typology, difficulties caused by cultural gaps may be more serious for these learners. For instance, Taki's (2011) study pointed out that the cultural-specific elements existing in Persian may cause problems of understanding in communication for Iranian EFL learners.

Likewise, for Chinese EFL learners, the learning difficulties may come from not only language barriers but also cultural diversities.

2.2 Method of metaphoric mapping (MM)

Kövecses (2001) proposed a method of using *metaphoric mapping* as explicit instruction to facilitate domain-linking processes between L1 and L2 figurative concepts. For one thing, idiomatic meaning is provided by ontological mapping as well as epistemic correspondence between the source and target domain (Kövecses and Szabó 1996); an emphasis on mapping process is believed to be able to facilitate the meaning making process. For the other, the method combines two main variables, where the conceptual metaphor is introduced and the universality and specificity of cultures and languages is compromised. Based on the results of his small-scale study of Hungarian students learning English figurative expressions, Kövecses (2001) speculated that metaphoric mappings not only improve comprehension but also facilitate production. If two languages have the same conceptual metaphor but different linguistic instantiations, *ontological mappings* of the conceptual metaphor that characterize the ontological correspondences between entities in the source and target domains can guarantee that expressions based on the same conceptual metaphor in two languages will share much of their meaning. For example, English *spit fire* can correspond to Hungarian *tüzet hány* 'vomit fire'. Even though they make use of different words, they share the same conceptual metaphor ANGER IS FIRE; the ontological correspondences between FIRE and ANGER can help learners match *hány* 'vomit' with *spit*, the action to cause more intense fire, and infer meanings of the two expressions. The process of matching the ontological correspondence is illustrated below:

> English *spit fire*: ANGER ←→ FIRE.
>   INTENSITY OF THE ANGER ←→ INTENSITY OF THE HEAT OF FIRE
> Hungarian *tüzet hány* (fire-obj. + vomit): ANGER ←→ FIRE.
>   INTENSITY OF THE ANGER ←→ INTENSITY OF THE HEAT OF FIRE
> The mapping process:
>   English *spit fire* → INTENSITY OF THE ANGER → Hungarian *tüzet hány*

If two languages have different conceptual metaphors, or if one language has a conceptual metaphor that does not exist in the other language, *epistemic mappings* that relate schematic knowledge of the source domain to the target domain help learners to infer their understanding of the familiar domains to the unfamiliar domains. For instance, English *wet blanket* is based on the

conceptual metaphor ENTHUSIASM IS FIRE, whereas Hungarian *ünneprontó* 'festivity-breaker' is based on the conceptual metaphor STATES ARE FUNCTIONAL OBJECTS. However, epistemic mappings of both expressions show that they share an abstract inference: 'cause a state to end'. Thus, Hungarian learners who do not know the expression can conceptually link the unfamiliar part in English ('causing the process of fire to end') to the familiar part of the mapping in Hungarian ('causing the object not to function'). The shared knowledge brought up in the epistemic mappings serves as a trigger for learners to identify the matching part in an existing conceptual metaphor. The process of linking epistemic mappings of the two languages is illustrated below:

> English: *wet blanket*
> ENTHUSIASM IS FIRE: causing the fire to end → causing the state to end
> Hungarian: *ünneprontó* ('festivity-breaker')
> STATES ARE FUNCTIONAL OBJECTS: causing the object not to function
> → causing the state to end
> The mapping process:
> Hungarian *ünneprontó* → causing the state to end → causing the fire to end
> → English *wet blanket*

The adoption of metaphoric mappings seems to be more promising in helping learners to establish an association between conceptual domains and find the metaphoric motivations of expressions. However, Kövecses' (2001) idea of using metaphoric mappings as explicit instruction to deal with cultural gaps has rarely been investigated for its pedagogical effect. Without empirical evidence, the metaphoric mapping method has not been able to claim its effects on L2 learning.

2.3 Research hypotheses

Though both Boers' and Kövecses' methods are cognitive-based approaches, it is possible that they assist learners in different ways. The CM method has shown that it helps learners to draw logical inferences associated with concepts of the source and target domains, such as WARFARE and ECONOMICS. However, some concepts, such as EMOTIONS, are too abstract for learners to schematize, even if the conceptual metaphors or metonymies are given. The MM method, including ontological and epistemic mappings, may help learners to grasp external and difficult notions, analyze and categorize the concepts involved, and map associative characteristics with other notions (Kövecses 2001). Hence, given the more structural and systematic mechanisms encompassed by metaphoric mappings, the present study hypothesizes that the MM

method will raise learners' awareness of figurative expressions more easily than the CM method will.

Moreover, considering the improvement in learners' retention of figurative expressions, even though Boers' studies (2000a, 2000b) have claimed a beneficial effect on retention produced by the CM method, the duration between the two tests was rather short (i.e., one taken immediately and another taken three days after the first test). Thus, the effect on retention claimed by Boers has yet to be firmly established. Presumably, the MM method emphasizes not only structural correspondence through ontological mappings but also knowledge association through epistemic mappings. The processes of elaboration on associative traits between source and target domains are more subtle and more organized than the processes made by conceptual metaphors, which display merely the correspondences between two subjects. Thus, learning through the method of metaphoric mapping conforms to the principle of *meaningful learning*, which emphasizes the process of hierarchical subsumption of new concepts and stored concepts (Ausubel 1963, 1968). Such learning may also result in a deep level of cognitive processing (Ellis 2002) that should be able to foster longer-term retention. The level of confidence in recognizing figurative expressions should thus be higher than that before receiving the instruction. Hence, the present study hypothesizes that the MM method will have a longer-term effect on retention compared with the CM method.

3 Methodology

3.1 Participants

The participants of the study were 68 first-year university students who were non-English majors with levels of English proficiency ranging from intermediate to high intermediate. They were all native Chinese speakers and had learned English for at least six years during their high school years; none of the participants had lived in foreign countries for over one year. Thus, they had less experience of and exposure to English culture and authentic materials than English majors have. The control of the participants' general English proficiency and experience in English was meant to mitigate the impact of factors identified as complicating in previous studies.

The participants attended two separate English classes. Each class received instruction in one type of cognitive-oriented method: one class of 32 participants

received the conceptual metaphor method (the CM group), while the other class of 36 participants received the metaphoric mapping method (the MM group).

3.2 Instruments

The extant literature has shown that metonymy and metaphor interact with each other in intricate ways, such as their boundary does not create a dichotomy but, rather, is fuzzy (Barnden 2010; Goossens 1990; Radden 2003) and their interactions can be manifested as a continuum (see Table 1). However, metonymic expressions as well as discussions of metonymy were absent from the previous studies using the CM method (Boers 2000a, 2000b). More recent research (Chen and Lai 2012) has found that L2 learners respond differently to figurative expressions located on different points of the continuum. These results suggest that only with equal attention to metonymy can L2 learners' metaphoric competence in figurative language, as well as the effect of both types of instruction, be properly claimed.

Table 1: Metonymy-metaphor continuum.

Metonymy	Metaphoric-metonymy	Metonymic-metaphor	Metaphor
Based on metonymic principle	Based on the combination of metaphor and metonymy		Based on conceptual metaphor

To measure the participants' ability to recognize figurative language use in the current study, an awareness test was designed (see Appendix A). The test consisted of 48 English sentences collected from dictionaries, a corpus (the British National Corpus), and the Internet. The sentences were modified to maintain an average sentence length of 10–15 words to ensure that the stimuli were similar and would not influence the learners' judgments. The sentences were also reviewed by native English speakers to ensure their grammaticality and authenticity. In addition, the test items were pilot-tested twice for reliability and construct validity, and ambiguous or questionable items were removed. Thus, among the 48 sentences, 24 sentences contained metaphoric or metonymic expressions and the other 24 sentences were written with chosen keywords or phrases from the sentences with metaphoric/metonymic expressions that contained no figurative intentions in the expressions. Moreover, the sentences

that had metaphoric or metonymic expressions were further categorized into four groups based on the metonymy-metaphor continuum, as shown in Table 1: metonymy (C1), metaphoric-metonymy (C2), metonymic-metaphor (C3), and metaphor (C4).

Each category contained sentences that involved embodied descriptions or body-related expressions, as well as sentences that did not. For sentences belonging to C2, the figurative expressions contained metonymies that applied conceptual metaphors on the basis of the metonymic principle. For instance, in sentence 13, the expression *a tongue-lashing* can be understood figuratively by combining the conceptual metaphor ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR with the conceptual metonymy EFFECT FOR CAUSE. Thus, *to give a tongue-lashing* is an aggressive behavior that metaphorically stands for angry behavior, which in turn metonymically represents anger, so this expression was categorized as a metaphoric-metonymy (C2). As for the sentences categorized in C3, the figurative expressions were formed on the basis of conceptual metaphors but also applied the metonymic principle. Take the expression *a pain in the neck* in sentence 25, for example. The PART FOR WHOLE conceptual metonymy shows that the body's responses can stand for the person's response. For the conceptual metaphor THE CAUSE OF ANGER IS PHYSICAL ANNOYANCE, the expression can be understood figuratively as being annoyed and angry; thus, it was categorized as a metonymic-metaphor (C3).

The participants were asked to read each sentence first and then determine whether the sentence contained metaphoric/metonymic expressions or whether it needed to be understood by thinking figuratively. The participants were required to rate the certainty of their judgments on a scale of 1 to 5; to avoid reading problems caused by unknown vocabulary, one extra option (0) was given as well. The average response of the participants indicated their ability to find metaphors/metonymies. In addition, the differences between the participants' performances before and after receiving the respective instruction indicated the extension of metaphoric awareness and the level of confidence in receiving the instruction.

3.3 Procedure and data collection

The experiment required two successive weeks to complete. The pre-test and instruction were conducted the first week and the post-test was conducted the second week. The CM group and the MM group participated in the experiment respectively, and both groups were led by the same teacher, who had been

trained in both methods of instruction by the researchers before the experiment. The researchers sat in the back of the classrooms and observed without disturbing the class.

At the beginning of the first week, the participants took the pre-test to determine their default level of awareness. After the test, which took 15 minutes to complete, the CM group and the MM group received instruction in conceptual metaphors and metaphoric mappings, respectively. The CM group was given a set of sentences containing figurative expressions about love; the CM-group participants then were given solely the conceptual metaphor *LOVE IS LIKE A JOURNEY* and were asked to illustrate correspondences between two domains: LOVE and JOURNEY. The MM group, on the other hand, was given the same set of sentences along with two paragraphs elaborating on the process of leading a journey and having a relationship, respectively; the participants then compared the two processes to look for correspondences between them.

The participants in both groups completed an activity related to the instruction received in the following class time. Both groups received handouts with 15 figurative expressions about emotions, such as emotion management. The CM group received a randomly arranged list of expressions and written instructions asking them to categorize those expressions into conceptual metaphors by identifying the correspondences between the source and the target domain. The MM group, on the other hand, received a list of expressions that had already been categorized under conceptual metaphors and written instructions asking them to elaborate the mapping relations between the two domains. After 10 minutes, the participants were asked to return the handout, and the teacher then led a discussion based on the participants' answers. Rather than check the correctness of the answers, the discussion was conducted with the intention of confirming the participants' understanding of the method of instruction received; thus, the participants were encouraged to speak about the ways they analyzed the figurative expressions. This instructing-exercising-discussing phase lasted about 35 minutes. It should be noted that the figurative expressions and sentences covered in this phase were carefully selected and did not overlap with the sentences contained in the initial awareness test. The researchers in the classroom observed no overlapping expressions mentioned in either classroom.

During the second week, the participants took the post-test to examine both the effects on retention and whether the two methods caused different learning effects. The test used in the post-teaching phase contained the same set of test items as on the pre-test; however, the order of the items was reshuffled so that the participants' retention of the materials learned the week prior could be measured. Before taking the test, which also took 15 minutes to finish, the

participants were asked whether they had studied relevant subjects during the week to ensure that their performances resulted from the effect of learning.

The research hypotheses were examined using a multiple regression model, which was equivalent to an analysis of variance with covariates (ANCOVA). This model also controlled the effects of some important external factors, including the participants' scores in English on the JCEE, the time spent learning English on their own outside of class, and whether they studied relevant subjects during the week. These effects were calculated during the process of regression testing to exclude possible impacts of the participants' individual background differences.

4 Results

Table 2 shows the mean performance scores of the participants, which indicate that the participants of both the CM group and the MM group made improvements overall. The improvement of scores also indicates that the participants became more certain about their judgments in recognizing metaphoric/metonymic expressions.

Table 2: Mean performance scores of participants in the awareness test.

Type	CM Group		MM Group	
	Pre-test	Post-test	Pre-test	Post-test
With Figurative Expressions (k = 24)	3.50 (0.55)	4.17 (0.43)	3.52 (0.54)	3.97 (0.60)
Without Figurative Expressions (k = 24)	1.84 (0.45)	2.20 (0.66)	1.86 (0.49)	2.05 (0.62)
Sample Size	32		36	

Note: k = number of items; standard deviations are in parentheses.

Table 3 reports the differences in the participants' performances between the pre-test and the post-test. Regarding the sentences containing metaphoric/metonymic expressions, the CM group showed no significant progress, whereas the MM group showed significant differences between the two tests ($\beta = 3.04$, $t = 2.50$, $p < 0.01$). On the other hand, regarding the sentences containing no metaphoric/metonymic expressions, both groups displayed no significant differences between the two tests.

Table 4 reports the comparison of the progress that the CM group and the MM group made in the post-test. The results show that the CM group made more progress than the MM group did in evaluating both sentences with and without

Table 3: Differences in participants' performances between pre-test and post-test.

Variables	Sentences with Metaphoric/ Metonymic Expressions		Sentences without Metaphoric/ Metonymic Expressions	
	CM Group	MM Group	CM Group	MM Group
	β (t-value)	β (t-value)	β (t-value)	β (t-value)
(Constant)	2.15 (0.98)	3.04 (2.50)*	0.10 (0.05)	1.10 (1.23)
Scores	−0.12 (−0.75)	−0.20 (−2.14)[+]	0.00 (0.00)	−.05 (−0.72)
Self-learning Time	−0.03 (−0.47)	0.037 (0.64)	0.05 (0.86)	−0.08 (−1.95)
Review/No Review	0.45 (1.93)	−0.11 (−0.54)	0.28 (1.20)	−0.07 (−0.47)
R^2, F	$R^2 = 0.13$, $F = 1.35$	$R^2 = 0.13$, $F = 1.60$	$R^2 = 0.09$, $F = 0.88$	$R^2 = 0.15$, $F = 1.90$

Note: *$p < 0.05$, one-tailed; [+]$p < 0.05$, two-tailed.

Table 4: Differences in participants' performances between the CM and the MM group.

Variables	Sentences with Metaphoric/Metonymic Expressions	Sentences without Metaphoric/Metonymic Expressions
	β (t-value)	β (t-value)
(Constant)	2.15 (1.00)	0.10 (0.06)
Group	−0.29 (−1.81)	−0.18 (−1.25)
Scores	−0.12 (−0.76)	0.00 (0.01)
Self-learning Time	−0.03 (−0.48)	0.05 (0.99)
Review/No Review	0.45 (1.98)	0.28 (1.38)
GMSC	−0.08 (−0.44)	−0.05 (−0.32)
GMSL	0.07 (0.79)	−0.35 (−1.28)
GMR	−0.57 (−1.81)	−0.13 (−1.86)
R^2, F	$R^2 = 0.15$, $F = 1.56$	$R^2 = 0.13$, $F = 1.31$

Note: Group: The CM group is coded as 0 and the MM group is coded as 1; GMSC: Means of the scores (MSC) multiplied by Group variable (G); GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G); GMR: Means of answers to the review/no review question (MR) multiplied by Group variable (G).

metaphoric/metonymic expressions ($\beta = -0.29$, $t = -1.81$, $p > 0.05$; $\beta = -0.18$, $t = -1.25$, $p > 0.05$, respectively); however, the differences between the two groups were not significant.

The specific ways in which the instruction on metaphoric mappings facilitated steady learning required further investigation. Thus, finer-grained analyses

Table 5: Differences in performances on four categories between the pre-test and the post-test.

	Variables	CM Group	MM Group
		β (t-value)	β (t-value)
C1	(Constant)	−1.85 (−0.49)	2.49 (1.67)
	Scores	0.17 (0.64)	−0.14 (−1.26)
	Self-learning Time	0.03 (0.34)	−.04 (−0.50)
	Review/No Review	−0.12 (−0.31)	−0.24 (−0.92)
	R^2, F	$R^2 = 0.02$, F = 0.17	$R^2 = 0.09$, F = 1.06
C2	(Constant)	3.21 (0.96)	2.30 (1.35)
	Scores	−0.20 (−0.84)	−0.14 (−1.10)
	Self-learning Time	−0.06 (−0.70)	−0.01 (−0.16)
	Review/No Review	0.90 (2.53)[+]	−0.11 (−0.39)
	R^2, F	$R^2 = 0.19$, $F = 2.25$	$R^2 = 0.05$, $F = 0.52$
C3	(Constant)	2.40 (1.26)	2.86 (2.28)*
	Scores	−0.13 (−0.96)	−0.19 (−2.01)[+]
	Self-learning Time	−0.04 (−0.79)	0.02 (0.40)
	Review/No Review	0.01 (0.05)	−0.01 (−0.02)
	R^2, F	$R^2 = 0.05$, $F = 0.46$	$R^2 = 0.11$, $F = 1.43$
C4	(Constant)	4.86 (1.46)	4.49 (2.38)*
	Scores	−0.32 (−1.32)	−0.31 (−2.19)[+]
	Self-learning Time	−0.04 (−0.48)	.17 (1.92)
	Review/No Review	1.03 (2.90)[+]	−0.10 (−0.31)
	R^2, F	$R^2 = 0.25$, $F = 3.18$	$R^2 = 0.18$, $F = 2.31$

Note: C1 = sentences containing metonymic expressions; C2 = sentences containing metaphoric-metonymic expressions; C3 = sentences containing metonymic-metaphoric expressions; and C4 = sentences containing metaphoric expressions; + $p < = 0.05$, one-tailed; *$p < 0.05$, two-tailed.

based on the metaphor-metonymy continuum were conducted and are reported in Table 5. The CM-group participants did not make significant progress on any of the four categories, though they received higher scores on average in the post-test. However, the MM-group participants made significant progress in C3 ($\beta = 2.86$, $t = 2.28$, $p < 0.05$) and in C4 ($\beta = 4.49$, $t = 2.38$, $p < 0.05$).

Table 6 reports the results of the cross-examination between sentences with/without body-related metaphoric/metonymic expressions and the four categories to determine further the effects of transparency and opaqueness on the participants. Regarding the sentences whose metaphoric/metonymic expressions contained body-related descriptions, the participants in both groups did not show any significant progress in the four categories of expressions. However, regarding the sentences whose metaphoric/metonymic

Table 6: Cross-examination of four categories and sentences with/without body-related expressions between the pre-test and the post-test.

Variables		Sentences with body-related expressions		Sentences without body-related expressions	
		CM Group β(t-value)	MM Group β(t-value)	CM Group β (t-value)	MM Group β (t-value)
C1	(Constant)	−1.53 (−0.38)	2.66 (0.92)	−2.16 (−0.47)	0.08 (0.03)
	Scores	0.17 (0.62)	−0.14 (−0.71)	0.17 (0.52)	−0.53 (−1.44)
	Self-learning Time	0.01 (0.17)	−0.14 (−1.77)	0.05 (0.40)	−0.07 (−0.89)
	Review/No Review	−0.19 (−0.46)	0.49 (1.51)	−0.05 (−0.10)	0.08 (0.52)
	R^2, F	$R^2 = 0.02$, $F = 0.19$	$R^2 = 0.14$, $F = 1.79$	$R^2 = 0.01$, $F = 0.13$	$R^2 = 0.09$, $F = 1.03$
C2	(Constant)	5.41 (1.64)	3.23 (0.96)	1.00 (0.18)	1.53 (0.61)
	Scores	−0.37 (−1.60)	−0.21 (−0.89)	−0.01 (−0.04)	0.02 (0.05)
	Self-learning Time	0.03 (0.34)	−0.09 (−1.01)	−0.15 (−1.04)	−0.09 (−0.96)
	Review/No Review	0.60 (1.73)	0.39 (1.03)	1.18 (2.02 $^+$)	−0.02 (−0.10)
	R^2	$R^2 = 0.17$, $F = 1.94$	$R^2 = 0.08$, $F = 0.90$	$R^2 = 0.14$, $F = 1.54$	$R^2 = 0.03$, $F = 0.33$
C3	(Constant)	2.46 (1.15)	−0.05 (−0.02)	2.33 (0.85)	3.33 (2.43)*
	Scores	−0.14 (−0.95)	0.01 (0.05)	−0.11 (−0.59)	−0.08 (−0.38)
	Self-learning time	0.00 (0.11)	−0.00 (−0.02)	−0.08 (−1.18)	−0.07 (−1.31)
	Review/No Review	−0.10 (−0.45)	0.26 (0.85)	0.12 (0.42)	−0.15 (−1.56)
	R^2, F	$R^2 = 0.04$, $F = 0.41$	$R^2 = 0.02$, $F = 0.25$	$R^2 = 0.06$, $F = 0.54$	$R^2 = 0.14$, $F = 1.69$
C4	(Constant)	1.59 (0.36)	3.04 (1.11)	8.12 (1.53)	8.10 (3.09)*
	Scores	−0.08 (−0.28)	−0.22 (−1.12)	−0.54 (−1.43)	0.15 (0.35)
	Self-learning time	−0.02 (−0.22)	0.03 (0.47)	−0.06 (−0.42)	−0.30 (−2.92) $^+$
	Review/No Review	0.69 (1.51)	0.34 (1.09)	1.36 (2.42) $^+$	−0.31 (−1.64)
	R^2, F	$R^2 = 0.08$, $F = 0.77$	$R^2 = 0.09$, $F = 1.00$	$R^2 = 0.21$, $F = 2.45$	$R^2 = 0.29$, $F = 4.41$

Note: *p <.05, two-tailed. $^+$ p < 0.05, one-tailed.

expressions did not contain body-related descriptions, the CM-group partici-
pants did not make any significant progress in any of the four categories,
while the MM-group participants made significant progress in C3 and C4
($\beta = 3.33$, $t = 2.43$, $p < 0.05$; $\beta = 8.10$, $t = 3.09$, $p < 0.05$, respectively).

5 Discussion

5.1 Effects on raising awareness

The first focus of the study was EFL learners' awareness of figurative lan-
guage. The results of the initial awareness test, as reported in Table 2,
showed that the participants in both the CM group and the MM group
made progress on the test after receiving the respective instruction. The
improvement of scores indicates that the participants in both groups became
more confident of their judgments in recognizing metaphoric and metonymic
expressions after receiving instruction; the enhanced certainty also indicates
the participants' raised awareness of figurative language. However, the
results reported in Table 3 showed that the participants in the MM group
performed significantly better in the post-test than in the pre-test, while those
in the CM group did not. This significance suggests that instruction on
metaphoric mappings could be especially beneficial to the learners' aware-
ness in some aspects.

Table 5 reported the analyses of the participants' responses to expressions
belonging to different categories on the metaphor-metonymy continuum, and it
showed that the MM-group participants performed significantly better in evalu-
ating metonymic-metaphoric (C3) and metaphoric expressions (C4), the two
categories that were closer to the metaphoric end of the continuum and that
were considered more abstract in the concepts involved. These findings suggest
that instruction on metaphoric mappings can help L2 learners to process
abstract concepts, and hence can be helpful in noticing and understanding
expressions concerning abstract source or target domains.

Moreover, Table 6 reported the analyses of the participants' responses to
body-related metaphoric/metonymic expressions, and it showed that the MM-
group participants received significantly higher scores in the post-test on eval-
uating metaphoric/metonymic expressions containing no bodily descriptions,
expressions that were even more abstract and opaque than others due to a
lack of bodily experiences. These findings suggest that instruction on metapho-
ric mappings can help learners to overcome difficulties resulting from the

abstractness of concepts and the insufficiency of embodied experiences, and thus make them more aware of those types of expressions.

To sum up, both instruction on conceptual metaphors and instruction on metaphoric mappings showed beneficial effects on improving EFL learners' awareness of figurative language use. Moreover, instruction on metaphoric mappings, owing to its structural, systematic, and logical mapping processes, was found to be especially helpful in facilitating learners' awareness of expressions involving more abstract concepts, such as expressions that involved complicated cross-domain mappings and expressions that were not grounded in embodied experiences.

5.2 Effects on retention

The second focus of the study was EFL learners' retention of figurative language. The general improvements in the post-test demonstrated the effects of receiving instruction during the figurative language learning process. In other words, the improvement in the mean scores of the post-test is positive evidence of the beneficial effects of cognitively based instruction, including CM instruction and MM instruction. Furthermore, the MM-group participants gained significantly higher improvements overall on the post-test compared with their performances on the pre-test. However, when comparing the two groups' performances, the MM group made less progress than the CM group made, as shown in Table 4. In other words, even though in the post-test the MM-group participants outperformed their previous performances, the degree of variances regarding individual score changes was not as high as that made by the CM-group participants.

The different levels of progress suggest that the participants of the MM group might have made greater consistent progress in evaluating sentences on the post-test; therefore, the *convergent* variances of the changes resulted in statistical significance, as shown in Table 3. Contrarily, the participants of the CM group might have performed inconsistently on the post-test, meaning the variance of changes was *divergent*. Thus, they did not show significant progress overall. The results of the comparisons, therefore, suggest the answer to the second research question: instruction involving metaphoric mappings can result in longer and steadier effects on retention for learners than instruction involving conceptual metaphors can.

To sum up, even though both instruction on conceptual metaphors and instruction on metaphoric mappings produced beneficial effects in raising awareness in EFL learners, instruction on metaphoric mappings also produced relatively

more consistent and steady progress. These findings support the effects of meaningful learning on second language acquisition (Ausubel 1963, 1968).

6 Implications and contributions

6.1 Beneficial effects on explicit teaching

Learners' attention has long been a favorable issue of second language acquisition research. For L2 learners, learning a new language implies a demand of understanding how it differs from their native language system and how the target language categorization system works (Littlemore 2009). Furthermore, theories and methods, such as corrective feedback and negotiated interaction (Pica et al. 1987) and form-focused instruction (Long 1991), strongly promote the idea that learners should notice specific parts of a language. Research has found a positive influence of explicit instruction not only on basic language skills training like writing (Andringa et al. 2011; Chen 2010) and grammar (Spada and Tomita 2010) but also on advanced competence development, such as pragmatic competence (Bu 2012). Thus, it is reasonable to claim that explicit teaching that focuses direct attention on the subjects learned is beneficial and should be indispensible for L2 learning (Ellis 2002; Norris and Ortega 2000).

The present study has provided positive evidence for explicit teaching in the classroom. The results have shown that explicit instruction on metaphoric/metonymic expressions, whether focusing on conceptual metaphors or metaphoric mappings, enhanced learners' awareness of figurative language. The present study was constructed based on findings from previous studies (Boers 2000a, 2000b; Boers and Demecheleer 2001; Boers et al. 2004, 2007), which showed that learners perform better when receiving explicit instruction. Therefore, it is reasonable to conclude that explicit teaching is useful in terms of figurative language learning.

Moreover, instruction on metaphoric mappings not only points out ontological mapping links between two source concepts but also demonstrates detailed epistemic mapping processes in an explicit way, resulting in better awareness of expressions that involve more complicated and abstract mapping relationships. In other words, instruction on metaphoric mappings is particularly beneficial for understanding abstract or unfamiliar expressions. This type of instruction provides clear structures of source and target domains; the explicit explanations of the corresponding relationship between domains and concepts

can help learners to establish construal systems, and hence overcome potential difficulties caused by language and cultural differences.

It is worth mentioning that MM instruction, though it has shown to be beneficial in teaching figurative language to EFL speakers, may be time-consuming because the essence of the instruction is to provide a substantial amount of figurative expressions from one conceptual metaphor for the sake of inductive learning. Thus, a language teacher may end up spending a great amount of time and effort collecting and organizing figurative expressions and sentences to facilitate learners in understanding the mappings. However, the benefits of such instruction on a target language subject are without doubt, particularly when learning figurative expressions, which often appear in collocational patterns. L2 learners' capability to retain a memory of expressions depends on whether they have sufficient and frequent exposure to the subjects (Abel 2003; Durrant and Schmitt 2010; Crossley et al. 2010), and as such the requirement of a massive input of figurative expressions can be facilitative. With the help of the Internet and the popularity of language corpora, this problem could be diminished.

6.2 Insights into the metaphor-metonymy continuum

Previous research has suggested that metaphor and metonymy may interact with each other in intricate ways since one motivates the other (Barcelona 2001; Kövecses and Radden 1998; Radden 2003). However, metonymy has received relatively little treatment in language teaching literature (Littlemore 2009; Panther and Radden 1999). One possible reason is that metonymy is used to perform referential functions for the purpose of euphemism or for the facilitation of comprehension, and thus becomes too common in communication to be perceived as a specific subject; therefore, metonymy is considered "a secondary trope below metaphor" (Gibbs 1999: 74). In addition, metonymy may be too subtle for speakers to be aware of, since it uses one entity to refer to another entity that it is already related to or is even a part of (Radden and Kövecses 1999). Compared with metaphors, which are very often considered idioms or fixed usages and thus require explicit guidance to be comprehended (Laufer 1997), metonymies are often left out of the curriculum.

Given the importance of metonymy, the present study included metonymy in the experiment. The results showed that L2 learners responded differently to metaphor and metonymy: the participants in both groups showed greater improvement in recognizing metaphoric expressions (C4) than in recognizing metonymic expressions (C1) after receiving the respective instruction, no matter

whether the improvement reached a statistically significant level. Such differences between the performances on metaphor and metonymy suggest that the participants sensed the divergence between the two types of figurative expressions even without being told of the distinctions in advance, and they showed different levels of awareness and retention of each type of expression. This finding not only corresponds to Chen and Lai's (2012) study, which contended that learners react differently to figurative expressions located at different points on the metaphor-metonymy continuum, it also provides further and finer analyses on the learning effects. The MM-group participants, after receiving instruction, performed significantly better on evaluating abstract expressions, including metonymic-metaphoric expressions (C3) and metaphoric expressions (C4). These findings suggest that the MM method is more effective than the CM method in establishing conceptual associations between domains, and the MM method compensates for the conceptual bridges caused by the abstractness of conceptual metaphors or by a lack of clues in embodied descriptions.

7 Conclusion

The present study has shed light on the application of metaphor and metonymy in EFL teaching and learning figurative language in three aspects. First, the hypothesis that explicit instruction in second language acquisition produces beneficial effects has been validated. Second, metonymy should be considered as equally important as metaphor and thus should be included in EFL language learning programs. Third, instruction on metaphoric mappings should be incorporated with instruction on conceptual metaphors to facilitate figurative language learning in EFL classrooms.

However, the number of participants sampled in the present study was not large enough to allow for generalization. Due to the limited number of participants, the diversity of the participants' background was also minimal. For instance, the proficiency level of the participants of the study was limited to intermediate and high intermediate, meaning they represented only a part of L2 learners in second language or foreign language learning contexts. For future studies, L2 learners with diverse proficiency levels or individual backgrounds should be included to determine the fine-grained effects of the two methods tested.

Moreover, learners' different cognitive styles may have played a crucial role in the figurative language learning process. Since it is believed that understanding figurative expressions requires language users' ability to link disparate

perceptual, affective, and conceptual domains, a process that depends highly on creativity (Kogan 1983; Seitz 1997) and cognitive style (Johnson and Rosano 1993), different cognitive styles may result in different learning effects. The present study did not integrate this learners' variable into the experiment; thus, further investigation of this issue via future studies is necessary.

References

Abel, B. 2003. English idioms in the first language and second language lexicon: a dual representation approach. *Second Language Research* 19(4). 329–358.

Andringa S. J., C. M. de Glopper & H. I. Hacquebord. 2011. The effect of explicit and implicit instruction on free written response task performance. *Language Learning* 61(3). 868–903.

Ausubel, D. 1963. *The psychology of meaningful verbal learning*. New York: Grune & Stratton.

Ausubel, D. 1968. *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston.

Barcelona, A. 2001. On the systematic contrastive analysis of conceptual metaphors: Case studies and proposed methodology. In M. Putz, S. Niemeier & R. Dirven (eds.), *Applied cognitive linguistics II: Language pedagogy*, 117–146. Berlin & New York: Mouton de Gruyter.

Barnden, J. A. 2010. Metaphor and metonymy: Making their connections more slippery. *Cognitive Linguistics* 21(1). 1–34.

Boers, F. 2000a. Enhancing metaphoric awareness in specialised reading. *English for Specific Purposes* 19. 137–147.

Boers, F. 2000b. Metaphor awareness and vocabulary retention. *Applied Linguistics* 21. 553–571.

Boers, F. 2001. Remembering figurative idioms by hypothesising about their origins. *Prospect* 16. 35–43.

Boers, F. 2013. Cognitive Linguistic approaches to teaching vocabulary: Assessment and integration. *Language Teaching* 46(2). 208–224.

Boers, F. & M. Demecheleer. 2001. Measuring the impact of cross-cultural differences on learners' comprehension of imageable idioms. *ELT Journal* 55(3). 255–62. http://eltj. oxfordjournals.org/cgi/reprint/55/3/ (accessed 26 October 2009).

Boers, F., M. Demecheleer & J. Eyckmans. 2004. Etymological elaboration as a strategy for learning figurative idioms. In P. Bogaards & B. Laufer. (eds.), *Vocabulary in a second language: Selection, acquisition and testing*, 53–78. Amsterdam & Philadelphia: John Benjamins.

Boers, F., J. Eyckmans & H. Stengers. 2007. Presenting figurative idioms with a touch of etymology: More than mere mnemonics? *Language Teaching Research* 11(1). 43–62.

Boers, F. & S. Lindstromberg. 2006 Cognitive linguistic applications in second or foreign language instruction: Rationale, proposals, and evaluation. In G. Kristiansen, M. Achard, R. Dirven & F. J. Ruiz de Mendoza Ibáñez (eds.), *Cognitive linguistics: Current applications and future perspective*, 305–355. Berlin: Mouton de Gruyter.

Boers, F. & H. Stengers. 2008. Adding sound to the picture: An exercise in motivating the lexical composition of metaphorical idioms in English, Spanish and Dutch. In L. Cameron, M. Zanotto & M. Cavalcanti (eds.), *Confronting metaphor in use: An applied linguistic approach*, 63–78. Amsterdam & Philadelphia: John Benjamins.

Bu, J. 2012. A study of the effects of explicit and implicit teachings on developing Chinese EFL learners' pragmatic competence. *International Journal of Language Studies* 6(3). 57–80.

Chen, Y. 2010. Teaching idioms in an EFL context: The past, the present, and a promising teaching method. *Proceeding of the 27th International Conference on English Teaching and Learning in R.O.C.* (ROC-TEFL 2010), 182–193. National Kaohsiung Normal University, Kaohsiung, Taiwan.

Chen, Y. & H. Lai. 2012. EFL learners' awareness of metonymy–metaphor continuum in figurative expression. *Language Awareness* 21(3). 235–248.

Crossley, S. A., T. Salsbury & D. S. McNamara. 2010. The development of polysemy and frequency use in English second language speakers. *Language Learning* 60(3). 1–33.

Deignan, A., D. Gabrys & A. Solska. 1997. Teaching English metaphors using cross-linguistic awareness-raising activities. *ELT Journal* 51(4). 352–60.

Dong, Y. 2004. Don't keep them in the dark! Teaching metaphors to English language learners. *English Journal* 93(4). 29–35.

Durrant, P. & N. Schmitt. 2010. Adult learners' retention of collocations from exposure. *Second Language Research* 26(2). 163–188.

Ellis, R. 2002. *The study of second language acquisition*, 9th edn. Oxford: Oxford University Press.

Gibbs, R. W. 1999. Speaking and thinking with metonymy. In K. Panther & G. Radden (eds.), *Metonymy in language and thought*, 61–76. Amsterdam: John Benjamins.

Goossens, L. 1990. Metaphonymy: The interaction of metaphor and metonymy in expressions for linguistic action. *Cognitive Linguistics* 1. 323–340.

Johnson, M. 1987. *The body in the mind: The bodily basis of meaning, imagination, and reason*. Chicago: Chicago University Press.

Johnson, J. & T. Rosano. 1993. Relation of cognitive style to metaphor interpretation and second language proficiency. *Applied Psycholinguistics* 14. 159–175.

Kellerman, E. 1977. Towards a characterization of the strategy of transfer in second language learning. *Interlanguage Studies Bulletin* 2. 58–145.

Kogan, N. 1983. Stylistic variation in childhood and adolescence: Creativity, metaphor, and cognitive styles. In J. H. Ravel & E. M. Markman (eds.), *Handbook of child psychology*, vol.3, 4th edn., 695–706. New York: Wiley.

Kövecses, Z. 2000. The concept of anger: Universal or culture specific? *Psychopathology* 33(4). 159–170.

Kövecses, Z. 2001. A cognitive linguistic view of learning idioms in an FLT context. In M. Pütz, S. Niemeier & R. Dirven (eds.), *Applied cognitive linguistics II: Language pedagogy*, 87–115. Berlin: Mouton de Gruyter.

Kövecses, Z. & G. Radden. 1998. Metonymy: Developing a cognitive linguistic view. *Cognitive Linguistics* 9(1). 37–78. doi: 10.1515/cogl.1998.9.1.37.

Kövecses, Z. & P. Szabó. 1996. Idioms: A view from cognitive semantics. *Applied Linguistics* 17(3). 326–355. doi: 10.1093/applin/17.3.326.

Lakoff, G. 1987. *Woman, fire, and dangerous thing: What categories reveal about the mind*. Chicago & London: University of Chicago Press.

Lantolf, J. P. 1999. Second culture acquisition: Cognitive considerations. In E. Hinkel (ed.), *Culture in second language teaching and learning*, 28–46. New York: Cambridge University Press.

Laufer, B. 1997. What's in a word that makes it hard or easy: Some intralexical factors that affect learning of words. In N. Schmitt & M. McMarthy (eds.), *Vocabulary, description, acquisition and pedagogy*, 140–155. Cambridge: Cambridge University Press.

Littlemore, J. 1998. *Individual Differences in Second Language Learning: Towards an Identification of the Strategy Preferences and Language Learning Strengths of L2 Students*

with Holistic and/or Imager Cognitive Styles (Doctoral dissertation, Thames Valley University).

Littlemore, J. 2001. Metaphoric competence: A possible language learning strength of students with a holistic cognitive style? *TESOL Quarterly* 35(3). 459–491.

Littlemore, J. 2009. *Applying cognitive linguistics to second language learning and teaching*. UK: Palgrave Macmillan.

Littlemore, J. & G. Low. 2006. Metaphoric competence, second language learning, and communicative language ability. *Applied Linguistics* 2(27). 268–294.

Long, M. H. 1991. Focus on form: A design feature in language teaching methodology. In K. De Bot, R. B. Ginsberg & C. Kramsch (eds.), *Foreign language research in cross-cultural perspective*, 39–52. Amsterdam: John Benjamins.

Low, G. 1988. On teaching metaphor. *Applied Linguistics* 9(2). 125–147. http://applij.oxford journals.org/cgi/reprint/9/2/125 (accessed 4 February 2009).

Norris, J. & L. Ortega. 2000. Effectiveness of L2 instruction: A research synthesis and quantitative meta-analysis. *Language Learning* 50. 417–528.

Odlin, T. 1989. *Language transfer: Cross-linguistic influence in language learning*. Cambridge: Cambridge University Press

Ortony, A. 1975. Why metaphors necessary and not just nice. *Educational Theory* 25. 45–53. http://www.cs.northwestern.edu/~ortony/Andrew_Ortony_files/1975-01%20-%20Why% 20metaphors%20necessary.pdf (accessed 20 October 2015).

Panther, K. & G. Radden (eds.). 1999. *Metonymy in language and thought*. Amsterdam: John Benjamins.

Pica, T., R. Young & C. Doughty. 1987. The impact of interaction on comprehension. *TESOL Quarterly* 21(4). 737–758.

Radden, G. 2003. How metonymic are metaphors? In R. Dirven & R. Pörings (eds.), *Metaphor and metonymy in comparison and contrast*, 407–434. Berlin & New York: Mouton de Gruyter.

Radden, G. & Z. Kövecses. 1999. Towards a theory of metonymy. In K. Panther & G. Radden (eds.), *Metonymy in language and thought*, 17–60. Amsterdam: John Benjamins.

Ringbom, H. 1987. *The role of the first language in foreign language learning*. Clevedon, UK: Multilingual Matters.

Seitz, J. A. 1997. The development of metaphoric understanding: Implications for a theory of creativity. *Creativity Research Journal* 10(4). 347–353. doi: 10.1207/s15326934crj1004_6.

Spada, N. & Y. Tomita. 2010. Interactions between type of instruction and type of language feature: A meta-analysis. *Language Learning* 60(2). 263–308. http://onlinelibrary.wiley. com/doi/10.1111/j.1467-9922.2010.00562.x/full (accessed 15 April 2012).

Taki, S. 2011. Cross-cultural communication and metaphorical competence. *International Journal of Language Studies* 5(1). 47–62.

Appendix A: Test Items of the Awareness Test

Categories	Body-related Descriptions	Test Items
Metonymy (C1)	Body-related	1. When I found out she lied to me, I almost *burst a blood vessel*.
	Counterpart	2. You'll *burst a blood vessel* if you keep drinking alcohol.
	None	3. The boss got *hot under the collar* when he found out that John lost the deal.
	Counterpart	4. People used to tuck ties *under their collar* when dressing formally.
	Body-related	5. He *grinned from ear to ear* when he received the birthday gift.
	Counterpart	6. She leaned over and whispered something in Peter's *ear*.
	None	7. We *had a ball* during our spring vacation to Europe.
	Counterpart	8. The two boys were kicking a *ball* on the grass.
	Body-related	9. The girl is so lovely that I can't *take* my *eyes off* her.
	Counterpart	10. The girl loved the dress so much that she didn't want to *take it off*.
	None	11. *There* are things that *couples* can do to bring the *spark* back into everyday life.
	Counterpart	12. After investigating, the police believed that it was cigarette *sparks* that started the fire.
Metaphoric-metonymy (C2)	Body-related	13. Harry's mother gave him a *tongue-lashing* for telling family secrets.
	Counterpart	14. He *lashed* the horse across the back with a whip.
	None	15. Your mother would *have a fit* if she knew that you skipped class.
	Counterpart	16. He *had a fit of* coughing because he caught a serious cold.
	Body-related	17. His eyes *glinted* when he saw the money on the ground.
	Counterpart	18. She thought the *diamond* was lost until she saw something glinting on the carpet.
	None	19. The host *wore a broad grin* as he greeted people in the room.
	Counterpart	20. She was *wearing* a gold ring on her index finger.
	Body-related	21. Their marriage is *on its last leg*; divorce is just a matter of time.
	Counterpart	22. I had to quit running every day *because* of the severe *pain in my leg*.
	None	23. Being a single-parent child, his mother's death really *hit* him *hard*.
	Counterpart	24. His dad hit *him* in the face so *hard* that he fell down on the ground.

(*continued*)

Categories	Body-related Descriptions	Test Items
Metonymic-metaphor (C3)	Body-related	25. Listening to that guy playing his drums is *a pain in the neck* for me.
	Counterpart	26. His brother got *a neck pain* because of bad sitting posture.
	None	27. All I *did* was come twenty minutes late, and the manager *jumped down* my throat.
	Counterpart	28. A fish bone got stuck in my *throat* and wouldn't go *down* into my stomach.
	Body-related	29. My heart is *soaring with happiness* beyond the capacity of anything to contain it.
	Counterpart	30. Local residents described the *flames* soaring into the night *sky*.
	None	31. On the wedding day everybody is *in high spirits*.
	Counterpart	32. The modern city has many *high*-rise skyscrapers and large mansions.
	Body-related	33. It's a really exciting project. I can't wait to *sink my teeth into* it.
	Counterpart	34. The moment I *sank my teeth deeply into* that pizza, I knew I loved it.
	None	35. Making plans first can help you use your time *profitably*.
	Counterpart	36. It was several months before the company started to trade *profitably*.
Metaphor (C4)	Body-related	37. The boss *flew into a towering rage* and fired all the employees who offended him.
	Counterpart	38. The statue stands on a huge pillar, *towering* over the city.
	None	39. I could barely *contain* my excitement after reading the teacher's comments.
	Counterpart	40. This book *contains* all the information you are looking for.
	Body-related	41. They were *filled* to overflowing with joy at the good news.
	Counterpart	42. The river often *overflowed* its banks during rainy seasons.
	None	43. When she saw Tom walking into the room, she *lit up*.
	Counterpart	44. She took out a *match* and *lit* it in order to get a warm flame.
	Body-related	45. Pictures of war can *carry* more moral meaning than thousands of words.
	Counterpart	46. David walked into the room, *carrying* his suitcases, looking tired.
	None	47. It took me some time to *digest* what I had heard.
	Counterpart	48. The baby is too small to *digest* food like meat.