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隱喻及轉喻對英語為外語學習者之教學成效：以情緒語言為例

The Effects of Teaching EFL Learners Metaphor and Metonymy:
With Reference to Emotion Expressions

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WITH REFERENCE TO EMOTION EXPRESSIONS

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博士論文中文提要

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論文提要內容：

　　隱喻(metaphor)及轉喻(metonymy)被廣泛的使用在日常生活語言中。認知語言學主張：隱喻及轉喻實為人類思想與溝通的中心。因此，語言學習者必須具備覺察及理解用以表示抽象概念的隱喻及轉喻用語的能力。然而，因為語言及文化的顯著差異，第二語言學習者在發展溝通能力時，也應培養譬喻能力(metaphoric competence)。

　　許多學者提出各式教學方法。現存文獻中，使用以概念引喻(conceptual metaphor)為主的教學方式，著重於點出用以對比的兩者間之相對特徵，已獲得實驗證實能提升語言學習者之覺察能力、理解能力、及記憶力。然而此教學方法忽略了語言文化間的差異填補，亦輕忽了轉喻的重要性。另一方面，使用隱喻映射(metaphoric mappings)為主的教學方式，能藉由實體映射(ontological mappings)及知識映射(epistemic mappings)有系統條理的闡述用以對比的兩者間之對照關係，不僅有助於彌補因文化不同而造成的認知差異，亦將轉喻與譬喻視為同等重要。因而以隱喻映射為主的教學方式被認為是具備潛力的教學方法，但仍缺少實證。

　　本論文旨在以實證方式，研究以概念引喻及以隱喻映射為主的兩種教學方式對於以英語為外語學習者在覺察能力、理解能力、及記憶力之學習成效。共有115 位、分別來自一般大學及科技大學之大學一年級學生參與本實驗。參與者分

成兩組，分別接受兩種教學方式。實驗分兩週進行：第一週先完成電腦化的譬喻能力測驗之前測，接著進行教學，第二週則進行電腦化的譬喻能力測驗之後測。測驗之結果則經由量化及質化方式進行分析。

實驗結果發現：兩種教學方式均對於參與者在覺察能力、理解能力、及記憶力有正面成效。然而儘接受以隱喻映射為主之教學方式的參與者在覺察能力測驗中獲得顯著進步，特別是對於不包含體驗性描述(embodied description)的轉喻性隱喻(metonymic metaphor)及隱喻用語，表現尤佳。至於理解力測驗部分，以隱喻映射為主之教學方式對於解讀含有文化差異性(cultural specificity)的用語特別有助益。另一方面，相較兩組教學方式的表現成果而言，以隱喻映射為主之教學方式造成參與者的學習成果呈現較一致且穩固的成長。總而言之，以隱喻映射為主之教學方式因為提供了具結構性、系統性及邏輯性的映射過程，而促進學習者較容易覺察包含抽象概念的譬喻用語，克服因文化差異性而造成的理解困難，及獲致較穩固的學習成長。

本研究為以英語為外語學習者在學習譬喻用語—包含隱喻及轉喻—上提供了三點貢獻。其一，透過學習者培養譬喻能力之實驗成果，直接教學(explicit teaching)方式對於第二語言習得的效益再次獲得證實。其二，本實驗成果顯示：轉喻與隱喻實為密不可分的兩種概念，在教學過程中應把轉喻列為與隱喻一樣重要。其三，學習者的中介語(interlanguage) 包含了語言的普同性及差異性概念，因此應被視為連續體(continuum)而非階段性結構；在設計教學教材時，應把此連續體的概念併入考量。總結而言，本實驗的成果不只在應用語言學領域提出見解，亦在第二語言習得領域有所貢獻。

Abstract

Metaphor and metonymy, pervasively found in everyday language, has been shown by cognitive linguistic research to lie at the heart of human thought and communication. Thus, ability to notice and comprehend metaphoric and metonymic expressions in expressing abstract concepts is indispensible for language users. However, since languages and cultures vary in a wide array of ways to employ metaphor and metonymy, L2 learners should develop metaphoric competence along with communicative competence.

Various methods to develop L2 learners' metaphoric competence have been proposed. In the extant literature, instruction involving conceptual metaphors (CM), which focuses on correspondences of general traits, has been proved effective in raising learners' awareness, comprehension, and retention for Hungarian and Dutch EFL learners. Its effectiveness in Chinese speaking context is worth attested empirically. On the other hand, metaphoric mappings, which illustrate both ontological mappings and epistemic mappings of two concepts in more systematic and detailed manners, offer a promising method for EFL language learning. Hence, instruction involving metaphoric mappings (MM) is assumed to be more effective than instruction of CM. The effectiveness of such a method is also worth attested empirically.

The present study aimed to test the effects of CM and MM on EFL learners' awareness, comprehension, and retention of metaphoric and metonymic expressions with empirical evidence from a carefully-designed experiment. Finer-grained analyses on three important issues were provided: first, an in-depth examination of the intricate interaction of metonymy and metaphor as a continuum, and its influences on figurative language learning was conducted. Second, cultural universality and specificity among languages and the different degrees of difficulties for EFL learners in transferring expressions between L2 and L1 were also investigated. Third, whether structural and logical mappings between languages and cultures could assist learners to better grasp abstract concepts was examined.

The participants included 115 Taiwanese EFL learners, who were freshmen of a general university and a four-year technological university. The English proficiency of the former group was high-intermediate and that of the latter was low-intermediate. The experiment contained three phases: pre-teaching, teaching and post-teaching. The

participants were divided into two sub-groups: one received instruction involving CM, and the other received instruction involving MM. They were asked to complete the computerized metaphoric competence test before and after receiving instructions. The results of the tests were collected and analyzed both quantitatively and qualitatively.

The results showed that both instructions could lead to better awareness, comprehension, and retention. However, only the participants of the MM groups performed significantly better in the posttest regarding the Awareness Test, especially in finding metonymic-metaphoric and metaphoric expressions that contained no bodily descriptions, the two categories which were considered the most abstract among the expressions. Regarding the Comprehension Test, MM instruction was found to be especially beneficial for the participants in interpreting expressions involving cultural-specific conceptual metaphors. Moreover, MM instruction resulted in convergent effects in the participants' performances and led toward relatively more consistent and steady progress. To conclude, MM instruction, with its structural, systematic, and logical mapping processes, was found to be especially helpful in facilitating learners' awareness of expressions involving more abstract concepts, overcoming difficulties caused by cultural specificity, and leading to longer-term effects on retention.

The present study sheds light on the application of metaphor and metonymy to EFL teaching and learning of figurative language in three aspects. First, that explicit instructions on second language acquisition carry beneficial effects is validated for the development of learners' metaphoric competence in the target language. In addition, metonymy is suggested as equally important as metaphor, and should be included in EFL language learning programs. Moreover, that learners' interlanguage system is a continuum encompassing expressions with universal and specific cultural characteristics is also validated. Therefore, designs of EFL teaching materials are suggested to take such a continuum into consideration. In brief, the results of the study contribute not only to applied linguistics but also to second language acquisition.

CHAPTER 1

INTRODUCTION

Background of the Study

For centuries, metaphor and metonymy were viewed as decorative language used for poetry and literary work. However, since the 1970s, cognitive linguists have become increasingly convinced that metaphor and metonymy are central not only to language but also to thought. Both metaphor and metonymy, or *figurative language*, are no longer considered to be only novel or poetic language; they are now accepted as ordinary language that manifests what people think in daily life (Lakoff & Johnson, 1980).

Metaphor and metonymy are two fundamental poles of human thought, as can be witnessed through their prevalence in art, music, sculpture, literature, and even language (Jakobson, 2003). According to the survey done by Pollio and his colleague in 1977, an average native English speaker uses about 5 metaphoric expressions per minute, 300 per hour, and more than 1,000 per day at the rate of a 4-hour speaking day (pp.8-9, also as cited in Dong, 2004). Since the internet and other communication tools have become widespread, the number of metaphoric expressions currently used in communication should be greater than it was 30 years ago. Figurative language is thus becoming more pervasive, and more necessary for everyday functioning.

Figurative language is considered useful for the purpose of communication. Ortony (1975) points out that the communicative functions of figurative language are inexpressibility, compactness, and vividness. People can verbalize what is unknown or difficult to express by using figurative language, and can deliver compact and abundant information of the object in a limited amount of words. In addition,

Littlemore and Low (2006) discuss the importance of metaphors under Bachman's (1990) framework of communicative competence, and argue that metaphoric competence has a great influence on second language learners' development of communicative competence. To both native and second language speakers, figurative language is an indispensable tool in communication. By the same token, for second and foreign language learners, figurative language is knowledge that must be acquired in the language learning process to reach a higher level of proficiency.

In addition to the purpose of communication, metaphor and metonymy are believed to be able to disclose insights into a culture (Black, 1993; Lantolf, 1999). Since metaphor and metonymy are formed on the basis of speakers' thoughts and experiences, they are affected by the conventionalized models of the cultures to which the speakers belong (Lakoff & Johnson, 1980). Without knowing figurative expressions used in a target language, L2 learners might be "kept in the dark" (Dong, 2004) and lack full understanding of the target language. Therefore, knowledge of figurative language can equip second and foreign language learners with understanding of the culture behind a language.

Since figurative language is believed to be central to the use of language and is pervasive in the language system, it should be given an important place in the field of language learning and teaching. Low (1988) points out that, if second language learners hope to be seen as competent users of the language, they need to develop certain metaphor-related skills, which native speakers are expected to be good at. Regarding L2 figurative language learning, research carried by cognitive linguists (Boers, 2000a, 2000b, Boers and Demecheleer, 2001, Boers, Demecheleer & Eyckmans, 2004; Boers, Eyckmans & Stengers, 2007; Boers & Stengers, 2008; Dong, 2004; Deignan, Gabrys, & Solska, 1997; Kövecses, 2001; Skoufaki, 2005) has made significant progress. Cognitive linguists believe that language is not arbitrary but

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motivated (Lakoff, 1987, p.346). To developing "metaphoric competence" (Littlemore, 2001), L2 learners need raised awareness of semantic motivation, not rigid memorization on fixed form (Boers & Lindstromberg, 2006). However, for foreign language learners who may encounter difficulties caused by cultural and linguistic differences, they need particular assistance focusing not only on grasping cues with semantic motivation but also bridging crucial cultural gaps.

The present study aims to probe into the issue of learning figurative language, including metaphor and metonymy. On the basis of findings and theories provided by the previous research, the present study would look for promising ways to facilitate gap bridging processes.

Motivations of the Study

The motivations of doing the research on the issue are as follows. First, confusion caused by differences between L1 and L2 is a common feature during L2 learning process; the situation worsens with the involvement of various metaphoric and metonymic expressions. Previous approaches to teaching figurative language focus so much on providing *motivation* of expressions to L2 learners, but are lacking concerns about cultural gaps. Research is needed to overcome the problem of the cultural gap. Moreover, previous research on teaching figurative expressions has rarely considered metonymy, which is as important and prevalent as metaphor. The oversight of such language traits is worth further research.

Current Trend of Language Acquisition Theory

Since metaphors and metonymies are so useful and important that language learners must acquire them, many teaching materials are needed. However, metaphors and metonymies used to be described as *dead* or *decorative*, quoted from the Greece

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philosopher Aristotle, and only appeared in the forms of idioms or literary devices. They were taught by memorization and drills (McCallum, 1970, 1978; Nandy, 1994) because they were believed to be fixed in form and meaning.

Nevertheless, with the emergence of cognitive linguistics in recent years, the ideas about learning a language are changing and thus differ from previous ones. Language is believed not to be composed of discrete units from which form and meaning are separate (Tomasello, 2006). It is a reflection of general cognition (Littlemore, 2009), and should be derived from and informed by language use rather than being presupposed and innate (Tomasello, 1995); form and meaning are related and inseparable, and the usages people employ are motivated, rather than arbitrary (Boers & Lindstromberg, 2006). As a result, for L2 learners who have already acquired many of the concepts while learning their L1, it is necessary to build a new construal system of the target language. In other words, L2 learners should learn how to "present and package information in different ways and from different viewpoints" (Littlemore, 2009, p.14). They may need to focus on different scenes and events, categorizing things in different ways, overcoming L1 entrenchment patterns, and acquiring L2 usages or expressions by knowing the cognitive process of motivation (Ellis, 2006a).

The viewpoints held by cognitive linguists provide a fresh inspiration to the development of metaphoric competence in the L2 learning context. For example, Boers (2000a, 2000b, 2001, 2004) suggests to acquaint L2 learners with the process of motivations through understanding conceptual metaphors, or metaphoric themes in his term, of figurative expressions. His idea has been proved in his research as an effective method to raise L2 learners' awareness of figurative language as well as to extend learners' retention of what they have learned. Lazar (2003), following Boers' claims, produces an EFL exercise book with a strong focus on raising awareness of

motivations of figurative expressions. However, the idea of providing L2 learners conceptual metaphors as an awareness-raising activity does not guarantee a complete development of L2 construal systems, and may not solve problems caused by cultural and linguistic differences between L1 and L2. Therefore, methods which compensate the method of conceptual metaphors are still and should be open to pursue.

To follow the trend of cognitive linguistics, which focus on developing human cognition, and to broaden the scope of current figurative language learning approaches, which focus on raising awareness of semantic motivation, the present study hopes to shed light on research of the development of L2 acquisition theories.

Cultural Similarities and Specificities for L2 Learners

Since metaphor and metonymy are based on people's knowledge of the world and experiences of life, they represent similarities and differences between cultures and between languages. People around the world, no matter which culture they are from or which language they speak, share common knowledge, such as concepts of love and life; they also have universal experiences, such as physiological responses. For instance, the emotion *anger* causes similar physiological responses in humans, including body heat, internal pressure, or redness in face and neck (Kövecses, 2000a). However, languages have specific characteristics that are exclusive to their users. For example, the emotion *anger* can be expressed in different ways by learners of the same culture: some view *anger* as a hot fluid in a container, as in English *I've reached the boiling point*, and some regard *anger* as a hot gas, as in Chinese 他氣鼓鼓的 *tā qì-gǔgǔ de* (he gas-inflated COM 'He is inflated with anger')(Yu, 1998).

The differences that arise, due to specific cultural norms, or traditions of language use, can lead to difficulties for language learners in transferring native language and knowledge. Danesi (1993) reports a series of studies on second

language learners' learning and developing metaphoric competence. Danesi found that, after three to four years of study, though students developed a high level of proficiency in L2, they continued to think in terms of their native concepts, and performed poorly on metaphor comprehension and translation tasks.

To help learners overcome the L1 interference, acquire L2 specific usages, and develop metaphoric competence, researchers (Deignan et al., 1997; Dong, 2004) suggest that second and foreign language learners' awareness of the existence of similarities and differences between their native language and target language should be raised. Moreover, Kövecses (2001) suggests utilizing the universal concepts existing among languages to help learners in comprehension, and adopting conceptual mappings between source and target domains to gain complete schematic knowledge and form cognitive correspondences.

However, the suggestion made by Kövecses (2001) has not yet been implemented in the foreign language teaching context (Kövecses, 2001, pp.112-113) and thus empirical evidence and studies are needed. The present study adapts his suggestion by adding cultural elements into the experiment. The method would be tested against the previous method, in which only conceptual metaphors are focused on, and in which cultural elements have not been considered. The comparisons between two methods hope to provide inspiring insight on the L2 learners' development of metaphoric competence.

Importance and Pervasiveness of Metonymy

Many researchers (Boers, 2000a, 2000b, 2001; Chung & Ahrens; 2002; Deignan et al., 1997; Dong, 2004; Skoufaki, 2005) have investigated the ways in which language learners understand and use metaphors; however, very few studies have ever taken metonymy into consideration despite its pervasiveness and importance. In

metonymy, an entity is used to refer to something that it is related to; the relation of contiguity, such as part-stand-for-whole or whole-stand-for-part relations, allows language users to understand and utter some expressions widely used in the daily life (Ungerer & Schmid, 2006, p.115). For example, very often a statement like the following appears in newspapers: *the White House has released a new policy*, where *the White House* stands metonymically for the American Government. This type of metonymic use is so prevalent in life that language users might not even notice the fact they are using it.

In some cases, metonymy can motivate metaphors (Barcelona, 2000). For instance, in the sentence *His eyes were shining*, the *eyes* stand for the person himself, for a part of a subject can stand for a whole. The *shining eyes* can stand for happiness, since *happiness* is mapped to *light* in the conceptual metaphors HAPPINESS IS LIGHT. Another example is the expression *foaming at the mouth*: The reference to rabies and pathological mania stands for the angry feelings metonymically. The interconnections between metaphor and metonymy are so close that they should not be taken as separate subjects but two interrelated features (Radden, 2003).

In fact, cognitive research of psychological experiments (Gibbs, 1999; Gibbs, Costa Lima, & Francuzo, 2004; Goosens, 1990) has already evidenced the close interaction of metaphor and metonymy. Yet, research of metonymic and metaphoric interactions and their effects on figurative language learning in second language acquisition (SLA) is still scanty. The fact that metonymic thinking is so pervasive and the metonymic expressions are so widely used also suggests that an explicit focus on metonymies may be beneficial for language learners, especially for L2 learners. Thus, in the present study, metonymies as well as metaphors will both be investigated.

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<div align="center">**Definition of Terms**</div>

Figurative Expressions

The term *metaphor* has been used in a variety of ways in contemporary metaphor research. It is used to refer to not only a concept but also an expression of figurative language. In order to distinguish the concept and its linguistic expression, Lakoff (2006) defines the word *metaphor* as a cross-domain mapping in conceptual systems, while the term *metaphoric expression* denotes a linguistic realization of such a domain mapping. Boers (2000a), on the other hand, uses the word *metaphor* to refer to a conceptual metaphor which is entrenched in human thought, and the term *figurative expression* to mean its linguistic realization.

The present study, however, uses the term *figurative expressions* to refer to the linguistic expressions formed on the basis of mappings between concepts. For one thing, the present study includes two figures of language: metaphor and metonymy; the term *metaphoric expression* literally excludes the presence of metonymic expression, and may cause a bias. For another, the usage targeted in the present study includes lexis with one or a few words and phrases; the word *expression* is not limited by word number and can refer to both types of language usages.

Yet, when quoting or citing other researchers' work, the terms used in their work are retained in order to present the original meanings. For example, Littlemore (2001) specifies four abilities consisting of metaphoric competence; she uses *metaphor* when referring to each ability. Therefore, in the present study, when those abilities are mentioned, her usages are preserved to include both metaphor and metonymy in their original senses.

Metaphoric Competence

Metaphoric competence refers to the ability that a language learner needs in

terms of understanding metaphoric and metonymic expressions. Many researchers try to define specific skills which compose the competence. Low (1988) contends that the metaphor-related skills that learners need to develop include the capability of interpreting and understanding meanings of metaphors figuratively, and interacting with and responding to metaphors pragmatically. The former capability focuses on learners' reception of figurative meanings whereas the latter one focuses on learners' production of expressions.

The metaphor-related skills are later explored by Littlemore (1998, 2001). She defines metaphoric competence as "the ability of second language learners to interpret novel metaphors in the target language" (Littlemore, 1998, as cited in Li & Cheng, 2007). The competence is composed of four components: the ability to find meaning in metaphor, the speed in finding meaning in metaphor, the fluency of metaphor interpretation, and the originality of metaphor production (Littlemore, 2001). The first three abilities are receptive skills and the last one is productive skill.

The present study takes Littlemore's (2001) ideas to define EFL learners' metaphoric competence. Though both Low's (1988) and Littlemore's (2001) definitions of the metaphoric competence focus on receptive and productive skills of language use, Littlemore's definition has four distinct abilities specified and thus can be analyzed separately with details.

However, the present study only examines two abilities among the four: the ability to find meaning in metaphor and fluency of metaphor interpretation. Several reasons result in avoidance of considering speed in finding meaning in metaphor and originality of metaphor production. First, the metaphor that Littlemore adapts to display learners' metaphoric competence is limited to "a statement which […] establishes a relationship between two parts of a sentence" (p.489), like *a dog is a walking stick*, which focuses on learners' creativities and ability to make logical

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comparisons. Since the present study aims to investigate metaphoric and metonymic expressions which are conventional expressions rather than merely statements of relationships, the present study does not require the participants to display originality of metaphor production. Second, according to the statistical analyses reported in Littlemore's (2001) study, speed in finding meaning and originality of production are significantly related. Since originality of production is not under investigation in the present study, the highly related ability of speed in finding meaning is not taken into consideration, either.

In addition to the abilities which are specified in Littlemore's definition of metaphoric competence, the present study adds another ability to define EFL learners' metaphoric competence: the ability to retain and to recall knowledge of metaphor and metonymy. To sum up, the abilities of metaphoric competence which are defined and operated in the present study are awareness, comprehension, and retention.

Awareness.　Learners' awareness of figurative expressions is defined as their ability to recognize figurative language use in whatever context. Cognitive linguists (Boers & Lindstromberg, 2006; Tomasello, 2006) believe that language is *motivated* rather than *arbitrary*; in order to learn a language, a learner should be able to recognize underlying semantic motivations of expressions or communicative intentions of utterances. In terms of learning figurative expressions, learners should acquire the ability to notice the metaphoric or metonymic nature of expressions, to observe metaphoric and metonymic expressions in everyday language, and to recognize conceptual metaphors or conceptual metonymies behind the expressions (Boers, 2004). Therefore, the present study define the awareness of EFL learners as the capability of recognizing metaphoric or metonymic language use in given context and telling expressions with figurative meanings from expressions with only literal meanings.

Comprehension.   Learners' comprehension of figurative expressions is defined as their ability to interpret metaphoric and metonymic expressions appropriately and correctly. Low (1988) indicates that learners should be able to construct plausible meanings for utterances containing metaphoric terms; thus, learners need to have clear ideas about combinations of topic and vehicle. In Littlemore's (2001) model of metaphoric competence, the comprehension is deemed as not only the ability to find more than one possible meanings for a single given metaphors but also the ability to determine one plausible meaning for the metaphoric expression. In other words, learners should be able to identify possible grounds for comparisons between topic and vehicles. Therefore, the present study defines the comprehension of EFL learners as the capability of comprehending meanings of figurative expressions and giving reasonable and sensible interpretations to the expressions.

Retention.   Learners' retention of figurative expressions is defined as the prolonged effect of learners' raising awareness and comprehension of metaphoric and metonymic nature of expressions. In Boers' (2000a, 2000b, 2001) studies, the results of the follow-up tests found that participants whose awareness was raised after instruction could reproduce more targeted figurative expressions than those who did not receive the awareness-raising instruction. The results suggest that learners' enhanced metaphoric awareness may contribute to the retention of figurative expressions. Verspoor and Lowie (2003) also found that participants who were provided awareness-raising clues would be more capable of guessing figurative senses of words than those who were asked to memorize words. The findings suggest that enhanced awareness can be beneficial in vocabulary acquisition. To take the practical effect and potential benefit of language teaching and learning into consideration, the issue of whether learners are able to retain and recall their knowledge of metaphor after a certain amount of time is worth investigating.

However, there is no common agreement on a proper length of time for examining retention. Choices of durations in studies which investigate the issue of retention range from immediacy (Boers, 2000b; Boers et.al., 2007), three days (Boers, 2000a), one week (Boers, 2001), two to three weeks (Verspoor & Lowie, 2003), to one year (Boers, 2004); no conclusive amount of time for retention test is suggested. Considering the possibilities that performances of immediate follow-up tests may be regarded as merely participants' temporary memories whereas performances after one year may be doubtable because of too many uncontrolled variables involved, the present study decides to give the posttest after one week and to measure participants' performances. On the one hand, the experiment of the present study was carried on in regular classes, in which the participants needed to meet at the same time every week. The one-week duration just fit schools' schedules. On the other hand, it is guaranteed that the experiment was not influenced or contaminated by other possible factors so that the results of the experiment could be claimed reliable.

Rationales of the Study and Research Questions

Researchers in the field of SLA contend that learners' awareness of motivations is the key in second language acquisition (Ammar, Lightbown, & Spada, 2010; O'Mally & Chamot, 1990; R. Ellis, 2002). Cognitive linguists, too, share this idea about beneficial effects of enhanced awareness (Boers & Lindstromberg, 2006; N. Ellis, 2006a, 2006b), and apply the idea to research on figurative language learning (Boers, 2000a, 2000b, 2001; Boers & Demecheleer, 2001; Boers, Demecheleer, & Eyckmans, 2004; Boers, Eyckmans, & Stengers, 2007; Boers & Stengers, 2008; Chung & Ahrens, 2004; Deignan et al., 1997; Dong, 2004; Kövecses, 2001; Low, 1988; Skoufaki, 2005). Though the proposed methods are different in terms of ways of applications, they mainly rely on the concept of source-theme relationships,

implementing metaphoric themes—or conceptual metaphor—during the learning processes in order to raise L2 learners' awareness of semantic motivation behind figurative expressions. The results have proved that L2 learners' enhanced awareness of conceptual metaphor is indeed beneficial in comprehension and retention.

However, the method of providing conceptual metaphor is not unproblematic. First of all, focusing mainly on awareness raising may lead to an underestimation of the effects of one important element: the gaps caused by different cultures between native and target 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 the advancement of L2 learning process, such as metaphor and metonymy learning which involves not only languages but also cultures and conventions, conflicts between L1 and L2 knowledge may cause greater difficulties (Kövecses, 2001).

Moreover, problems caused by the conflict could get worse when considering different L1 learners. The participants of the research which adapts the method of conceptual metaphor are Dutch (Boers, 2000b, 2001) or French (Boers, 2000b; Boers & Demecheleer, 2001) native speakers learning English. Their L1 are Indo-European languages of the Germanic branch or Italic branch, which are closely related to English, a member of the Germanic family of languages. However, when the distance between a native and a target language is farther, language learners may not be able to count on similarities and familiarities during the learning process. For example, English learners of Asian countries, whose native languages are far different from Indo-European languages, may need further supports to bridge the cultural and linguistic gaps during the learning process.

In order to help numerous EFL learners around the world to acquire and develop metaphoric competence, researchers (Deignan et al., 1997; Dong, 2004; Kövecses,

2001) propose several ways to solve problems caused by cultural and linguistic differences. Among those proposed solution, Kövecses' (2001) proposal of integrating metaphoric mappings seems very promising. It not only follows the trend of cognitive linguistics which emphasizes semantic motivations behind expressions, but also deals with cultural gaps by utilizing learners' already-existent world knowledge and universal concepts. However, up till now the idea hasn't been empirically tested yet; thus, it hasn't been able to claim its effects on L2 learning.

The present study, therefore, intends to compare the two previously-proposed methods in teaching EFL learners metaphoric and metonymic expressions, determine their effects on L2 figurative language learning, and find a compromising way for EFL learners with different native languages. The two methods under investigation include: the method of conceptual metaphor (CM), which focuses on giving conceptual metaphors and has learners compare two domains to find associative characteristics, and the method of metaphoric mappings (MM), which emphasizes mapping processes and has learners map between domains and between cultures. The present study targets at Chinese native speakers who are learning English as a foreign language. Their metaphoric competence—ability of recognizing figurative expressions, fluency of comprehending meanings, and retention of learned figurative expressions—are under investigation.

The research questions are as follows:

Research Question 1: Which teaching method would improve EFL learners' awareness of metaphoric and metonymic expressions of the emotions? In what way does the method help?

Research Question 2: Which teaching method would facilitate EFL learners in comprehending metaphoric and metonymic expressions? In

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what way does the method help?

Research Question 3: Which teaching method would facilitate EFL learners in

retaining metaphoric and metonymic expressions of the

emotions?

In summary, the goal of the present study is to investigate and compare the effect

of using two teaching methods—one focusing on conceptual metaphor (CM) and the

other emphasizing metaphoric mappings (MM)—on developing the abilities of the

metaphoric competence defined by Littlemore (2001). In addition to the effects on

competence improvement, the influence of retention will also be examined.

As for the targeted metaphoric and metonymic expressions, among all the

abstract subjects that would require figurative language in communication, *emotion* is

one of the most commonly discussed topics in daily life and is universally possessed

by all human beings (Kövecses, 1986, 1990, 2000a, 2000b; Lakoff & Kövecses,

1987). The current study will therefore focus on teaching and learning emotion

expressions. The emotions are generally classified into *anger*, *happiness*, *sadness*,

fear, *love*, *hate*, and *desire* in traditional Chinese Confucian culture (King, 1989).

Considering the scope of the study, two common emotions—*anger* and *happiness*–are

specifically chosen as the targets for analysis.

<h2 align="center">Significance of the Study</h2>

The present study aims to investigate and compare the effect of using two

teaching methods on developing the abilities of the metaphoric competence. The

results of the study shall make several contributions to the field of applied linguistics

as well as second language acquisition.

First, the present study can provide more detailed analysis of L2 learners'

perceptions of figurative expressions. Since the present study includes not only metaphor but also metonymy, analyses on L2 learners' responses and perceptions could encompass the idea of metaphor and metonymy interaction. Unlike previous studies, which investigated only effects of learning (Boers, 2000a, 2000b, 2001, 2004), the present study has a finer-grained arrangement of the test items in terms of their degrees of semantic transparency and opaqueness. Figurative expressions used in the present study are considered as scattering on a continuum; the idea of slipperiness of metaphor and metonymy (Radden, 2003; Barnden, 2010) allows finer analyses of learners' responses.

Secondly, the present study can provide empirical evidence of the previous hypothesis that figurative expressions may be culturally universal or specific among languages (Kövecses, 2000a). Though the concepts of universality and specificity are widely accepted by researchers, whether language users detect these traits and use them while processing expressions has not been validated by empirical studies. The present study integrates the ideas of universality and specificity into the metaphor-metonymy continuum so that learners' folk knowledge will also become a variable of their performances; thus the results of the study can serve to unravel the effects of cultural universality or specificity on language learning.

The present study investigates and compares two methods which are both based on cognitive linguistic theories, trying to determine the benefits each method may bring. The findings of the study hope to shed light on the field of L2 figurative language teaching and learning. Metaphor and metonymy should no longer be seen as fixed idioms or expressions whose meanings are arbitrary, but as expressions motivated by cognitive processes. The present study wishes to provide inspiring insight into material designs as well as classroom instructions for foreign language teachers and learners.

In the modern era of language teaching and learning, which values communicative competence, understanding and using figurative expressions are indispensible (Low, 1988; Ortony, 1975; Littlemore & Low, 2006). The results of this study can provide pedagogical guidelines for EFL teachers to follow in teaching figurative expressions, and for EFL learners to acquire metaphoric competence so as to develop native-like English language proficiency.

Organization of the Present Study

A summary of the study is presented below:

Chapter 2 reviews literature related to the present study. Theories of metaphor and metonymy are first reviewed to establish the theoretical background. In the second section, to demonstrate similarities and differences between the two languages under discussion, English and Chinese, metaphoric and metonymic expressions of the emotion *anger* and *happiness* in both languages are reviewed. Third, the research on teaching methods regarding the EFL context is also reviewed. Based on the reviews, the research hypotheses are given.

Chapter 3 states the processes of the development of the research design, and the rationales of the test—the Metaphoric Competence Test—used in the present study. Background information on the participants, design of test items, and procedures of data collection are introduced separately, with detailed explanations.

Chapter 4 reports and describes the results and analyses of the tests—the Awareness Test and the Comprehension Test. The participants' performances on the tests provide evidence for and answer to the three research questions. The quantitative analyses of the results show how different teaching methods influence learners' awareness in terms of metaphor and metonymy. The qualitative analyses, on the other hand, provide evidence of how learners deal with similarities and differences between

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their native and target languages.

Chapter 5 summarizes the major findings of the two tests and three research questions, and provides pedagogical guidelines and implications. This study closes by pointing out its limitations and suggesting future research in other education milieu.

CHAPTER 2

THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES

This chapter reviews literature related to theories of metaphor and metonymy, English and Chinese expressions of emotions, and cross-cultural universality and specificity. Teaching methods in an EFL context are also examined under the theoretical frameworks. Based on the literature, the research hypotheses of the study are raised.

Metaphor and Metonymy

Metaphors and metonymies used to be viewed as figures of speech wherein one or more words were used outside of their conventional meanings (Lakoff, 2006). With advances in linguistic research, metaphors and metonymies, which are no longer considered mere "decorative and ornamental" language, have been pervasively found in language, thought, and action to have everyday functions for communicative purposes.

Metaphor Theories

Traditionally, metaphor was viewed as being based on the notions of similarity or comparison between literal and figurative meanings of an expression. The ancient Greek philosopher Aristotle argues that metaphor is an implicit comparison based on the principles of analogy. The sentence *Man is a wolf* is an example of the traditional comparison view: when comparing *man* to *wolf*, a semantic clash occurs, and thus results in a need to reconstruct the conceptual basis to interpret the comparative statement (Miller, 1993, p.382). Based on the comparison view, Black (1962, 1993)

moves further to propose an interactive view of metaphor, taking it as one subject projecting its associated implications onto the distinct other. Two subjects, namely the primary and secondary subjects, interact with each other by selecting related properties and constructing parallel implications.

Black's interactive view of metaphors shows the concept that metaphor is more than a linguistic phenomenon but a way of thinking about things. His idea of mappings across two subjects, or two domains, is then developed into the contemporary theory of metaphor, which considers metaphor as a cross-domain mapping in the conceptual system (Lakoff & Johnson, 1980). Cognitive linguists believe that metaphor is a conceptual mechanism "by which we understand and structure one domain of experience in terms of another domain of a different kind" (Johnson, 1987, p.15), and is a mapping of thoughts across different conceptual domains. The domain that requires explanation is the *target domain*, while the domain that is used to explain a concept is the *source domain*.

In the contemporary theory of metaphor, each conceptual domain has its inherent structures, called *image schema*, constructed from the cognitive typology of daily life experiences. Image schema of a target domain is invariant when mapping to a source domain; in other words, the image-schema structure of source domain should be consistent with the inherent structure of target domain. In other words, the systematicity and correspondences between the two domains are based on the Invariance Principle (Lakoff, 1993). As a result, metaphor can be explained and comprehended by analyzing the image schema of the two domains and matching corresponding traits.

A mapping relationship between the source domain and the target domain is called a *conceptual metaphor* (Lakoff & Johnson, 1980). Each mapping is a fixed set of ontological correspondences between entities in a source domain and entities in a

target domain. For example, the conceptual metaphor LIFE IS A JOURNEY shows the *ontological mapping* from the source domain JOURNEY to the target domain LIFE. The ontological mapping characterizes epistemic correspondences by mapping knowledge about journeys onto knowledge about life: according to conventional understandings of these two subjects, life is a progress through which one keeps moving on in order to reach goals, just as a journey is a process of moving forward to reach each subsequent destination. A person leading a life is like a traveler leading a journey; the goal of life is like the destination of the journey. Significant life events are like important experiences of journeys. These correspondences shown by the *epistemic mapping* further extend the conceptual metaphor. The mappings given in (1) below illustrate the conceptual metaphor LIFE IS A JOURNEY. (Materials are adapted and modified from Lakoff, 1993)

(1) Ontological mappings of LIFE IS A JOURNEY
    Source: JOURNEY   ←→   Target: LIFE
    Travelers   People
    Journey   Lifetime
    Destination   Goal

Epistemic mappings of LIFE IS A JOURNEY
Source: JOURNEY   ←→ Target: LIFE

When leading a journey, travelers may lose directions and miss their destination.	When live a life, people may lose directions and miss their life goals.
Travelers need to choose which directions or roads to go.	People need to choose which ways and life to live on.
Travelers go through different places and have various experiences.	People go through different life phases and have various life experiences.

Examples:

He's *without direction* in his life.

I'm *where I want to be* in life.

I'm *at a crossroads* in my life.

He's never let anyone *get in his way*.

He's *gone through* a lot in life.

Metonymy Theories

Like metaphor, metonymy was traditionally viewed as only a figure of speech that substituted one thing for another. It worked by the contiguity, or association, between two expressions. Metonymy was believed to be used primarily for referential purposes, i.e., to use one entity to stand for another (Lakoff & Johnson, 1980, p.36).

However, Radden and Kövecses (1999) oppose this traditional view and argue that metonymy is a cognitive process in which one conceptual entity provides mental access to another conceptual entity within the same idealized conceptual model (ICM). Barcelona (2000) also defines metonymy as a conceptual projection whereby one experiential domain is partially understood in terms of another experiential domain included in the same common experiential domain. These definitions of metonymy point out one similarity of metaphor and metonymy: both serve the function of providing understanding. The definitions also point out the major difference between metonymy and metaphor: metonymy involves the association of two entities within the same ICM, while metaphor involves a mapping between two separate domains.

Metonymy allows language users to use one entity to stand for another in order to facilitate understanding. However, not every entity within ICMs can stand for each other and produce metonymies. The choice of vehicle and target in default cases of metonymy appears to be motivated or restrained by cognitive principles: the need to be accurate for the communicative purpose, and the natural inclination to think and talk explicitly about things that are cognitively salient rather than things that are less

obvious (Langacker, 1993). To illustrate, specific body parts would be chosen to represent a whole person. In the example *She is just a beautiful face*, the word *face* represents *she* as a person, meaning that she has nothing but an attractive appearance. Moreover, observable physiological effects can be used to stand for abstract and imperceptible feelings. For example, the sentence *He turned red in the face* displays the agitation of the person.

Relationship between Metaphor and Metonymy

According to the definitions, the cognitive process of forming metaphor and metonymy are different in essence: metaphor involves cross-domain mappings while metonymy involves mappings within the same domain. However, researchers find that the distinction between the notions of metaphor and metonymy is "notoriously difficult" (Radden, 2003, p.93), since metaphor and metonymy interact with each other in intricate ways.

Barcelona (2000) integrates previous studies and finds that, at the conceptual level, metaphor and metonymy can motivate each other. On the one hand, many metaphors are motivated conceptually by a metonymy, which is closer to their experiential basis. Take the emotion *anger*, for example. According to Lakoff and Kövecses (1987), the metonymies of *anger* conceptualize the physiological effects of being angry: BODY HEAT, PRESSURE, and AGITATION. These effects motivate the related metaphors of anger, such as ANGER IS A HOT FLUID IN A CONTAINER, as in *I had reached the boiling point* or *I got all steamed up*.

On the other hand, metonymy can also be motivated by a metaphoric concept. This type of interaction happens when the target domain of a metaphor carries out a metonymic mapping in which a specific attribute can stand for its entity. For example, in the sentence *She caught his ear and persuaded him to accept the plan*, the phrase

his ear stands for this person's attention metaphorically, and at the same time belongs to a conventional metonymy BODY PART FOR FUNCTION (Goosens, 1990).

Since both metaphor and metonymy are conceptually associated, the distinction between them is not a dichotomy, but rather a fuzzy boundary. Taylor (1995, 2003) uses the conceptual metaphor MORE IS UP as an example. The experience of piling things up establishes a natural association between quantity and vertical extent, which causes the height to be associated metonymically with quantity; only when the piling-up image becomes abstract and beyond the stereotypical situation can metaphor take over. Radden (2003, p.409) further develops the case and proposes the "literalness-metonymy-metaphor continuum" shown in Table 2.1.

Table 2.1
Literalness-Metonymy-Metaphor Continuum

Literal		Metonymic		Metaphoric
High tower	*High tide*	*High temperature*	*High price*	*High quality*

The existence of a continuum evidences that the conceptual metaphor MORE IS UP is grounded in experience (Lakoff, 1993). By adding objects to a pile, the pile gets higher; the vertical height metonymically stands for degrees of temperature, i.e., UP FOR MORE. The vertical height then becomes more abstract in a sense wherein higher means better, i.e. GOOD IS UP.

Metaphor and Metonymy of Emotions

Since conceptual domains were formerly believed to be constructed from the cognitive typology of daily life experiences, metaphor and metonymy should be comprehended or represented on the experiential basis (Lakoff & Johnson, 1980, p.19). Human emotion is one subject that is grounded in experiences (Lakoff &

Kövecses , 1987). People can experience a certain emotion and have abstract feelings that are difficult to communicate or express. As soon as they move away from concrete physical experience and start talking about abstractions or emotions, they resort to figurative expressions for help (Ortony, 1975). By using metaphoric and metonymic expressions, people can describe the process of experiencing the emotions, and demonstrate the intensity of them.

Metaphor and Metonymy of *Anger*

With respect to the descriptions about the emotion *anger*, many metaphoric and metonymic expressions are based on the experiences of physiological reactions to anger. For example, being angry causes increased body heat, internal pressure, and redness in the face and neck. The feelings of anger then results in agitation and interferes with accurate perception. These embodied experiences yield the principle of metonymic expressions: THE PHYSIOLOGICAL EFFECTS OF AN EMOTION STAND FOR THE EMOTION (Kövecses, 1990). Examples in (2) below list sentences related to this concept.

(2) BODY HEAT
   a. Don't *get hot under the collar*.   b. Billy's a *hothead*.

   INTERNAL PRESSURE
   c. Don't get *a hernia*!   d. When I found out, I almost burst *a blood vessel*.

   REDNESS IN FACE AND NECK AREA
   e. She was *scarlet* with rage.   f. He got *red* with anger.

   AGITATION
   g. She was *shaking* with anger.   h. I was *hopping* mad.

   INTERFERENCE WITH ACCURATE PERCEPTION
   i. She was *blind* with rage.   j. I was beginning to *see red*.

All these expressions indicate the emotion *anger* via its physiological effects on an angry person.

The physiological effects of anger, especially the part that emphasizes body heat, form the basis of the most general metaphor for anger: ANGER IS HEAT. Two types of heat are applied: the heat of fire, and the heat of fluid (Kövecses, 1986; Lakoff & Kövecses, 1987). In addition to these two source domains, some further ones are added to the list of metaphoric source domains that characterize *anger* (Kövecses, 1990, 2000b), as shown by the examples given in (3) below.

(3) ANGER IS A HOT FLUID IN A CONTAINER.
    a. You make my *blood boil*.   b. She got all *steamed up*.

ANGER IS FIRE.
    c. He is doing *a slow burn*.   d. His anger is *smoldering*.

ANGER IS INSANITY.
    e. I just touched him, and he *went crazy*.   f. You're *driving me nuts*.

ANGER IS AN OPPONENT IN A STRUGGLE.
    g. I'm *struggling* with my anger.   h. He *surrendered* to his anger.

ANGER IS A CAPTIVE ANIMAL.
    i. He *unleashed* his anger.   j. He is *breathing* fire.

ANGER IS A BURDEN.
    k. After I lost my temper, I felt *lighter*.
    l. He has *a chip on his shoulder*.

ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR.
    m. He started *snarling at me*.   n. Don't *bite my head off*.

THE CAUSE OF ANGER IS TRESPASSING.
    o. This is where I *draw the line*.   p. Don't *step on my toes*.

THE CAUSE OF ANGER IS PHYSICAL ANNOYANCE.

 q. Don't be *a pain in the ass*.   r. He's *a pain in the neck*.

ANGER IS A NATURAL FORCE.

 s. It was a *stormy* meeting.   t. He *thundered* with rage.

AN ANGRY PERSON IS A FUNCTIONING MACHINE.

 u. That really *got* him *going*.

ANGER IS A SOCIAL SUPERIOR.

 v. His actions were completely *governed* by anger.

Metaphoric Metonymy and Metonymic Metaphor of *Anger*

In the case of the conceptual metaphor ANGER IS INSANITY, since insane behavior can metonymically stand for insanity and insanity is metaphorically related to *anger*, insane behavior can also indicate angry behavior. The behavior can stand for *anger* based on EFFECT FOR CAUSE metonymy. Examples in (4) below give illustrations.

(4) INSANE BEHAVIOR STANDS FOR ANGER.
  a. When my mother finds out, she will *have a fit*.
  b. When the ump threw him out of the game, Billy started *foaming at the mouth*.

When people suffer serious anger and can neither control nor relieve it, they usually engage in violent and frustrated behavior. This type of behavior may also be counted as a form of angry behavior. For the same metonymic principle, this behavior can represent the emotion that causes it to occur. Examples are given in (5) below.

(5) VIOLENT FRUSTRATED BAHAVIOR STANDS FOR ANGER.
  a. He's *tearing his hair out*.
  b. If one more thing goes wrong, I'll start *banging my head against the wall*.

The EFFECT FOR CAUSE metonymy can apply to the case of aggressive behavior. The conceptual metaphor ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR indicates that aggressive behavior, including both verbal and visual types, metaphorically stands for angry behavior, which in turn metonymically represents *anger*, as shown by the examples given in (6) below.

(6)   AGGRESSIVE VERBAL BEHAVIOR STANDS FOR ANGER.
           a. She gave him a *tongue-lashing*.   b. I really *chewed* him *out* good!

       AGGRESSIVE VISUAL BEHAVIOR STANDS FOR ANGER.
           c. She was *looking daggers* at me.   d. He was *glowering* at me.

The expressions listed under (4), (5), and (6) manifest combinations of the metonymic principle and the conceptual metaphor. These expressions, in Kövecses' (1990) term, are *metaphoric metonymies*.

In addition to metaphoric metonymies, which apply conceptual metaphors on the basis of the metonymic principle, some expressions are formed on the metaphoric basis but also apply the metonymic principle. These expressions contain body parts and organs, which can stand metonymically for a whole person; the PART FOR WHOLE metonymic principle shows that the body's responses to anger can stand for the person's response to anger. Combined with a conceptual metaphor, a mapping between a source and a target domain can be imagined by referring to the physiological response. For example, sentence (3-a) *You make my blood boil* is formed based on the conceptual metaphor ANGER IS A HOT FLUID IN A CONTAINER; however, it also contains *blood*, an important part of the human body. One can imagine the feeling of boiling blood flowing in one's vessels, and relate the feeling to the angry emotional response. Sentences (3-l), (3-n), (3-p), (3-q), (3-r), (4-b), (5- a), (5-b), (6-a) are also expressions with body parts: shoulder, head, toe,

bottom, neck, mouth, hair, and tongue. These expressions are metaphors that can be understood metonymically, so they can be called *metonymic metaphors*.

Metaphor and Metonymy of *Happiness*

Regarding expressions of the emotion *happiness*, similar to expressions of the emotion *anger*, metaphoric and metonymic expressions are mainly motivated on the basis of physiological reactions and experiences. For example, one of the typical expressive responses associated with happiness is smiling; the sentence *They were all smiles* is one common expression. A more intense form of smiling is laughing, as in the sentence *He was so happy that he laughed out loud*. In addition to smiling, physical activities such as jumping and dancing are also assumed to accompany happiness. These physiological reactions to happiness form metonymic expressions. Sentences listed in (7) below illustrate the metonymic expressions of *happiness*. (Examples are cited in Kövecses,1991).

(7) SMILING
  a.   She was *smiling* with happiness.   b. He *grinned from ear to ear*.

  JUMPING
  c.   He *jumped* for joy.   d. He was *leaping* with joy.

  DANCING
  e.   We were *dancing* with joy.   f. They *kicked up their heels*.

The physical activities like jumping and dancing show a close connection between happiness and festive conditions. Happiness as an energetic state is thus the conceptual metaphor HAPPINESS IS VITALITY. In addition, energy may lead to heat and thus derive light. The conceptual metaphor HAPPINESS IS LIGHT is one of the most representative metaphors for happiness. In addition to the two conceptual

metaphors, some further ones are added to the list of metaphoric source domains that characterize *happiness* (Kövecses, 1991, 2000b), as shown by the examples given in (8) below.

(8) HAPPINESS IS LIGHT.
   a. She *brightened up* at the news.   b. She *lit up* when she heard the news.

   HAPPINESS IS VITALITY.
   c. He is *alive* with joy.   d. He's in a *lively* mood today.

   HAPPINESS IS A FLUID IN A CONTAINER.
   e. Joy *welled up* inside her.   f. He was *overflowing* with joy.

   HAPPINESS IS A CAPTIVE ANIMAL.
   g. His feeling of happiness *broke loose*.
   h. She couldn't *hold back* her happiness.

   HAPPINESS IS AN OPPONENT IN A STRUGGLE.
   i. He was *knocked out*.   j. She was *overcome by joy*.

   HAPPINESS IS INSANITY.
   k. They were *crazy with happiness*.   l. She's ready to *jump out of her skin*.

   HAPPINESS IS A NATURAL FORCE.
   m. She felt *a rush of happiness*.   n. Feelings of happiness *hit* her *in waves*.

Metaphoric Metonymy and Metonymic Metaphor of *Happiness*

The behavioral responses to *happiness* ground the metaphoric expressions in experience associated with the upward orientation. For instance, when one is happy and smiling, the ends of the mouth turn upward, in contrast to the downward turn when one is upset. Moreover, jumping and dancing also imply upward movements. Hence, the orientation metaphor HAPPY IS UP is used in describing *happiness*. The concept of happiness being an upward orientation also leads to such conceptual

metaphors as BEING HAPPY IS BEING OFF THE GROUND and BEING HAPPY

IS BEING IN HEAVEN. Since it is the embodied experience that is used to present a

feeling of a person, the metonymic principle PART FOR WHOLE is applied to the

conceptual metaphors. Examples in (9) below list sentences related to this concept.

(9) HAPPY IS UP
   a. They were in *high* spirits.   b. Thinking about her always *gives* me *a lift*.

   BEING HAPPY IS BEING OFF THE GROUND
   c. She was *on cloud nine*.   d. I was just *soaring with* happiness.

   BEING HAPPY IS BEING IN HEAVEN
   e. They were in *hog heaven*.   f. I was in *seventh heaven*.

The conceptual metaphor HAPPINESS IS VITALITY motivates the metonymic

sense associated with being warm, for being vital and energetic implies being lively

and warm instead of lifeless and cold. WARMTH can stand for happiness based on

the EFFECT FOR CAUSE metonymy. Examples in (10) below show sentences

related to this concept.

(10) HAPPINESS IS WARMTH
   a. What she said made me feel *warm* all over.
   b. That *warmed* my spirits.

In addition to the rising temperature, another form of behavior is also observable:

the reactions of the eyes. When a person is happy, brightness of the eyes is an

"assumed expressive response" (Kövecses, 1991, p.31). Combining the conceptual

metaphor HAPPINESS IS LIGHT, brightness of the eyes can stand for the *happiness*

emotion. At the same time, since the human body is often conceptualized as a

container, the eyes, which substitute for a person based on PART FOR WHOLE

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metonymy, are regarded as containers for emotions. Therefore, the conceptual

metaphor BRIGHT EYES STAND FOR HAPPINESS is motivated by the conceptual

metaphor EYES ARE CONTAINERS FOR THE EMOTIONS. Examples are listed in

(11) below.

(11) BRIGHT EYES STAND FOR HAPPINESS
   a.   His eyes were *shining*.
   b.   b. His eyes *glinted* when he saw the money.

Metonymy-Metaphor Continuum of *Anger* and *Happiness*

The analyses on the metaphoric and metonymic expressions show that those

expressions can be placed on a continuum, as in Table 2.2 below. The expression of

anger is a good example. At one end of the continuum, the metonymy THE

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the base of other conceptual metaphors of *anger*. At the other end, metaphor is made

based on mappings from various source domains. Between the two ends of the

continuum, the metaphoric metonymy is formed based on the combination of a certain

conceptual metaphor and the EFFECT FOR CAUSE metonymy. Furthermore, the

metonymic metaphor is the metaphor that can be understood with PART FOR

WHOLE metonymy.

With regard to the metaphoric and metonymic expressions of the emotion

happiness, they too can be placed on a continuum. At one end, the metonymy THE

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still the base of other conceptual metaphors of *happiness*. At the other end, metaphor

is made based on mappings from different source domains, such as LIGHT and

VITALITY. Between the two ends of the continuum, the metaphoric metonymy is

formed based on the combination of certain conceptual metaphors and metonymic

principles, like EFFECT FOR CAUSE and PART FOR WHOLE. On the other hand, the metonymic metaphor is a metaphor that is associated with PART FOR WHOLE metonymy.

Table 2.2

Metonymy-Metaphor Continuum

Metonymy	Metaphoric metonymy	Metonymic metaphor	Metaphor
Based on conceptual metonymy.	Based on the combination of metaphor and metonymy.		Based on conceptual metaphor.

However, notice that there is no clear separation between the categories on the continuum; the boundaries between them are fuzzy. Even expressions that belong to one category are located in different places on the continuum due to their level of prototypicality. For example, among metonymic metaphors, some body parts, such as *eye*, *head*, *tongue*, and *blood*, are more prototypical; others, like *gorge*, are rather peripheral. The intermediacy and overlap of metaphor and metonymy, as Radden (2003) and Barnden (2010) caution, emphasize the slipperiness of the two concepts and the fuzziness of the boundaries between them. In general, the closer to the end of metaphor, the more complicated the conceptual mappings are, and thus the more effort is needed to interpret the expressions.

Metaphor and Metonymy of Emotions in Other Languages

Human emotions are common in human beings. People around the world use their languages to manifest their thought and reaction of emotions. Many researchers have explored metaphoric and metonymic expressions about *anger* in a number of languages, such as English (Lakoff & Kövecses, 1987; Kövecses, 1986, 2000a), Chinese (King, 1989; Yu, 1995, 1998), Japanese (Matsuki, 1995), Hungarian

(Kövecses, 2000a, 2005), Spanish (Barcelona, 2001; Soriano, 2003), and Arabic

(Al-Haq & El-Sharif, 2008). Expressions of *happiness* have also been investigated in

English (Kövecses, 1991), Chinese (King, 1989; Yu, 1998), Japanese and German

(Dobrovol′skiĭ & Piirainen, 2005; Shinohara & Matsunaka, 2009). The findings show

that different languages have similar metaphoric and metonymic expressions, as well

as different ones. The similarities and differences among languages are found and

categorized into four general patterns (Deignan et al., 1997): (a) same conceptual

metaphor and same linguistic expressions, (b) same conceptual metaphor and

different linguistic expressions, (c) different conceptual metaphors, and (d) similar

words or phrases but different metaphoric meanings. The findings of those patterns

suggest that languages may be universal at the conceptual level, but can be specific in

linguistic manifestation.

Metaphor and Metonymy of *Anger* in Chinese

In English, metaphors and metonymies of the emotion *anger* emphasize

inherent characteristics in the prototypical cognitive models (Lakoff & Kövecses,

1987): when an offending event happens to a person and causes anger, the person

attempts to control the anger but loses control anyway; then the person seeks

retribution, and after receiving it, the anger ceases to exist. Such a cognitive model

(i.e., Offending event→Anger→Attempt to control anger→Release of

anger→Restoration of equilibrium) also operates in Chinese (King, 1989, cited in

Kövecses, 2000b). However, in Chinese culture, there is another type of model, which

differs from the previous model only in the final two stages. In this model, the force

of anger is diverted to various parts of the body and causes somatic effects, such as

headaches or stomachs. Afterward, compensating events happen and balance the

intensity of the offence; anger then ceases to exist. The two cognitive models of anger

in Chinese culture result in the similarities and differences in anger metaphors found in Chinese and English (Kövecses, 2000a).

The general metaphoric concept that ANGER IS HEAT in English is also applicable in Chinese (Yu, 1995), and it yields two versions. One version is the heat of a concrete fire, which is the same as in English. The other is the heat of a gas, which is specific in Chinese culture.

When ANGER IS HEAT is applied to a concrete fire, the metaphoric concept ANGER IS FIRE is quite conventional, as it is in English. Sentences listed in (12) below are examples (cited in Yu, 1995, 1998).[1]

(12) ANGER IS FIRE
   a. 別惹我發火 *bié rě wǒ fā huǒ* (don't provoke me shoot fire 'Don't set me on fire.')
   b. 你在火上加油 *nǐ zài huǒ shàng jiā yóu* (you PRT fire on add oil 'You're adding oil on the fire.')
   c. 他大動肝火 *tā dà dòng gān huǒ* (he greatly move liver fire 'He flew into a rage.')
   d. 他氣得火冒三丈 *tā qì de huǒ mào sān zhàng* (he gas COM fire rise three *zhang* 'He anger/fire is flaming up as high as 10 meters.')

The actual linguistic expressions for the conceptualization may be similar or different. Descriptively, Chinese tends to use more body parts, especially internal organs, in the conventionalized phrases of *anger* than English does. But if these metaphoric expressions are closely examined, they show that excessive anger will hurt the angry person's body; the concept of *anger* being harmful is quite similar to that in English. For example, fire burning inside the heart would medically cause damage to the human body; fire let out from the seven apertures in the head is also harmful.

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[1] The Chinese examples are provided with English transcriptions, word-for-word glosses, and English translations. The transcriptions follow the Hanyu Pinyin system. The glosses follow Yu's (1998) system in which some grammatical markers are noted as abbreviations instead of direct translations. For example, COM stands for *complement marker*, and PRT refers to *particle*.

Examples in (13) illustrate the concepts.

(13) a. 怒從心起 *nù cóng xīn qǐ* (anger from heart up 'Anger comes from the heart.')
   b. 七竅生煙 *qī qiào shēng yān* (seven apertures produce smoke 'Fuming with anger')

However, a subtle difference exists between English and Chinese. In English, the emotion of anger is seen as a destructive force that could be harmful not only to the angry person but also to bystanders. On the other hand, in Chinese, though the emotion of anger is also seen as a damaging force to the angry person, it is self-restrained; i.e., it would not damage others. The difference here supports the claim that, though metaphors in languages share universality, they also have their own specificities.

The second version of ANGER IS HEAT in Chinese is applied to gases: ANGER IS THE HOT GAS IN A CONTAINER. The metaphoric concepts consist of common knowledge about heated gas: When the heated gas is closed up in a container, it will expand and cause increasing internal pressure, with an ultimate consequence of explosion (Yu, 1995). Sentences listed in (14) are good examples (cited in King, 1989, and Yu, 1995, 1998).

(14) ANGER IS THE HOT GAS IN A CONTAINER.
   a. 他憋了一肚子氣 *tā biē le yí dù zi qì* (he hold-back PRT one belly gas 'He was filled with pent-up anger.')
   b. 他心中有氣 *tā xīn zhōng yǒu qì* (he heart inside have gas 'He was angry inside.')
   c. 他在生悶氣 *tā zài shēng mēn qì* (he PRT produce contained gas 'He felt sulky')
   d. 他怒氣沖沖 *tā nù qì chōng chōng* (he anger gas soar soar 'He was in a state of fury.')

Although FLUID and GAS are very different source domains, they share some basic metaphoric entailments, such as HEAT, INTERNAL PRESSURE, and POTENTIAL AND DANGER OF EXPLOSION, allowing them to be carried over from different source domains to the same target domain *anger*.

The above metaphoric expressions disclose apparent similarities of metonymic principle between English and Chinese. Similar metonymic expressions are also common in everyday use, as shown in (15) below (cited in King, 1989; Yu, 1995; Kövecses, 2000a).

(15) BODY HEAT
   a. 我氣的臉上火辣辣的 *wǒ qì de liǎn shàng huǒ là-là de* (I gas COM face on fire hot PRT 'I was so angry that my face was peppery hot.')

INTERNAL PRESSURE
   b. 他的怒氣終於爆發 *tā de nù qì zhōng yú bào-fā* (he COM anger gas eventually explode 'His temper exploded at last.')
   c. 別把肺給氣炸了 *bié bǎ fèi gěi qì zhá le* (don't PRT lung PRT gas explode PRT 'Don't burst your lung with rage.')

AGITATION
   d. 他氣得吹鬍子瞪眼睛 *tā qì de chuī hú-zi dèng yǎn-jīng* (he gas COM blow moustache glare eye 'He was so angry that he was blowing his moustache and opening his eyes wide.')
   e. 他氣得渾身發抖 *tā qì de hún-shēn fā-dǒu* (he gas COM whole-body tremble 'His body was shaking all over with rage.') .

REDNESS IN FACE AND NECK AREA
   f. 他們爭得各個面紅耳赤 *tāmén zhēng de gège miàn-hóng-ěr-chì* (they argue COM everyone face-red-ear-red 'They argued until everyone became red in the face and ears.')
   g. 他們吵得臉紅脖子粗 *tāmén chǎo de liǎn-hóng-bózi-cū* (they argue COM face-red-neck-thick 'They argued until their faces turned red and their necks became thicker.')

    h. 我氣得兩眼發黑 *wǒ qì de liǎng yǎn fā hēi* (I gas COM two eye become black 'I was so angry that my eyes turned blind.')

    i. 我氣得頭昏眼花 *wǒ qì de tóu-hūn yǎn-huā* (I gas COM head-giddy eye-blurred 'I was so angry that my head became giddy and my vision blurred.')

From these examples, the similarities of metonymic expressions between the two languages are obvious. The similarities show that bodily experiences are universal among languages. However, cultural models do influence manifestations of linguistic expressions. Sentence (2-j) *I was beginning to see red* and (15-h) are good examples of this: the English example (2-j) uses *got red*, while the Chinese example (15-h) uses *become black*.

Metaphor and Metonymy of *Happiness* in Chinese

    In terms of metaphoric and metonymic expressions of the emotion *happiness* in Chinese, they seem to share some major conceptual metaphors with those in English. For example, the orientational metaphor HAPPY IS UP is found in Chinese expressions, as shown in examples in (16) below (cited in Yu, 1998).

(16) HAPPY IS UP

    a. 他很高興 *tā hěn gāo-xìng* (he very high-spirit 'He is very high-spirited.')

    c. 他情緒高漲 *tā qíng xù gāo-zhàng* (he mood high-rise 'His spirits are running high.')

    d. 他正在興頭上 *tā zhèng zài xìng-tóu shàng* (he PRT at spirit-head on 'He is at the height of his spirit.')

    e. 他得意洋洋 *tā dé yì yang-yang* (he complacency raise-raise ''He looked triumphant.')

    In addition to HAPPY IS UP, the HAPPINESS IS LIGHT metaphor also exists in Chinese. Moreover, the more generic-level conceptual metaphor THE EMOTIONS

ARE FLUIDS IN A CONTAINER also applies to Chinese as the conceptual

metaphor HAPPINESS IS A FLUID IN A CONTAINER. Examples in (17) list

sentences related to the two conceptual metaphors.

(17) HAPPINESS IS LIGHT
   a. 他們各個興高采烈 *tā xìng-gāo cǎi-liè* (they everyone spirit-high
      glow-strong 'They're all in high spirits and with a strong glow.')
   b. 他喜形於色 *tā xǐ xíng yú sè* (he happiness show in color 'His happiness
      showed in his facial color.')

   HAPPINESS IS A FLUID IN A CONTAINER
   c. 他心中充滿喜悅 *tā xīn zhōng chōng-mǎn xǐ-yuè* (he heart inside fill
      happiness 'His heart is filled with happiness.')
   d. 他滿心歡喜 *tā mǎn-xīn huān-xǐ* (he full-heart joy 'His heart is full of joy.')

However, Chinese also has conceptual metaphors distinct from those in English.

The conceptual metaphor HAPPINESS IS FLOWERS IN THE HEART is an

example. Flowers are mapped onto happiness, while blossoms suggest the intensity of

happiness, as examples shown in (18) below.

(18) HAPPINESS IS FLOWERS IN THE HEART
   a. 他心裡樂開了花 *tā xīn lǐ lè kāi le huā* (he heart inside happy bloom PRT
      flower 'He is happy, like flowers blooming in his heart.')
   b. 他心花怒放 *tā xīn-huā nù-fang* (he heart-flower wildly-bloom 'Flowers in
      his heart are blossoming wildly.')

The conceptual metaphor comes from traditional Chinese culture, in which blooming

flowers in spring are considered vigorous and happy. In addition, from a cultural

perspective, flowers in the heart reflect the more introverted character of Chinese (Yu,

1998), and so does the fluid in the container. In English, the entire human body is

viewed as a container, while in Chinese, it is the heart inside the body that carries this

reference. Moreover, in English, being happy is like being off the ground, whereas in Chinese, even though happiness is oriented upward, it is still "well-grounded" (Yu, 1998, p.65). Being off the ground is not a desirable trait in Chinese, due to the idea rooted in Chinese culture that putting one's feet on solid ground represents the virtue of humility.

Metaphoric expressions of *happiness* disclose similarities and differences between metaphors in English and Chinese; similar to metaphors, some metonymies are common in the two languages, while others are distinct. Behavioral reactions, such as smiling and laughing, are also seen in Chinese. Examples in (19) list some cases in Chinese (cited in King, 1989; Yu, 1998).

(19) JUMPING
   a. 他高興的活蹦亂跳 *tā gāo-xìng de huó-bèng luàn-tiào* (he high-spirit COM energetically-skip wildly-jump 'He was jumping and skipping for joy.')
   b. 他雀躍不已 *tā què-yuè bù-yǐ* (he swallow-leap no-stop 'He was jumping happily like a bird.')

   DANCING
   c. 他樂的手舞足蹈 *tā lè de shǒu-wǔ zú-dào* (he happy COM hand-dance foot-dance 'He was so happy that he danced for joy.')
   d. 他們歡欣鼓舞 *tā mén huān-xīn gǔ-wǔ* (they happy inspired-dance 'They were so happy as to dance.')

   SMILING
   e. 他高興的嘴巴都合不攏 *tā gāo-xìng de zuǐ-bā dōu hé bù lǒng* (he high-spirit COM mouth even shut not close 'He was so happy that he couldn't close his mouth.')
   f. 他笑容滿面 *tā xiào-róng mǎn-miàn* (he smile-expression all-over-face 'He had a broad smile on his face.')

When expressing the emotion of happiness in terms of facial features, Chinese highlights not only the eyes but also the eyebrows. In Chinese, an eyebrow is regarded

as an indicator of internal feelings. For instance, Chinese uses 眉頭深鎖 *méi-tóu shēn-suǒ* (brow-head deep locked 'Brows are tightly locked or knitted') to describe an anxious person who frowns all the time. Chinese also uses 喜上眉梢 *xǐ shàng mé-shāo* (happiness climb brow-tip 'Happiness crawled up to the tips of the brows') to describe a happy and exciting facial expression.

(20) REACTION IN EYES AND BROWS
   a. 他眉開眼笑 *tā méi-kāi yǎn-xiào* (he brow-open eye-smile 'He was all smiles.')
   b. 他高興的眉飛色舞 *tā gāo-xìng de méi-fēi sè-wǔ* (he high-spirit COM eyebrow-fly expression-dance 'He was overjoyed.')

Descriptively, "English emphasizes the brightness of eyes, whereas Chinese focuses on the changes of shape of eyes and eyebrows" (Yu, 1998, p.69). However, both English and Chinese agree that upward orientation indicates happiness. Thus even in Chinese, the eyebrows go up when showing happiness and joy.

Universality and Specificity

Linguistic data show that speakers see themselves as undergoing similar physiological processes and responding to certain situations in similar ways. The physiological characteristics of being angry, such as rises in skin temperature and blood pressure, or being happy, such as smiling and jumping, are natural reactions and hence universal for all human beings. The universality of actual physiological mechanisms leads to metonymic concepts such as *body heat*, *internal pressure*, *redness in face and neck area*, *jumping*, and *dancing*. These metonymies provide cognitive motivation for people to conceptualize a person metaphorically as a container under pressure, and then lead to the similarity in the metaphoric conceptualization of the emotions in various languages (Kövecses, 2005).

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Though languages may develop similar metaphoric concepts due to the universal embodied experiences of emotions, they instantiate the concepts in culturally-specific ways. For example, in English, *anger* is conceptualized as a hot fluid within a closed container, i.e., the human body. On the other hand, in Chinese, *anger* is conceptualized as a hot gas rather than a fluid, due to the fact that traditional Chinese medicine emphasizes the notion of 氣 *qi*, or 'gas', the energy flowing inside the body (Yu, 1995, 1998). In these cases, the generic level of the metaphoric concept AN ANGRY PERSON IS A PRESSURED CONTAINER is similar among languages; however, it is instantiated differently in different contexts and cultures.

The specificity of metaphoric concepts in languages can be attributed to different degrees of conventionalization of folk knowledge and linguistic realization. Folk knowledge refers to the shared knowledge that reflects cultural models (Kövecses, 2000b). For example, compared with English, Chinese tends to use more internal organs, especially the liver and the heart, in *anger* metaphors; this tendency stems from the five-elements theory of traditional Chinese medicine, which closely relates the physiological effects of emotions to the internal organs (Yu, 1998).

To sum up, metaphoric concepts can be similar across different languages at the generic level. Owing to the common physiological experiences of all humans, the generic level metaphors are universal and culturally independent. At the same time, metaphors also have cross-linguistic variations at the specific level; these metaphors are specific and culturally dependent.

Possible Relations of Metaphoric and Metonymic Expressions across Languages

Kövecses (2005), on closer analysis of English and Hungarian examples, found five possibilities for translating figurative expressions from one language into another. The five possibilities are summarized as in Table 2.3.

Table 2.3

Five Possibilities of Translating Figurative Expressions from One Language into Another

	Word Form	Meaning of Forms		Conceptual Metaphor
		Literal	Figurative	
Possibility 1	Different	Same	Same	Same
Possibility 2	Different	Different	Same	Same
Possibility 3	Different	Different	Same	Different
Possibility 4	Different	Different	Different	Different
Possibility 5	Different	Different	Same [by means of literal meaning]	[no metaphor]

Note. The table is modified based on Kövecses, 2005, p.144 and p.149.

In addition to a factor of linguistic form, Kövecses takes into account three factors: the literal meaning of the expressions, the figurative meaning to be expressed, and the conceptual metaphor on the basis of which figurative meanings are expressed. On the basis of the comparison between English and Hungarian, he finds that the first possibility, in which different word forms that are used have the same primary literal meanings, figurative meanings, and the same conceptual metaphor, is the most common case. The second possibility, in which different word forms used have different primary literal meanings that are extended metaphorically within the same conceptual metaphor to yield the same figurative meanings, happens less frequent than the first possibility. The third possibility, in which the same figurative meanings are expressed in different word forms that have different literal meanings within different conceptual metaphors, is the least frequent case compared with the other two possibilities.

The fourth possibility, in which expressions used in one language do not have exact counterparts in another language, is originally found in translated literature. Translators use expressions freely in order to make an integral whole of the literary work. For example, Sági (2002, cited in Kövecses, 2005, p.140) analyzes the

Hungarian and English translated versions of the novel *Lolita*, and finds that, the sentence *Her…eyes had a funny way of traveling all over you* in the English version corresponds to the sentence *szemei furcsán tapogattak* ('eyes oddly touching') in the Hungarian version. The two versions are formed based on different conceptual metaphors and have different literal and figurative meanings; yet both expressions manage to maintain the storyline in a coherent way. In addition to the literary work, this pattern of possibility is also suggested to be used in everyday speech, in which the smooth of conversation flow is more important than the exactness of translation.

However, the fifth possibility, in which figurative meanings of expressions can be suggested in a literal way, is controversial. For example, the English expression *time to spare* can be expressed in a literal way by using the Hungarian expression *fölösleges* ('superfluous'). Nevertheless, Kövecses (2005) argues that even though the expression *fölösleges* ('superfluous') appears to be nonmetaphorical, people still need to understand *time* metaphorically as a valuable resource in order to comprehend the term. Thus, the fifth possibility should not be considered as a pure-literal one.

Possible Relations of Metaphoric and Metonymic Expressions in English and Chinese

Modified from previous research of Kövecses (2005) and other researchers (Deignan et al., 1997), and based on the examples discussed in the previous sections on the English and Chinese metaphors and metonymies of *anger* and *happiness*, the present study employs four possibilities in translating figurative expressions from English into Chinese: (1) same conceptual metaphor with same metaphoric or metonymic expression; (2) same conceptual metaphor with different metaphoric or metonymic expression; (3) different conceptual metaphor with different metaphoric or metonymic expression; and (4) different in word forms, literal meaning, figurative

meaning, and even conceptual metaphor. The possibilities are elaborated and explained with examples in the following paragraphs.

As for metaphoric and metonymic expressions of the emotion *anger*, Chinese and English both have the conceptual metaphor ANGER IS FIRE and express the intensity of *anger* by showing the fierceness of the fire. The English expression *add fuel to the fire* matches the Chinese expression 火上加油 *huǒ shàng jiā yóu* (fire on add oil 'Adding oil on the fire') literally and metaphorically. On the other hand, in English, smoke, which represents anger, may *pour out of someone's ears*, while in Chinese the smoke is considered to pour out of the seven apertures of the human body, as in the expression 七竅生煙 *qī qiào shēng yān* (seven apertures produce smoke, 'Fuming with anger'). The two expressions share the same conceptual metaphor ANGER IS FIRE, but manifest it differently in their linguistic instantiation.

In addition, the English expression *smolder*, meaning literally to burn slowly without a flame, refers to the status of suppressing anger within the heart instead of expressing it outwardly. However, in Chinese, even though the metaphoric meaning of the expression 生悶氣 *shēng mēn qì* (produce-contained-gas 'Feel sulky') is similar to the English *smolder*, it comes from the conceptual metaphor ANGER IS THE GAS IN A CONTAINER. The two expressions, though similar in figurative meaning, are different in their conceptual metaphors. Finally, some expressions are different in both conceptual metaphors and figurative meanings.

Regarding metaphoric and metonymic expressions of the emotion *happiness,* there are expressions in English and in Chinese that have the similar literal and metaphoric meanings based on the same conceptual metaphors. For example, the expression *jump for joy* has its corresponding Chinese expression, 高興得跳起來 *gāo-xìng de tiào qǐ-lái* (high-spirit COM jump up 'Jump up for joy'). Additionally, some expressions, though similar in figurative meanings and conceptual metaphors,

are different in their linguistic instantiations. For instance, in English, the emotion *happiness* may *well up* inside a person based on the EMOTIONS ARE FLUIDS IN A CONTAINER conceptual metaphor. The same conceptual metaphor is applied to Chinese and thus has the expression like 喜悅湧上心頭 *xǐ-yuè yǒng-shàng xīn-tóu* (happiness gush-up heart-tip 'Happiness wells up in the heart'), which is similar in figurative meaning but is literally different; in Chinese, the term 湧上 *yǒng-shàng* (gush-up 'Welled up') usually exists along with 心 *xīn* (heart 'Heart'), while in English *well up* does not require collocates.

Sometimes expressions may be based on different conceptual metaphors. The conceptual metaphor HAPPINESS IS FLOWER IN THE HEART exists only in Chinese; thus, though 心花怒放 *xīn-huā nù-fàng* (heart-flower wildly-bloom 'Flowers are blossoming wildly in his heart') means to burst with joy, it is different from the English expression in terms of the conceptual metaphor. Another example is 容光煥發 *róng guāng huàn-fā* (face light light-up 'The face glowing with health'), which implies *energy* and *spirit* rather than *happiness* directly; its source domain is VITALITY rather than LIGHT, as the source domain of the expression *a glowing face* shows happiness.

Together with the English and Chinese examples, the four possibilities show that metaphoric and metonymic expressions in different languages have some common characteristics and some distinctive ones; in other words, metaphors and metonymies in languages may be both universal and culturally specific.

Learning Metaphor and Metonymy in L2 Context

Since universality and specificity of figurative expressions exist in languages, language learners will face a potential problem of transferability of expressions from L1 to L2. Some learning difficulties are due to lack of equivalent or similar metaphors

in L1, and some result from the degree of transparency of meanings (Deignan et al., 1997). For second and foreign language learners, to acquire metaphoric concepts that are universal in all languages is presumably easier than to acquire metaphoric concepts that are culturally and linguistically specific. Metaphor variations may occur when learners rely on the conventional knowledge of their first language and the physical environment in which that language emerges (Kövecses, 2005, p.93).

Due to the gaps between language and cultures, figurative expressions were formerly viewed as linguistic forms with arbitrary meaning compositions. They have long been taught to and learned by L2 learners through rote learning, which focuses mainly on memorization. Reference books like *English expressions with idioms, prepositions and metaphors* (Nandy, 1994) represent the trend of teaching methods at that time. Figurative expressions are listed along with their corresponding figurative interpretations. The author explicitly suggests that readers memorize the listed expressions in the preface of the book as well as implicitly drops hints in the chapter titles, such as "Idioms to Remember."

(21) Content of *English expressions with idioms, prepositions and metaphors* (Nandy, 1994, pp.39-40)
IDIOMS TO REMEMBER
1. To take aback=to surprise or astonish.
2. A.B.C. of a subject=its rudiments
3. Above-board=openly; without trickery.
…
60. A loose fish=a man of dissipated habits.

On the other hand, since the Audio-lingual Method (ALM) was popular in the 1970s and 1980s, idiom teaching and learning methods followed the principles of ALM, training learners through a system of reinforcement, such as drilling them through substitution exercises. Reference books such as *Idiom drills: For students of*

English as a second language (McCallum, 1970) and *More idiom drills for students of English as a second language* (McCallum, 1978) show clear correspondence to the principles. In the books, the author first provides a dialogue in which targeted idiomatic expressions are integrated, and then gives figurative meanings of the expressions with a few more example sentences. After familiarizing students with those expressions, the book then gives substitution drills and homework exercises. The examples are shown in (22) below.

(22) Content of *Idiom drills* (McCallum, 1970, pp.7-10)

DIALOGUE

    A: Have you heard that Jane cancelled her party next Friday?

    B: Yes, but I didn't hear why. What happened?

    A: She's going to New York. She has to **see about something** for her boss. …And she can have the party when she returns.

    B: Frankly, I'm glad about the party. I'm **up to my ears** in working right now.

DEFINITIONS

See about: take the responsibility to do something; make arrangements for.

*Let's have a picnic on Sunday. I'll **see about** the food.*

Up to one's ears: have too much to do.

*Helen would like to go with us but she can't. She's **up to her ears** in work.*

SUBSTITUTION DRILL

    1. She has to *see about* something for her boss.

                     some business in Chicago.

                     that house on Elm Street.

    2. I'm *up to my ears* in work right now.

        Jim's   his

        They're   their

Moreover, giving direct translations was very common in L2 learning contexts. Reference books were edited along with contrastive studies between the target and native languages. Encountering new figurative expressions, most L2 learners would

first find corresponding L1 translations.

However, these teaching methods have some common flaws. First, the listed figurative expressions are not associated with meanings or themes; the selections of targeted expressions lack logical relationships and systems. In addition, the expressions are presented within limited contexts, such as a short conversation between two unidentified speakers, without further information of the discourse background. Using such materials, learners pick up expressions as discrete and isolated entities under unauthentic circumstances with few contextual clues. Rote learning like this may result in short retention and impracticability of what has been learned (Brown, 2000, p.84).

Since the main flaw of rote learning is the unsystematic and unauthentic presentation of materials, a way to improve learning efficiency is to give learners opportunities for meaningful learning. Meaningful learning is "a process of relating and anchoring new material to relevant established entities in cognitive structure" (Brown, 2000, p.84). By associating meaningful learning sets with already-existing knowledge through a subsumption process, learners' retention of what has been learned can be improved (Ausubel, 1968, as cited in Brown, 2000).

To promote meaningful learning, learners' awareness of cultural conventions and metaphoric themes should be raised. For one thing, the universality of conceptual metonymy and metaphor, which focuses on human bodily experiences and physiological responses, may help learners comprehend metonymic expressions and those that involve metonymic principles. For the other, noticing the existence of language distance can decrease difficulties of meaning transferability between L1 and L2, and overcome problems of different linguistic instantiations (Kellerman, 1977). L2 learners need to be aware of the characteristics of the specificity of figurative expressions in their native language and the target language. As a result, in L2

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teaching contexts, learners should be consciously aware of cross-cultural variations.

Cognitive Linguistic Viewpoints on Second Language Acquisition

From cognitive linguistic viewpoints, learning a second language is similar to learning the first language: the process of second language acquisition is *emergent* rather than inborn, in which L2 learners acquire L2 constructions from the repeatedly encountered usages happening in their surroundings. The L2 learning process involves *probabilistic processing* and *contingency learning*, which refer to the fact that the more frequent a particular form is corresponded to particular meaning or used in a particular context, the more quickly it is learned (Ellis, 2006a). The *frequency*, *recency*, and *context* are thus the three fundamental factors in second language acquisition (SLA).

However, SLA is also a *rational learning*, which optimally reflects L1's repeated activation, i.e., entrenchment, and thus suffers various types of L1 interference (Ellis, 2006b). The problem is rooted in the pre-existent L1 construal, the perspective reflecting learners' general cognition. Since language is considered as a tool to manifest its speakers' thoughts, learning a new language means learning how to present things from different perspectives (Littlemore, 2009, p.14). However, when learners face conflicts between native language and target language cues, they would first resort to their native language interpretation strategies and, upon recognition of contradiction between the target language and their native language, resort to a universal selection of meaning-based cues (MacWhinney, Bates, & Kliegl, 1984, as cited in Gass & Selinker, 2001; MacWhinney, 2005). The "binding power" (Odlin, 2005) of L1 transfer would bring negative effects to L2 construal development.

To overcome the binding power and break the cognitive habits, L2 learners need to firstly notice and realize the existence of new construal systems of the target

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language. As Kellerman (1995) argues, the difficulty for L2 learners to acquire the new construal lies in the difficulty to perceive differences between L1 and L2. As exposure to L2 increase, learners would gradually cut down the reliance on L1 and have *probabilistic processing* and *contingency learning.*

However, the essential difference between the foreign language teaching (FLT) context and the second language teaching (SLT) context in opportunities and frequency of exposure to L2 make the SLA process more difficult. Due to the lack of chances of direct exposures, foreign language learners need and may benefit from having L2 construal systems explicitly pointed out in class. As additional evidence was intentionally brought to the attention of the foreign language learner through explicit instruction, the L1-L2 similarities and differences would become salient for L2 learners to be aware of (Ellis, 2006b; Littlemore, 2009).

Teaching Figurative Language through Awareness-Raising Activities

Due to the cognitive view of SLA, cognitive abilities of learning figurative languages have also been paid attention to by various researchers (Boers, 2000a, 2000b, 2001; Boers & Demecheleer, 2001; Boers, Demecheleer, & Eyckmans, 2004; Boers, Eyckmans, & Stengers, 2007; Boers & Stengers, 2008; Chung & Ahrens, 2004; Deignan et al., 1997; Dong, 2004; Kövecses, 2001; Low, 1988; Skoufaki, 2005). Their research goals mainly lie in raising L2 learners' awareness of figurative languages as well as the effects on learning figurative language due to L1-L2 similarities and differences.

Among the research devoting to compensate the difficulty of transferability and facilitating L2 figurative language learning, some suggest awareness-raising activities which adopt direct comparisons between L1 and L2. For example, Deignan, Gabry, and Solska (1997) suggest an activity of cross-linguistic comparison to help learners

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avoid the ambiguities of L1-L2 transfers. In their case, Polish learners of English were led to compare expressions in the two languages and find patterns of translating one language into another. Through directly comparing L1 and L2 expressions, learners will be alert to the fact that what exists in L1 does not always exist in L2, and will know not to take similar or equivalent L2 expressions for granted. Moreover, Li (2002, cited in Boers & Lindstormberg, 2006), based on an experiment with 394 Chinese learners of English, suggests that explicit discussions can be beneficial in learners' retention of the expressions learned. Thus, L2 teachers should explicitly guide learners to compare and contrast conventional expressions in both L1 and L2, and draw learners' attention to the collocational restrictions of expressions as well.

However, in the L2 teaching context, learner awareness should not be limited only to recognizing cross-cultural differences. Learner awareness also refers to learners' ability to recognize conceptual metaphors or conceptual metonymies behind expressions, possible cross-cultural differences in conceptual metaphors, and cross-linguistic variety in linguistic instantiations of those conceptual metaphors and metonymies (Boers, 2004). Since to recognize and to understand conceptual metaphors and metonymies are important of awareness development, researchers have proposed ways to help learners look into the expressions. One possible way is to find the *motivation* of the conceptual metaphor (Boers, 2000a). *Motivation* refers to source domains or literal origins of the expressions; conceptual metaphors or metonymies are believed to be motivated by etymological information derived from source domains. For example, the expression *nip something in the bud* is derived from the source domain of AGRICULTURE and GARDENING.

Through implementing *etymological elaboration* mnemonic techniques (Boers, Demecheleer & Eyckmans, 2004), learners will see conceptual metaphors—or *metaphoric themes* in Boers' (2000a) term—of expressions, and find the associations

between the expressions and the original literal usages. Boers et al. (2007) found that, by providing learners with source domains and explanations of the origin of the expressions, learners perform significantly better on identifying meanings of expressions than those who guess the meanings without knowing the etymology of the expressions. The results suggest that awareness of the origin—the etymology or the source domain—of the expressions may facilitate comprehension. The *etymological elaboration* strategy can be implemented in language classrooms or in textbooks; Boers et al. (2004) give examples of multiple-choice tasks that focus on identifying either source domains or figurative meanings, as shown in (23) and (24) below. Both tasks are meant to complement one another.

(23) Source-identifying multiple-choice exercise (Boers et al., 2004, p.60)

What domain of experience do you think the following idiom comes from?
To show someone the ropes
   a. Prison/torture
   b. Boats/sailing
   c. Games/sports

(24) Meaning-identifying multiple-choice exercise (Boers et al., 2004, p.60)

What is the figurative meaning of the following idiom?
To show someone the ropes
   a. To disclose the truth to someone
   b. To give someone a severe penalty
   c. To teach someone how to do a task

In addition to the study of etymology, providing the metaphoric theme or source domain has a beneficial mnemonic effect as well. Boers' (2000b) experiment on vocabulary retention proves that students who studied a list of lexis organized along metaphoric themes were more likely to reproduce the expressions than students who

studied a list organized along traditional functional meanings. Providing metaphoric themes helps learners recognize the systematic mappings between two domains and hence retain longer the vocabulary learned. Therefore, in order to improve retention, figurative expressions presented to learners should be grouped under general metaphoric themes. The examples shown in (25) below illustrate the idea.

(25) A list of figurative expressions along with metaphoric themes (Adapted based on Boers, 2000b, p.556)

English has a lot of expressions to describe anger. Some of them are very common: *She is angry. He's mad at you.* Other expressions can be used to specify the kind of anger:

Anger as a hot fluid in a container
    Anger welled up inside me.
    I am boiling with anger.
    She was all steamed up.
Anger as fire
    She was breathing fire.
    He's hot under the collar.
    He added fuel to the fire.

Boers' research is mainly based on cognitive linguists' contention in that figurative language, including metaphors and metonymies, formulates our ordinary 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, p.15). It also accords with cognitive views of SLA, which emphasize learners' conscious reflections on semantic motivations, including conceptual metaphors and metonymies, behind expressions. The method has been carried out in EFL contexts like Dutch (Boers, 2000b, 2001; Boers, Eyckmans, & Stengers, 2007) and French (Boers, 2000a, 2000b; Boers & Demecheleer, 2001; Boers, Demecheleer & Eyckmans, 2004), and has been proved to be effective.

However, learning metaphoric and metonymic expressions through finding source domains and the associative characteristics still has its limitations. Just because figurative meaning extensions are believed to be motivated rather than arbitrary does not mean that the origins are fully predictable (Boers et al., 2007, p.45). Difficulties mainly come from different degrees of conventionalization in the target language and differences existing between the cultures of two languages. In the above-mentioned studies, participants are either French or Dutch speakers, whose native languages are originated from similar language family as English; the differences between their cultures and languages are relatively smaller than between other languages. When it comes to Chinese learners whose native languages are relatively more different from English in origins and typology, the difficulties caused by cultural gaps for the Chinese learners may be more serious.

Comprising Teaching Method for L2 learners

The present trend in teaching and learning figurative language focuses on providing metaphoric themes. At the same time, if a metaphoric theme is culturally specific, the gap might be bridged through explicit discussions and explanations (Deignan et al., 1997). To combine these two main variables—on the one hand the metaphoric theme is introduced, and on the other hand the universality and specificity of cultures and languages can be compromised—Kövecses (2001) proposes an idea of using *metaphoric mappings*[2] as explicit instructions to facilitate domain linking processes between L1 and L2 figurative concepts. His method of transferring already-existent concepts of learners' first language to the newly-learned one is rather

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[2] Kövecses uses the term *metaphoric mappings* in his article at year 2001, and introduces it as a potential pedagogy for foreign language learners. Thus in the present study the term *metaphoric mappings* will follow Kövecses' uses. In addition, the term *metaphoric mappings* refers to the mapping processes not only in metaphors but also in metonymies.

promising in an EFL context.

Kövecses (2001), based on the results of his small-scale study of Hungarian students learning English figurative expressions, speculates that metaphoric mappings can not only improve comprehension but also facilitate production. If two languages have the same conceptual metaphor but different linguistic instantiations, *ontological mappings* that characterize the correspondences between basic constituent elements in the source domain and in the target domain may help learners create links between distinct linguistic expressions of the two languages. For example, in the case of the conceptual metaphor ANGER IS FIRE, English *spit fire* corresponds to Hungarian *tüzet hány* 'vomit fire'; the schematic knowledge of FIRE as the source domain can help learners match the meaning of *hány* with *spit*, and infer meanings of the two expressions.

If two languages have different conceptual metaphors, or if one has a conceptual metaphor that does not exist in the other, *epistemic mappings* can carry knowledge about elements in the source domain onto elements in the target domain, helping learners relate their knowledge of the used and abstract half to the unused and concrete half. For instance, English *wet blanket* and Hungarian *ünneprontó* 'festivity-breaker' come from different conceptual metaphors: *wet blanket* comes from STATE IS FIRE metaphor and *ünneprontó* comes from STATE IS FUNCTIONAL OBJECT metaphor. However, both expressions show the causes of the end of the state. Learners use their familiar knowledge of the domain FIRE and link it to the unfamiliar domain FUNCTIONAL OBJECT; the used and familiar part of the mapping will serve as a trigger for the learner to identify the matching half in an existing conceptual metaphor (Kövecses, 2001, p.112). The epistemic mapping process is shown in (26) below.

(26) Epistemic mapping process of Hungarian speakers learning English idioms

    English: *Wet blanket*
        ENTHUSIASM IS FIRE: causing fire to end ➔ causing state to end

    Hungarian: *ünneprontó* ('festivity-breaker')
        STATES ARE FUNCTIONAL OBJECTS: causing object not to function ➔causing state to end

    The mapping process:
        Hungarian *ünneprontó* ➔ causing state to end ➔ causing fire to end ➔ English *Wet blanket*

Kövecses (ibid) proposes the idea of adopting metaphoric mappings in teaching and learning, but he also admits that this view has not been tested empirically: "Until we have the relevant experimental results in an FLT context, these ideas should merely be regarded as an attempt to account for what is potentially going on in the mind of the learner" (Kövecses, 2001, pp.112-113).

Rationales and Hypotheses

The evolving trend of teaching metaphoric and metonymic expressions illustrates the development of second language acquisition theories. Cognitive linguists no longer see language as discrete units—the claim that structural linguists like Bloomfield (1942) held. Nor do they view it as a self-contained system that can be studied in isolation—the view taken by mentalists such as Chomsky (1957). Instead, cognitive linguists consider language to be an integral part of cognition as a whole (Langacker, 1987). Language is viewed as a structural inventory of conventional symbolic units, in which forms are associated directly with meanings whose characterization requires reference to the embodiment, activities, and socio-cultural norms (Langacker, 1987, 1991). In terms of language learning, cognitive linguists believe that the unit of language, *utterance*, is not presupposed or prejudged, but is

concerned with processes of communication in usage events; language is *motivated* rather than *arbitrary* since utterance carries coherent communicative intention when it is produced (Tomasello, 2006). Thus, instead of focusing mechanistically on stimuli-response connections and conditioned learning, cognitive linguists search for the underlying motivations of language usages. Metaphors and metonymies, two immense characteristics in the semantics of natural language and in patterns of thought, are investigated based on this belief.

Cognitive linguists have shown that the motivations behind metaphoric and metonymic expressions can be found either by enhancing learners' awareness of the underlying conceptual metaphors (Boers, 2000a, 2000b) or by tracing the origins or etymology of the expressions (Boers, 2001; Boers & Demecheleer, 2001; Boers et al., 2004). Boers' studies, in particular, have provided great amount of evidence of beneficial effects on foreign language learners' learning figurative expressions through understanding conceptual metaphors (CM); hence, the idea of using conceptual metaphors in teaching and learning is worth trying in different EFL contexts.

However, the methods provided by Boers still have limitations. First, to relate associative characteristics in the source domains to the target domain, language users need to establish concrete schemas of abstract concepts in their minds and seek relevant structural components in the conceptual schema. The process of entailment requires great cognitive effort and inter-subjectivity, and is unlikely to be effective without explicit guidance and help (Skoufaki, 2005). Second, for L2 learners, who grow up in their own culture and with their own distinct native language, differences between two languages caused by cultural specificity may lead to erroneous L1 transfer (Boers, 2001; Boers & Lindstormberg, 2006, p.325). The more distant the native and target languages are, the more difficult the learners may experience during

the learning process.

To assist learners in associating conceptual domains and finding the motivations of expressions, the adoption of metaphoric mappings (MM) is suggested. Though both CM and MM are cognitive-based approaches to facilitate figurative language learning in second or foreign language learning context, they may provide different assistance to learners. Some concepts, such as emotions, are too abstract for learners to schematize, even if the conceptual metaphors or metonymies are given. Metaphoric mappings, including ontological mappings and epistemic mappings, may help learners grasp external and difficult notions, analyze and categorize concepts involved, and map associate characteristics with other notions (Kövecses, 2001). Hence, given the more structural and systematic mechanisms encompassed by MM, the present study contends that MM should bring provide a stronger impact than CM to learners in learning figurative expressions. However, since the idea of MM has not been implemented in real EFL contexts yet, empirical research is needed to claim more conclusive evidence of this potential method.

Taking the nuts and bolts of both CM and MM into consideration, the present study conducted an empirical research, comparing and contrasting their effectiveness on EFL learners' learning English metonymic and metaphoric expressions, focusing in particular on their awareness, retention, and comprehension of figurative language. Six hypotheses are formulated.

Hypothesis 1 to Hypothesis 3are related to the first research question about raising learners' awareness of metaphoric and metonymic expressions.

Hypothesis 1: To raise learners' awareness of metaphoric and metonymic expressions, instruction involving MM is more helpful than instruction involving CM.

In accord with finer-grained analysis, another advantage of metaphoric mappings

should relate to cognitive processes of abstract concepts. The intricate relations between metaphor and metonymy are presented as a continuum (Radden, 2003; Barnden, 2010), in which expressions that are located closer to the end of metonymy on the continuum should be more concrete in terms of mapping relations whereas expressions located closer to the end of metaphor should be more abstract (Radden, 2003). The presumption comes from the cognitive viewpoint that a metonymic mapping is made within the same ICM while a metaphoric mapping is between different ICMs (i.e., cross-domain mappings) (Barcelona, 2000; Lakoff & Johnson, 1980). Take expressions of emotion for illustration. Metonymic expressions of *anger* are based on physiological actions that are displayed outwardly; metaphoric expressions, on the other hand, are based on abstract mapping relations to other separate concepts, such as *fire* or *animal*. Hence, metaphoric expressions presumably require greater cognitive effort to notice and comprehend.

However, although the existence of the continuum has been noticed in the extant literature, its effects on EFL learners have been paid little attention to. The study conducted by Chen and Lai (in press) is an endeavor to show that EFL learners indeed react differently to expressions locating on different parts of the continuum; yet the scale of that study is limited, and a larger sample to investigate how such a continuum can affect EFL learners' awareness on metaphoric and metonymic expressions is still needed.

For this reason, the present study implements the two cognitive methods in order to explore further the existence of the metaphor-metonymy continuum as well as its effects on learning abstract expressions. Instruction involving metaphoric mappings, which illustrate associated characteristics of two concepts in more systematic and detailed manners, is assumed to be more effective in assisting abstract mapping processes. Comparatively, instruction involving conceptual metaphors, which focus

on correspondences of general traits but lack thorough inquires into abstract concepts, may be less effective. Accordingly, the second hypothesis is as follows:

Hypothesis 2: Instruction involving MM can facilitate noticing expressions locating closer to the metaphor end on the metonymy-metaphor continuum than instruction involving CM.

Moreover, the concreteness-abstractness of the expressions located on the metonymy-metaphor continuum also accords with the transparency and opaqueness of expressions due to their different levels of *embodiment*, the concept which "refers to understanding the role of an agent's own body in its everyday situated cognition" (Gibbs, 2006, p.1). People can perceive bodily movements and anticipate reactions when adapting to environmental situations (Gibbs et al., 2004); as a result, expressions based on embodied experiences or observable physiological reactions should be considered relatively more transparent for learners to understand. Comparatively, expressions that are not based on embodied experience or that involve more peripheral body organs should be considered more opaque.

For this reason, metaphoric mappings, which provide both ontological mappings and epistemic mappings to show overall as well as specific mapping processes, are believed to be able to facilitate the mapping process of abstract concepts. Therefore, metaphoric mappings might also be helpful in recognizing expressions that are opaque. Based on the same assumption, the third hypothesis is as follows:

Hypothesis 3: Instruction involving MM can be more helpful than instruction involving CM in noticing relatively more opaque expressions due to their lack of human embodied descriptions.

Regarding the second research question about improving comprehension of metaphoric and metonymic expressions, Hypothesis 4 and 5 are proposed. In a foreign language learning context, where learners' conventional cultures and native languages

are different from the target language, offering conceptual metaphors or metonymies may cause transferability problems due to cultural universality and specificity (Kövecses, 2000a, 2001). It is believed that learners can perceive cross-linguistic similarity between L2 input and existing L1 knowledge, and such a perception has an overwhelmingly facilitative effect on learning (Ringbom, 1992). However, 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 & Demecheleer, 2001).

To solve the difficulty in terms of comprehension, learning through metaphoric mappings is suggested (Kövecses, 2001). Metaphoric mappings may help bridge the gaps between two languages as well as avoid erroneous L1 transfer due to ontological and epistemic mappings. Ontological mappings strengthen the universal concepts by both emphasizing the correspondences between domains and facilitating link creations between distinct linguistic expressions of the two languages, whereas epistemic mappings fill in culturally-specific gaps by relating knowledge of the used and abstract half to the unused and concrete half. By introducing both mappings, L2 learners can utilize their pre-existent knowledge to understand and comprehend the meanings of metaphoric and metonymic expressions (Littlemore, 2009). That is to say, the metaphoric mappings not only take advantage of similarities but also make up for differences between L1 and L2, and are assumed to be useful especially in improving comprehension. The fourth hypothesis is as follows:

Hypothesis 4: To improve comprehension of metaphoric and metonymic expressions, instruction involving MM is more helpful than instruction involving CM.

Moreover, with the in-depth discussions on cultural universality and specificity, another issue concerning learners' comprehension should also be paid attention to.

The possible patterns of L1-L2 transfer regarding metaphoric and metonymic

expressions proposed by Kövecses (2005) predict the possible difficulty levels for L2

learners in comprehending figurative language. If an L2 expression is similar to L1 in

literal meanings, figurative meanings, and conceptual metaphors or metonymies, it is

assumed to be easier for L2 learners to comprehend, since L2 learners can use their

L1 knowledge to process L2. On the other hand, if an L2 expression is different from

L2 in every respect, it is assumed to be more difficult to comprehend, because L2

learners have to stimulate a new and distinguished image schema, or ICM. For this

reason, metaphoric mappings, which relate knowledge of the used and abstract half to

the unused and concrete half, should be able to trigger universal knowledge as well as

develop new knowledge schemas (Kövecses, 2001). Thus, the fifth hypothesis is as

follows:

Hypothesis 5: Instruction involving MM can improve comprehension of figurative

expressions which are different from L1 in literal meanings, figurative

meanings, and conceptual metaphors more efficiently than instruction

involving CM.

Finally, considering the third research question about effect of extending

learners' retention, Hypothesis 6 is proposed. Metaphoric mappings emphasize not

only structural correspondence through ontological mappings but knowledge

association through epistemic mappings as well. The processes of elaboration on

associative traits between source and target domains are more systematic than the

processes made by conceptual metaphors, which display merely correspondences

between two subjects. Thus, learning through MM conforms to the principle of

meaningful learning, which emphasizes the process of hierarchical subsumption of

new concepts and stored concepts (Ausubel, 1963, 1968). It may result in a deep level

of cognitive processing (Ellis, 2002), and should be able to foster a longer-term

retention. Thus, the sixth hypothesis is stated as follows:

Hypothesis 6: Instruction involving MM can lead toward longer-term effect on

retention than instruction involving CM can.

In sum, the six hypotheses draw upon both second language acquisition theories and cognitive linguistic theories of metaphors and metonymies in order to examine the effects of learning which the CM and MM instruction may have on EFL learners. To distinguish from the previous studies and to examine and consolidate theoretical grounds, the present study also offers finer-grained analyses on theories of metaphor and metonymy. Moreover, the present study aims to examine the effect of cultural universality and specificity on EFL learners' comprehension.

Regarding the awareness, Hypotheses 1 focuses on the effect of raising learners' awareness each method may result in. Hypotheses 2 and 3 concentrate on determining specific ways each method may help. Hypothesis 3 tries to determine the influences on learning caused by the "notoriously difficult" (Radden, 2003, p.93) relations between metaphor and metonymy. Hypothesis 4 attempts to investigate the effects of embodiments on EFL learners' responses to figurative language. On the other hand, Hypothesis 4 and 5 concern the effect of improving learners' comprehension. Hypothesis 4 focuses on the effect each method may have of improving learners' comprehension. Hypothesis 5 emphasizes the cultural elements and their influence on learners. Finally, Hypothesis 6 concentrates on the issue of learners' retention.

The present study is meant to test the hypotheses with empirical evidence from a carefully-designed experiment. Learners' metaphoric competences, including awareness, comprehension, and retention of metaphoric and metonymic expressions, are investigated and employed to examine the hypotheses.

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CHAPTER 3

METHODOLOGY

To design an experiment and to develop an instrument in order to examine EFL learners' metaphoric competence, three pilot studies were conducted. Each pilot study contributed ideas and data for further modifications to the main study. The following sections first report separately the three pilot studies, including their backgrounds, methodologies, findings, and contributions to the main study. Then the rationales of the research design are stated. Finally, the formal design of the main study is reported.

Pilot Studies

Three pilot studies were carried out from 2008 to 2010. Participants of the pilot studies were university students whose English proficiency ranged from intermediate to high intermediate. They participated in the studies as part of the courses they were taking at the time. Each time, the performances of the participants were used as the references for modifications to the next study. The findings were collected and used to design and develop the experiments and instruments of the main study in 2010.

Pilot Study I

The first pilot test was administered in the spring semester of 2009. The goal was to investigate and explore the potential of implementing Kövecses' (2001) idea of metaphoric mappings in teaching idioms to EFL learners. Kövecses (2001) suggests that metaphoric mappings could help learners in the foreign language context to find the similarities of L2 idioms to their L1, and to bridge gaps between different conceptual metaphors of L2 and L1 idioms. To test the feasibility of his suggestion, a

small-scale study was conducted.

Participants.　Twenty university students participated in the study. They took a course named *Intermediate Writing* in the English Honors Program of the school. Their English proficiency ranged from intermediate to high intermediate. They were Chinese speakers whose English proficiency levels were around high intermediate according to their scores on TOEIC tests. All were non-English majors enrolled in the English Honors Program offered by the university. The writing course was meant to train their English writing abilities and familiarize them with the writing styles of English.

Procedures.　This informal experiment was conducted while the students were practicing descriptive and narrative essay writing. The students were asked to write a three-to-four-paragraph essay describing an experience that made them angry as homework to practice both essay types. They were asked first to write the essay in Chinese, and then in English; they were told not to give word-by-word translations, but to use spontaneous language. The reason for writing in Chinese first and then in English was to raise learners' awareness of similarities and differences between the two languages and cultures (Deignan et al.,1997).

After submitting the first draft, the students were introduced to the concept of conceptual metaphor and metaphoric mappings in class. They were instructed to create metaphoric mappings of metaphoric/metonymic expressions involved with *anger* as well. The teaching materials, including a few idioms as examples, were adopted from Boers' (2000) study. The metaphoric mappings were collected from previous studies (Lakoff and Kövecses, 1987; Kövecses, 1990). The students then revised their first drafts, with encouragement to integrate as many metaphoric/metonymic expressions as possible. Their essays were collected and analyzed later.

Findings.   Students' essays were coded in order to analyze the frequency and

tendency of *anger* idiom uses. The results showed that the students more frequently

tended to use idioms of the conceptual metaphor ANGER IS FIRE than idioms of the

conceptual metaphor ANGER IS A HOT FLUID IN A CONTAINER. Out of the 486

sentences in 19 essays, 25 sentences contained *anger* idiomatic expressions derived

from ANGER IS FIRE, such as *That kindled me fire* or *What added the fuel to the fire*

was that two suspects were jumping happily on my bed. On the other hand, 19

sentences contained *anger* idiomatic expressions of ANGER IS A HEATED FLUID,

like *My anger was boiling, which was going to explode* or *Eventually, I couldn't*

simmer down.

The difference regarding frequencies of uses may result from differences in the

Chinese and English cultures. Chinese also has expressions derived from the ANGER

IS FIRE metaphor, such as 火上加油 *huǒ shàng jiā yóu* (fire on add oil 'Add fuel to

the fire') and 火冒三丈 *huǒ mào sān zhàng* (fire rise three *zhang* 'Fire/anger is

flaming up as high as 10 meters'). However, rather than using FLUID to describe

anger, Chinese uses the concept of 氣 *qì* 'gas' in the conceptual metaphor ANGER

IS A HOT GAS IN A CONTAINER, such as 生悶氣 *shēng mēn qì*

(produce-contained-gas 'Feel sulky') and 怒氣沖沖 *nù qì chōng-chōng* (angry gas

soar-soar 'in a state of fury'). 氣 *qì* 'gas' is the substance which functions as a motive

power for the human body; it is an indispensible element in traditional Chinese

medicine. In the theory of *yīn-yang*, fluid and gas belong to opposite categories.

Therefore, Chinese speakers may be familiar with the GAS metaphor rather than the

FLUID one; when writing in English, the students used more expressions of the

common conceptual metaphor ANGER IS FIRE than those of the unfamiliar

conceptual metaphor ANGER IS A HOT FLUID. The selection of one over the other

is determined by the underlying cultural models (Yu, 1998).

Moreover, some metaphoric/metonymic expressions of different conceptual metaphors were mixed. For example, in the sentence *I simmered down, but I saw the smoke was pouring out of his ear[s]*, the writer employed both the ANGER IS A HOT FLUID metaphor (s*immer down*) and the ANGER IS FIRE metaphor (*smoke is pouring out of the ear*). The reason may be that fluid and fire are dependent on each other naturally: fluid evaporates into vapor or gas when heated, while vapor liquefies when cold. Therefore, when using metaphoric mappings in understanding two conceptual metaphors, the students may easily connect them together due to the dialectical nature (Yu, 1998).

Contributions to the main study.   This study was an informal investigation of the potential pedagogical implementation of using metaphoric mappings in teaching English idioms to EFL learners. Though the study did not follow strict control and research design, and thus the results could not be generalized, the findings from the students' writings could still provide positive proof of the idea of metaphoric mappings Kövecses proposes.

First, learners' responses to the metaphoric/metonymic expressions of *anger* showed that cultural differences indeed influence learning. Learners acquired faster and more easily the expressions whose conceptual metaphors were similar or identical to those of L1. In addition, learners' creations of expressions whose conceptual metaphors were mixed with others also showed that metaphoric mappings might exist and work in learners' minds and thus cause incorrect relation processes. These two major findings support Kövecses' idea of using metaphoric mappings in an FLT context.

However, analyzing learning effects based on learners' essays was difficult; also, the findings were difficult to quantify. Hence, the next study focused on developing an instrument that could measure learners' performances quantitatively. In addition,

learners' competence of learning figurative language was further divided so that the analysis on learning effects could be more thorough.

Pilot Study II

The second pilot test was administered in the fall semester of 2009. Two goals were set for the study. First, a practical measuring instrument should be developed to examine learners' metaphoric competence; second, a complete teaching process should be designed to help learners acquire the idea of metaphoric mappings. In order to achieve the first goal, Littlemore's (2001) model of metaphoric competence was adopted and revised. Additionally, the research design of Boers' (2000) study was referred to and modified. Boers aimed to measure the effect of metaphoric awareness on learners; in that study, the awareness was raised through learning idiomatic expressions along with metaphoric themes. However, this study tried to raise learners' awareness in a different way: by using metaphoric mappings to help learners find corresponding traits in the source and the target domains.

Participants.   Participants were a cohort of 28 university students, comprising sophomores, juniors, and seniors. They were from different colleges, such as the College of Social Sciences, the College of Commerce, the College of Communication, and the College of Foreign Languages; none of them majored in English. They were Chinese native speakers and had spent at least seven years learning English in school. To determine their general English proficiency, they were given a TOEIC full-length unofficial simulated test; the scores of the test indicated that their English proficiency was at the intermediate to high-intermediate level.

Instruments.   The basic construction of the Metaphoric Competence Test was based on Littlemore's (2001) model. The present study developed a test with three sections: the Awareness Test, which measured the ability to find meanings in

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metaphor; the Comprehension Test, which measured fluency of metaphor interpretation; and the Production Test, which examined the ability to produce metaphoric expressions.

The experimental design was based on Boers' (2000b) study and modified to fit the goal of this study. Boers' study aimed to measure the effect of metaphoric awareness on learners. However, he did not mention the learners' default metaphoric knowledge in the beginning; some participants might have learned the expressions before and thus performed better than others. Hence, the Awareness Test (see Appendix 1) and the Comprehension Test (see Appendix 2) designed for this study were used to determine learners' awareness before instruction was given. In addition, Boers provided a one-word formula to each blank in a cloze test, intending to test the participants' retention of metaphoric/metonymic expressions. However, providing the formula and setting constraints cannot reveal the participants' productive competence. As a result, the Production Test (see Appendix 3) designed for the present study deleted the word formula and allowed more freedom for learners to apply the knowledge learned.

The teaching materials used by Boers, including an article about managing emotions and a list of 18 metaphoric/metonymic expressions about anger, were duplicated in the present study (see Appendix 4).

Procedures. First, the participants were given a test of six pages, containing two parts of the Metaphoric Competence Test: the Awareness Test and the Comprehension Test. The first page was the Chinese instructions for the Awareness Test. The teacher read the instructions out loud in Chinese to ensure they were fully understood by the participants. Then the participants turned to the second page and started answering questions for 15 minutes. The participants were then immediately asked to move on to the second part. The instructions were again presented and read

in Chinese to ensure full understanding. Then the participants answered questions for 15 minutes.

After the tests were completed, the test sheets were collected. A handout containing an article about managing emotions was distributed to every participant. Five minutes were allowed for them to read over the article and circle metaphoric/metonymic expressions. Then a five-minute discussion was conducted, with the participants showing the expressions they had found and thinking about objects to which anger was compared. A volcano (*erupt*, *outburst*, *explosion*), water (*boiling point*, *cool down*), and a container (*bottled up*) were found by the participants.

Next, they were deliberately separated into two groups and asked to read a handout with a list of 18 metaphoric/metonymic expressions about anger, discuss the list with group members, and categorize the expressions under the given subtitles. One group received subtitles of metaphoric themes while the other group received subtitles of metaphoric mappings (see Appendix 5 and Appendix 6). The participants discussed the exercise for 10 minutes, and then the handouts were collected. After that, the Production Test sheets were distributed, the instructions were read aloud, and the participants spent 15 minutes working on the tests.

Findings. In the Awareness Test, scores on the 20 items designed to have no metaphoric/metonymic expressions averaged 1.87, while scores on the other 20 items, containing metaphoric/metonymic expressions, averaged 3.90. The average scores indicated that the participants were capable of finding metaphoric/metonymic expressions.

In terms of the reliability, the overall reliability, estimated by Cronbach's Alpha, was .791 (n=40). The value of the overall Cronbach's Alpha confirmed the high reliability level of the existing 40 items. However, the reliability of the items which

did not contain metaphoric/metonymic expressions was .607 (n=19), and was relatively lower than the reliability of the items which contained metaphoric/metonymic expressions (Cronbach's Alpha=.808, n=21). Accordingly, some test items needed to be adjusted or deleted to reach a higher reliability level for the main study.

In the Comprehension Test, two native Chinese speakers served as the raters; both were advanced English learners and had been teaching English in universities for at least five years. After they read over the answers, they developed a grading scale (see Appendix 7). They practiced grading to ensure consistency before they graded the participants' answers.

In addition to the quantitative grades, qualitative analysis was also conducted. The participants tended to use context clues to interpret unfamiliar metaphoric/metonymic expressions. For example, the metaphoric/metonymic expression *smolder* in the sentence *After the big fight with his girlfriend, Dave was smoldering for days and didn't talk to her* was interpreted as 冷戰 *lěng zhàn* (cold war 'Give the silent treatment') by most of the participants. Another example was found in the sentence *People had finally reached the boiling point as the price of oil kept rising*, in which the expression *reach the boiling point* was translated into 忍無可忍 *rěn wú kě rěn* (endure not capable endure 'Beyond one's bearing') or 怨聲載道 *yuàn shēng zǎi dào* (complaint sound again are-said 'Complaints are heard everywhere') due to the context. In addition, the participants did not perform well on the sentence *Tempers have cooled down a bit and I hope we could sort things out.* Possibly they were distracted by the phrasal verb *sort out*; some participants reported after the experiment that they did not understand this phrasal verb, so they did not complete the translation of the sentence.

In terms of the Production Test, the participants' answers varied and were not

limited to expressions they had just read on the handouts. For example, when they were asked to describe the angry actions of the protagonist of the story in the passage, some participants used *lion* along with *shout out* as expressions. This answer indicated that the participants understood and implemented the metonymic concept VIOLENT BEHAVIOR STANDS FOR ANGER.

Regarding the correctness and acceptability of the produced expressions, two native English speakers were asked to grade the answers of the participants. However, after reviewing the answers, both raters commented that some expressions were not acceptable in native English use, even though they might be understandable. It was concluded that the acceptability of production was in doubt, and thus the innovative expressions should not be counted as correct ones.

Contributions to the main study. The test results collected from the pilot test not only provided useful information and references for the main study but also were used to examine the validity of the design of the main study.

In terms of the Awareness Test, the reliability of each test item was calculated and then used as a criterion to delete or revise items for the main study. Items that could lift the overall reliability to a Cronach's Alpha estimate higher than .8 were kept for the main study; items whose reliability was lower than .8 were either revised or deleted.[3]

In terms of the Comprehension Test, feedback from the participants was used to revise test items for the main study. Ambiguous or difficult words were removed to prevent distractions. For example, item number three, *Tempers have cooled down a bit and I hope we could sort things out*, was removed because the phrasal verb *sort out*

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[3] To raise the overall Cronach's Alpha estimate, item 5, 25, and 33 listed in the Appendix 1 were removed. Meanwhile, to make sentences more native-like, item 2 and 19 were revised by keeping the key words but rewriting the sentences. For example, sentence 2 *The dog lashed its tongue and craved for water on a hot summer day* was rewritten to be the sentence *He lashed the horse across the back with a whip* with its key word *lash* remained.

was reported to be distracting to the participants. Some sentences were revised or rewritten, with the key words retained.[4] In addition, the grading criteria developed by the two raters were adopted for the design of the main study.

In terms of the Production Test, though the expressions participants produced were based on an understandable metaphoric mapping process, the expressions were not considered correct or satisfying in terms of production from native English speakers' viewpoints, and did not match Littlemore's definition of *originality*. The clash of acceptability and originality demanded further consideration of the test design.

Pilot Study III

The third pilot test was administered in the spring semester of 2010. The main goal of this study was to examine the practicality of the computerized Metaphoric Competence Tests. Meanwhile, the test items were examined again to ensure stable reliability. Processes of the experiment, including time and necessary facilities, were adjusted according to the feedback from the second pilot study. The research design of the pilot study this time then became the model for the main study.

Participants. There were 17 university students participated in the study. They were from the College of Foreign Languages, except one, who was from the College of Social Sciences; none of them majored in English. Fifteen out of 17 participants were sophomores, one was a junior, and one was a senior. Their general English proficiency was claimed to be roughly equivalent, since they had taken the same test for admission to the English Honors Program. They were assembled for the class *Intermediate Writing in English* offered by the program; they had to meet weekly for

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[4] Sentences 4, 7, and 8 listed in the Appendix 2 were rewritten with the key words retained. For example, the key word of sentence 7, *budget*, was kept, but the sentence was rewritten as *In order to get anything done, we have to budget our time the same way we budget our money*.

three hours to learn and practice English writing skills. The study was conducted during the class time as part of the regular, rather than irrelevant, course materials.

Instruments. The Metaphoric Competence Test was again implemented in the study. Test items were adapted from the previous pilot study: Some original items were revised, some were removed, and some new items were added.

The Awareness Test (see Appendix 8) contained 48 items, among which 35 items had been used in the second pilot test; the other 13 items were newly created for the present study to examine reliability. The items were categorized into four types of figurative language in accordance with the metaphor-metonymy continuum: metonymy, metaphoric metonymy, metonymic metaphor, and metaphor. Additionally, in order to investigate whether embodied experience would influence learners' awareness of metaphoric/metonymic expressions, the items were also categorized into groups with or without body part vocabulary.

In the Comprehension Test, 12 sentences were included (see Appendix 9). Four sentences were selected from the 15 sentences used in the second pilot study;[5] the other eight sentences were added to the list in order to include expressions about emotions and other target domains.[6] The 12 sentences were designed to represent four possibilities of transferring metaphoric/metonymic expressions into different languages as proposed by Kövecses (2005).

Regarding the Production Test, two articles were adapted in the study. One article was the same as the one used in the previous pilot study (see Appendix 3), and the other was a new article written and designed for the study (see Appendix 10). Both were stories consisting of emotion metaphoric/metonymic expressions. Each

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[5] Sentences 1, 4, 7, and 8 of the Comprehension Test used in the second pilot test (see Appendix 2) were revised or rewritten, and were adopted in the third pilot test as sentences 2, 5, 3, and 4 (see Appendix 9).
[6] Sentences 3, 4, 8, and 11 listed in the Appendix 9 contained expressions about *happiness*. Sentences 2, 7, 9, and 12 contained expressions about target domains other than emotions.

article contained 10 blanks for the participants to fill in. An extra article was used in the present study so as to gain more comments on the test from the participants.

Procedures. The present study was carried out in a computer laboratory, where every participant had one personal computer; computer programs of the Metaphoric Competence Test were installed on all of the computers beforehand. The experiment took two weeks of class to finish. In order to record the process of the experiment thoroughly, a digital voice recorder and a digital camera were used during the two weeks.

In the first of the two classes, the participants were introduced to the idea of using metaphoric/metonymic expressions to make their use of language lively. The term *metaphor* was explained briefly to activate prior knowledge. They then were asked to do all three parts of the Metaphoric Competence Test one by one. First, the participants clicked on Exercise One on the desktop, typed in their student identification numbers, and entered the Awareness Test. After reading the Chinese instructions for the test shown on the screen, the participants were asked to proceed with the test for 15 minutes. Then the participants were asked to go on to Exercise Two, the Comprehension Test. After reading the Chinese instructions, the participants were required to type their interpretations of each English sentence thoroughly in Chinese. Fifteen minutes later, the sheets for the Production Test were distributed to the participants. They answered the questions for 15 minutes. Then the Metaphoric Competence Test was completed. In the time remaining in the first class, the participants read the article used in the second pilot study as well, discussed their ideas, and did exercises in groups.

After a week, the participants gathered again in the same computer laboratory. A brief review of the content of the previous class was given as the opening remarks of the class. The participants were then asked to do the exercises again. The test items of

the Awareness and Comprehension Test were the same, but their listing orders randomized. After finishing both tests, the participants were given the Production Test, which contained a story that was completely different from that used in the first class. The participants again spent about 45 minutes to complete the Metaphoric Competence Test. They were asked to comment on the program and the test later. At that point, the experiment was considered done; the time remaining in the second class was used for the participants to discuss their previous writing tasks, which were not a component of the present study.

Findings. Since the main goal of this pilot study was to refine the test items, to test the computer program, and to rehearse the procedures of the experiment, the answers on the tests were not used for detailed analysis. Only the reliability of the test items was computed. After the study, the participants were asked their opinions of using the computer program and for suggestions for improvement. In addition, since the whole process of the experiment was tape-recorded and videotaped, the procedures of the experiment were also reviewed; an experienced researcher in the same research field was also invited to comment on the procedures and design of the experiment.

As for the Awareness Test, the overall reliability of the test of the first week had a Cronbach's Alpha of .843 (n=48), which indicated good internal consistency. The reliability of the 35 items used in the second pilot study was .794 (n=35), which was very close to the overall reliability of the previous time (Cronbach's Alpha=.791, n=40); the high similarity in reliability showed that the consistency of these 35 items was stable, even though they had been tested on different test takers. Additionally, the reliability of the test of the second week was .798 (n=48), which was still considered satisfactory. Thus, the existing 48 items were considered stable and reliable.

In terms of the operation of the computer program, the participants were

unfamiliar with the interface in the beginning, and took more time to respond. However, they claimed that they could respond normally after trial and error attempts on the first few items. Regarding the Comprehension Test, all 17 students agreed that no difficult words or phrases hindered their reading fluency for the 12 sentences. However, they encountered some trouble with typing Chinese in the program. The operating system may not have assisted the program and thus caused problems with typing.

As for the two articles used in the Production Tests, most participants preferred the first article (i.e., Appendix 3), which was also used in the second pilot study. The reasons for the preference included the clearer narration of the story, simpler relationships between characters, and a more interesting plot.

Contributions to the main study.　The third pilot study aimed to prepare for the main study. The comments from the participants, the observations from the teacher, and the audio and video recordings provided thorough information and useful suggestions in refining the experimental design.

First of all, all 48 items of the Awareness Test had been administered twice and showed consistent reliability. Thus, the test items were kept for the main study. The test items of the Comprehension Test had also been administered twice and were revised for the main study based on the participants' comments. In terms of the Production Test, the article used in both the second and the third pilot study was chosen for the main study.

Regarding the computer programs of the Awareness Test and the Comprehension Test, the interface was adjusted to reduce the possibility of misleading test takers and to enhance the reliability of the program itself. To the Awareness Test were added two practice items for the participants to familiarize themselves with the interface before moving on to the formal test. One practice item was added to the

Comprehension Test. The problems related to the operating system of the computer were also solved.

Main Study

Rationales of Research Design

Design of the experiment. The pilot studies had provided evidence regarding the feasibility of incorporating metaphoric mappings into EFL teaching contexts as well as the potential benefits of the method. The main study is designed to validate its empirical strength. As mentioned in Chapter 2, previous research (Boers, 2000a, 2000b, 2001) which relied mainly on the method of introducing conceptual metaphors also gained positive results in terms of leaning effects like awareness or retention. Both the method of giving conceptual metaphors (CM) and the method of giving metaphoric mappings (MM) are cognitive-oriented; nevertheless, the present study predicts that participants under the instruction of MM will outperform participants under the instruction of CM. Therefore, in the main study, the two methods were compared; the results of comparisons would be used to testify the research hypotheses and to answer the research questions.

Two types of instruction would be given: one following Boers' (2000b) idea of learning metaphors and metonymies by comparing two subjects or concepts used in expressions; the other adopting Kövecses' (2001) proposal of giving metaphoric mappings and leading learners to map across two domains. The group that followed the comparison approach was called the CM group for short, and the group that used metaphoric mappings was called the MM group.

The learning effects of participants were expected to be shown through the differences between the participants' performances on the Metaphoric Competence Test before and after instruction. Comparisons between the two test results would

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demonstrate how different instructions affected learners' awareness, retention, and comprehension of metaphoric/metonymic expressions.

Since the learning effects of two different methods would be determined by the differences between learners' performances before and after instruction, setting a control group in which participants received no instruction was not necessary in this main study. Therefore, the present study divided participants into only two groups: the CM group, which received instruction on the comparison of two subjects, and the MM group, which received instruction on metaphoric mappings between two domains.

Targeted participants.   Since the present study is conducted in a foreign language learning context, learners' language proficiency levels may have played a crucial role in their learning effects. Boers (2004) suggests that, to exploit how learners "actively generate figurative language" (p.222), intermediate learners would be the most responsive target group. Elementary language learners may face difficulties not only in production but also in comprehension due to their lack of lexical knowledge, while advanced learners with sufficient lexical knowledge may be hesitant in taking the risks required to produce metaphoric/metonymic expressions because they tend to avoid making use of expressions whose acceptability in the target language they are not sure of. Since the current study plan to investigate both receptive and productive knowledge, it would target learners at the intermediate level.

In order to determine the participants' English proficiency levels, the study chose first-year college students as target participants. First, according to the Ministry of Education in Taiwan, high school graduates in Taiwan are deemed to be equipped with an intermediate level of general English proficiency ("The General English Proficiency Test"). Second, in Taiwan, first-year college students are selected to enter schools according to their scores on the Joint College Entrance Exams (JCEE);

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first-year students accepted by the same school are expected to have similar

proficiency levels of English. In addition, the study was conducted in the beginning of

the school year, the time when high school students had just passed the JCEE and

enrolled in college; the students' default proficiency levels of English were about the

same. As a result, the present study chose first-year college students as the targeted

participants because of their roughly equivalent English proficiency.

However, considering the actual situation in Taiwan, there are two tracks of

colleges: general university and four-year technological university.[7] They are

different in three major ways. First, students in general universities attend high school,

while the majority of students in technological universities attend vocational schools.

Second, students in general universities take a General Scholastic Ability Test or

Department Required Test to enter schools, while students in technological

universities take the Technological & Vocational Education (TVE) joint college

entrance examination. Most importantly, students who choose a general university

more often seek academic training, while students of four-year technological

universities tend to seek vocational training.

Since the first-year students of these two types of schools tend to have different

learning backgrounds and purposes, the present study also took these variables into

consideration in order to reflect the real language teaching situation in EFL countries

such as Taiwan. Therefore, two groups of students were involved in the main study.

One group of students was from a national university located in Taipei city. The other

group of students was from a four-year technological university in Taipei city.

All participants in the study were non-English majors, because non-English

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7 *Technological university* is known as *university of science and technology* as well; the two terms are
interchangeable in the education system of Taiwan. However, the present study uses the term
technological university to refer to the type of university, in contrast with the term *university of science
and technology* which is used as a proper noun of a school name.

majors have less experience of and exposure to English culture and authentic materials than English majors. Therefore, choosing non-English majors as the participants could mitigate the impact of factors identified as complicating in previous studies. Significant effects of the proposed methodology could thus reasonably be claimed.

Instrument development. Three separate tests—the Awareness Test, the Comprehension Test, and the Production test—were designed, pilot-tested, and revised in the pilot studies, and were implemented in the main study as well. However, only results of the Awareness Test and the Comprehension Test were used for analyses in the main study. Results of the Production Test were excluded, for that they were doubted of validity and acceptability.

Originally, the Production Test was intended to examine the participants' ability to produce the metaphoric and metonymic expressions. However, the results and the observations found from the pilot studies as well as the comments and suggestions given by the foreign raters in the second pilot study revealed great difficulty of evaluation and doubtful validity of the test. For one thing, the design of the Production Test did not fit the definition of the metaphoric competence Littlemore (2001) proposed: *originality in producing metaphors*, the competence related to learner creativity. For another, the originality of learners' productions clashed with acceptability in native speakers' eyes.

However, the Production Test was still remained in the test-taking process instead of being abandoned. The results of the Production Test carried in the previous pilot studies showed that, though they were doubtful of acceptability from native speakers' viewpoint, they demonstrated how the participants employed cognitive processes. In other words, results of the Production Test could show how a learner's interlanguage operates, which were valuable evidence for exploring learners' thinking

processes.

Therefore, the Production Test was still implemented in the main study. The purpose was used instead to discover learners' cognitive processes. Nevertheless, even though it would not be discussed in Chapter 4 with the other two tests, the results of the Production Test were presented and discussed separately in Chapter 5 as suggestions and inspiration for future studies.

Participants

The total number of participants was 115. They were divided into two sets: the set of general university students and the set of four-year technological university students. Each set of participants was further divided into two groups: one that received instruction in conceptual metaphor (the CM group), and the other group that received instruction in metaphoric mappings (the MM group). Table 3.1 shows the exact number of participants in each group.

Table 3.1
Number and Distribution of the Participants

Set	General university		Four-year technological university	
Group	CM group	MM group	CM group	MM group
# of participants (n=115)	32	36	24	23

Both the general university and the four-year technological university were located in Taipei City. The participants were all first-year students enrolled the universities in September 2010. They had just graduated from high schools or vocational schools and taken the entrance exams held in the same year. The following section describes the participants' background information separately.

Participants of the CM group in the general university. This group comprised 32 participants. Eight of them had taken the General Scholastic Ability Test to enter the university; their average score on the English component of the General Scholastic Ability Test was 13.87 out of the full score of 15, which was higher than the top-level score of 13, according to statistics from the College Entrance Examination Center (2010a). The other 24 participants took the Department Required Test and averaged 83.72 out of the full score of 100, which was also higher than the top-level score of 79, based on data collected by the College Entrance Examination Center (2010b). Overall, these 32 participants' scores on the English components of both tests were in the top 88th percentile of all test takers for the year 2010.

Among the 32 participants, three had passed the elementary-level test of the General English Proficiency Test (GEPT), the test which is designed and administered in Taiwan; 17 the intermediate-level test, and two the upper-intermediate-level test. Only 10 participants had never taken any English proficiency test. Based on their performances on the college entrance examinations and on other English proficiency tests, it was estimated that the English proficiency of the participants of the CM group in the general university was around intermediate to high-intermediate level.

The participants were all native Chinese speakers. Two of them had lived in foreign countries—one in America and the other in Canada—for one year; the others had never lived in a foreign country. The average age to start learning English was eight. The average time they had spent on learning English per week was 2.4 hours.

The participants were from the College of Social Sciences and the College of International Affairs. Their majors included political science, public finance, diplomacy, and ethnography. They were randomly assigned to the same class of College English (I) by the school system.

Participants of the MM group in the general university. This group comprised 36 participants. There were 12 of them having taken the General Scholastic Ability Test to enter the university; the average score on the General Scholastic English Ability Test was 13.67 out of the full 15, which was higher than the top-level scale 13 (College Entrance Examination Center, 2010a). The other 24 participants had taken the Department Required Test and averaged 78.68 out of the full score 100, which was very close to the top-level score 79 (College Entrance Examination Center, 2010b). Overall speaking, these 36 participants' scores on the English components of both tests were in the top 88th percentile of all test takers for the year 2010.

Among the 36 participants in this group, eight had passed the elementary-level test of the GEPT, 14 the intermediate-level test, and three the upper-intermediate-level test. Two participants had Test of English for International Communication (TOEIC) scores of 605 and 680, respectively, which are roughly equivalent to the intermediate level of the GEPT according to the document *國內英語能力檢測比較參考表* (Minister of Education, 2004). The remaining nine participants had never taken an English proficiency test. Based on their performances on the college entrance examinations and on the other English proficiency tests, the English proficiency of the participants of the MM group in the general university was estimated to be intermediate to high-intermediate level.

The participants were all native Chinese speakers. None of them had lived in foreign countries. The average age to start English learning was nine. The average time they had spent on learning English per week was 2.2 hours.

The participants were from the College of Law and the College of Education. Their majors were either law or education. They were randomly assigned to the same class of College English (I) by the school system.

Participants of the CM group in the four-year technological university.

This group comprised 24 participants. 10 of them had taken the General Scholastic Ability Test to enter the university; the average score of the English component of the General Scholastic Ability Test was 13.1 out of the full 15, which was higher than the top-level scale 13 (College Entrance Examination Center, 2010a). The other 12 participants had taken the TVE joint college entrance examination and averaged 85.09 out of the full 100, which was much higher than 60.90, the mean of the top quarter population (Test Center of Technological & Vocational Education, 2010a), and was roughly equivalent to the top 98th percentile of all test takers for the year 2010, based on data about the interval width of the raw scores (TCTE, 2010b). The other two participants were overseas students from Guatemala and Indonesia, respectively. The one who was from Guatemala spoke Spanish as his first language. The one who came from Indonesia spoke Indonesian as the official language, but he could also speak the Teochew dialect, since he was a descendent of Chinese immigrants.

Among the 24 participants, four had passed the elementary-level test of the GEPT, 17 the intermediate-level test, and 11 the upper-intermediate-level test. The two overseas participants had TOEIC scores of 570 and 850, respectively. Only seven participants had never taken an English proficiency test. Based on their performances on the college entrance examinations and on the English proficiency tests, the English proficiency of the participants of the MM group in the four-year technological university was estimated to range from low intermediate to intermediate.

The participants who were native speakers of Chinese had never lived in foreign countries. The average age to start English learning was 10. The average time they had spent on learning English per week was 2.3 hours. The two overseas participants had started to learn English as a second language at around 10 years old and spent about two hours per week on the subject.

The participants were from the College of Engineering and the College of Electrical Engineering and Computer Science. Their majors were also similar to those of the participants of the CM group. They were randomly assigned to the same class of Oral-aural Drills in English (I) by the school system.

Participants of the MM group in the four-year technological university.
This group comprised 23 participants. Two of them had taken the General Scholastic Ability Test to enter the university; the average score of the English component of the General Scholastic Ability Test was 13, which was higher than the top-level score of 13 out of the full 15, according to the statistics announced by the College Entrance Examination Center (2010a). Twenty participants had taken the TVE joint college entrance examination and averaged 82.10 out of the full 100, which was much higher than 60.90, the mean of the top quarter population (Test Center of Technological & Vocational Education, 2010a), and was roughly equivalent to the top 97th percentile of all test takers for the year 2010, based on data about the interval width of the raw scores (TCTE, 2010b). One participant had entered the university through Selection and Recommendation Admission for Technically and Artistically Talented Students (SRATATS), and had no official score for English.

Among the 23 participants, 12 had passed the elementary-level test of GEPT, and 17 the intermediate-level test. The rest of the participants had never taken an English proficiency test. Based on their performances on the college entrance examinations and the English proficiency tests, the English proficiency of the participants of the CM group in the four-year technological university was estimated to range from low intermediate to intermediate.

All the participants were native Chinese speakers. None had lived in a foreign country. The average age to start learning English was 10. The average time they had

spent on learning English per week was 3.4 hours.

These participants, the same as the participants in the CM group, were from the College of Engineering and the College of Electrical Engineering and Computer Science. Their majors included construction engineering and electronic engineering. They were randomly assigned to the same class of Oral-aural Drills in English (I) by the school system.

Instruments

In order to measure learners' metaphoric competence, a Metaphoric Competence Test was developed based on Littlemore's (2001) model of metaphoric competence. It consisted of three parts: an Awareness Test, a Comprehension Test, and a Production Test. Each part was designed to examine specific abilities. The first test examined learners' abilities to find metaphors, the second test examined learners' fluency in interpreting metaphors, and the third test investigated learners' originality in producing metaphors.

The test items used in the main study were pilot-tested twice for reliability and construct validity in order to remove ambiguous or questionable items. Moreover, they were reviewed by native English speakers to ensure their grammaticality and authenticity. The English native speaker held a Master's degree from an American school and had been teaching English in a Taiwan university for more than 20 years. He also served as a consultant for the present study to ensure that the sentences were comprehensive and natural.

Regarding the computer software of the Awareness Test and Comprehension Test, the program which had been implemented in the third pilot test was adjusted and refined for the main study. The instructions for each test were shown on the screen in Chinese to ensure that the participants understood them. Practice test items were also

shown on the screen to allow the participants to familiarize themselves with the interface.

Awareness test.　　The first test focused on measuring the participants' ability to find metaphors. The results of the section could be interpreted as the effect of raised awareness of figurative language: If awareness is raised, learners will be able to find metaphoric language uses more quickly and affirmatively. This part of 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 to 15 words to ensure that the stimuli were similar and would not influence learners' judgments.

Among the 48 sentences, 24 contained metaphoric/metonymic expressions, while the other 24 did not. Among the 24 sentences that included metaphoric or metonymic expressions, eight sentences contained metaphoric or metonymic expressions related to *anger*, eight related to *happiness*, and eight related to other target domains such as *ideas*, *love*, or *life*. Key words or phrases were chosen from the 24 sentences with metaphoric/metonymic expressions to create their counterparts, which had no figurative intentions in the expressions. The 48 sentences were scrambled to prevent learners from discovering the patterns of the test items from their listing orders. Table 3.2 summarizes the distributions of the sentences of the Awareness Test.

Table 3.2

Distribution of Test Items of the Awareness Test

Type	Sentences with metaphoric/metonymic expressions			Sentences without metaphoric/metonymic expressions		
Topic	About anger	About happiness	About other target domains	(containing key words of counterparts of anger)	(containing key words of counterparts of happiness)	(containing key words of counterparts of other domains)
Item # (n=48)	8	8	8	8	8	8

In addition, the metaphoric/metonymic expressions were produced such that they

fit into the metonymy-metaphor continuum, and thus could be categorized into four

groups: metonymy (C1), metaphoric metonymy (C2), metonymic metaphor (C3), and

metaphor (C4). Learners' responses to these four types of expressions were also

investigated. Table 3.3 shows the distributions of the four categories in the test.

Table 3.3

Distribution of the Four Categories of the Awareness Test

Categories	Metonymy (C1)	Metaphoric Metonymy (C2)	Metonymic Metaphor (C3)	Metaphor (C4)
Item # (n=48)	12	12	12	12

In addition, to examine the assumption that expressions in sentences related to

embodied descriptions might be more transparent in meaning than expressions not

related to the body, the test items were further categorized into expressions related or

not related to the human body. These finer-grained categorizations of metaphoric and

metonymic expressions under investigation were helpful in determining whether

human's embodied experiences would influence learners' awareness and

understanding of figurative language. Table 3.4 shows the distribution of the

body-related expressions in the test.

Table 3.4

Distribution of the Body-related Expressions of the Awareness Test

Categories	Sentences with metaphoric/metonymic expressions		Sentences without metaphoric/metonymic expressions	
	related to body parts	unrelated to body parts	related to body parts	unrelated to body parts
Item # (n=48)	12	12	12	12

In brief, the 48 sentences comprised the 24 sentences containing metaphoric or metonymic expressions and the 24 counterparts that contained no metaphoric or metonymic meanings. The sentences that had metaphoric or metonymic expressions were further categorized into four groups based on the metonymy-metaphor continuum; each category contained sentences that involved embodied descriptions or body-related expressions as well as sentences that did not. The complete distributions and categorizations of the sentences are shown in Appendix 11.

Participants were asked to read each sentence first and determine whether the sentence contained metaphoric/metonymic expressions, or whether it needed to be understood by thinking figuratively. Participants were required to rate their certainty to their judgments on a scale of 1-5; to avoid reading problems caused by unknown vocabulary, one extra option (0) was given as well. The average response on the scale from 1 to 5 would indicate the participants' ability to find metaphor/metonymy. The scale was modified based on the designs of Pollio and Smith's (1979) and Littlemore's (2001) studies, and was presented to the participants in Chinese. The following is the English version:

(5) The sentence obviously has metaphor/metonymy.

(4) The sentence may have metaphor/metonymy.

(3) This is the middle of the scale. I'm not sure if it is a metaphor/metonymy or not.

(2) The sentence may not have metaphor/metonymy.

(1) The sentence obviously has no metaphor/metonymy.

(0) There are words I do not understand in this sentence.

Comprehension test.   The second part of the test examined the ability to interpret metaphoric/metonymic expressions fluently. The participants' interpretations showed their understanding in terms of meanings of the expressions; moreover, the participants' ability to translate L2 metaphoric/metonymic expressions into L1 demonstrated the ways they dealt with language transfer difficulties. By synthesizing the studies of Deignan et al. (1997) and Kövecses (2005), five possibilities existed when translating the same figurative meaning from one language to another. However, since the fifth possibility is considered controversial in terms of its categorization (Kövecses, 2005, p.149), it was excluded from the present study, as it was unrelated to testing a figurative sense. The remaining four possibilities were used to categorize the sentences designed for the test. Table 3.5 shows these four possibilities of metaphoric/metonymic expressions in two different languages.

Table 3.5

Four Possibilities of Metaphoric/Metonymic Expressions in Different Languages

	Word form	Literal meaning	Figurative meaning	Conceptual metaphor
Possibility 1	Different	Same	Same	Same
Possibility 2	Different	Different	Same	Same
Possibility 3	Different	Different	Same	Different
Possibility 4	Different	Different	Different	Different

In total, 12 English sentences that contained metaphoric/metonymic expressions were listed; those sentences were collected and modified from the same sources as the

Awareness Test. The metaphoric/metonymic expressions used in the sentences included expressions about *anger* or *happiness* and about other target domains. Each possibility included one sentence containing metaphoric/metonymic expressions about *anger*, one containing expressions about *happiness*, and one containing expression about other topics. Table 3.6 summarizes the distributions of the test items of the Comprehension Test. The complete distributions and categorizations of the sentences are shown in Appendix 12.

Table 3.6
Distribution of Test Items of the Comprehension Test

Type	Possibility 1	Possibility 2	Possibility 3	Possibility 4
Item #(n=12)	3	3	3	3

Participants were asked to read each sentence and then write down the corresponding meanings in Chinese. They were encouraged to write down the meanings of the sentences instead of word-by-word translations. By allowing the participants to give answers on meaning rather than form, their ability to interpret rather than translate could be demonstrated.

The responses were evaluated by two native Chinese speakers who were advanced in English and had been teaching English in Taiwan universities for at least five years. Both raters were English majors in their college years; the college education equipped them with general knowledge of linguistics and semantics. Moreover, they both took the course about applied semantics in graduate schools, and were acquainted with the concepts about metaphor and metonymy. The two raters were trained in advance to ensure the consistency of their judgments. The criteria used for evaluating the participants' answers were designed and elaborated according to the discussions of the two raters and the researcher. Three elements were included in the

grading criteria: meaning, form, and comprehensiveness of the Chinese translation.

The following were the grading criteria of the Comprehension Test.

(5) The answer not only expresses the figurative meaning correctly, but also shows the conceptual metaphor exactly and precisely.

(4) The answer expresses the figurative meaning correctly. However, the participant does not seem to understand the conceptual metaphor, since his/her translation is not related to the conceptual metaphor.

(3) The answer expresses the acceptable figurative meaning generally; the sentence is comprehensive with such a figurative meaning.

(2) The answer expresses an acceptable sentence meaning.

(1) The answer is wrong.

(0) No answer is provided.

Production test.   The test was in a cloze-test form. The cloze test has been widely used in previous studies, partly because it can create a scenario with context clues that assist testees in composing answers. Researchers (Boers, 2000a, 2000b, Boers & Demecheleer, 2001; Boers, Eyckmans, & Stengers, 2007; Kövecses, 2001) often provide one or two words as prompts to help learners retrieve the expressions learned. However, in the present study, word prompts were removed in order to encourage the participants to actively produce metaphoric/metonymic expressions, rather than to passively recite those learned. In addition, each blank was to be filled with a complete clause to prevent syntactic errors; the participants could judge from the context and write grammatically and semantically complete clauses. Based on the assumption that a proper scenario can assist learners in formulating relevant schema of metaphoric mappings, the cloze tests were scenario-based articles related to emotions of anger or happiness. Each article contained 10 blanks. Hints which suggested the missing elements in terms of the fluency of meanings were provided for each blank to make the story easier to understand.

The participants were asked to fill in the blanks and complete the article. They were encouraged to express meanings figuratively to make the story lively. To determine whether they made productions because of the metaphoric mapping rules, they were also asked to explain why and how they produced certain expressions for each blank in either Chinese or English.

Procedures

The procedure of the main study consisted of three phases: Pre-teaching, Teaching, and Post-teaching. The experiment required two successive weeks to complete. The first week was used to conduct the pretest and to teach, and the second week was used to conduct the posttest. About two and a half hours were needed to complete the procedure.

The Metaphoric Competence Test was implemented twice in the consecutive two weeks. The test given before the teaching phase was to determine participants' threshold levels of understanding figurative language in the beginning. One week later, the test was given again at the post-teaching phase to measure the effect of different methods on learners' awareness, retention, and comprehension. The goals and details of the procedures of each phase are explained in the following sections.

Pre-teaching phase. The goal of the pre-teaching phase was to determine the participants' default level of metaphoric competence. In order to collect the participants' responses in an efficient way, the test was carried out in a computer laboratory, where each participant operated one computer and stored the responses in the computer after finishing the tests.

The participants were given the Metaphoric Competence Test, including the Awareness Test, Comprehension Test, and Production Test. Each test took 15 minutes

to finish. In total, the first set of the Metaphoric Competence Test lasted roughly 45 minutes. For convenience, the next two phases were also carried out in the computer lab.

Teaching phase.   The goals of the teaching phase were to raise the participants' awareness, and to establish schematic knowledge of the domains. To ensure that the participants received no biased or incomplete instructions, the researcher herself was the instructor for the teaching. The procedures were rehearsed with PowerPoint slides (see Appendix 13 and 14), which were later used during the teaching phase. The PowerPoint slides provided a fixed framework for the instructor to follow so that she neither went astray nor provided extra or irrelevant information. The titles of each slide on the PowerPoint file were written in question forms; the instructor was asked to give directly and exactly those questions to the participants during the teaching phase so that she would not give extra and unnecessary information to the participants. In addition, all four runs of the experiment—the two groups of the two universities—were audio-recorded with a digital recorder to ensure that the teacher did follow a set protocol during the teaching phase.

In the beginning, the instructor presented a sonnet written by Shakespeare as a prologue to the lecture about metaphor. The instructor raised questions to lead the participants to notice the figurative descriptions used in the sonnet, such as "what does he write about?" and "what does he compare the girl to?" The goal of reading and discussing the sonnet was to activate the participants' prior knowledge of figurative language used in literary work. After then, the instructor presented to the participants the old-day definition and the contemporary definition of metaphor in order to raise their awareness of common figurative expressions used in daily life.

The instructor then presented the participants three types of figurative

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expressions, including simile, metonymy, and metaphor. Thus, the participants were introduced to expressions which were made of obvious comparisons as well as expressions which were based on abstract conceptual mapping processes. By giving examples, the instructor presented the idea that metaphor and metonymy were not only poetic expressions or idioms, but a daily life language which could be just a word or a phrase.

After activating the participants' prior knowledge of metaphor and metonymy, the instructor moved on to presented the formation of metaphor. In the CM groups, the instructor presented the participants a picture which depicted links between *source* and *target* (see Appendix 13, slide 10). The instructor then showed seven example sentences, which contained expressions of the love-is-a-journey conceptual metaphor. The instructor asked the participants questions like "what is the common topic of those sentences?" and "what do the sentence compare love to?" in order to clarify the idea of the source and the target. The participants then were asked to read those sentences again to confirm their concepts about the love-is-a-journey conceptual metaphor.

In the MM groups, the participants would read the same seven sentences containing the love-is-a-journey conceptual metaphor first. Then the instructor presented them two passages about *journey* and *love* respectively (see Appendix 14, slide 11). The instructor read through the passages and asked the participants if they had noticed any corresponding descriptions in the two passages. Then the instructor presented the participants the correspondences (see Appendix 14, slide 12). The participants were also asked to read those sentences again to confirm their concepts about the love-is-a-journey correspondences.

Both the CM groups and the MM groups received a short English article about emotion (see Appendix 4). The participants were asked to read the article for five

minutes; later, the teacher led discussions in Chinese about the metaphoric/metonymic expressions used in the article for 10 minutes. Students were asked to circle any metaphoric/metonymic expressions used in the article and to categorize those expressions into groups with similar ideas or concepts. The goals of the discussions were to lead the participants to be aware of the pervasiveness of metaphoric and metonymic expressions, to clarify an idea that 譬喻 *pì-yù* ('metaphor') includes not only idioms but words or phrases, and to draw their attention to the similarities and differences between Chinese and English. The discussion lasted 10 minutes.

Following this, both groups received handouts with several metaphoric or metonymic expressions about emotions, the handouts which had been administered once in the second pilot study. The CM groups received a randomly arranged list of expressions and written instructions asking them to categorize those expressions into conceptual metaphors by recognizing the corresponding traits (see Appendix 5). The MM groups, on the other hand, received a list of expressions which had already been categorized under conceptual metaphors and written instructions asking them to point out the corresponding traits of the source domain and the target domain (see Appendix 6).

During the discussion, the participants were allowed and encouraged to discuss the items with their classmates. Group discussion is considered a useful awareness raising activity, as shown in previous studies (Deignan et al., 1997; Dong, 2004). In addition, having opportunities to interact with other speakers and to make meaning is an important component of the communicative language teaching approach (Savignon, 1971, as cited in Savignon, 2005). To avoid skepticism that the teaching approach relied too much on cognitive development and left out the essence of communicative language teaching, the present study allowed as well as encouraged discussions among peers during the teaching phase. After 10 minutes of discussion, the

participants were asked to hand in the results of their discussions. The articles and the handouts were also collected. The phase then ended and the classes were dismissed.

Post-teaching phase.   The post-teaching phase was held in one week after the pre-teaching and the teaching phase. The goal of giving the post-teaching test was to examine whether different awareness-raising activities can affect learners' retention and in what ways they can cause different learning effects. The test used in the post-teaching phase contained the same test items as on the pretest, but the orders of the items were reshuffled. In addition, the Production Test of the posttest required the participants to write down the reasoning behind their production of such expressions.

The same participants again gathered in the computer lab. In the beginning of the post-teaching phase, the participants were asked whether they had studied relevant subjects during the week; the answer to this question could ensure that the participants' performances would result from the effect of learning. Then they took the second set of the Metaphoric Competence Test. The complete process took 45 minutes or so.

Data Collection and Analysis

The whole process of the experiment was carried out in computer labs in which the Metaphoric Competence Test could be given on computers. Thus, except for the Production Test, which was paper-based, the responses to the Awareness Test and the Comprehension Test were saved as text files in the computers. The electronic text files were collected and organized after the experiment, and were used for further analyses. The test sheets for the Production Test, which required the participants to answer on the test sheets, were collected as well.

In terms of the Awareness Test, the participants' answers were computed with

SPSS 17 to examine the learning effects on figurative language. The participants' abilities to recognize metaphors and metonymies at different levels of abstractness were analyzed. To examine differences of performances that the participants were able to make after receiving instructions, the linear regression analysis was used.

In terms of the Comprehension Test, the participants' answers were given to the raters who had cooperated in the second pilot study once. The raters graded the participants' interpretations based on the criteria they had agreed on in the second pilot test. Then the given grades were computed with the linear regression analysis model through SPSS 17 and were used to examine whether the participants' comprehension was different after the teaching phase. Moreover, while the raters were grading, they were also asked to mark answers that they considered worth discussing. The marked answers were later used for qualitative analysis.

The Production Test was excluded from the main study. However, considering potential insight it could provide for future studies, the Production Test was still given a preliminary analysis. Since expressions which the participants wrote as answers were doubted the acceptability in native speakers' eyes, the analyses of the Production Test focused mainly on the participants' explanations of making metaphoric and metonymic expressions. Based on the participants' explanations, how EFL learners interpret and relate conceptual metaphors and how they use metaphoric mappings in producing metaphoric/metonymic expressions could be detected. The varieties of the answers may also show how different levels of transparency and opaqueness of metaphoric/metonymic expressions influence their productions.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter reports the results of the Awareness Test and the Comprehension Test. The data are analyzed and discussed in order to examine the hypotheses stated in Chapter 2. In addition, the research questions raised in Chapter 1 are answered based on the findings of the experiments. The Awareness Test aims to measure the ability of the participants to recognize metaphors and metonymies. The finer-grained analyses regarding degrees of transparency and opaqueness of expressions are also reported. The Comprehension Test aims to examine the ability to interpret metaphoric/metonymic expressions fluently. In addition to quantitative analyses, qualitative analyses were also conducted, for that the participants' interpretations of metaphoric/metonymic expressions might be shown through their translations.

Results of the Awareness Test

A total of 115 participants participated in the experiments. There were 68 of them from a general university, and 47 from a four-year technological university. Among them, 32 participants from a general university and 24 participants from a four-year technological university were grouped into the CM group, which received instruction on conceptual metaphors or conceptual metonymies. The rest 36 participants from general university and 23 participants from a four-year technological university were put into the MM group, which received instruction on metaphoric mappings. Their performances on the pretest and the posttest were calculated and analyzed according to the designs of the 48 test items in the Awareness Test.

Ability to Recognize Metaphors and Metonymies

The participants were asked to judge whether each sentence contained

metaphoric or metonymic expressions as well as to decide on the certainty of their

judgments on a five-level scale in order to examine their abilities to recognize

metaphors and metonymies. Table 4.1 shows the mean performance scores of the

participants. The mean scores show that the participants of both university and of both

groups had overall improvements. The improvements of scores also indicate that the

participants became more certain about their judgments of recognizing

metaphoric/metonymic expressions.

Table 4.1

Mean Performance Scores of Participants in the Awareness Test

| Type | Participants of the general university | | | | Participants of the four-year technological university | | | |
| | CM group | | MM group | | CM group | | MM group | |
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
With figurative expressions (k=24)	3.50 (.55)	**4.17** (.43)	3.52 (.54)	**3.97** (.60)	3.37 (.45)	**3.84** (.58)	3.30 (.58)	**3.61** (.53)
Without figurative expressions (k=24)	1.84 (.45)	2.20 (.66)	1.86 (.49)	2.05 (.62)	1.81 (.42)	2.00 (.35)	2.38 (.78)	2.27 (.50)
Sample size	32		36		24		23	

Note. k: number of items

Note. The mean scores were rounded off to two decimal places.

Note. Numbers in parentheses listed under mean scores were standard deviations.

The issue whether these improvements on mean scores reach statistic

significances was then investigated. The differences between the participants'

performance scores in the pretest and in the posttest would show their learning progress in terms of the awareness of metaphors and metonymies. Some external factors, such as the participants' scores in English on the JCEE or the TVE joint college entrance examination, their time spent on learning English by themselves outside of classes, and their study of relevant subjects during the week, were also calculated during the process of regression testing in order to exclude possible impacts of the participants' individual background differences. The constants of the regression models represent differences between the participants' responses to the sentences on the pretest and on the posttest.

Table 4.2 reports differences in participants' performances on sentences with metaphoric/metonymic expressions between pretest and posttest. Both the CM groups of the general university and of the four-year technological university showed no significant differences between the pretest and the posttest. However, the MM groups of both universities showed significant differences between two tests (β=3.04, t=2.50, p<.01; β=7.70, t=1.87, p<.05). The results indicate that, regardless of the background differences, the participants of the MM groups of both universities improved significantly in the posttest when they were asked to identify metaphoric/metonymic expressions.

Table 4.3 reports differences in participants' performances on sentences without metaphoric/metonymic expressions between pretest and posttest. All four groups of the participants performed no significant differences between two tests. The results suggest that explicit instructions on metaphoric/metonymic expression indeed enhanced learners' awareness of figurative language uses; however, the instruction on metaphoric mappings also improved their ability to recognize figurative expressions.

Table 4.2

Differences in Participants' Performances on Sentences with Metaphoric/Metonymic Expressions between Pretest and Posttest

| | Participants of the general university | | | | | | Participants of the four-year technological university | | | | | |
| | CM group | | | MM group | | | CM group | | | MM group | | |
Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
(Constant)	2.15	.98		**3.04**	**2.50****		.78	.76		**7.70**	**1.87***	
Scores	-.12	-.75	1.04	-.20	-2.14^{+}	1.07	.01	.08	1.07	-.52	-1.75^{+}	1.31
Self-learning time	-.03	-.47	1.03	.037	.64	1.05	.02	.14	1.11	.02	.32	1.24
Review or not	.45	1.93^{+}	1.05	-.11	-.54	1.02	.08	.12	1.05	-.28	-.36	1.06
R^2		.13			.13			.00			.22	
Adj-R^2		.03			.05			-.15			.10	
F		1.35			1.60			.02			1.80	

$^{+}$ $p < .05$, one-tailed. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 4.3

Differences in Participants' Performances on Sentences without Metaphoric/Metonymic Expressions between Pretest and Posttest

| | Participants of the general university | | | | | | Participants of the four-year technological university | | | | | |
| | CM group | | | MM group | | | CM group | | | MM group | | |
Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
(Constant)	.10	.05		1.10	1.23		.79	1.30		2.82	.66	
Scores	.00	.00	1.03	-.05	-.72	1.07	-.03	-.69	1.07	-.23	-.74	1.31
Self-learning time	.05	.86	1.05	-.08	-1.95^{+}	1.05	.03	.31	1.11	.03	.34	1.24
Review or not	.28	1.20	1.04	-.07	-.47	1.02	-.22	-.58	1.05	-.16	-.24	1.06
R^2		.09			.15			.04			.07	
Adj-R^2		-.01			.07			-.11			-.08	
F		.88			1.90			.25			.73	

$^{+}$ $p < .05$, one-tailed.

The performances of the participants of the CM and the MM groups were compared in order to measure the effects of learning caused by each instruction. To exclude possible impacts of external factors and also to differentiate the two groups, the three individual background differences multiplied by the group variable (i.e., the CM group equals 0 and the MM group equals 1) were again calculated along with the participants' responding scores. The constants of the group variables in the regression models represent the results of comparisons of two groups.

Nevertheless, to confirm that the participants of the two groups did not differ significantly before receiving instruction, their performances on the pretest were compared first. Table 4.4 reports the results of comparing the participants' performances on evaluating sentences with metaphoric/metonymic expressions in the pretests. On the other hand, Table 4.5 reports the results of comparing the participants' performances on evaluating sentences without metaphoric/metonymic expressions in the pretests.

In the general university, the participants of both groups did not differ significantly in the pretest, no matter in evaluating sentences with metaphoric and metonymic expressions or sentences without them (β=.10, t=.79, p>.05; β=.07, t=.61, p>.05). Since the external factors had been excluded from consideration, the results of Table 4.4 and Table 4.5 suggest that differences between two groups in the posttest could be attributed to different instructions they received.

However, in the four-year technological university, the participants' performances in the pretest were significantly different. In terms of evaluating sentences containing metaphoric/metonymic expressions, though the CM-group performances were better than the MM-group's, they did not reach significance level, (β=-.07, t=-.40, p>.05). On the contrary, in terms of evaluating sentences without metaphoric/metonymic expressions, the MM group performed significantly better in

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Table 4.4

Differences in Performances on Sentences with Metaphoric/Metonymic Expressions in Pretest between the CM and the MM group

Variables	Participants of the general university			Participants of the four-year technological university		
	β	t	VIF	β	t	VIF
(Constant)	1.55	.91		3.38	9.09***	
Group[a]	**.10**	**.79**	**1.09**	**-.07**	**-.40**	**1.16**
Scores	.14	1.17	4.12	.01	.44	1.18
Self-learning time	.04	.79	2.08	-.05	-.82	6.00
Review or not	-.27	-1.46	2.20	-.14	-.63	1.85
GMSC[b]	-.11	-1.64	2.09	.10	.77	1.38
GMSL[c]	.02	.15	3.98	.03	.42	6.04
GMR[d]	.77	3.11[++]	2.18	.42	1.17	1.83
R^2		.22			.13	
Adj-R^2		.13			-.01	
F		2.47			.81	

[a]Group: The CM group is coded as 0, and the MM group is coded as 1.

[b]GMSC: Means of the scores (MSC) multiplied by Group variable (G).

[c]GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G).

[d]GMR: Means of answers to the review-or-not question (MR) multiplied by Group variable (G).

[++] *p* < .01, one-tailed. *** *p*< .001, two-tailed.

Table 4.5

Differences in Performances on Sentences without Metaphoric/Metonymic Expressions in Pretest between the CM and the MM Group

Variables	Participants of the general university			Participants of the four-year technological university		
	β	t	VIF	β	t	VIF
(Constant)	-.20	-.13		1.70	3.75**	
Group[a]	**.07**	**.61**	**1.09**	**.58**	**2.88[++]**	**1.16**
Scores	.15	1.35	4.12	.02	.56	1.18
Self-learning time	.03	.68	2.08	-.05	-.62	6.00
Review or not	-.23	-1.41	2.20	-.09	-.31	1.85
GMSC[b]	.00	.05	2.09	-.09	-.54	1.38
GMSL[c]	-.07	-.53	3.98	.018	.22	6.04
GMR[d]	.49	2.18[+]	2.18	.64	1.48	1.83
R2		.13			.26	
Adj-R^2		.03			.13	
F		1.32			1.92	

[a]Group: The CM group is coded as 0, and the MM group is coded as 1.

[b]GMSC: Means of the scores (MSC) multiplied by Group variable (G).

[c]GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G).

[d]GMR: Means of answers to the review-or-not question (MR) multiplied by Group variable (G).

[+] $p < .05$, one-tailed. [++] $p < .01$, one-tailed. ** $p < .01$, two-tailed.

(β=.58, t=2.88, *p*<.01). The results suggest that the two groups of the four-year technological university were different from the beginning. Whether these differences may result in biased findings should be examined later.

Table 4.6 and Table 4.7 report the results of comparing the progress that the CM and the MM groups made in evaluating sentences in the posttest. In the general university, the CM group had better improvements than the MM groups did on evaluating both sentences with and without metaphoric/metonymic expressions (β=-.29, *t*=-1.81, *p*>.05; β=-.18, *t*=-1.25, *p*>.05). Similarly, in the four-year technological university, the CM group also had better improvements than the MM groups on evaluating both types of sentences (β=-.33, *t*=-.78, *p*>.05; β=-.62, *t*=-1.86, *p*>.05). In summary, the CM groups in both universities had better performances in the posttest than the MM groups did, no matter in evaluating sentences with or without metaphoric/metonymic expressions. However, none of the groups reached the significance level, meaning that the differences on the improvements between groups were not statistically significant.

To sum up, with regard to the question of whether the participants' awareness of metaphors and metonymies was raised after receiving instructions, the results of the posttest reported in Table 4.2 and Table 4.3 showed that awareness was raised in both CM and MM groups of both universities. In terms of evaluating sentences containing metaphoric and metonymic expressions, the CM-group participants did not make statistically significant progress. However, the MM-group participants made significant improvements. On the other hand, in terms of evaluating sentences containing no metaphoric or metonymic expressions, the participants of both CM and MM groups made progress, even though such progress was not statistically significant. The results suggest that instruction on metaphoric mappings is as helpful as

Table 4.6

Differences in Participants' Performances on Sentences with Metaphoric/Metonymic Expressions between the CM and the MM Group

Variables	Participants of the general university			Participants of the four-year technological university		
	β	t	VIF	β	t	VIF
(Constant)	2.15	1.00		.78	.82	
Group[a]	**-.29**	**-1.81**	**1.09**	**-.33**	**-.78**	**1.16**
Scores	-.12	-.76	4.12	.01	.09	1.18
Self-learning time	-.03	-.48	2.08	.02	.16	6.00
Review or not	.45	1.98	2.20	.08	.13	1.85
GMSC[b]	-.08	-.44	3.98	-.53	-1.58	1.38
GMSL[c]	.07	.79	2.09	.00	-.01	6.04
GMR[d]	-.57	-1.81	2.18	-.31	-.34	1.83
R^2		.15			.12	
Adj-R^2		.06			-.04	
F		1.56			.73	

[a]Group: The CM group is coded as 0, and the MM group is coded as 1.

[b]GMSC: Means of the scores (MSC) multiplied by Group variable (G).

[c]GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G).

[d]GMR: Means of answers to the review-or-not question (MR) multiplied by Group variable (G).

Table 4.7

Differences in Participants' Performances on Sentences without Metaphoric/Metonymic Expressions between the CM and the MM Group

Variables	Participants of the general university			Participants of the four-year technological university		
	β	t	VIF	β	t	VIF
(Constant)	.10	.06		.79	1.03	
Group[a]	**-.18**	**-1.25**	**1.09**	**-.62**	**-1.86**	**1.16**
Scores	.00	.01	4.12	-.03	-.55	1.18
Self-learning time	.05	.99	2.08	.03	.25	6.00
Review or not	.28	1.38	2.20	-.22	-.46	1.85
GMSC[b]	-.05	-.32	3.98	-.20	-.73	1.38
GMSL[c]	-.35	-1.28	2.18	-.01	-.04	6.04
GMR[d]	-.13	-1.86	2.09	.06	.08	1.83
R^2		.13			.14	
Adj-R^2		.03			-.02	
F		1.31			.87	

[a]Group: The CM group is coded as 0, and the MM group is coded as 1.

[b]GMSC: Means of the scores (MSC) multiplied by Group variable (G).

[c]GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G).

[d]GMR: Means of answers to the review-or-not question (MR) multiplied by Group variable (G).

instruction on conceptual metaphor in enhancing learners' abilities to recognize metaphors and metonymies.

However, when comparing the participants' performances of the two groups, the degree of progress the MM groups made was lower than the degree of progress the CM groups made in judging sentences with or those without metaphors/metonymies, as shown in Table 4.6 and Table 4.7. The results of the comparisons thus do not support the first hypothesis which hypothesizes instruction involving metaphoric mappings can be more helpful than instruction involving CM in raising learners' awareness. At the same time, the differences on the performances of the MM group participants from the four-year technological university at the default setting seemed to have no significant influence on their performances in the posttest.

Even though the MM groups did not achieve higher average scores than the CM groups, the results of the comparisons indicate that they did gain significantly higher overall improvements. In other words, the participants of the MM groups might have made more consistent progress in evaluating sentences with metaphoric/metonymic expressions on the posttest, and thus the variances of the changes resulted in significance in Table 4.2. Contrarily, the participants of the CM groups might have performed inconsistently on the posttest, so they did not show significant overall changes. The results of the comparisons, therefore, support the sixth hypothesis: instruction involving metaphoric mappings can lead learners toward longer-term effect on retention than instruction involving conceptual metaphors and metonymies can.

Moreover, in what specific ways could the instruction on metaphoric mappings facilitate steady learning still requires further investigation. Thus, the finer-grained analyses based on metaphor-metonymy continuum were conducted and reported in the following section.

Ability to Recognize Metaphors and Metonymies on the Continuum

The second hypothesis stated that metaphoric mappings might assist learners to establish image schemas of abstract concepts and thus facilitate learners' abilities to recognize more abstract expressions, that is, expressions located closer to the side of metaphor on the metonymy-metaphor continuum. To examine the hypothesis, the participants' performances in evaluating metaphoric and metonymic expressions belonging to different categories were analyzed.

Table 4.8 reports the mean performance scores in four categories of sentences with metaphoric or metonymic expressions. The participants received higher scores in all four categories in the posttest than in the pretest. These overall improvements in the posttest correspond to the previous findings that explicit instructions on figurative language can facilitate learners' awareness.

Nevertheless, among the four categories in all four groups of participants, Category Four (C4), which contained metaphoric expressions, had the lowest mean scores. The results indicate that metaphoric expressions, which were formed based on abstract cross-domain mapping processes, were the most difficult one for the participants to recognize; the lowest mean scores also suggest that the participants were highly uncertain about their judgments.

A regression test was conducted in order to examine progress the participants made in the posttest. Table 4.9 shows the results of differences in performances on the four categories of sentences containing metaphoric/metonymic expressions between the pretest and the posttest. In terms of the participants of the general university, those in the CM group did not make significant progress on any of the four categories, though they received higher scores averagely in the posttest. However, the participants of the MM group made significant progress in Category Three (C3), β=2.86, t=2.28, p<.05, and Category Four (C4), β= 4.49, t= 2.38, p<.05.

Table 4.8

Mean Performances Scores in Four Categories of Sentences with Metaphoric or Metonymic Expressions

| Category | Participants of the general university | | | | Participants of the four-year technological university | | | |
| | CM group | | MM group | | CM group | | MM group | |
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
C1 (k=6)	3.61	4.21	3.56	3.95	3.36	4.06	3.56	3.69
	(.82)	(.77)	(.63)	(.78)	(.63)	(.71)	(.63)	(.77)
C2 (k=6)	3.54	4.25	3.71	4.03	3.46	3.97	3.43	4.02
	(.79)	(.68)	(.78)	(.82)	(.76)	(.71)	(.80)	(.74)
C3 (k=6)	3.74	4.23	3.58	3.96	3.58	4.06	3.43	3.81
	(.49)	(.39)	(.44)	(.62)	(.57)	(.58)	(.74)	(.53)
C4 (k=6)	**3.11**	**3.98**	**3.23**	**3.94**	**3.08**	**3.26**	**2.76**	**2.92**
	(.93)	(.78)	(.98)	(.84)	(.88)	(.85)	(1.01)	(.96)
Sample size	32		36		24		23	

Note. k: number of items

Note. C1: Sentences Containing Metonymic Expressions. C2: Sentences Containing Metaphoric-Metonymic Expressions. C3: Sentences Containing Metonymic-Metaphoric Expressions. C4: Sentences Containing Metaphoric Expressions.

Note. The mean scores were rounded off to two decimal places.

Note. Numbers in parentheses listed under mean scores were standard deviations.

In terms of the participants in the four-year technological university, those of the CM group performed significantly better in evaluating sentences belonging to Category One (C1), β=1.20, t=1.87, p<.05. However, they did not make significant progress in the rest three categories. On the other hand, the participants of the MM group made no significant progress in any of the four categories.

The significant progress in C3 and C4 which the MM-group participants in the general university made suggest that the instruction on metaphoric mappings was helpful for learners in recognizing expressions referring to abstract concepts. On the contrary, the CM-group participants did not make significant progress in evaluating sentences in all four categories. Their different performances in the posttest thus

Table 4.9

Differences in Performances on Four Categories of Sentences Containing Metaphoric/Metonymic Expressions between the Pretest and the Posttest

		Participants of the general university						Participants of the four-year technological university					
		CM group			MM group			CM group			MM group		
	Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
C1	(Constant)	-1.85	-.49		2.49	1.67		**1.20**	**1.87***		3.80	1.31	
	Scores	.17	.64	1.03	-.14	-1.26	1.05	-.02	-.48	1.07	-.26	-1.25	1.31
	Self-learning time	.03	.34	1.05	-.04	-.50	1.07	-.12	-1.10	1.11	-.06	-1.12	1.24
	Review or not	-.12	-.31	1.04	-.24	-.92	1.02	.21	.53	1.05	.29	.66	1.06
	R^2, Adj-R^2, F	R^2=.02, Adj-R^2= -.09, F=.17			R^2= .09, Adj-R^2= .01, F=1.06			R^2=.09, Adj-R^2= -.05, F= .64			R^2= .10, Adj-R^2= -.04, F=.71		
C2	(Constant)	3.21	.96		2.30	1.35		.34	.49		5.39	1.35	
	Scores	-.20	-.84	1.03	-.14	-1.10	1.05	.02	.45	1.07	-.36	-1.24	1.31
	Self-learning time	-.06	-.70	1.05	-.01	-.16	1.07	-.08	-.66	1.11	.04	.60	1.24
	Review or not	.90	2.53⁺	1.04	-.11	-.39	1.02	.12	.27	1.05	-.41	-.68	1.06
	R^2, Adj-R^2, F	R^2= .19, Adj-R^2= .11 , F= 2.25			R^2= .05, Adj-R^2= -.04, F= .52			R^2= .03, Adj-R^2= -.12, F= .18			R^2= .19, Adj-R^2= .06, F=1.44		
C3	(Constant)	2.40	1.26		**2.86**	**2.28***		-.40	-.59		2.68	.93	
	Scores	-.13	-.96	1.03	-.19	-2.01	1.05	.05	.98	1.07	-.16	-.78	1.31
	Self-learning time	-.04	-.79	1.05	.02	.40	1.07	.11	1.03	1.11	-.01	-.12	1.24
	Review or not	.01	.05	1.04	-.01	-.02	1.02	-.06	-.15	1.05	-.35	-.80	1.06
	R^2, Adj-R^2, F	R^2= .05 , Adj-R^2= -.06, F=.46			R^2= .11, Adj-R^2= .03, F= 1.43			R^2=.12, Adj-R^2= -.01, F= .89			R^2= .08, Adj-R^2= -.06, F=.57		
C4	(Constant)	4.86	1.46		**4.49**	**2.38***		.41	.57		3.51	1.10	
	Scores	-.32	-1.32	1.03	-.31	-2.19⁺	1.05	-.04	-.70	1.07	-.26	-1.14	1.31
	Self-learning time	-.04	-.48	1.05	.17	1.92	1.07	.13	1.06	1.11	.07	1.21	1.24
	Review or not	1.03	2.90⁺	1.04	-.10	-.31	1.02	-.11	-.25	1.05	.02	.04	1.06
	R^2, Adj-R^2, F	R^2=.25 , Adj-R^2= .17 , F=3.18⁺			R^2=.18 , Adj-R^2= .10, F=2.31			R^2= .06, Adj-R^2= -.08, F=.44			R^2= .21, Adj-R^2= .08, F=1.68		

Note. C1: Sentences Containing Metonymic Expressions. C2: Sentences Containing Metaphoric-Metonymic Expressions. C3: Sentences Containing Metonymic- Metaphoric Expressions. C4: Sentences Containing Metaphoric Expressions.

+ p < .05, one-tailed.　　* p < .05, two-tailed.

support the second hypothesis in that instruction involving metaphoric mappings can facilitate noticing expressions locating closer to the metaphor end on the metonymy-metaphor continuum than instruction involving conceptual metaphors.

However, the performances of the participants in the four-year technological university were different from those in the general university. Except for the significant progress the CM-group participants made specifically in C1, no significant differences were shown between the pretest and the posttest in four categories. The results do not support the second hypothesis.

Since the metaphor-metonymy continuum is not a strictly-categorized line but a continuum with fuzzy boundaries, further fine-grained analyses are needed. It is hypothesized that human bodily experiences should be able to facilitate learners' recognition, especially experiences involving parts of the human body. Thus the metaphoric or metonymic expressions involving parts of the human body were examined.

Ability to Recognize Metaphors and Metonymies with Bodily Descriptions

The third hypothesis posited that metaphoric mappings could facilitate learners' awareness of more opaque expressions, the expressions which were formed with few body-related descriptions. Metonymic expressions, which are based on physiological reactions, were presumed to be more transparent semantically than metaphoric expressions, which involve abstract linking across conceptual domains. To examine this hypothesis as well as to further determine the effects of the two types of instruction, the participants' performances on the tests were analyzed.

Among the 24 sentences containing the metaphoric/metonymic expressions, 12 sentences contained words referring to human body parts or images of bodily

descriptions, while the other 12 did not. Table 4.10 and Table 4.11 show the differences between the pretest and the posttest in performances on sentences with and without bodily descriptions respectively.

Table 4.10 shows that, regarding the 12 sentences with metaphoric or metonymic expressions comprising body-part descriptions, the participants of both the CM and the MM groups of the general university did not make significant progress in the posttest, and neither did the CM-group participants of the four-year technological university. However, the MM-group participants in the four-year technological university performed significantly worse in the posttest than in the pretest, β=-4.14, t= -2.60, p< .01.

Table 4.11 shows that, regarding the other 12 sentences with metaphoric or metonymic expressions which did not contain bodily descriptions, the participants of the general university did not make significant differences between the pretest and the posttest, and neither did the participants of the MM group of the four-year technological university. Nevertheless, the CM-group participants of the four-year technological university performed significantly worse in the posttest than in the pretest, β=-.94, t= -1.76, p< .05.

The sentences involving bodily descriptions were then cross-examined with four categories to further determine the effects of transparency and opaqueness on the participants. Table 4.12 reports the results of differences in performances on four categories of sentences with body-related metaphoric/metonymic expressions between the pretest and the posttest. The participants in the general university did not show any significant progress in the four categories of expressions, and neither did the CM-group participants in the four-year technological university. However, the MM-group participants in the four-year technological university performed significantly worse in C2 and C4 (β=-4.00, t=-1.90, p<.05; β=-6.93, t=-2.20, p<.05).

Table 4.10

Differences in Performances on Sentences with Body-related Metaphoric/Metonymic Expressions between the Pretest and the Posttest

	Participants of the general university						Participants of the four-year technological university					
	CM group			MM group			CM group			MM group		
Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
(Constant)	1.98	.92		2.22	1.05		.07	.15		**-4.14**	**-2.60****	
Scores	-.11	-.71	1.03	-.14	-.95	1.00	.03	.76	1.06	-.01	-.13	1.31
Self-learning time	.01	.13	1.05	-.05	-.87	1.02	.01	.14	1.10	.02	.91	1.24
Review or not	.25	1.09	1.04	.38	1.56	1.02	-.29	-.91	1.05	.02	.09	1.06
R^2		.06			.11			.07			.06	
Adj-R^2		-.04			.03			-.07			-.09	
F		.57			1.30			.53			.40	

** $p< .01$, two-tailed.

Table 4.11

Differences in Performances on Sentences without Body-related Metaphoric/Metonymic Expressions between the Pretest and the Posttest

	Participants of the general university						Participants of the four-year technological university					
	CM group			MM group			CM group			MM group		
Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
(Constant)	2.32	.81		.61	.27		**-.94**	**-1.76***		-.20	-.12	
Scores	-.12	-.62	1.02	-.01	-.09	1.00	-.01	-.34	1.06	-.11	-1.01	1.31
Self-learning time	-.06	-.82	1.05	-.00	-.03	1.02	-.00	-.09	1.10	-.03	-1.18	1.24
Review or not	.65	2.16$^+$	1.04	.43	1.71	1.02	.10	.31	1.05	-.22	-.94	1.06
R^2		.15			.08			.01			.14	
Adj-R^2		.06			.00			-.14			.00	
F		1.67			1.00			.09			1.03	

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

Table 4.12

Differences in Performances on Four Categories of Sentences with Body-related Expressions between the Pretest and the Posttest

		Participants of the general university						Participants of the four-year technological university					
		CM group			MM group			CM group			MM group		
	Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
C1	(Constant)	-1.53	-.38		2.66	.92		.60	.87		-3.02	-1.10	
	Scores	.17	.62	1.02	-.14	-.71	1.00	.02	.53	1.06	-.09	-.49	1.31
	Self-learning time	.01	.17	1.05	-.14	-1.77	1.02	-.04	-.42	1.10	.04	1.03	1.24
	Review or not	-.19	-.46	1.04	.49	1.51	1.02	-.59	-1.41	1.05	-.00	-.00	1.06
	R^2, Adj-R^2, F	R^2=.02, Adj-R^2= -.09, F=.19			R^2= .14, Adj-R^2= .06, F=1.79			R^2= .12, Adj-R^2= -.01, F= .94			R^2= .11, Adj-R^2= -.04, F=.74		
C2	(Constant)	5.41	1.64		3.23	.96		-.14	-.17		**-4.00**	**-1.90***	
	Scores	-.37	-1.60	1.02	-.21	-.89	1.00	.04	.72	1.06	-.01	-.11	1.31
	Self-learning time	.03	.34	1.05	-.09	-1.01	1.02	-.02	-.15	1.10	-.00	-.08	1.24
	Review or not	.60	1.73	1.04	.39	1.03	1.02	-.48	-.92	1.05	-.39	-1.24	1.06
	R^2, Adj-R^2, F	R^2= .17, Adj-R^2= .08 , F= 1.94			R^2= .08, Adj-R^2= -.01, F= .90			R^2= .07, Adj-R^2= -.07, F= .52			R^2= .08, Adj-R^2= -.06, F=.57		
C3	(Constant)	2.46	1.15		-.05	-.02		-1.04	-1.29		-2.58	-1.51	
	Scores	-.14	-.95	1.02	.01	.05	1.00	.10	1.64	1.06	-.16	-1.33	1.31
	Self-learning time	.00	.11	1.05	-.00	-.02	1.02	.04	.30	1.10	-.00	-.18	1.24
	Review or not	-.10	-.45	1.04	.26	.85	1.02	.32	.65	1.05	.30	1.16	1.06
	R^2, Adj-R^2, F	R^2= .04 , Adj-R^2= -.06, F=.41			R^2= .02, Adj-R^2= -.07, F= .25			R^2= .15, Adj-R^2= .03, F=1.21			R^2= .12, Adj-R^2= -.01, F=.90		
C4	(Constant)	1.59	.36		3.04	1.11		.91	1.12		**-6.93**	**-2.20***	
	Scores	-.08	-.28	1.02	-.22	-1.12	1.00	-.05	-.90	1.06	.21	.95	1.31
	Self-learning time	-.02	-.22	1.05	.03	.47	1.02	.07	.57	1.10	.06	1.10	1.24
	Review or not	.69	1.51	1.04	.34	1.09	1.02	-.41	-.82	1.05	.19	.39	1.06
	R^2, Adj-R^2, F	R^2=.08 , Adj-R^2= -.02 , F=.77			R^2=.09 , Adj-R^2= 00, F=1.00			R^2= .07, Adj-R^2= -.08, F=.47			R^2= .09, Adj-R^2= -.06, F=.62		

Note. C1: Sentences Containing Metonymic Expressions. C2: Sentences Containing Metaphoric-Metonymic Expressions. C3: Sentences Containing Metonymic-Metaphoric

Expressions. C4: Sentences Containing Metaphoric Expressions.

* *p*< .05, two-tailed.

Table 4.13 reports the results of differences in performances on four categories of sentences without body-related metaphoric/metonymic expressions between the pretest and the posttest. As for the participants in the general university, the CM-group participants did not make any significant progress in any of the four categories. However, the MM-group participants made significant progress in C3 and C4 (β=3.33, t=2.43, p<.05; β=8.10, t=3.09, p<.05). As for the participants in the four-year technological university, the CM-group participants made significant progress in C1 (β=1.79, t=2.00, p<.05). However, the MM-group participants performed significant worse in C1 and C2 (β=-6.80, t=-2.50, p<.05; β=-8.23, t=-2.64, p<.05).

In sum, in the general university, the CM-group participants did not make statistically significant progress in the posttest; in other words, whether the expressions involve bodily descriptions or not did not make any crucial difference to the participants in evaluating metaphoric and metonymic expressions. However, the MM-group participants performed significantly better when recognizing metaphoric expressions which involved no body-related description. The superior performances in C3 and C4 indicated that the instruction on metaphoric mappings were especially helpful in recognizing not only metaphoric expressions which were formed by abstract cross-domain mappings but also metaphoric expressions which could not be associated with bodily experiences. Thus, the finding supports the third hypothesis that instruction involving metaphoric mappings can be more helpful than instruction involving conceptual metaphors and metonymies in noticing expressions which are relatively more opaque due to the lack of human embodied descriptions.

On the other hand, in the four-year technological university, the performances of the CM group on the posttest did not differ significantly from those on the pretest. Yet they made an exception when evaluating sentences containing metonymic expressions (C1) but no bodily description. Nevertheless, the MM-group participants performed

Table 4.13

Differences in Performances on Four Categories of Sentences without Body-related Expressions between the Pretest and the Posttest

		Participants of the general university						Participants of the four-year technological university					
		CM group			MM group			CM group			MM group		
	Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
C1	(Constant)	-2.16	-.47		.08	.03		**1.79**	**2.00***		**-6.80**	**-2.50***	
	Scores	.17	.52	1.02	-.53	-1.44	1.00	-.07	-1.10	1.06	.19	1.01	1.31
	Self-learning time	.05	.40	1.05	-.07	-.89	1.02	-.18	-1.24	1.10	.03	.62	1.24
	Review or not	-.05	-.10	1.04	.08	.52	1.02	1.00	1.83	1.05	-.25	-.62	1.06
	R^2, Adj-R^2, *F*	R^2= .01, Adj-R^2= -.09, *F*=.13			R^2= .09, Adj-R^2= .00, *F*=1.03			R^2= .25, Adj-R^2= .13, *F*=2.18			R^2= .06, Adj-R^2= -.09, *F*=.41		
C2	(Constant)	1.00	.18		1.53	.61		.83	.68		**-8.23**	**-2.64***	
	Scores	-.01	-.04	1.02	.02	.05	1.00	.00	.01	1.06	.34	1.54	1.31
	Self-learning time	-.15	-1.04	1.05	-.09	-.96	1.02	-.12	-.64	1.10	-.02	-.37	1.24
	Review or not	1.18	2.02[+]	1.04	-.02	-.10	1.02	.72	.95	1.05	-.72	-1.52	1.06
	R^2, Adj-R^2, *F*	R^2= .14, Adj-R^2 .05, *F*= 1.54			R^2= .03, Adj-R^2= -.06, *F*=.33			R^2= .06, Adj-R^2= -.09, *F*= .38			R^2= .21, Adj-R^2= .09, *F*=1.68		
C3	(Constant)	2.33	.85		**3.33**	**2.43***		.25	.32		-3.11	-1.05	
	Scores	-.11	-.59	1.02	-.08	-.38	1.00	.00	-.01	1.06	-.03	-.18	1.31
	Self-learning time	-.08	-1.18	1.05	-.07	-1.31	1.02	.18	1.42	1.10	.00	.10	1.24
	Review or not	.12	.42	1.04	-.15	-1.56	1.02	-.43	-.91	1.05	.24	.53	1.06
	R^2, Adj-R^2, *F*	R^2= .06, Adj-R^2= -.05, *F*=.54			R^2= .14, Adj-R^2= .06, *F*=1.69			R^2= .12, Adj-R^2= -.02, *F*= .86			R^2= .02, Adj-R^2= -.14, *F*=.11		
C4	(Constant)	8.12	1.53		**8.10**	**3.09***		-.10	-.10		-2.92	-.78	
	Scores	-.54	-1.43	1.02	.15	.35	1.00	-.02	-.28	1.06	.00	.02	1.31
	Self-learning time	-.06	-.42	1.05	-.30	-2.92[+]	1.02	.17	1.09	1.10	.02	.43	1.24
	Review or not	1.36	2.42	1.04	-.31	-1.64	1.02	.19	.32	1.05	-.76	-1.34	1.06
	R^2, Adj-R^2, *F*	R^2= .21, Adj-R^2= .12, *F*=2.45			R^2= .29, Adj-R^2= .23, *F*=4.41			R^2= .07, Adj-R^2= -.07, *F*= .51			R^2= .10, Adj-R^2= -.04, *F*=.73		

Note. C1: Sentences Containing Metonymic Expressions. C2: Sentences Containing Metaphoric-Metonymic Expressions. C3: Sentences Containing Metonymic-Metaphoric Expressions. C4: Sentences Containing Metaphoric Expressions.

[+] *p*< .05, one-tailed.   * *p*< .05, two-tailed.

generally worse in evaluating sentences with and without bodily descriptions. They

performed significantly worse when evaluating sentences with body-related

metaphoric/metonymic expressions, specifically sentences belonging to C2 and C4.

They also got significant worse performances in C1 and C2 when evaluating

sentences without body-related metaphoric/metonymic expressions. The contrary

findings to the general university do not support the third hypothesis.

Summary of the Results of the Awareness Test

Table 4.14 summarizes the results of the Awareness Test by showing the status of

the four hypotheses.

Table 4.14
Summary of the Results of the Awareness Test

Hypothesis	Participants of the general university	Participants of the four-year technological university
Hypothesis 1: To raise learners' awareness of metaphoric and metonymic expressions, instruction involving MM is more helpful than instruction involving CM.	Not support	Not support
Hypothesis 2: Instruction involving MM can facilitate noticing expressions locating closer to the metaphor end on the metonymy-metaphor continuum than instruction involving CM.	Support	Not support
Hypothesis 3: Instruction involving MM can be more helpful than instruction involving CM in noticing relatively more opaque expressions due to their lack of human embodied descriptions.	Support	Not support
Hypothesis 6: Instruction involving MM can lead toward longer-term effect on retention than instruction involving CM can.	Support	Support

Discussions of the Awareness Test

The results on ability to recognize metaphoric/metonymic expressions do not support the first hypothesis about awareness enhancement. In addition, the results on ability to recognize expressions with finer-grained categories show that the four-year technological university did not support the third and the fourth hypotheses. The reasons for these unsupported hypotheses may involve issues of the participants᾽ individual differences, including cognitive style and proficiency level.

Individual Differences on Cognitive Style

The results on measuring the ability to recognize metaphors and metonymies fail to support the first hypothesis which states that instruction involving metaphoric mappings can result in better awareness of metaphoric and metonymic expressions than instruction of conceptual metaphors. As Table 4.6 and Table 4.7 show, the degrees of progress the MM-group participants made were not significantly higher than those made by the CM-group participants. However, Table 4.4 shows that the MM-group participants improved significantly in the posttest when evaluating sentences with metaphoric/metonymic expressions, meaning that the MM-group participants indeed benefited from instruction on metaphoric mappings and gained significant enhancement on the awareness.

Compared with the performances of the MM groups, the degrees of progress the CM-group participants made in the posttest were not significant, though the overall degrees were higher than those of the MM groups. The situation suggests that the CM-group participants might have a significant variance regarding individual performances. Some participants might perform better and gain greater amount of progress while some might perform worse and lower the group mean score. In other

words, the performances of the CM groups were influenced by individual differences on performances.

The individual differences seem to play crucial roles in the figurative language learning for several reasons. First, metaphoric/metonymic expressions are believed to reflect speakers' general cognition; they are subjective to each speaker's particular viewpoints (Littlemore, 2009, p.13). The lack of objectivity may result in different levels of awareness in individuals. Moreover, understanding metaphoric/metonymic expressions requires language users' ability to link disparate perceptual, affective, and conceptual domains, the process which highly depends on creativity (Kogan, 1983; Seitz, 1997) and cognitive style (Johnson & Rosano, 1993). Thus, individuals may vary in their developments of metaphoric competence, even after receiving instructions. Empirical studies (Boers & Littlemore, 2000; Littlemore, 2001) also confirms that people who have a holistic cognitive style may process metaphors more quickly than those with an analytic cognitive style, since developing metaphoric competence requires "loose analogical reasoning"(Littlemore, 2001) and creativity in order to relate old knowledge to the new. Therefore, while different learners have different cognitive styles, they might perform differently in their awareness of figurative language.

The differences of mapping processes between the two instructions can explain why, even with the learning difficulty caused by individual divergence, instruction on metaphoric mappings seemed to gain more stable learning effects than instruction on conceptual metaphors did. On the one hand, instruction on conceptual metaphors gives only general mapping relations rather than logical mapping processes; therefore, learners need to utilize their analogical reasoning to retrieve mappings between two subject concepts. In this study, the participants with holistic cognitive style might gain better improvement because they can blend and relate their conception of the target

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domain with the source domain easier (Boers & Littlemore, 2000). However, the participants with analytic cognitive style might perform worse due to the lack of detailed clues. The individual differences between the participants might thus enlarge the divergence between their performances.

On the other hand, instruction on metaphoric mappings illustrates the detailed relations between target domains and source domains and thus provides learners more structural, systematic, and logical clues to relate their knowledge to find and comprehend metaphoric and metonymic expressions. The detailed mapping processes compensate the vague analogical relations between subject concepts and facilitate metaphoric competence development. Therefore, in the study, both the participants of holistic style and analytic style can benefit from the instruction. As a result, the participants of the MM group show higher degree of convergence in their overall performances.

Individual Differences on Proficiency Level

The dissimilarities of ability on recognizing metaphoric and metonymic expressions between the participants of the general university and the four-year technological university can be attributed to the participants' different learning backgrounds. As reported in Chapter 3, the two tracks of higher education in Taiwan may result in different learning effects. The participants in the four-year technological university had relatively lower English proficiency than those in the general university had; their purposes of going to universities were to seek vocational training rather than academic study. Thus, they generally had fewer chances of knowing and learning figurative language uses, which were deemed as a relatively more advanced language skill. With less experience and lower frequency of exposure, they might be stuck in recognizing only expressions with relatively more concrete images. As the

findings of Table 4.9 suggest, the CM-group participants performed significantly better in C1 while the MM-group participants also performed pretty well in C1 and C2, the categories which were closer to the metonymy end on the metaphor-metonymy continuum.

The findings support Boers' (2004) claim about appropriate proficiency level to activate knowledge of figurative language uses. Essentially, learners whose English proficiency is close to the elementary level may face difficulties in comprehension due to their lack of lexical knowledge. In addition to the basic difference on the vocabulary size, in foreign language learning context like Taiwan, in which main learning opportunities are limited to language classrooms, differences in proficiency levels also represent as well as result from different frequency of exposure to the target language. Learners with lower proficiency level usually have fewer chances or experiences to expose to the target language. According to the cognitive linguistic viewpoint, an individual's linguistic competence emerges from the collaboration of the memories of the utterances he is exposed to and from the frequency-biased abstraction of regularities (Ellis, 2006a). Thus, low frequency of exposure may lead to relatively worse acquisition of usages than high frequency one.

Moreover, the findings of the Awareness Test suggest that, even if the learners own English proficiency around the intermediate level, they still performed differently in recognizing figurative language use. Learners with high-intermediate level of proficiency show their progress clearly while learners with low-intermediate level are restricted in demonstrating their learning progress. Hence, the issue of the effect of proficiency differences Boers (2004) proposes could be categorized in an even finer way.

Results of the Comprehension Test

Originally there were 115 participants in the main study. However, two participants in the CM group from the four-year technological university were foreign students whose native languages were neither Chinese nor English. Since the Comprehension Test required the participants to translate English sentences into Chinese, these two foreign students did not participate in it. As a result, only 113 participants took the Comprehension Test.

Two raters graded the participants' translating works in the pretest and the posttest of the Comprehension Test. The grades were calculated and analyzed quantitatively to determine the learning effects. Then, qualitative analyses and discussion were done based on the raters' observations and opinions.

Inter-rater reliability

The two raters had cooperated in the second pilot test once. They were trained in advance to grade the participants' translations; their grading was significantly correlated at the 0.01 level. They were cooperated again in the process of grading in the main study. Again the inter-rater reliability was calculated to ensure that these two raters conducted consistent and correlated grading in the main study.

Each participant received grades on the 12 items from both raters in both the pretest and the posttest. The sums of their grades in each test were used to measure the correlation coefficients between the two raters. In total, there were 113 participants and 226 grades. The grades given by the two raters were then computed to examine the reliability.

Table 4.15 reports the results measured by Spearman rank correlation. The correlation coefficient of the grades given by the two raters was .92, $p<.001$, which was significant at the 0.01 level with a 2-tailed hypothesis. The results indicated that

the grades given by the two raters were strongly correlated, and demonstrated a high

degree of agreement between raters.

Table 4.15

Correlation of Ratings

			Rater A	Rater B
Spearman's rho	Rater A	Correlation Coefficient	1.00	.92***
		Sig. (2-tailed)	.	.00
		N	226	226
	Rater B	Correlation Coefficient	.92***	1.00
		Sig. (2-tailed)	.00	.
		N	226	226

** *p*< .001, two-tailed.

The results reported in Table 4.15 confirm the high degree of reliability and

consistency of two raters' evaluations. Therefore, the grades were used for the

following analyses.

Ability to Comprehend Metaphors and Metonymies

Table 4.16 reports the mean scores of the participants. Every group of

participants received higher mean scores in the posttest. The improvements of the

mean scores again confirm the positive effects on learning with explicit instructions.

However, questions of whether the improvements reached statistically significant

levels still required further analyses.

Table 4.16

Mean Performances Scores of Participants in the Comprehension Test

	Participants of the general university				Participants of the four-year technological university			
	CM group		MM group		CM group		MM group	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean score	3.70	3.84	3.69	3.89	3.25	3.57	2.62	3.06
(k=12)	(.45)	(.48)	(.48)	(.42)	(.64)	(.61)	(.73)	(.44)
Sample size	32		36		22		23	

Note. k: number of items

Note. The mean scores were rounded off to two decimal places.

Note. Numbers in parentheses listed under mean scores were standard deviations.

To determine the effects of different types of instruction on the participants, the differences in the grades they received on the pretest and the posttest were calculated and reported in Table 4.17. None of the groups reached statistically significant levels. The results suggest that the participants did not make significant progress in their comprehensions of figurative language after receiving instructions. Additionally, the results do not support the fourth hypothesis which states that instruction on metaphoric mappings is more helpful in improving comprehension of metaphoric and metonymic expressions than instruction on conceptual metaphors and metonymies.

As for the question whether the CM and the MM groups were significantly different in terms of the performances, the grades of the participants in both groups were compared. The results are reported in Table 4.18. Differences in grades between the CM and the MM groups in both universities were not statistically significant (β=.18, t=.79, p>.05; β=.34, t=.89, p>.05). Yet, the constants of the group variables indicate that the MM groups in both universities made higher amount of progress in the posttest and thus had higher ranges of differences between two tests than the CM groups did. The findings again support the sixth hypothesis that instruction

Table 4.17

Differences in the Grades between Pretest and Posttest

| | Participants of the general university | | | | | | Participants of the four-year technological university | | | | | |
| | CM group | | | MM group | | | CM group | | | MM group | | |
Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
(Constant)	**.72**	**.46**		**2.45**	**.74**		**-1.49**	**-.44**		**7.81**	**1.70**	
Scores	-.05	-.45	1.05	-.15	-.62	1.03	.19	.74	1.21	-.48	-1.45	1.31
Self-learning time	.00	.03	1.07	-.02	-.19	1.05	-.15	-1.15	1.20	-.09	-1.16	1.24
Review or not	.58	2.13[+]	1.02	.06	.16	1.04	-.26	-.52	1.07	-.49	-.70	1.06
R^2, Adj-R^2, F	R^2= .13, Adj-R^2= .05, F=1.61			R^2= .01, Adj-R^2= -.09, F=.13			R^2= .09, Adj-R^2= -.06, F= .61			R^2= .16, Adj-R^2= .02, F=1.18		

[+] $p< .05$, one-tailed.

Table 4.18

Differences in Grades between CM and MM Group

| | Participants of the general university | | | Participants of the four-year technological university | | |
Variables	β	t	VIF	β	t	VIF
(Constant)	1.22	.82		-1.49	-.39	
Group[a]	**.18**	**.79**	1.11	**.34**	**.89**	1.12[a]
Scores	-.08	-.72	1.10	.19	.65	2.43
Self-learning time	-.01	-.18	1.05	-.15	-1.02	6.62
Review or not	.36	1.63	1.06	-.26	-.46	1.97
GMSC[b]	-.03	-.32	1.08	-.67	-1.60	2.53
GMSL[c]	.13	.92	1.07	.06	.36	6.57
GMR[d]	-.26	-.81	1.06	-.22	-.26	1.94
R^2, Adj-R^2, F	R^2=.07, Adj-R^2= -.04, F= .65			R^2=.14, Adj-R^2= -.02, F= .89		

[a]Group: The CM group is coded as 0, and the MM group is coded as 1.

[b]GMSC: Means of the scores (MSC) multiplied by Group variable (G).

[c]GMSL: Means of the self-learning time (MSL) multiplied by Group variable (G).

[d]GMR: Means of answers to the review-or-not question (MR) multiplied by Group variable (G).

involving metaphoric mappings can lead toward longer-term effect on retention than instruction involving conceptual metaphors and metonymies can.

The test items in the Comprehension Test can be categorized into four groups based on the possibilities of translating metaphoric/metonymic expressions into different languages. To further determine the difficulty levels of possibilities for the L2 learners as well as the learning effects, analyses were performed and are reported in the following section.

Ability to Comprehend Metaphors and Metonymies of Different Possibilities

Each possibility had three test items. The mean scores of each possibility were reported in Table 4.19. Possibility Three (P3) received the highest scores among the four possibilities, no matter in the pretest or in the posttest. In addition, Possibility Four (P4) received the lowest mean scores in the pretest and in the posttest. The findings about the lowest scores in P4 matched the prediction that expressions which were completely different from learners' native languages should be the most difficult ones for learners to comprehend.

However, the findings also show an interesting tendency: the participants tended to have better interpretations of the expressions which shared with Chinese similar figurative meanings but differed from Chinese in literal meanings and conceptual metaphors, i.e., P3. The expressions which shared with Chinese literal meanings, figurative meanings, and conceptual metaphors, i.e., Possibility One (P1), did not score the highest as predicted. Reasons for the contradiction to the prediction might need further qualitative analyses, which are reported in the later section.

Table 4.19

Mean Performances Scores in Four Possibilities of Sentences

	Participants of the general university				Participants of the four-year technological university			
	CM group		MM group		CM group		MM group	
Category	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
P1 (k=3)	4.17	4.16	3.83	4.07	3.68	3.96	2.94	3.41
	(.64)	(.90)	(1.08)	(.83)	(.97)	(1.08)	(1.28)	(.99)
P2 (k=3)	3.46	3.63	3.73	3.84	3.05	3.30	2.35	2.64
	(81)	(.86)	(.66)	(.80)	(.65)	(.63)	(1.12)	(1.02)
P3 (k=3)	4.35	4.74	4.42	4.58	4.05	4.58	3.76	4.20
	(.54)	(.34)	(.62)	(.39)	(.91)	(.48)	(1.13)	(.76)
P4 (k=3)	2.81	2.81	2.79	3.07	2.20	2.44	1.43	1.97
	(1.10)	(1.05)	(1.03)	(.81)	(1.07)	(1.17)	(.73)	(.78)
Sample size	32		36		22		23	

Note. k: number of items.

Note. P1: Possibility One. P2: Possibility Two. P3: Possibility Three. P4: Possibility Four.

Note. The mean scores were rounded off to two decimal places.

Note. Numbers in parentheses listed under mean scores were standard deviations.

The differences between the grades of the three test items in each category on the pretest and the posttest were first calculated in order to determine the learning effects. The results of the analyses show how each type of instruction influenced the participants' comprehension. The results are reported in Table 4.20.

The participants in the CM groups of both universities did not make significant progress on their grades in all four possibilities. However, the MM-group participants of both universities made significant progress in P4 (β=34.68, t=1.92, p<.05; β=50.69, t=2.73, p<.01) while the MM group in the four-year technological university also made significant progress in P2 (β= 25.00, t= 1.75, p<.05). The findings confirm the fifth hypothesis which states that instruction on metaphoric mappings can improve comprehension of metaphoric and metonymic expressions which are

Table 4.20

Differences in Performances on Four Possibilities of Sentences between the Pretest and the Posttest

		Participants of the general university						Participants of the four-year technological university					
		CM group			MM group			CM group			MM group		
	Variables	β	t	VIF	β	t	VIF	β	t	VIF	β	t	VIF
P1	(Constant)	-1.83	-.20		-5.45	-.27		1.99	.10		5.65	.21	
	Scores	.06	.08	1.05	.42	.29	1.03	-.09	-.06	1.21	-.12	-.06	1.31
	Self-learning time	.24	.53	1.07	.23	.43	1.05	-.19	-.24	1.20	-.10	-.21	1.24
	Review or not	.79	.49	1.02	1.05	.49	1.04	2.29	.75	1.07	-4.10	-.97	1.06
	R^2, Adj-R^2, F	R^2= .02, Adj-R^2= -.07, F=.21			R^2= .02, Adj-R^2= -.08, F=.20			R^2= .03, Adj-R^2= -.13, F=.20			R^2= .05, Adj-R^2= -.10, F=.35		
P2	(Constant)	16.04	1.68		-3.01	-.22		2.98	.20		**25.00**	**1.75***	
	Scores	-1.17	-1.63	1.05	.37	.39	1.02	-.16	-.14	1.20	-1.65	-1.60	1.31
	Self-learning time	-.42	-.93	1.07	-.64	-1.79	1.05	-.01	-.01	1.19	-.25	-.99	1.24
	Review or not	3.98	2.41[+]	1.02	.04	.02	1.04	.20	.09	1.06	-.46	-.21	1.06
	R^2, Adj-R^2, F	R^2= .24, Adj-R^2= .16, F=3.29			R^2= .12, Adj-R^2= .02, F=1.25			R^2= .00, Adj-R^2= -.17, F=.01			R^2= .14, Adj-R^2= .00, F=1.00		
P3	(Constant)	-1.65	-.24		3.19	.27		16.97	.80		12.39	.54	
	Scores	.26	.49	1.05	-.08	-.10	1.03	-1.06	-.65	1.20	-.65	-.39	1.31
	Self-learning time	.17	.52	1.07	-.40	-1.30	1.05	-.14	-.17	1.19	-.36	-.92	1.24
	Review or not	.23	.19	1.02	-.29	-.23	1.04	-.22	-.07	1.06	.94	.26	1.06
	R^2, Adj-R^2, F	R^2= .02, Adj-R^2= -.07, F=.24			R^2= .06, Adj-R^2= -.04, F=.64			R^2= .04, Adj-R^2= -.12, F=.23			R^2= .05, Adj-R^2= -.11, F=.30		
P4	(Constant)	-3.92	-.54		**34.68**	**1.92***		-3.21	-.17		**50.69**	**2.73****	
	Scores	.23	.41	1.05	-2.48	-1.93	1.03	.25	.18	1.21	-3.36	-2.51[+]	1.31
	Self-learning time	.04	.12	1.07	.61	1.26	1.05	.24	.33	1.20	-.40	-1.24	1.24
	Review or not	1.91	1.51	1.02	-.12	-.06	1.04	1.60	.56	1.07	-2.23	-.79	1.06
	R^2, Adj-R^2, F	R^2= .07, Adj-R^2= -.01 F=.85			R^2= .18, Adj-R^2= .09, F=2.06			R^2= .04, Adj-R^2= -.12, F=.23			R^2= .31, Adj-R^2= .20, F=2.77		

Note. P1: Expressions which share the same literal and figurative meanings, and conceptual metaphors with Chinese. P2: Expressions which share the same figurative meanings and conceptual metaphors with Chinese, but differ in literal meanings. P3: Expressions which share the same figurative meaning with Chinese, but differ in literal meanings and conceptual metaphors. P4: Expressions which differ from Chinese in literal meanings, figurative meanings, and conceptual metaphors.

* $p< .05$, two-tailed. ** $p< .01$, two-tailed. [+] $p< .05$, one-tailed.

different from L1 in literal meanings, figurative meanings, and conceptual metaphors more efficiently than instruction involving conceptual metaphors and metonymies.

The reasons why the participants of the CM group did not have satisfactory performances on the posttest, and why the participants of the MM group performed better in certain types of possibilities on the posttest should be examined with detailed qualitative analyses.

Qualitative Analyses of the Comprehension Test

There were 12 English sentences on the Comprehension Test. Each sentence contained a metaphoric or metonymic expression which conformed to one type of the possibilities adapted from Kövecses (2005). The two raters were asked to explain the standards they set for grading; they also wrote down their comments and observations during the grading processes. Based on their notes, the sentences of each possibility are discussed one by one.

According to the mean scores reported in Table 4.19, the orders of the mean scores from the highest to the lowest—P3, P1, P2, and P4 in that order—were the same in the general university and in the four-year technological university, no matter in the pretest or in the posttest. Since the performances of the participants in both universities showed similar tendency, they were viewed as two combined groups—the CM group and the MM group—rather than four separate groups.

Sentences Belonging to Possibility One

There were three sentences containing expressions belonging to Possibility One (P1), meaning that the expressions were similar to Chinese in literal meanings, figurative meanings, and conceptual metaphors/metonymies. Expressions belonging to this possibility were predicted to be the easiest for L2 learners to catch, since they

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were compatible with the expressions used in Chinese. However, the mean scores of P1 were not the highest in both the CM and the MM groups of the two universities. The progress of the participants between the pretest and the posttest was not significantly different in the two groups, either. Explanations with more detailed analyses are given below.

Sentence 1: When he found out he was not going to be promoted, he gnashed his teeth. The two raters decided that the best Chinese translation of the expression *gnashed his teeth* was 氣得咬牙切齒 *qì de yǎo-yá qiè-chǐ* (anger COM bite-teeth tighten-teeth 'So angry that bite teeth strongly with a tightly closed mouth'), since it mentioned the target domain ANGER and related it to an insane behavior. Translations like 生氣 *shēng qì* (produce gas 'Get angry') and 憤怒 *fèn nù* (indignant angry 'Indignant') were counted as the second highest level, meaning a score of 4, because they presented the figurative meaning *angry* correctly but did not touch the conceptual metaphor. The term 不悅 *bú yuè* (not happy 'Unhappy') was given a score of 3 because of its lower intensity of *anger*.

Some expressions only expressed parts of the figurative meaning of the term *gnashed his teeth* and thus were given a score of 2. The connotative meaning of the expression 懊惱 *ào nǎo* (repent annoyed 'Feel remorseful and angry') was *being regretful and upset*, which was not exactly the same as *being angry*. Some participants wrote 咬緊牙 *yǎo jǐn yá*, which was almost a direct word-to-word translation; however, due to the consideration that this term could refer to meanings such as *bite one's lips to endure anger* in some cases, it was scored as a 2.

The rest of the answers were either incorrect or irrelevant to the original expression. For example, the expression 面有難色 *miàn yǒu nán-sè* (face have bad-looking 'Look like embarrassed or reluctant') was scored as a 1 because the

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figurative meanings were very different. Other expressions like 難過 *nán-guò* (grief 'Feel grieved'), 笑 *xiào* (laugh 'Laugh'), and 震驚 *zhèn jīng* (shock surprise 'Feel shocked') were given a score of 1 because of the incorrect meanings.

More than half of the participants in both the CM and the MM groups scored higher than 4 on this sentence. The reason could be that the term 咬牙切齒 *yǎo-yá qiè-chǐ* (bite-teeth tighten-teeth 'bite teeth angrily with a tightly closed mouth') is commonly seen and frequently used in Chinese. Similar terms like 氣得牙癢癢 *qì de yá yǎng yǎng* (anger COM teeth itchy itchy 'So angry that the teeth in the mouth are itchy and wanted to be grinded') are also very common. Thus the participants could easily find the related conceptual metaphor and got satisfactory scores.

Interestingly, some participants incorrectly translated the words *be promoted* into terms like 解雇 *jiě gù* (terminate employment 'to lay off') or 不被錄取 *bú bèi lù-qǔ* (not PRT recruit 'Not being recruited'). However, they still translated the term *gnash one's teeth* correctly and precisely. The situation suggests possibility that some participants relied mainly on the metaphoric term to help them interpret the whole sentence.

Sentence 2: When they heard the news of their promotions, they all danced for joy. Participants who received a score of 5 on this sentence translated the term *danced for joy* as 手舞足蹈 *shǒu wǔ zú dào* (hand-dance foot-dance 'So happy to dance for joy') or 欣喜若狂 *xīn xǐ ruò kuáng* (glad joy like crazy 'To be wild with joy'). The Chinese translations like these not only pointed out the target domain HAPPINESS and the corresponding physical reactions like DANCING, but also showed the figurative senses through their wordings. Some expressions, such as 高興得跳起來 *gāo-xìng de tiào qǐ-lái* (high-spirit COM jump up 'Jump up for joy') or 快樂得跳起舞來 *kuài-lè de tiào qǐ wǔ lái* (happy COM jump up dance PRT 'So happy

that jump up and dance') showed the meaning through direct translations; the meanings were correct, but the forms were not as beautiful and rigorous as those of the answers that scored 5. As a result, these types of answers received only a 4 from the two raters.

Some participants received scores of only a 3 because they interpreted only the meaning of *danced* but left out the meaning of *joy*. One example is the expression 跳了整夜的舞 *tiào le zhěng yè de wǔ* (jump PRT whole night COM dance 'Dance all night long'). Another example is the expression 跳著慶賀 *tiào zhe qìng-hè* (jump PRT celebrate 'Jump up to celebrate'), which received only a 2 because the term indicated neither *happiness* nor physical reactions.

A note-worthy answer written by participants of the MM group is 雀躍 *què-yuè* (spallow-leap 'Leap happily like a bird'), which was given a score of 5. The two raters both agreed that this term included the meanings of *up* and *dance*, so it deserved a full score. This answer also showed that the participant might have caught the image of birds jumping happily, as if they were dancing. The mappings assisted the participant in interpreting the English term into Chinese.

Sentence 3: How can I advance in my career when my competitor holds all the aces? The two raters agreed that an answer which earned a score of 5 should point out the conceptual metaphor LIFE IS A GAME with terms connoting *possession* and *advantage*. The expression *hold all the aces* means to have an advantage. Thus, Chinese expressions like 佔有優勢 *zhàn yǒu yōu shì* (possess have advantage side 'Gain an advantage') or 握有王牌 *wò yǒu wáng-pái* (hold have trump-card 'Hold the best position') were given a score of 5.

Some participants translated *the aces* into 資源 *zī-yuán* (resource 'Resource'), and got the score 4. *Having resources* did not necessarily mean *gaining advantage*,

but mplied the meaning of possessing something useful and probably beneficial. Thus the two raters decided to give the second highest score. On the other hand, some participants translated the expression into 掌握大局 *zhǎng wò dà jú* (palm control big situation 'Control the overall situation') or 握有主控權 *wò yǒu zhǔ kōng quán* (hold have major control power 'Having mastership') and received a score of 3. The raters considered the answers like this to show the meaning of *possession* or *holding* but not to express the meaning of *advantage* or *predominance*; the sentence thus had an acceptable figurative meaning generally, but not precisely. They gave the middle score to such answers.

Some participants wrote 什麼方面都很強 *shé-mo fāng-miàn dōu hěn qiáng* (whatever aspect all very great 'Great in whatever aspect') or 都比我強 *dōu bǐ wǒ qiáng* (all compare I great 'All stronger/greater than I'). The answers like these showed acceptable sentence meanings without figurative connotations, and hence received a score of 2.

There were other misinterpretations of the term. One participant used 把柄 *bǎ-bǐng* (handle 'A mistake or fault that can be taken advantage of by others') in his translated sentence. Though having 把柄 *bǎ-bǐng* may give you a chance to take advantage of the person, it does not connote the meaning of *advantage* directly. As a result, both raters scored this answer as a 1.

The participants showed their capability to comprehend the term *hold all the aces* in different ways. Some participants wrote 我的對手熟知我的弱點 *wǒ-de duì-shǒu shóu zhī wǒ-de ruò diǎn* (my opponent familiar know my weak point 'My opponent knows my weakness very well') or 我的對手對我瞭若指掌 *wǒ-de duì-shǒu duì wǒ le ruò zhǐ cháng* (my opponent to I understand like finger palm 'My opponent knows me too well'). They reversed the meaning of *advantage* into *weakness* and explained the sentence, but delivered similar meanings. Though they

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received scores 1 and 2 from the two raters because the answer went too far beyond the original figurative meaning, they were highlighted by both raters as examples that showed L2 learners' capability and flexibility of interpretation.

Summary.　The participants in both the CM and the MM groups performed relatively well in translating the three sentences containing expressions belonging to Possibility One. Their answers were quite similar so that few significant differences of the answers between the two groups were observed. However, the variety of the answers indicated that the participants not only understood the meanings of the expressions but also were capable of interpreting the meanings in their own words. The flexibility of interpretation in their translation works also suggested that, since the L2 expressions were similar to those of L1 in every aspect except word forms, the expressions were easier to link to L2 learners' construal of experiences, invoking the learners to interpret them with their personal knowledge.

In addition, the mean score of Possibility One would have been higher if some participants had not left the sentences blank and thus received a score of 0. Sentence 2 was ordered as the eleventh item on the pretest and twelfth on the posttest, which were the final second and the last test items, respectively. Three MM-group participants did not answer the test item on the pretest, and two CM-group participants as well as two MM-group participants did not answer it on the posttest. These participants did not complete the comprehension test, and thus several items received scores of 0. The overall performance was affected by the lower scorers.

Sentences Belonging to Possibility Two

There were three sentences containing expressions belonging to Possibility Two (P2), meaning that the expressions were similar to Chinese in figurative meanings and

conceptual metaphors/metonymies, but different from Chinese in literal meanings. The mean scores of Possibility Two in both the CM and the MM groups from the two universities were lower than those of Possibility One and Possibility Three, and only higher than that of Possibility Four. The degrees of progress the participants made between the pretest and the posttest were not significantly different, except for the MM group in the four-year technological university. Explanations of the situation required more detailed analyses.

Sentence 4: Bill was blue in the face, arguing with Jack in a loud voice. The term *blue in the face* is similar to Chinese in its figurative meaning—*being angry*—and conceptual metaphor—THE PHYSIOLOGICAL EFFECTS OF AN EMOTION STAND FOR THE EMOTION, but different from Chinese common usage 鐵青著臉 *tiě-qīng zhe liǎn* (iron-green COM face 'Pale but grim face') in literal forms. In Chinese, the color *green* commonly refers to pale, unhealthy, or unhappy. The word 鐵青 *tiě-qīng* is the livid color, which represents *paleness* and *anger*. Thus, the color *blue* used in English and the color *livid* or *green* used in Chinese comprise the main difference between the two languages.

Some participants managed to translate the English term into Chinese as 面色鐵青 *miàn sè tiě-qīng* (face color iron-green 'Pale but grim face') or 面紅耳赤 *miàn hóng ěr chì* (face red ear red 'So angry that the face and ears become red'), and received a score of 5 for successfully relating the target domain ANGER and the source domain PHYSIOLOGICAL EFFECTS. Other participants wrote 氣得臉色發青 *qì de liǎn sè fā qīng* (gas COM face color become green 'Too angry that the face become pale') or 氣得臉都綠了 *qì de liǎn dōu lǜ le* (gas COM face all green PRT 'Too angry that the face become pale'); these answers also express the meaning of the English term correctly, so they were given a 5.

Those answers received a 4 or a 3 expressed only unhappiness or a bad-looking face, without pointing out the source domain PHYSIOLOGICAL EFFECTS or the target domain ANGER. Some examples are 一臉不開心 *yì liǎn bù kāi-xīn* (a face not happy 'The face which showed unhappiness') or 臉色難看 *liǎn sè nán-kàn* (face color bad-looking 'Unhappy face'). One participant wrote 一臉臭樣 *yì liǎn chòu yàng* (one face disreputable-like 'Long face'), and received a score of 3, because although the sentence was comprehensive with such a figurative meaning, it was not exactly the same as the original term.

Some people expressed acceptable sentence meanings but did not give acceptable figurative meanings. For example, 臉色恐怖 *liǎn sè kǒng-bù* (face color fear 'The face looks fearful') does not connote *anger*. Some participants used other colors like 慘藍 *cǎn-lán* ('pale blue') or 慘綠 *cǎn-lǜ* ('pale green'), which, in the two raters' opinions, indicated only *paleness* but not *anger*.

Surprisingly, many participants in both the CM and the MM groups tended to translate the English term into Chinese as 憂鬱 *yōu yù* (worried gloomy 'Melancholy') and 憂愁 *yōu chóu* (worry distressful 'Depressed'). The reason might be that the English word *blue* is widely known as a polysemy: it stands not only for the color but also for melancholy. Without clear context clues to assist them, the participants thus tended to interpret the term *blue in the face* as meaning depressed or gloomy.

Sentence 5: Happiness welled up within the groom when he saw the bride walking down the aisle.   Two raters agreed that answers deserving a score of 5 should point out the concept of *up* and *fluid* so that the conceptual metaphor HAPPINESS IS A FLUID IN A CONTAINER could be shown. Therefore, answers like 喜悅湧上心頭 *xǐ-yuè yǒng-shàng xīn-tóu* (happiness gush-up heart-tip

'Happiness wells up in the heart') and 快樂溢於言表 *kuài-lè yì yú yán biǎo* (happiness overflow in word surface 'Happiness was shown between lines') received the highest score.

Participants also showed their understanding of the concept *fluid in a container* by using terms like 充滿 *chōng-mǎn* (full 'full of') or 滿溢 *mǎn yì* (full overflow 'So full that it overflow'), and matched the terms with the organ 心 *xīn* (heart 'heart'). The image of a container full of fluid and the image of the heart filled with the feeling of joy were related.

Some participants of the MM group expressed the concept *up* successfully by giving answers like 喜洋洋 *xǐ yáng yáng* (joy up up 'Radiant with joy'); however, the answers left out the concept *fluid*. On the other hand, some participants emphasized the concept *fluid* instead of the concept *up*, such as 被幸福感淹沒 *bèi xìng-fú gǎn yān mò* (be happiness feeling submerge sink 'Be covered by the feeling of happiness'). Either answer expressed the figurative meaning correctly, but the conceptual metaphor was not sufficiently explained, so such answers received a score of 4.

Compared with the participants of the MM group, the participants of the CM group tended to interpret the meaning in a more literal way. Though some participants still gave score-four answers like 快樂萌發 *kuài-lè méng fā* (happiness sprout up 'Happiness emerges'), which include the idea of moving upward but exclude the idea of fluid, most participants received only a score of 3 and 2 for pointing out only *joy* or *happiness*. Examples are 顯得很開心 *xiǎn dé hěn kāi-xīn* (appear COM very happy 'Appear to be very happy') and 非常快樂 *fēi-cháng kuài-lè* (very happy 'Very happy'). The expression 高興得快死掉了 *gāo-xìng de kuài sǐ-diào le* (happiness COM almost die PRT 'Someone almost dies because of the extreme happiness') received a score of 2 because it was too exaggerated and not precise in figurative

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meaning, though the sentence meaning was acceptable.

Fewer than 10 participants out of the total 113 participants received a score of 1 for answering 很感動 *hěn gǎn dòng* (very touched moved 'Feel touched'), 露出微笑 *lòu chū wéi xiào* (reveal out gentle smile 'Show a gentle smile'), or 悲傷 *bēi-shāng* (sorrow 'Sorrow'). These answers were either insufficient or incorrect. Other than the minority of the participants, most participants performed fairly on this sentence. The reason could be that the context of the sentence—a bride and a groom in a wedding ceremony—was easily related to the emotion *happiness*. However, the participants' answers showed that they were able to understand the concepts of *up* and *fluid* in English and were capable of transferring the concepts to their native language Chinese.

Sentence 6: In order to get anything done, we have to budget our time the same way we budget our money. Participants who received a score of 5 for this sentence translated the term *budget* as 規劃 *guī-huà* (plan-draw 'To draw up a plan'), 計畫 *jì-huà* (compute-plan 'To plan'), 預算 *yù-suàn* (beforehand -calculate 'To budget in advance'), or 預估 *yù gū* (beforehand -estimate 'To predict and estimate in advance'). The English term *budget* means to plan a way to spend money. Those terms in Chinese also connote meanings of making plans. The source domain *money* and the target domain *time* are closely related and were pointed out.

The concept of *planning* was highlighted. Terms like 運用 *yùn-yòng* (exercise 'Make use of') and 善用 *shàn yòng* (well use 'Use well and wisely') received only a score of 4 due to lack of the concept of *planning*. Other terms like 衡量 *héng-liáng* (weight-measure 'To measure'), 控制 *kòng-zhì* (control 'Control'), 計算 *jì-suàn* (compute-calculate 'To count'), and 分配 *fēn-pèi* (separate-assign 'To assign') received a score of 3 for the same reason. Those terms that received a score of 3 did

not express the concepts of *using* and *spending*.

Some participants interpreted the term as 預支 *yù zhī* (beforehand spend 'Draw the money in advance') and received a score of 2, because the term meant the opposite of the original meaning: 預支 *yù zhī* is spending, whereas 預算 *yù suàn* (beforehand -calculate 'To budget in advance') is planning. Even though the term pointed out the concept of *doing beforehand*, it was still misinterpreted.

In addition, some participants wrote 付出時間和金錢 *fù chū shí-jiān hé jīn-qián* (pay out time and money 'Spend time and money'), which received a 1 because the whole sentence was interpreted wrongly: In the original sentence, *time* was the only thing to budget, and *money* was excluded. The answer 把花時間當作在花錢 *bǎ huā shí-jiān dāng-zuò zài huā qián* (PRT spend time take-as COM spend money 'Consider spending time as spending money') received the same score for a similar reason.

The context clues of this sentence helped as well as tricked the participants. Those whose answers received a score of 3 may have used their understanding of *money* and *time* during interpreting processes and thus made incorrect but relevant mappings.

Summary. The answers indicated that the participants used their limited knowledge of L2 to interpret metaphoric and metonymic expressions, with resulting mistakes. The mistakes also proved the potential problem of L1-L2 transfer. On the other hand, the diverse answers also suggested that the participants utilized their own life experiences to find correct interpretations of the usages they encountered. The situation corresponds to the hypothesis in Chapter 2 that the universality of experiences was helpful for L2 learners, whereas the specificity of cultures was impeditive.

Cultural differences were also revealed in the collocations. For example, in Chinese, the term 充滿 *chōng-mǎn* (full 'full of') usually goes with the word 心 *xīn* (heart 'heart'). However, in English, the term *well up* can be shown in more superficial places, like *face*. When doing translation, the participants spontaneously adopted what they perceived to be suitable collocations rather than stuck to the usage of the other language.

Faced with expressions that were gradually and increasingly diverged from those of the native language, the participants seemed to rely on context clues more often. Though the context clues did not always lead the participants to the right interpretation, the misinterpreted answers showed how the cognitive processes operated. Explicit teaching and enhanced awareness might facilitate learners' cognitive processes at this stage.

Sentences Belonging to Possibility Three

Three sentences contained expressions belonging to Possibility Three (P3), meaning that the expressions were similar to Chinese in figurative meanings, but different from Chinese in literal meanings and conceptual metaphors/metonymies. The mean scores of Possibility Three were the highest among the four possibilities, though the progress the participants made between the pretest and the posttest was not significantly different.

Sentence 7: The crowd's anger reached a boiling point when they saw the police shooting a boy.   The conceptual metaphor of the term *reach the boiling point* was ANGER IS A HOT FLUID IN THE CONTAINER, which mapped the concept *boiling water* into the concept *most angry*. However, in Chinese, the emotion *anger* is mapped to the concept of *gas* rather than *fluid*. Whether the participants could express

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the idea of *the most angry* and the concept of *at the limit* determined the grades they

received. The majority of the participants managed to interpret the term correctly.

Answers like 民怨沸騰 *mín yuàn fèi téng* received the full score from both raters.

Some participants wrote 怒氣到達最高點 *nù qì dào-dá zuì gāo diǎn* (anger gas

reach most high point 'To reach the highest point of anger') or 憤怒到了極點 *fèn-nù*

dào le jí diǎn (anger reach PRT extreme point 'Extremely angry') and also received a

score of 5 because they expressed the concept of *to the limit* successfully.

The term 怒氣騰騰 *nù qì téng téng* (anger gas soar soar 'Steaming anger')

received scores of 4 and 5 separately from the two raters. One rater thought that the

words 騰騰 *téng téng* implied the image of *boiling* or *heating*, and gave the full

score. The other rater, however, thought that this term did not express the concept of

to the limit clearly and hence deserved only a score of 4. The diverse opinions of this

answer indicated that, since the conceptual metaphors used were cultural-specific, L2

learners had to consult other images and use other knowledge to explain L1

expressions belonging to Possibility Three; the consultation of schema from different

cultures might lead to different interpretations easily, even at a very minor level.

Another discussable example also disclosed the problem caused by differences

between two languages at the cognitive level. The term 怒氣爆發 *nù qì bào fā*

(anger gas explode up 'Anger erupts') received a score of 4, while the term 到了爆發

的境界 *dào le bào fā de jìng jiè* (reach PRT explode up COM realm boundary

'Reach the limit of anger and almost explode') received a score of 5. The reason given

by the raters was that 爆發 *bào fā* indicated the action of explosion, whereas 到了爆

發的境界 *dào le bào fā de jìng jiè* indicated the state in which something was about

to explode. The second implied the concept of *to the limit*, so it received the full score

of 5. Though the Chinese characters 爆發 *bào fā* were the same, the meanings were

different at a subtle level.

Sentence 8: The bride had a glowing face on her wedding day. The raters had diverse opinions of the translation of the term *a glowing face* in the beginning. One of them thought that the best translation of this term should point out the concepts *light* and *happiness*. However, the other rater thought that this term should also be comprehended as descriptions of being *healthy* and *dynamic*. The reason for the diversity is that the term 容光煥發 *róng guāng huàn-fā* (face light light-up 'the face glowing with health') is commonly and frequently used to describe the state of a bride, and it coincidentally adopts the concept *light*. The coincident similarity might cause trouble with understanding and interpreting English terms that include the concept *light* as well.

Answers such as 露出喜悅的表情 *lòu chū xǐ-yuè de biǎo-qíng* (expose out happiness COM facial-expression 'Reveal the expression of joy') and 滿臉幸福 *mǎn liǎn xìng-fú* (whole face happiness 'Happy face') received a score of 5 because of the indications of *happiness* and *external expression*. The disputable answers like 容光煥發 *róng guāng huàn-fā* (face light light-up 'the face glowing with health') and 精神奕奕 *jīng shén yì-yì* (dynamic spirit radiate 'Radiant with vitality') also received a score of 5, since the interpretations were acceptable in Chinese. Some answers only mentioned the emotion *happiness*, like 喜悅 *xǐ-yuè* (happiness 'Happiness') , and were scored as a 4.

Interestingly, many answers mentioned the concept *beauty*. Two examples are 臉美得像在發光 *liǎn měi de xiàng zài fā guāng* (face beauty COM like PRT radiate light 'Face is so beautiful that it looks like beaming') or 很亮眼 *hěn liàng yǎn* (very light eye 'Outstanding and easy to catch the attention'). The reason why the participants adopted the concept *beauty* might have been the context clues of the sentence. It was reasonable to relate a bride to the image of *beauty*. Additionally, the

word *face* is commonly related to the concept of *beauty* as well. When the participants encountered problems interpreting unfamiliar English terms, they tended to search for other clues for assistance.

Sentence 9: I was so touched by his stories that I bought his autobiography immediately. The answers given by the participants were all very similar. Most people translated the term into the Chinese term 感動 *găn-dòng* (feel moved 'Be moved') and received a score of 5. Some varieties, like 感觸良多 *găn-chù liáng duō* (feeling very many 'Mixed feelings') or 很有感觸 *hěn yǒu găn-chù* (very have feeling 'Have many stirring feelings'), received a score of 3, since they pointed out the concept *feeling* but did not show the exact feeling of *being moved*. The sentences thus were comprehensive with such figurative meanings, even though the answers did not sufficiently express the figurative meaning.

Answers which received a score of 2 were 被深深的吸引 *bèi shēn shēn de xī-yǐn* (PRT deep deep COM attract 'Be attracted deeply') and 感同身受 *găn tong shēn shòu* (feel the-same-as body suffer 'Feel as though one experiences something'). The answers expressed acceptable sentence meanings, even though the figurative meanings were not precisely interpreted. Only two participants received a score of 1 for their incorrectly interpreted answers, 崇拜 *chóng-bài* (worship 'worship') and 著迷 *zháo-mí* (obsess 'Obsess'). The two terms not only incorrectly translate the original English term but also misinterpret the meaning of the sentence.

The majority of the participants got the full score on the sentence. The usage *being touched by* is widely used in daily conversation and is taught in textbooks; thus, it was easy for the participants.

Summary. The participants tended to rely heavily on context clues to interpret

unfamiliar expressions. Some answers for the sentences in Possibility Three implied this tendency. The situation might also suggest that the participants indeed encountered difficulty when translating expressions belonging to Possibility Three.

The characteristics of Possibility Three caused interesting responses in the L2 learners. Differences in the conceptual metaphors/metonymies led the L2 learners to utilize knowledge of their native language to comprehend knowledge of the target language. Evidence of cultural-specificity can be seen in the participants' answers.

Sentences Belonging to Possibility Four

There were three sentences containing expressions belonging to Possibility Four (P4), meaning that the expressions were different from Chinese in figurative meanings, literal meanings, and conceptual metaphors/metonymies. The mean scores of P4 were the lowest among the four possibilities. However, the participants of the MM group made significant progress on the posttest, while the CM group did not. Their answers to each sentence were analyzed in the followings.

Sentence 10: Supporters stormed out of the meeting place when they found out their candidate lost the election. The term *storm out* relates the concept of the natural force *storm* to the concept of the human emotion *anger*. The two raters agreed that answers which pointed out the concept of *fierce anger* and the concept of *rapid leave* could receive the full score. Answers that pointed out only the emotion or the action received lower scores because the conceptual metaphor was not shown clearly. Based on the criteria, the Chinese terms 氣沖沖的離開 *qì chōng-chōng de lí kāi* (gas huff-huff COM leave 'leave in a huff') or 憤怒的衝出去 *fèn-nù de chōng chū-qù* (anger COM dash out 'Dash out angrily') got the score 5. The majority of the participants just wrote 衝出去 *chōng chū-qù* (dash out 'dash out') and got the

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middle score of 3.

In the CM group, most participants gave answers like 湧出 *yǒng chū* (gush out 'Gush out') and 紛紛離開 *fēn-fēn lí-kāi* (in-droves leave 'Leave in groups'). Those answers expressed acceptable and comprehensible sentence meanings; however, they did not show the conceptual metaphor correctly.

Compared with those of the CM group, the participants of the MM group tended to display the figurative images more vividly. Many of them on the posttest used common but colloquial terms to interpret the English term *storm out*. Examples included 鳥獸散 *niǎo shòu sàn* (bird beast scatter 'to flee helter-skelter') and 一哄而散 *yì hōng ér sàn* (sudden hubbub then scatter 'to break up in a hubbub'). Although these answers did not convey the exact figurative meanings like *rapidity* and *anger*, they still received scores of 2 and 3 because of their vivid images and comprehensible meanings. Some other answers, despite receiving low scores for incorrect interpretations of the sentence meaning, showed the concept of the natural force clearly. The answer 心情如暴風掃過般失望 *xīn qíng rú bào-fēng sǎo guò bān shī-wàng* (heart emotion like storm sweep through PRT disappoint 'Feel so disappointed, just like the storm sweeping through') interpreted the emotion wrongly, while the answer 大發雷霆 *dà fā léi tíng* (big send-out thunderclap 'to flare up') missed the concept of speed and direction. Though the answers did not receive high scores, they indicated the mapping processes operated by the participants.

A noteworthy number of the participants misinterpreted the direction *out* as *in*. They wrote 生氣的衝進會議室裡 *shēng-qì de chōng jìn huì-yì-shì lǐ* (produce-gas COM dash into conference-room inside 'Dash into the conference room angrily') or 衝入 *chōng rù* (dash into 'Dash into') instead of the correct direction *out*. The possible reason for such a misunderstanding might be that the participants used context clues when translating; they thought that the angry crowd should send a

punitive force against the campaign under the circumstances.

Sentence 11: Thinking of my lovely girl friend always gives me a lift.   The
term _give someone a lift_ comes from the conceptual metaphor HAPPINESS IS UP.
The most similar interpretation in Chinese, according to the raters, should be
something like 高興得飄飄然 _gāo-xìng de piāo-piāo-rán_ (high-spirit COM
floating-like 'as happy as floating in the air'). The two raters agreed that answers
expressing the concepts of _up_ and _happiness_ should be graded as a 5, and that answers
expressing only one concept, either _happiness_ or _up_, should be scored as a 4 or 3.

However, the participants did not seem to perform satisfactorily on this item.
They had problems relating the concept _lift_ into the concept _happiness_. Thus, various
guesses appeared in their answers: answers like 愁腸百結 _chóu cháng bǎi jié_ (worry
intestines hundred knot 'Feeling of sadness and worries) or 魂不守舍 _hún bù shǒu
shè_ (soul not guard house 'Spaced out and absent-minded') misinterpreted the
emotion, whereas answers like 讓我放鬆心情 _ràng wǒ fàng sōng xīn qíng_ (let I put
relax heart emotion 'Let me relax') or 減輕我的壓力 _jiǎn qīng wǒ-de yā lì_ (reduce
lighten my press strength 'Release my pressure') misinterpreted the figurative
meaning. Those answers were given a score of 1.

The participants in the CM group tended to directly translate the figurative
meaning of the term into Chinese but did not express its conceptual metaphor. For
example, answers like 讓我心情變好 _ràng wǒ xīn qíng biàn hǎo_ (let I heart emotion
change-to good 'Make me feel better') and 讓我好興奮 _ràng wǒ hǎo xīng-fèn_ (let I
very excitement 'Make me excited') showed the emotions happiness and excitement,
but did not point out the link between _happiness_ and _up_.

The participants in the MM group, on the other hand, tended to express the
concept _up_ more clearly. The majority of them answered 振奮 _zhèn fèn_ (raise

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excitement 'To cheer up') or 精神為之一振 *jīng shén wéi-zhī yí zhèn* (dynamic spirit to-be a raise 'Lifted the spirit'). These terms involved the concept of *begin up* and *raising*, and thus received scores of 3 or 4. In addition, the participants seemed to be capable of translating the English term into more vivid Chinese usages, such as 心情飛揚 *xīn qíng fēi yang* (heart emotion fly raise 'Make a high spirit'), which not only had interpretations similar to the English but also described similar conceptual images.

Sentence 12: Many people go bananas during the World Cup football games. The phrase *go bananas* comes from the concept of monkeys jumping excitedly and frenziedly at the sight of bananas. Though the concept should be universally understandable, it is not used commonly in Chinese. To interpret this term, the raters agreed that answers like 瘋狂 *fēng-kuáng* (crazy 'Crazy') or 興奮到失控 *xīng-fèn dào shī kòng* (excitement to lose control 'So excited that lose control') could be given a score of 5, for these answers pointed out the concept of *being insane* and *uncontrolled*. Answers such as 興奮 *xīng-fèn* (excitement 'Feel excited') or 著迷 *zháo mí* (suffer obsession 'Obsess'), despite explaining the sentence meaning in an acceptable way, did not show the concept of *frenzy*, and thus were given a score of 4 or 3.

The participants performed unsatisfactorily on this item. The lack of a corresponding term in Chinese caused trouble for them in comprehending the sentence. Thus, many participants might have relied on context clues for interpretation. Answers like 為了看世足而熬夜 *wèi-le kàn shì-zú ér áo-yè* (in-order-to watch world-football so stew-night 'Stay up late in order to watch the World Cup football game') were obviously guesses based on the normal understanding of people watching football games. Even for those participants who

answered 瘋狂 *fēng kuáng* (crazy 'Crazy') or 狂熱 *kuáng rè* (crazy hot 'Be fanatical'), it was hard to tell whether they interpreted the term by utilizing the conceptual metaphor or by guessing from personal knowledge.

However, the participants' performances on the posttest were consistently better than those on the pretest. More participants got scores of 5 for answering 瘋狂 *fēng kuáng* (crazy 'Crazy') or 陷入狂熱 *xiàn-rù kuáng rè* (fall-into crazy hot 'Become fanatical') on the posttest than on the pretest, whether they were in the CM or the MM group. This tendency seemed to show that the participants had better comprehension in terms of the general sentence meaning after receiving instruction.

Summary. The performances of the participants in Possibility Four (P4) seemed to be more diverse than the performances in the other three possibilities. Learners tended to rely on context clues more often than they did in interpreting sentences. In view of the fact that P4 had the lowest mean score among the four possibilities, Possibility Four, in which the expressions from the two languages differed in literal meanings, figurative meanings, and conceptual metaphors and metonymies, caused the most trouble for the participants in the translation task.

However, the difficulty of the participants in interpreting terms also disclosed the mapping processes in their minds. The participants seemed to be able to identify the source domains of the conceptual metaphors. Though they did not necessarily identify the target domains, they still utilized knowledge related to the known concepts and tried to map it to possible target domains.

The participants in the MM group especially showed their capability for mappings. Their answers were usually more vivid than the answers given by the CM group participants. For example, they described a natural force in Sentence 10, and indicated the upward direction in Sentence 11. Though they did not comprehend the

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meanings of the English terms, their interpretations suggested that they took

advantage of the metaphoric mappings well.

Summary of the Results of the Comprehension Test

Table 4.21 summarizes the results of the Comprehension Test by showing the

status of the hypotheses.

Table 4.21

Summary of the Results of the Comprehension Test

Hypothesis	Participants of the general university	Participants of the four-year technological university
Hypothesis 4: To improve comprehension of metaphoric and metonymic expressions, instruction involving MM is more helpful than instruction involving CM.	Not support	Not support
Hypothesis 5: Instruction involving MM can improve comprehension of figurative expressions which are different from L1 in literal meanings, figurative meanings, and conceptual metaphors more efficiently than instruction involving CM.	Support	Support
Hypothesis 6: Instruction involving MM can lead toward longer-term effect on retention than instruction involving CM can.	Support	Support

Discussions of the Comprehension Test

L1-transfer Interference

The fourth hypothesis which states that instruction on metaphoric mappings is

more helpful in improving comprehension of metaphoric and metonymic expressions

than instruction on conceptual metaphors and metonymies did not seem to be well

supported. The MM-group participants in both universities did not perform

significantly better in the posttest, as the results reported in Table 4.17, and the

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progress the MM-group participants made between two tests were not significantly different from the progress the CM-group participants made, as the results shown in Table 4.18. In other words, the two groups of participants seemed to perform similarly well. However, the results reported in Table 4.18 also show that, though the differences were not significant, the degree of progress the MM-group participants made were still higher than that made by the CM-group participants. Therefore, the findings suggest that the MM-group participants still benefited from the instruction in some ways; the findings also partially support the sixth hypothesis which states that instruction involving metaphoric mappings can lead toward longer-term effect in retention than instruction involving conceptual metaphors and metonymies can.

Judging from the finer-grained analyses on four possible patterns of L2-to-L1 translations, the slight differences on the performances of the MM-group participants resulted from their significant improvements mainly on P4, as the results shown in Table 4.20. The improving performances were shown not only on the scores qualitatively but also on the interpretations qualitatively. Qualitative analyses suggest that the participants in the MM group especially showed their capability for mappings unfamiliar concepts and thus received higher scores. The answers of the MM-group participants usually delivered more vivid images than the answers given by the CM-group participants, and expressed the metaphoric/metonymic expressions with more appropriate senses of figurative meanings. For example, in Sentence 10, the MM-group participants captured connoted characteristics of the conceptual domain of *storm*, and translated the English expression into Chinese with concepts of *speed* and *fierceness*. In Sentence 11, the MM-group participants also displayed the mapping process from concrete images *lift* and *up* to abstract concept of *energy* and *excitement*. Compared to the CM-group participants who tended to interpret the expressions in more general terms indicating broader ranges of meanings, the MM-group

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participants seemed to equip considerable cognitive flexibility.

The benefits that instruction of metaphoric mappings brought include better comprehension of meanings and livelier imagination of figurative senses. These advantages can be attributed to the mapping processes which instruction on metaphoric mappings consists of. Instruction on conceptual metaphors only points out ontological mapping relations, such as ANGER IS FIRE, to learners. However, when L1 does not share the conceptual metaphors with L2, L2 learners would face a problem of not being able to make logical comparisons between two unfamiliar concepts or subjects. That is to say, for L2 learners who already speak one language and rely on one established construal system, the formation of new construal systems is necessary for successful L2 acquisition (Ellis, 2006a). Instruction on metaphoric mappings, which explicitly points out epistemic mapping processes and offers clearer connections between abstract or unfamiliar concepts and concrete and familiar ones, facilitate the formation of L2 construal systems. Thus, in the study, the MM-group participants mastered the unfamiliar L2 concepts better than the CM-group participants did, and gained higher mean scores.

Although the instruction on metaphoric mappings resulted in better comprehension, the improvements were not enough to reach significant levels. The qualitative analyses offer explanations for the unsatisfactory results: for L2 learners, successful formation of a L2 construal system means to understand how the target language categorization system works and how it differs from a L1 system. However, the pre-existing L1 categorization systems are hard to break and thus cause interference (Weinreich, 1953, as cited in Ellis, 2006a). For example, in Sentence 10, the participants tended to categorize *storm* into Chinese metaphoric senses about *anger*, such as in 大發雷霆 *dà fā léi tíng* (big send-out thunderclap 'to flare up') in which *storm* and *thunder* were both categorized into types of *anger*. However, in

Chinese *storm* is related to the direction *in*, as in a normal expression 被捲入暴風中 *bèi juǎn rù bào-fēng zhōng* (PRT pull into storm inside 'being involved in a stormy crisis') and seldom used with the direction *out*. Therefore, some participants wrote *dash into* in answers like 生氣的衝進會議室裡 *shēng-qì de chōng jìn huì-yì-shì lǐ* ('Dash into the conference room angrily') rather than *dash out*. Another L1-interference example is Sentence 11. In Chinese *lift* and *up* are frequently related to *excitements*, but they are not specifically related to *happiness*. Thus, the participants' interpretations were influenced by the L1 existing knowledge and translated the L2 expressions into 興奮 *xīng-fèn* ('Excitement') or 振奮 *zhèn fèn* ('Cheer up') rather than *happiness*.

To overcome the binding power of L1 construal systems and to form different perspectives of L2, explicit instructions which make learners aware of construal systems that exit in L2 but not in L1 can accelerate process of acquisition (Littlemore, 2009). Instruction on metaphoric mappings, which displays detailed and systematic corresponding relations between two concepts, offers direct guidance to mental mappings that are needed to interpret L2 expressions. Thus, it smoothly bridges the gaps between L1 and L2 construal systems and cultural differences.

Since instruction on metaphoric mappings were proved to be helpful for L2 learners to bridge the cultural gaps and find appropriate explanations, the instruction should be claimed beneficial for L2 learning. At the same time, to lower the negative influence of L1 transfer, more explicit presentation of L2 construal systems may be useful.

Extraneous Factors

Some extraneous factors rather than the test itself affected the results of the Comprehension Test. The factors included ways of operating the computer program,

time of finishing the test, and order of the test items. Those factors, based on the participants' comments in an informal post survey done after the tests, somehow influenced the participants' physical and mental status and then affected their performances.

First, ways of operating the computer program caused some difficulties for the participants. The Comprehension Test, the same as the Awareness Test, required the participants to respond on computer. However, while the Awareness Test required the participants to type just one key to represent their evaluation on a scale, the Comprehension Test demanded the participants to type complete sentences in Chinese. Though the participants were provided with two samples for practices before moving on to the main test, they still encountered some operating difficulties during the test, such as slow speed of typing and unfamiliar input methods. Due to the program limitation, the Comprehension Test program only allowed Zhù-Yīn Chinese Input Method; some participants who were used to other types of input methods, like Cāng-Jié Chinese Input Method, were forced to use Zhù-Yīn Chinese Input Method and thus typed slower.

The slower typing speed was just one of the factors that affected time of finishing the test. Another factor was the exhaustion caused by the consecutive test-taking process. The Awareness Test was given to the participants first, and required the participants to read 48 sentences swiftly and concentratedly in 15 minutes. The process would consume lots of mental efforts; in addition, the participants' eyes might feel tired too because of long-time close-reading on computers. When they moved on to the Comprehension Test, they might be weary of doing tests and started to slow down on the speed of answering.

The other reason that caused unsatisfactory performances on the test was orders of test items. Approaching to the end of the test, the participants started to be impatient

because of mental exhaustion. Therefore, the answer rate became relatively lower. For example, three out of 113 participants did not answer the eleventh test item in the pretest (97% answer rate) and 16 out of 113 participants gave up answering the twelfth test item (86% answer rate). Similar situation happened in the posttest: four participants did not answer the eleventh test item (96% answer rate) and four did not answer the twelfth test item (96% answer rate). Those participants received a score of 0 and thus lower the overall mean scores.

Difficulty Levels of the Four Possibilities

Theories of L1-L2 transfer, such as different levels of similarity/universality and differences/specificity between L1 and L2, can also be attributed to the presumption of difficulty levels regarding learning L2 figurative expressions. It was predicted that learners may face different degrees of difficulties graduating from P1 to P4 in transferring expressions from L2 to L1. If L1 and L2 share literal meanings, figurative meanings, and conceptual metaphors of figurative expressions, comprehending L2 figurative expressions should be easier for L2 learners because they can resort to exiting L1 knowledge (Killerman, 1977). Contrarily, if L1 and L2 are different in every aspect, understanding figurative expressions should be more difficult for L2 learners because they have to not only overcome L1 interferences but also establish new L2 construal system (Ellis, 2006a).

However, the results of the Comprehension Test did not completely conform to the presumption. P4, which represents expressions that are different between L1 and L2 in literal and figurative meanings as well as conceptual metaphors, scored the lowest as expected. Nevertheless, P1, which represents expressions that are similar between L1 and L2 in every aspect, did not score the highest. Surprisingly, despite the difficulty caused by cultural-specificity, the mean score of P3 was still the highest

among the four, followed by P1, P2, and P4.

The lower answer rate offers a part of reason why P1 did not score the highest as predicted. The eleventh test item in the pretest, which belonged to P1, happened to be the twelfth test item in the posttest. Compared with P1, P3 did not contain test items which were ordered as the last two and received no score of 0, hence reduced the influence of a score of 0 on the final mean score.

In addition to extraneous factors, the unmatched prediction on difficulty levels of the four possibilities might be attributed to the present situation in foreign language teaching contexts. As mentioned in Chapter 2, most textbooks on figurative language still rely on traditional rote learning, which requires L2 learners to memorize English metaphoric/metonymic expressions, figurative meanings, and sample sentence structures. Studies (Chen, 2011; Lai & Chen, 2010) also confirm that EFL learners tend to pay more attention to expressions which were idiom-like and were more assertive in using them. The participants in the present study, who were about 19 years of age, were not in time for the new trend of teaching proposed by the cognitive linguists, and hence they were still asked to memorize metaphoric/metonymic terms like idioms during their early years of learning. Therefore, they performed well on expressions belonging to P3 with fixed answers.

However, the way of learning by memorizing has a potential flaw: it is almost impossible for learners to memorize all figurative expressions, idioms and slangs included. Therefore, when encountering an unlearned expression, learners may fail to comprehend and interpret due to their lack of certain knowledge. The expression *go banana* in Sentence 12 happens to be an example. The variety of interpretations indicated that most participants gave their interpretations based on context clues, not on direct comprehension of the expressions. Only few participants were able to give exact interpretations of the expressions. The researcher, after all the tests had

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completed, asked the participants informally about how they thought of the Comprehension Test; participants specifically pointed out Sentence 12 as the most difficult one. Yet, some participants expressed that they learned this phrase before, so they did not consider it difficult. The reflections of the participants toward Sentence 12 reveal a fact that, without previous learning or memorizing, L2 learners may feel extremely difficult to comprehend an unfamiliar figurative expression, especially when the expression is very different from L1. In addition, the comments also accord with Kellerman's (1979) claims that, when learners perceived the distance between two languages, they may decide to avoid risking L1 transferring. Thus, it becomes reasonable that learners may either heavily rely on their stored knowledge or search for other assistances like context clues.

However, with no direct evidence, the above-mentioned discussions of why P3 scored the highest should still be taken as speculations and demand further investigation. The reflections of the participants did not come from thorough and formal survey, and thus can serve as only a clue. But this clue may shed light on future improvements on EFL teaching and learning of figurative language.

CHAPTER 5

CONCLUSIONS

This chapter summarizes the major findings of the two tests and answers three research questions at the same time. Based on the results and discussions, theoretical reflections and pedagogical implications are provided. This study closes by pointing out its limitations and suggesting future research in other teaching contexts.

Answers to the Research Questions

Three research questions were raised in Chapter 2, enquiring the effects of two teaching methods—conceptual metaphors and metaphoric mappings—on EFL learners' awareness, retention, and comprehension of figurative language learning. They are answered separately in the following sections.

The First Research Question

The first research question of the study focuses on EFL learners' awareness of figurative language. An empirical investigation of two cognitive-oriented instructions—instruction on conceptual metaphors (CM) or instruction on metaphoric mappings (MM)—are conducted. The results of the Awareness Test show that both the participants of the CM groups and of the MM groups made progress on the Awareness Test after receiving the instructions. The improvements of scores indicate that the participants became more confident of their judgments of recognizing metaphoric/metonymic expressions; the enhanced certainty also indicates the participants' raised awareness of figurative language.

However, the results also show that the participants of the MM groups performed

significantly better in the posttest than in the pretest while those of the CM groups did not. The significances suggest that instruction on metaphoric mappings were especially beneficial to the learners' awareness in some aspects. The analyses on the participants' responses to expressions belonging to different categories on the metaphor-metonymy continuum show that the MM-group participants in the general university performed significantly better in evaluating metonymic-metaphoric and metaphoric expressions, the two categories which were closer to the metaphoric end on the continuum and were considered more abstract in the concepts involved. The 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, the analyses on the participants' responses to body-related metaphoric/metonymic expressions show that the MM-group participants in the general university received significantly higher scores in the posttest in evaluating metaphoric/metonymic expressions containing no bodily descriptions, expressions which were even more abstract than others due to lack of bodily experiences. The finding suggests that instruction on metaphoric mappings can help learners overcome difficulties resulting from abstractness of concepts and insufficiency of embodied experiences, and thus they become more aware of those types of expressions.

To sum up, both instruction on conceptual metaphors and instruction on metaphoric mappings were proved to be beneficial in improving EFL learners' awareness of figurative language use. The favorable influences confirm that cognitive-oriented instructions indeed can assist learners to make better sense of figurative language (Ellis, 2006a, 2006b). 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 which involved complicated cross-domain mappings and expressions which were not grounded in embodied experiences.

The Second Research Question

The second research question of the study focuses on EFL learners' comprehension of figurative language. L2 learners' comprehension of metaphoric and metonymic expressions is believed to be related to their world knowledge, which is governed by their L1 language and culture. Therefore, which instruction is beneficial for utilizing cultural universal concepts as well as bridging gaps between cultural differences is under investigation.

The results of the Comprehension Test show that both the participants of the CM groups and of the MM groups made progress on the test after receiving the instructions, the progress meaning that the participants offered better and more comprehensive L1 interpretations to the L2 metaphoric/metonymic expressions. Since the impacts of external factors, such as the fact that whether the participants reviewed the subjects during one-week interval, had been excluded from statistical calculation, the improvements of the scores could be logically interpreted as their improvements of comprehension.

The results again confirm that cognitive-oriented methods work well on L2 figurative language learning. However, the analyses on the participants' interpretations of expressions belonging to different possibilities show that, after receiving the instructions, the MM-group participants in both universities got significantly higher scores on interpreting expressions which differ from the participants' L1 in literal meanings, figurative meanings, and conceptual metaphors/metonymies. The finding indicates that the participants benefited from

instruction on metaphoric mappings in overcoming culturally-different difficulties. The finding also suggests that metaphoric mappings assist learners in relating their knowledge of the familiar concept to the unfamiliar one. The results thus successfully provide empirical evidence for Kövecses' (2001) theoretical assumptions of metaphoric mappings.

The qualitative analyses on the participants' answers again confirm the effects of metaphoric mappings on comprehension. When answering the expressions that had conceptual metaphors similar to L1, both groups of participants were able to utilize the universal concepts to transfer L2 expressions into corresponding L1 terms. The diversity of answers also indicates that the participants equipped cognitive flexibility to express the same meanings in conventional L1 forms. Answers of the term *blue in the face* in Sentence 4 offer good examples. The participants managed to translate the English term into Chinese as 面色鐵青 *miàn sè tiě-qīng* (face color iron-green 'Pale but grim face') or 面紅耳赤 *miàn hóng ěr chì* (face red ear red 'So angry that the face and ears become red') instead of directly translating *blue* into 藍 *lán* ('blue'). The choices of 紅 *hóng* 'red' and 青 *qīng* 'green' by the participants reflect a very interesting cultural variations regarding color terms (Berlin and Kay 1969). According to the hierarchy of color terms claimed by Berlin and Kay, both *red* and *green* are more basic than *blue*, and are more prevalently found in languages. Those who translated this example into *green* have a better grasp of the linguistic and cultural specifics of Chinese and English, while those who translated this example into *red* employed their universal embodied knowledge shared by Chinese and English.

However, when answering the expressions which were different from L1 in conceptual metaphors, the CM-group participants tended to rely on context clues of the sentences, giving more or less vague interpretations. On the contrary, the MM-group participants tended to search for recognizable and familiar concepts and

then utilized the concepts to give more exact interpretations. For example, in Sentence 11, the CM-group participants were settled with interpretations like 興奮 *xīng-fèn* ('excitement') and 心情好 *xīn qíng hǎo* ('feel better'). On the other hand, the MM-group participants caught the concept of *up* in the expression *gave me a lift*, and interpreted the expressions in Chinese with similar concepts, like 振奮 *zhèn fèn* ('To cheer up'). The findings suggest that metaphoric mappings can facilitate learners to use the existing knowledge of the source domain and to map it to a possible target domain.

In summary, both instruction on conceptual metaphors and instruction on metaphoric mappings support the claim that cognitively-oriented methods improve EFL learners' comprehension of figurative language. However, instruction on metaphoric mappings was found to be especially beneficial to learners in interpreting expressions involving cultural-specific conceptual metaphors. Kövecses (2001) maintains that explicit instruction of ontological and epistemic mappings can compensate cultural-difference problems and facilitate learning. Our findings advance such a claim by proposing and confirming empirically that, through presenting systematic and logic mappings directly and clearly, learners can find ways to associate relevant knowledge or to create new construal systems, and thus can improve their comprehension.

The participants' interpretations happened to demonstrate their interlanguage, a transitional system reflecting learners' current L2 knowledge (Ellis, 2002). The present study also analyzes the participants' answers qualitatively to offer explanations to the effects of facilitation: metaphoric mappings not only structurally display basic correspondences between the source and target domains through ontological mappings, but also systematically specify the correlating relationships between the two domains through epistemic mappings (Lakoff, 1987). The correlating

relationships then construct and provide structural image schemas for both the source

and target domains. With the detailed and structural image schemas of the source and

target domains, learners can conjecture the mapping relationships between two

distinct domains easily because of the *Invariance Principle* (Lakoff, 1993), a principal

which claims that "metaphorical mappings preserve the cognitive topology (that is,

the image-schema structure) of the source domain, in a way consistent with the

inherent structure of the target domain" (ibid., p.215). Therefore, when encountering

expressions which are culturally specific only in L1 or in L2, learners can either use

their existing world knowledge to interpret mapping relationships or rely on given

image schemas to construct mapping relationships.

The Third Research Question

The third research question of the study focuses on EFL learners' retention of

figurative language. The effects on retention in the study refer to the learning effects

after receiving the instructions for one week. The differences between participants'

performances in the pretest and in the posttest can reveal the effects of the instructions

on retention.

In both the Awareness Test and the Comprehension Test, the participants

performed better in the posttest than in the pretest. The general improvements in the

posttest demonstrate the effects of having explicit instructions during figurative

language learning process. However, the improvements on mean scores of the tests

could only support the assumption that cognitively-based instructions, including CM

and MM instructions, have beneficial effects on awareness raising and comprehension

improvement; whether both instructions have beneficial effects on retention still needs

investigation. Since neither could the differences between the pretest and the posttest

determine which instruction resulted in better effect on retention, the differences that

each group made were compared to each other.

The results of comparisons between the CM groups and the MM groups in the Awareness test show that the mean scores the MM-group participants made were lower than that made by the CM-group participants. However, the degrees of progress made by the MM-group participants in the posttest were significant statistically. The findings suggest that instruction on metaphoric mappings help the participants make consistent and steady progress in the posttest, and thus the variances of the changes were significant.

In the Comprehension Test, the participants of the MM groups received higher mean scores in the posttest than the participants of the CM group did. Though the differences they made between the pretest and the posttest were not significantly higher than that of the participants of the CM groups, the improvements still indicate the better progress the MM-group learners made.

To sum up, even though both instruction on conceptual metaphors and instruction on metaphoric mappings bring beneficial effects to EFL learners' awareness raising and comprehension improvement, instruction on metaphoric mappings can also bring relatively more consistent and steady progress. The findings assure the effects of meaningful learning on second language acquisition (Ausubel, 1963, 1968). Metaphoric mappings provide structural correspondence through ontological mappings as well as knowledge association through the epistemic mappings. The systematic elaborations can facilitate a deeper level of cognitive processing throughout the learning process (Ellis, 2002). Moreover, the detailed information of mapping processes can minus the influences of individual differences, such as cognitive styles. The elaborations on mapping processes bridge gaps between conceptual domains and facilitate metaphoric competence development. In addition, the advantages of relating existing and concrete knowledge to new and abstract

concepts through epistemic mappings can solve problems caused by cultural specificity. Thus, regarding awareness as well as comprehension, metaphoric mappings can result in positive and even beneficial effects.

Implications

Beneficial Effects of Explicit Teaching on SLA

Learning a language means accepting a construal system which speakers of the language possess. For second language or foreign language learners, learning a language which is different from their native one implies a demand of understanding how the target language categorization system works and how it differs from the native language system (Littlemore, 2009). The demand requires L2 learners' strong noticing skills which can direct them to spot new perspectives and categorizations. Therefore, an attention-getting process is necessary in SLA (Schmidt, 1990; Ellis, 2006a).

Learners' attention has long been a favorable issue of SLA research. Many theories and methods are proposed in order to ensure that *input* of the target language becomes *intake* of learners, which refers to the noticed input that is actually internalized (Corder, 1967). These theories and methods, such as corrective feedback and negotiated interaction (Pica, Young, & Doughty, 1987) and form-focused instruction (Long, 1991), strongly promote the idea that learners should notice specific parts of a language, particularly on mismatches between L1 and L2. Moreover, the *noticing* of learners should involve not only consciousness as awareness but also consciousness as intention (Schmidt, 1990). Therefore, explicit teaching is believed to be beneficial for L2 learning (Ellis, 2002).

The present study also provides positive evidence for explicit teaching.

The results of both the Awareness Test and the Comprehension Test show that explicit instructions on metaphoric/metonymic expressions, whether focusing on conceptual metaphors or metaphoric mappings, enhanced learners' awareness uses as well as improved learners' comprehension of figurative language. Though the present study does not have a control group which can serve as a basis of learners' performances when no instruction is given, previous studies (Boers, 2000a, 2000b; Boers & Demecheleer, 2001; Boers, Demecheleer & Eyckmans , 2004; Boers, Eyckmans & Stengers, 2007) have proved that learners perform better when receiving explicit instructions. Therefore, it is reasonable to conclude that explicit teaching is useful in terms of figurative language learning.

Moreover, the instruction on metaphoric mappings seems to result in better awareness of expressions which involve more complicated and abstract mapping relationships, and better comprehension on expressions which are more distinctive from L1 usages, according to the results of the present study. In other words, instruction on metaphoric mappings is particularly beneficial for understanding abstract or unfamiliar expressions. The instruction not only shows ontological mapping links between two source concepts but also demonstrates detailed epistemic mapping processes. Hence it may overcome potential difficulties caused by individual differences on cognitive styles.

Such a research sheds light on discussions of how learners' different cognitive styles can lead to different learning effects. Figurative language learning is not a privilege for learners of holistic cognitive styles, who are more likely to treat target and source conceptual domains as an integrated entity and are found better at sensing similarities between domains (Boers & Littlemore, 2000; Littlemore, 2001). Even learners of analytic cognitive styles, who are more likely to conceive the two domains of metaphor as distinct domains and are found worse in explaining conceptual

metaphors (Boers & Littlemore, 2000), manage to construct correlative relationships between domains and between concepts. Both bottom-up (i.e., for learners of analytic styles) and up-down (i.e., for learners of holistic styles) learning processes are covered. In addition, instruction on metaphoric mappings also bridges gaps between two cultures by displaying traits of conceptual domains for learners to link what are known to what are not. The clear and detailed structures of mapping processes shown through metaphoric mappings help learners construct new construal system of L2 and thus facilitate L2 acquisition (Ellis, 2006a; Littlemore, 2009).

In sum, while both explicit instruction on conceptual metaphors and explicit instruction on metaphoric mappings are helpful for L2 learners in learning metaphoric and metonymic expressions, instruction on metaphoric mappings can provide additional benefits to help learners overcome problems caused by L1-L2 transfer and non-language influences, such as cognitive styles.

Insights into Metaphor-metonymy Continuum

Previous research suggests that metaphor and metonymy may interact with each other in intricate ways since one motivates the other (Barcelona, 2000; Radden, 2000). However, metaphor is more often noticed by researchers, teaching material designers, and even learners. Metonymy, on the other hand, has received relatively little treatment in the language teaching literature (Panther & Radden, 1999; Littlemore, 2009). For one thing, metaphor is more frequently researched because it is very often considered as idioms or fixed usages, which need explicit teaching and memorization (Laufer, 1997). Metonymy, however, is used to perform referential functions, sometimes for the purpose of euphemism and sometimes for facilitation of comprehension. It may be too common in communication to be perceived as a specific subject, and thus is seemed as "a secondary trope below metaphor" (Gibbs,

1999, p.74). For another, metonymy uses one entity to refer to another entity which is already related to or even is part of it; metonymy may thus be too subtle for speakers to realize (Radden & Kövecses, 1999).

The present study encompasses metonymy into the experiment. The results of the present study show that L2 learners actually reacted differently to metaphor and metonymy. In the Awareness Test, the participants showed apparent improvement on recognizing metaphoric expressions than on recognizing metonymic expressions after receiving instructions. The different performances on metaphor and on metonymy suggest that the participants sensed the divergence between these two types of figurative expressions and reacted to each type differently. In the Comprehension Test, the participants demonstrated great flexibility in interpreting expressions involving metonymic senses. For example, *dance for joy* in Sentence 2 was interpreted as 手舞足蹈 *shǒu wǔ zú dào* (hand-dance foot-dance 'So happy to dance for joy') rather than literally 跳舞 *tiào wǔ* (jump dance 'dance'). *Blue in the face* in Sentence 4 was translated into 面色鐵青 *miàn sè tiě-qīng* (face color iron-green 'Pale but grim face') or 面紅耳赤 *miàn hóng ěr chì* (face red ear red 'So angry that the face and ears become red') rather than simply 藍色 *lán sè* (blue color 'Blue'). Though the Comprehension Test was not meant for measuring learners' reactions to metaphor and metonymy and thus could not discern differences between the participants' performances on metaphoric and metonymic expressions, the answers of the test still show the clue that the participants tactfully found proper referential targets and interpreted the terms appropriately.

The findings of the present study indicate that L2 learners, whether they sense the differences between metaphor and metonymy consciously or not, demonstrate distinct reactions to these two types of figurative expressions. The findings also accord with cognitive perspectives of metonymy, which is regarded, if not more

fundamental, as equally important to the conceptual system as metaphor (Gibbs, 1999; Barnden, 2010; Chen & Lai, in press). Thus, the participants' performances in the tests suggest that metaphor and metonymy as well as their intricate interactions should be paid equal attention in the language teaching field.

Insights into Interlanguage System of L2 Acquisition

The results of the Comprehension Test show that the participants reacted differently to each possibility of translating figurative expressions between L1 and L2. Among the four possibilities, P3 received the highest scores. Though this finding of the ranks was contradictory to what was expected originally: P1 should have the best performances and P4 should have the worst one, still the different performances between each group provide noticeable evidence for the existence of different stages of interlanguage during the L2 acquisition process.

Interlanguage represents a mental process responsible for L2 acquisition; it shows both the internal system that L2 learners construct during learning and a series of associated systems that characterize the learning progress over time (Ellis, 2002). L2 learners are forming grammars and construal systems in the learning process; each piece of knowledge which is formed and learned shares some common rules with the previously constructed system while at the same time contains some new or revised rules. The L1 system, rather than being replaced fully by L2 system, is gradually reducing its impact on L2 acquisition (Corder, 1977). Since the interlanguage works like stratified system that keeps overlapping and changing, it is postulated by cognitive linguists (Bardovi-Harlig, 1999; Corder, 1967) as a continuum system. One end on the continuum is L1 and the other is L2. While L2 learners are getting advanced in terms of L2 proficiency, they are gradually reducing impacts caused by L1; the interlanguage position then moves near the L2 end on the continuum.

The participants' different performances regarding different possibilities conform to the concept of the interlanguage continuum, showing that the interlanguage system of L2 learners is not stable and fixed, but rather is dynamic and fluctuating. Since some potential variables, such as the participants' proficiency levels of English and years of L2 learning, had been excluded, the participants' performances on sentences of each possibility can be viewed as the noticeable evidence of the interlanguage continuum. Even at the same proficiency level, L2 learners still react diversely to L2 expressions. For those L2 expressions which share many similarities with L1 expressions, learners can utilize their existing knowledge to facilitate L2 comprehending. For those L2 expressions which differ largely from L1, learners would need time to accumulate knowledge and experiences in order to not only reduce L1 interferences but also improve L2 understanding. The interlanguage system thus manifests universal properties between L1 and L2 during the L2 acquisition process (Corder, 1977).

However, in the present study, the participants actually performed better on P3 than P1, even though the expressions belonging to P1 shared more similarities with the participants' L1 than the expressions of P3 do. The inconsistent findings may be attributed to the present situation in foreign language teaching contexts, in which traditional rote learning is still prevalent. The situation leads to the discussions of and the insight into designs of EFL teaching materials in the later section.

Insights into Cultural Universality and Specificity

Metaphor and metonymy are believed to manifest speakers' conceptual understanding of the world; therefore, to learn metaphor and metonymy means to accept certain perspectives in a construal system. However, for L2 learners who have already had an operating construal system of their native language, it might be

difficult to develop or acquire a new one. The conflicts come from similarities and differences between L1 and L2, and between the cultures speakers of each language possess (Ellis, 2006a; Littlemore, 2009).

In fact, whether the native language influences the second language learning is an issue which has been debating for a long time in the SLA field. Some researchers (Lado, 1957; Odlin, 1989; Ringbom, 1987) contend that L1 transfer can facilitate L2 learning if systematic comparisons of two languages are made clearer to L2 learners; learners can understand new information by making use of already existing knowledge. However, some believe that L1 transfer can cause interference since L2 learners might either avoid unfamiliar L2 structures (Schachter, 1974) or overuse familiar L1 structures (Levenston, 1971). The dispute over the topic indicates that L1 transfer can be a double-edged sword: when great similarities exist, learners may doubt that the similarities are real. Thus, as Kellerman (1979) claims, learners' perception of the distance between the first and the second language is significant.

In the case of metaphor and metonymy learning, which involves differences of not only languages but also cultures and conventions, the role of L1 transfer becomes especially salient and important (Littlemore, 2009). In the Comprehension Test, the participants performed the best when English expressions were different from Chinese in certain aspects (i.e., Possibility 3). However, when English expressions were completely different from Chinese (i.e., Possibility 4), the participants performed the worst. The different performances may result from long-existing traditional EFL teaching methods: rote-learning and memorization. EFL learners are trained to notice salient differences between two languages and are forced to memorize ubiquitous L2 terms; textbooks designed by McCallum (1970, 1978) and Nandy (1994) are two obvious examples. Thus, they tend to be alert when encountering distinct or collocational usages. However, when encountering unknown or unlearned expressions,

EFL learners might have difficulties in comprehending them. To facilitate comprehension, L2 learners need to learn how to overcome culture-specific gap as well as utilize culture-universal clues.

Instruction on conceptual metaphors has been proved that it provides useful mental tool for L2 learners in learning (Boers, 2000a, 2000b) and comprehending (Boers, 2000a) metaphoric expressions. However, instruction on conceptual metaphors is criticized as neither always necessary nor sufficient, since a conceptual metaphor existing in one language may not exist in another language (Littlemore, 2009, p.98). Even when a conceptual metaphor exists across different languages, it usually exploits in different ways (Deignan et al., 1997; Kövecses, 2002). Thus, learners might still have difficulties in comprehending conceptual metaphors.

Instruction on metaphoric mappings, on the other hand, provides detailed structures for learners. As previously stated in Chapter 2, metaphoric mappings, including ontological mappings and epistemic mappings, are presumed to be able to help L2 learners bridge cultural gaps (Kövecses, 2001). Even when some concepts are not used or unfamiliar in L1, L2 learners can relate an abstract and unfamiliar concept to a concrete and familiar one in order to bridge the gaps. The results of the Comprehension Test provide positive evidence to the hypothesis: the participants in the MM group gained significant improvements on sentences belonging to P4, which were different from Chinese in all aspects.

To conclude, instruction on metaphoric mappings is proved to be more beneficial in bridging cultural gaps caused by cultural specificity. For foreign language learners who lack chances of direct exposures to L2 and face differences between two languages, instruction on metaphoric mappings may facilitate L2 construal systems development.

Teaching Materials for EFL Learners

Traditional methods for EFL learners to learn metaphor and metonymy mainly focus on presenting forms and their arbitrary meanings (Laufer, 1997). With the advance in cognitive linguistics and language learning theories, metaphor and metonymy are believed to be taught about motivated relationships between forms and meanings and in systematic ways. Previous research (Boers, 2000a, 2000b; Boers and Demecheleer, 2001, Boers, Demecheleer & Eyckmans, 2004; Boers, Eyckmans & Stengers, 2007; Boers & Stengers, 2008; Dong, 2004; Deignan et al., 1997; Skoufaki, 2005) has found that, by giving learners conceptual metaphors, origins of words, mnemonic images, or phonological motivations, learning would be facilitated.

Though the methods are gradually accepted in EFL teaching contexts, they are rarely applied to EFL teaching materials. The first teaching material in the market that adopts cognitive viewpoints is Lazar's (2003) *Meaning and metaphor: Activities to practice figurative language*. In the book, Lazar integrates various elements which have been studied and proved to be useful, such as images and conceptual metaphors. The book includes 34 units; each unit focuses on one specific topic and its related conceptual metaphors, such as *Games* versus *Sports* (Unit 3) and *Time* versus *Money* (Unit 4). In each unit, vocabulary of each topic area is given its literal meaning together with its extended metaphorical set. Examples include *weather* vocabulary to describe behavior (Unit 5) and relationship (Unit 30) or *taste* vocabulary to describe people's characters and behavior (Unit 7). Moreover, the book presents idioms and collocation with simulated examples, such as advertisements or stories, to engage learners in a meaningful learning setting. In addition, the book includes activities to encourage learners to make cross-cultural comparisons. For example, in Unit 12, which focuses on metaphoric meanings of *color* vocabulary, learners are asked to answer the question: "how many of the associations of these colors are the same in

your language as they are in English?"(p.45) By forcing learners to reflect expressions of their mother tongue, learners might be able to avoid problems caused by culturally-determined stereotypes and meanings. According to Lazar, the book intends to "improve learners' overall language awareness and encourage them to use language confidently and imaginatively" (p.1).

Though Lazar's book has successfully integrated the idea of conceptual metaphors into EFL teaching material, it still has several limitations. First, the units of the book are organized based on topics, or source domains of conceptual metaphors. However, a source domain may be related and mapped to more than one target domain. For instance, the source domain of *fire* is applied not only to the target domain of *anger* but also to other target domains such as *love* or *enthusiasm*. Therefore, this type of source-domain-dependent arrangement cannot take both conceptual metaphors and the scope of metaphor into consideration at the same time.

Moreover, the problem would also result in unsystematic and uneconomical arrangement of the units. Take the source domain of *weather* for example. It is applied to the target domains of relationship as in the expression *a warm smile*. It is also applied to the target domains of behavior as in the expression *to breeze into the room*. It is also relevant to the source domain of *temperature* in some ways as in the expression *to warm toward someone* and *to melt someone's heart*. However, in Lazar's book, the three related conceptual metaphors are three separated units. The separation of relevant source domains or target domains might cause repetitions of materials and confusion of learners.

Aside from the limitations, some other factors should also be taken into consideration in designing a textbook. Fist, learners' different cognitive styles need to be treated differently. Previous research (Boers & Littlemore, 2000; Littlemore, 2001) has found that conceptual metaphors work better in learners with holistic cognitive

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styles. The present study, with empirical evidence, finds that metaphoric mappings work not only for learners with holistic cognitive styles but also for those with analytic cognitive styles. These findings from previous research and the present study conjecture that learners with different cognitive styles would react differently to instructions they receive; therefore, they should attain respective assistances from a textbook. Second, mere comparisons and discussions can only enhance learners' awareness of cultural universality and specificity, but cannot urge learners to take advantage of similarities and overcome difficulties due to differences. In regard to the two factors mentioned above, it is recommended that materials concerning metaphoric mappings should be added and integrated into textbook designs. Metaphoric mappings result in positive learning effects on learners of both holistic and analytic cognitive styles. Moreover, metaphoric mappings demonstrate similarities and differences between languages in mapping processes, and encourage learners to associate existing and universal knowledge with unfamiliar and specific one. Thus, incorporating metaphoric mappings into teaching materials should be beneficial for EFL learners.

Last but not the least, metonymy, which intricately interacts with metaphor, should be given equal attention to in EFL teaching materials as metaphor. Metonymy often serves as foundations of metaphor; hence, introducing metonymy to learners paves the way for bridging learners' mental gaps between literal meanings and metaphoric meanings of expressions.

Limitations and Future Study

Variables of Cognitive Styles

The results of the study suggest a critical role for individual cognitive style in the development of metaphoric competence, so does previous research (Boers, 2004;

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Boers & Littlemore, 2000; Littlemore, 2001). But the present study seemed to overcome this issue: learners with either holistic or analytic cognitive styles got improved by instruction of metaphoric mappings. However, due to the fact that the variables of different cognitive styles were not counted as parts of the experimental design in the present study and hence lacked cross-validation with the learning effects, the exact influences of the participants' cognitive styles on the two proposed instructions were still unable to be claimed.

The present study did not adopt cognitive style analysis as a variable in the first place for two reasons. First, the complete Metaphoric Competence Test needed almost an hour to finish; the implementation of the test took more than a half of the class time during the experiment. The limitation of time forced the researcher to give up cognitive styles analysis. Second, the present study mainly focused on learners' reactions to metaphor and metonymy as well as to cultural universality and specificity; learners' cognitive styles were not the main topic for investigation. Therefore, the researcher decided not to include the cognitive styles analysis in the study.

However, the influences of learners' individual differences seem undoubtedly important judging from the results of the study. For future study, participants' cognitive styles should be taken as a moderator variable to monitor participants' learning effects.

Control of Extraneous Variables

Many steps were taken by the study to control extraneous variables so as to enhance validity. Two freshman-English classes in the general university and two in the four-year technological university were chosen randomly to ensure that regular students in the classes were the participants of the study. By choosing classes rather than choosing students, the researcher could not manipulate the compositions of

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participants. At the same time, by choosing freshman-English classes in both universities, the researcher could ensure the similar threshold levels of the participants' general English proficiency and academic background.

Moreover, some issues regarding individual differences were also controlled as strict as possible. To reduce the effect caused by researcher expectancy, the researcher designed the PowerPoint slides to guide the teachers through the teaching phase. Video cameras and digital recorders were also used during the experiments in order to monitor the processes. In addition, to avoid a Hawthorne effect[8], before the semester started, the researcher had asked for the regular class teachers' permission to integrate the study into their syllabi; therefore, the students in classes would deem the two classes of the experiment as scheduled course materials and would not intend to perform differently. Finally, to rule out the influences of each individual's different background, such as time of learning English and entrance exam scores, the researcher implemented statistical tools to lessen the effects.

However, even with careful designs and controls, some extraneous variables might still influence the validity of the study. In addition to the two variables mentioned in Chapter 4—inconvinience of operations on computers and exhaustion of test takers—some other variables should also be considered and controlled in the future study. A potential practice effect is an example. The pretest and the posttest were implemented in two consecutive weeks, thus the duration between two tests might not long enough for the participants to forget what were on the test. Besides, due to the difficulty of controlling reliability and construct validity, the researcher did not compose another *equivalent* test to counterbalance the results. Instead, the

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[8] The term *Hawthorn Effect* refers to the effect produced by the introduction of new elements into a situation (Richards, Platt, & Platt, 1998, p.208). Individuals may change their behavior due to the attention they are receiving from researchers rather than because of any manipulation of independent variables.

researcher made the test items of the pretest and the posttest identical, but reshuffled the order of the test items to achieve the goal of counterbalance. However, since the only difference between two tests was the order of the test items, it is unlikely but not impossible that the participants' performances on the posttest could be still influenced by their remaining memory for the pretest.

To avoid the potential practice effect, future studies should adopt better counterbalancing strategies. For example, two different but equivalent tests should be designed. By doing so, no participants would take the same test items twice. Effects of the reliance on memories may be lessened.

Control of Test Validity

Another variable which may affect the validity of the test is the difficulty level of the test items. The present study was carefully designed and carefully carried. To establish the content validity of the Metaphoric Competence Test, all the test items were reviewed by a native English speaker, who is also an experienced EFL teacher, not only to examine the grammaticality and authenticity of the chosen expressions but also to gauge the essentiality and representativeness of the chosen expressions. Moreover, to establish the construct validity as well as reliability, the test items had been pilot-tested three times before they were used in the main study; they were modified, deleted, or rewritten based on the results of each pilot test.

However, some problems may still exist regarding the test items. For example, word choices of each test items may represent different difficulty levels to the participants. Some vocabulary used in the test, such as *lash* in Sentence 13 of the Awareness Test and *gnash* in Sentence 1 of the Comprehension Test, was not included in the vocabulary list of the 大考中心高中英語參考辭彙表 (College Entrance Examination Center, 2002). The absence of the vocabulary from the list means that a

certain word is never taught to the Taiwanese high school students in class, and may result in certain difficulties of comprehension.

To obtain a better internal validity of the test, future studies could select the test items with reference to the vocabulary list issued by the Ministry of Education. By doing do, the basic difficulty level in terms of vocabulary comprehension could be better controlled.

Ability to Produce L2 Metaphor

The present study measures L2 learners' ability of awareness and comprehension of metaphor and metonymy; however, it does not measure the ability of producing metaphor and metonymy, the ability which, according to Low (1987) and Littlemore (2001), is also a constituent of learners' metaphoric competence. Though the Production Test was carried out in the Metaphoric Test, the results of the Production Test were not used in the study. The ignorance is an important missing piece of the overall L2 learning puzzle.

Findings of the production test.   Considering the difficulty level of the Production Test and the proficiency of the participants, the Production Test was given to participants of the four-year technological university as homework rather than a formal test. Therefore, only the results made by the general university participants were reviewed.

The participants of the CM group showed apparently more active attitudes toward the test than the participants of the MM group did based on number of blanks they had filled in. Most of the CM-group participants filled in all the 10 blanks of the Production Test, providing answers with explanations. However, most of their answers were related to a concept of *fire*, *volcano*, or *water*. More precisely speaking,

the answers they provided mostly appeared in the Comprehension Test or the Awareness Test, or in the handouts used in the teaching phase; these answers included *blue in the face*, *erupted*, *exploded*, *flipped the lid*, *boiling water*, *smoldering*, etc. An obvious example was the term *went bananas*, which was included in the Comprehension Test and received very low mean scores. The term was not known by most participants before the test, judging from their performances in the Comprehension Test of the pretest; however, it was used in the Production Test for many times. Apparently, the CM-group participants seemed to not only memorize the terms which had been introduced but also put these terms into use. Thus, the Production Test became more like a retention test to the CM-group participants.

On the other hand, the MM-group participants missed more blanks of the Production Test than the CM-group participants. Though they also used some expressions about *fire* and *volcano* in the test, they tended to use many animal-related expressions more often, such as *roar like a lion*, *like a sleeping tiger*, *become a mad horse*, or *turn to a tiger*. Their explanations for these animal-related expressions demonstrated their reasoning processes: the animals were chosen for their stereotypes in the Chinese culture. Participants who wrote expressions about *lion* stated their reasons with the conventional Chinese expression 河東獅吼 *hé dōng shī hǒu* (river east lion roar 'A jealous and domineering wife') or the explanation 獅子很兇 *shī-zi hěn xiōng* (lion very fierce 'Lions are very fierce'). Participants who wrote about *tiger* stated similar reasons, such as 母老虎 *mǔ lǎo hǔ* (female tiger 'A shrew'). An interesting analogy of animal was *horse*. The participant who wrote *like a mad horse* explained that 因為馬兇起來很可怕 *yīn-wèi mǎ xiōng qǐ-lái hěn kě-pà* (because horse sulk up very fearful 'because it is fearful when a horse gets angry'). His unique answer showed that even in the same culture, people might still possess different ideas of stereotypes.

Similar with the MM-group participants, the CM-group participants also made some animal-related expressions. Animals such as *lion* and *tiger* were mentioned by the CM-group participants. Other animals like *dragon* and *ant* were also used for analogy, like *spit fire like dragon* and *ants on the hot pot*. Surprisingly, though the CM-group participants did not make animal-related analogies as often as the MM group did, frequently they used indirect metonymic-metaphoric expressions, like *bite one's head off*. The CM-group participants again seemed to retain the expressions which they had been introduced.

The tendency for the participants to recite the terms might partially result from the effect of subject expectancy: the participants thought that they figured out the intention of the test and thus intended to perform well in the test. Orders of the implementations of the test could be the clue. Since the Production Test was the third in the row of the Metaphoric Competence Test, and the three tests had been given once in the pre-teaching phase, it was reasonable for the participants to expect the Production Test when they took the previous two tests—the Awareness Test and the Comprehension Test—in the posttest. By guessing the intention, they might form expectancy about the results of the test and tried to achieve better results. Combining the effect of a potential practice effect, the participants might intentionally keep track of the expressions and produce them in the Production Test.

Contributions, limitations, and suggestions to future studies. The reviews of the results of the Production Test reveal valuable insight on EFL learners' cognitive processes of languages. First, EFL learners have capability to make proper analogies to match given contexts. Second, they do notice the differences between cultures and between languages, though they may not have sufficient proficiency to assist them the bridge gaps in betweens and to transfer knowledge appropriately. Third, EFL learners

possess cognitive flexibility, which facilitates their figurative language uses both in L1 and in L2. As a result, to enhance EFL learners' awareness on figurative language and to improve their ability on more advanced language use, such as understanding and producing metaphoric and metonymic expressions, researchers in the field of linguistics and English teaching should continue devoting time and efforts to develop more promising theories and methods.

Compared with the ability to be aware of and to comprehend metaphor and metonymy, L2 learners' ability to produce metaphor and metonymy has rarely been investigated. One difficulty is the problem of defining *production*. Littlemore (2001) defines L2 learners' productive ability as *originality of producing metaphor*, which measures L2 learners' creativity and originality of perceiving analogy between and making comparisons of two subjects; the more creative and logical analogies learners can make, the better metaphoric senses they display. On the other hand, Boers (2000a, 2000b) defines learners' productions as ability to reduplicate metaphoric expressions which have been taught. Hence, Boers' definition of *production* is closer to *retention* rather than *active production*. Moreover, Littlemore and Low (2006) offer their dentition of production as a part of communicative language ability, focusing on the development of L2 learners' communicative competence. In sum, the definition of L2 learners' productive ability is not as unified and simple as the receptive ability. Therefore, few studies can be counted as real measurements on L2 learners' ability of production.

In addition, the scarcity of studies in L2 learners' ability of production can also be attributed to the essential differences between native and nonnative speakers. Metaphoric and metonymic expressions usually involve cultures and conventions; they are deemed, though not as fixed and arbitrary, as highly collocational terms. Native speakers have the intuition, including acceptability and productiveness, about

the idiolectal grammar, and the capacity to write metaphor creatively (Davis, 2003, p.435). However, for nonnative speakers, it is hard to produce expressions as identical as those by native speakers. L2 learners' creativity usually has a problem of the acceptability to L1 community (Davis, 2006). Thus, it could be problematic if the ability of producing metaphor and metonymy is defined as a completely unrestrained creation.

Because of these limitations, the Production Test was left out of the main study. However, regarding the importance of the productive ability, the results of the Production Test implemented in the posttest still reveal valuable insight and inspirations for future endeavor.
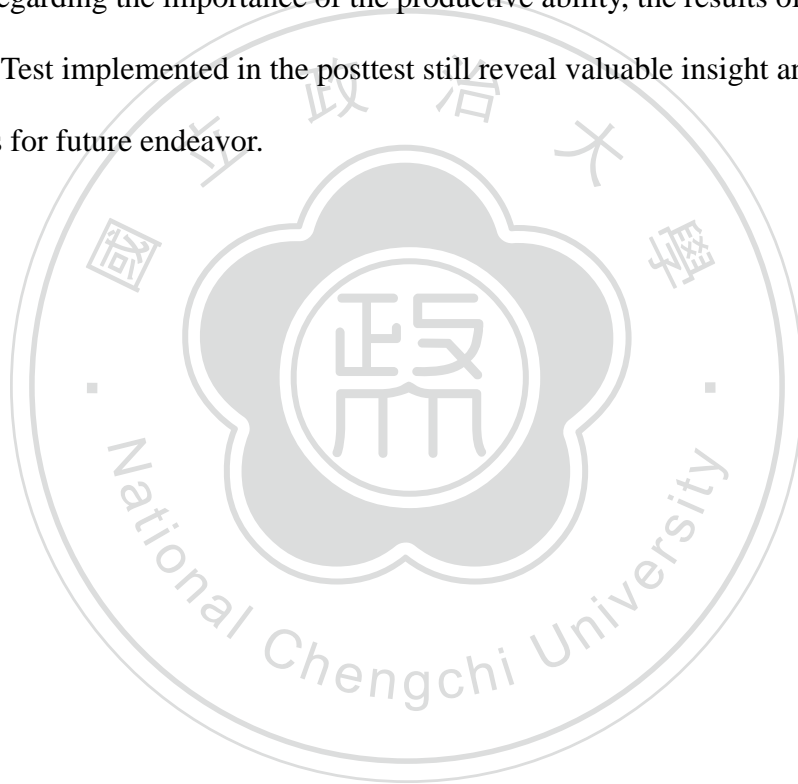
Appendix 1

Awareness Test Used in the Second Pilot Study

<div align="center">第一部分</div>

英文中，有些用語無法單純從字面上來解讀它的意思。這些用語必須藉助「譬喻」的想法，建立「所使用的文字」與「被描述的主題」之間的邏輯關係，才能夠了解它的意義。

舉例來說，戀人之間有時會出現這樣的對話：『look how far we've come!』這句話單純從字面上解讀，意思是『看看我們已經走多遠了！』但實際上這句話並非要表達行走的距離；要了解這句話的真正涵意，必須要藉助「譬喻」：兩個談戀愛的人，一起朝共同人生目標前行。對於戀人來說，這句話應該解讀為『看看我們兩個共同經營這段戀情已經這麼久了！』

又比如說，戀人之間的對話：『We need to spinning our wheels to overcome this.』字面上翻譯為『我們需要轉動輪子來克服這件事。』但實際上戀人之間並沒有「輪子」這種東西存在。要了解這句話的真正涵意，一樣得要藉助「譬喻」：對戀人來說，在戀愛過程中可能會因為問題而陷入僵局，這時就需要兩人努力才能克服難關，維繫關係。因此這句話對戀人來說，應該解讀為『我們要共同努力來克服這件事。』

以下共有 40 個英文句子。其中有一些需要藉由「譬喻」的方式來解讀，有一些則不需要。你的任務是去判斷哪一個句子需要「譬喻」才能解讀，並指出你對於你的判斷的肯定程度。

答案分成五種：
(5) 這個句子明顯是「譬喻」用法。
(4) 這個句子**很可能**是「譬喻」用法，儘管程度上比較不那麼可信。
(3) 這個句子**可能**是「譬喻」用法，也可能不是。我不能確定它屬於哪一種。
(2) 這個句子**也許**是「譬喻」用法，但我無從判斷。
(1) 這個句子**絕對不是**「譬喻」用法。
(?) 因為裡面有我不認識的字，所以我看不懂這個句子。

請先閱讀以下句子，然後根據你的判斷，從(?)、(1)到(5)之中，選出最適切的答案。

	(5) 這個句子 **明顯是** 「譬喻」 用法	(4) 這個句子 **很可能是** 「譬喻」 用法	(3) 這個句子 **可能是** 「譬喻」 用法	(2) 這個句子 **也許**是 「譬喻」 用法	(1) 這個句子 **絕對不是** 「譬喻」 用法	(?) 有不認識 的字，所 以看不懂 這個句子
1. People used to tuck ties under the collar when dressing formally.						
2. The dog lashed its tongue and craved for water on a hot summer day.						
3. He had a fit of coughing because he got a serious cold.						
4. Listening to that guy playing his drums is a pain in the neck for me.						
5. Her own particular chip on the shoulder was her poor background.						
6. People get hot under the collar when others cut in a line suddenly.						
7. This book contains all the information you are looking for.						
8. As he heard more about their wicked plan, he started doing a slow burn.						
9. When I found out she lied to me, I almost burst a blood vessel.						
10. His harsh criticisms were enough to make anyone see red.						
11. The white explosion of a bomb was followed by a glow of blue smoke.						
12. She clasped her hands until the fingertips turned red.						
13. Several frogs were hopping about on the lawn after a heavy rain.						
14. Your mother would have a fit if she knew that you skipped the class.						
15. He fell down bleeding as a victim to the dagger of the assassin.						
16. You need to calm down. Don't let your anger get out of hand.						
17. The baby is too small to digest food like meat.						
18. The patient was foaming at the mouth when being sent to an emergency room.						
19. The statue stands on a huge pillar, *towering* over the city.						
20. The boss flew into a towering rage and fired all the employees offending him.						

	(5) 這個句子 **明顯是** 「譬喻」 用法	(4) 這個句子 **很可能是** 「譬喻」 用法	(3) 這個句子 **可能是** 「譬喻」 用法	(2) 這個句子 **也許**是 「譬喻」 用法	(1) 這個句子 **絕對不是** 「譬喻」 用法	(?) 有不認識 的字，所 以看不懂 這個句子
21. I could barely contain my excitement after reading the teacher's comments.						
22. That fat guy went blue in the face while running for the bus.						
23. We need to construct a strong argument in order to win the debate.						
24. The fish slipped out of my hand and jumped back into the lake.						
25. David walked into the room, carrying his suitcases, looking tired.						
26. You can cross a river on a tree-trunk, but not on a chip of wood.						
27. His brother got a neck pain because of bad sitting postures.						
28. She was just blowing off steam because she was under great pressure.						
29. The boss is hopping mad about employees' repeated lateness.						
30. He died three days ago of the burns he received in the fire.						
31. You'll burst a blood vessel if you keep drinking alcohol.						
32. Pictures of war can carry more moral meaning than thousands of words						
33. It took them two years to construct the bridge across the river.						
34. It took me some time to digest what I had heard.						
35. She looked daggers at Tom when he complained of the food she made.						
36. She was blowing off steam for having been treated unfairly for years.						
37. I was attracted to that girl; I could feel the strong electricity between us						
38. When judges threw him out of the game, Billy started foaming at the mouth.						
39. Harry's mother gave him a tongue-lashing for telling family secrets.						
40. The electricity went off while I was cooking supper, and the kitchen was dark.						

Appendix 2

Comprehension Test Used in the Second Pilot Study

<div align="center">第二部分</div>

在前一部分的測驗中曾提到：有些英文用語無法單純從字面上來解讀它的意思，而是必須藉助「譬喻」的想法，建立「所使用的文字」與「被描述的主題」之間的邏輯關係，才能夠了解它的意義。

以下共有 15 句英文句子。請**解讀**句子的含意，並以**中文**將句子的意思寫出來。

1. When he found out he was not going to be promoted, he gnashed his teeth.

_____

2. She is very angry now; your insincere apology will just add fuel to the fire.

_____

3. Tempers have cooled down a bit and I hope we could sort things out.

_____

4. Tom holds all the aces right now. You'll have to do what he says.

_____

5. Smoke was pouring out of his ears when he heard he was fired for no reason.

_____

6. He hit the ceiling when knowing that his daughter was beaten by a school teacher.

_____

7. You need to budget your time well so that you can do things efficiently.

_____

8. People had finally reached the boiling point as the price of oil kept rising.

_____

9. After the big fight with his girlfriend, Dave was smoldering for days and didn't talk to her.

_____

10. His mother gave him a tongue-lashing for telling others the family secrets.

_____

11. It made my gorge rise when hearing how foreign brides were abused by their spouses.

_____

12. Jack had a chip on his shoulder and argued with his coach about the exhausting training.

_____

13. Her irresponsible behaviors and impolite expressions got my hackles up.

_____

14. His rudeness to his parents left a bad taste in my mouth.

_____

15. Feeling shocked by her husband's disloyalty, she exploded at last and cried out.

_____

Appendix 3

Production Test Used in the Second Pilot Study

<div align="center">第三部分</div>

寫作時，常會需要用到譬喻的用語來幫助語意通暢，以及讓描述更生動。例如以下的例子：

After sending her the message, he couldn't sleep for many days. When he finally saw her letter lying on the mailbox, *he lit up and jumped for joy* (describe his mood). He couldn't wait but rip off the envelope, and started to read it out loud…..

以下為一篇文章。其中有部分句子為空白。每個空格後方都有提示的文字，點明此處應該要接續的文意。請以順暢的英文，利用**譬喻**語法，以**最符合前後文、最能保持文意流暢的方式**，填入以下的空白處。

Last month was my parents' wedding anniversary. A week before the anniversary my mother already suspected that my father had forgotten about it, since he hadn't asked her if she wanted to do anything special for the occasion. After all those years my father should really have known better, because he had learned from experience _____ (1. describe my mother's temper). But I felt that he deserved another lesson and I decided not to remind him of the anniversary. Days before that important day I could already notice

_____ (2. describe my mother's mood). I tried to tell her _____ (3. describe e my mother's motion) by telling her my father might still remember after all. But he didn't, and as the day of the anniversary approached, my mother _____ (4. describe my mother's mood).

On the morning of the day itself, my father left for work as usual without mentioning the wedding anniversary. Mother almost _____ (5. describe my mother's mood). To make matters even worse, my father came home late that evening. By the time he got home at 8 pm, without as much as a present for her, _____ (6. describe my mother's

mood). "You inconsiderate, selfish oaf!" _____ (7. describe my mother's action). My father looked baffled.

"I know I'm a little bit late, but that's no reason to bite my head off," he mumbled.

I felt that was a perfect time to make my contribution to their marital bliss, so I took a bottle of champagne that I had bought and offered it to them, congratulating them on their wedding anniversary. However, for my mother, this action _____ (8. describe my mother's mood). My father, who looked abooslutely embarrased now, made a desperate attempt to make up by taking her out for dinner at her favorite restaurant, but even so _____ (9. describe my mother's mood) all night. He ended up buying expensive presents and a bouquet of roses the next day to make her cool down, but still _____ (10. describe my mother's mood) for several weeks.
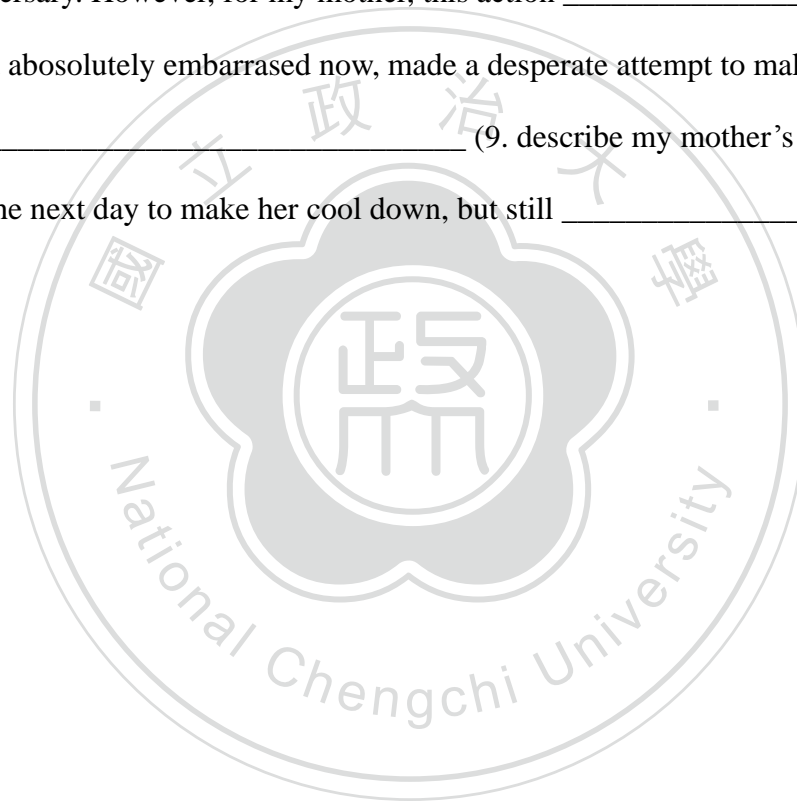
Appendix 4

Teaching Materials of the Second Pilot Study

Read the following article. Circle metaphors used in it (including words & idioms).

Managing the Emotions

People manage their emotions in different ways, depending on their personality and the culture they live in. in western culture, for instance, crying is usually seen as a sign of weakness, especially for men. Research has shown, however, that crying it out makes people feel better. So perhaps we should encourage our children to wear their hearts on their sleeves more often. It has become a widely accepted idea that, instead of bottling up the emotions, one should ventilate one's emotions once in a while. One should blow off steam in order to avoid sudden explosions.

However, one emotion may prove to be an exception: anger. In fact, ventilating anger is one of the worst ways to cool down: outbursts of rage typically pump up the arousal, leaving people feeling more angry, not less. When people blow up at the person who has provoked their anger, their rage not only peaks during the outbursts, but the angry mood is also prolonged. After reaching their boiling point, those people keep fuming much longer.

A far more effective way of managing anger is simmer down first, and then, in a more constructive manner, confront the person to settle a dispute. Imagine that someone pushed you aside in a crowd. Your first thought may be "How rude!" that reflex may then be followed by more negative thoughts: "He could have hurt me! I can't let him get away with that." Then, should someone else behind you bump into you because you have slowed down, you are apt to erupt in rage at that person too. Now imagine a more positive line of thought toward the man who pushed you aside: "Maybe he had a good reason, such as an emergency." Your may be cool down by thinking like this, and could dismiss the anger with a laugh.

Activity: Try to categorize the source domains used to describe the concept *anger*.

Handout with subtitles made of metaphoric themes (conceptual metaphor)

Metaphor of Anger

English has a lot of expressions to describe anger. Some of these are very common: *she's angry*. *He's mad at you*. To make your language more varied, other expressions can be used to specify the kind of anger.

The followings are 18 expressions. Please discuss with your group members, and categorize these expressions into groups.

He exploded.	*He erupted.*	*He unleashed his anger.*
His blood is boiling.	*He is all steamed up.*	*He was fuming.*
He's hot under the collar.	*He has a ferocious temper.*	*He blew up at me.*
Simmer down.	*Adding fuel to the fire.*	*He was breathing fire.*
Don't snap at me.	*Don't bite my heat off.*	*Anger welled up inside him.*
He flipped his lid.	*An inflammatory remark.*	*He kept smoldering for days.*

Anger is a hot fluid in a container.

Anger is fire.

Angry people are dangerous animals.

Appendix 6

Handout with subtitles made of metaphoric mappings

Metaphor of Anger

English has a lot of expressions to describe anger. Some of these are very common: *she's angry*. *He's mad at you*. To make your language more varied, other expressions can be used to specify the kind of anger.

Following are 18 expressions. Discuss with your group members, think about the corresponding characteristics and relationships between *anger* and source domains, and briefly write down these relationships.(e.g. *Love is a journey*: lovers → travelers; break up → go different ways)

Anger is fire.	
	An inflammatory remark. Adding fuel to the fire. He kept smoldering for days. He's hot under the collar. She was breathing fire. She exploded.
Anger is a hot fluid in a container.	
	Anger welled up inside me. She is all steamed up. I was fuming. I am boiling with anger. She flipped her lid. She blew up at me. She erupted. Simmer down.
Angry people are dangerous animals	
	He has a ferocious temper. He unleashed his anger. Don't snap at me. Don't bite my heat off.

Appendix 7

Criteria Used in the Second Pilot Study to Evaluate Answers of the Comprehension Test

(5) The answer not only expresses the figurative meaning correctly, but also shows the conceptual metaphor exactly and precisely.

(4) The answer expresses the figurative meaning correctly. However, the participant does not figure out the conceptual metaphor; the translation is not related to the conceptual metaphor.

(3) The answer expresses the acceptable figurative meaning generally; the sentence is comprehensive with such figurative meaning.

(2) The answer expresses the acceptable literal meaning.

(2) The answer is wrong.

(1) No answer.

Appendix 8

Test Items of the Awareness Test Used in the Third Pilot Study and the Main Study

1. He had a fit of coughing because he caught a serious cold.

2. The boss got hot under the collar when he found out that John lost the deal.

3. The modern city has many high-rise skyscrapers and large mansions.

4. He grinned from ear to ear when he received the birthday gift.

5. She was wearing a gold ring on her index finger.

6. The river often overflowed its banks during rainy seasons.

7. All I did was come twenty minutes late, and the manager jumped down my throat.

8. Harry's mother gave him a tongue-lashing for telling family secrets.

9. After investigating, the police believed that it was cigarette sparks that started the fire.

10. There are things a couple can do to help bring the spark back into everyday life.

11. My heart is soaring with happiness beyond the capacity of anything to contain.

12. It was several months before the company started to trade profitably.

13. It's a really exciting project. I can't wait to sink my teeth into it.

14. I had to quit running everyday because of the severe pain in my leg.

15. The two boys were kicking a ball on the grass.

16. His brother got a neck pain because of bad sitting posture.

17. You'll burst a blood vessel if you keep drinking alcohol.

18. She thought the diamond was lost until she saw something glinting on the carpet.

19. I could barely contain my excitement after reading the teacher's comments.

20. The boss flew into a towering rage and fired all the employees that offended him.

21. His eyes glinted when he saw the money on the ground.

22. We had a ball during our spring vacation to Europe.

23. She took out a match and lit it in order to get a warm flame.

24. His dad hit him in the face so hard that he fell down on the ground.

25. A fish bone got stuck in my throat and wouldn't go down into my stomach.

26. The girl loved the dress so much that she didn't want to take it off.

27. The moment I sank my teeth deeply into that pizza, I knew I loved it.

28. Your mother would have a fit if she knew that you skipped class.

29. As a single-parent child, his mother' death really hit him hard.

30. When she saw Tom walking into the room, she lit up.

31. Looking tired, David walked into the room, carrying his suitcases,

32. They were filled to overflowing with joy at the good news.

33. It took me some time to digest what I had heard.

34. Listening to that guy playing his drums is a pain in the neck for me.

35. The girl is so lovely that I can't take my eyes off her.

36. Pictures of war can carry more moral meaning than thousands of words

37. This book contains all the information you are looking for.

38. People used to tuck ties under the collar when dressing formally.

39. He lashed the horse across the back with a whip.

40. Making plans first can help you use your time profitably.

41. The great cliff stands on a huge rock, towering over the city.

42. When I found out she lied to me, I almost burst a blood vessel.

43. On the wedding day everybody is in high spirits.

44. The baby is too small to digest food like meat.

45. The bright moonlight showed the Taj Mahal in all its glory.

46. Local residents described the flames soaring into the night sky.

47. The host wore a broad grin as he greeted people in the room

48. Their marriage is on its last legs; divorce is just a matter of time.

Appendix 9

Test Items of the Comprehension Test Used in the Third Pilot Study and the Main Study

1. Thinking about my lovely girl friend always gives me a lift.
2. When he found out he was not going to be promoted, he gnashed his teeth.
3. In order to get anything done, we have to budget our time the same way we budget our money.
4. The crowd's anger reached a boiling point when they saw a police shooting a boy.
5. How can I advance in my career when my competitor holds all the aces?
6. Bill was blue in the face, arguing with Jack in a loud voice.
7. Supporters stormed out of the meeting place when knowing the candidate lost the election.
8. Happiness welled up within the groom when he saw the bride walking down the aisle.
9. I was so touched by his stories that I bought his autobiography immediately.
10. Many football fans go bananas during the World Cup games.
11. When they heard the news of promotions, they all danced for joy.
12. The bride had a glowing face on her wedding day.
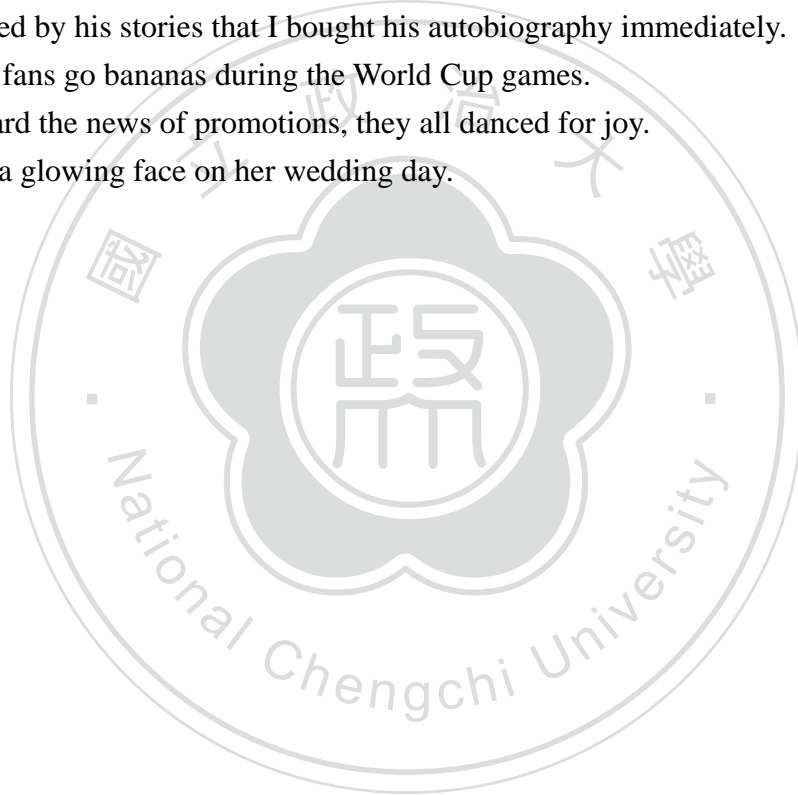
Appendix 10

Production Test Used in the Third Pilot Study

I used to keep a diary when I was in junior high school. I put the diary in my desk drawer in order to hide it from my parents. One day, I came home earlier than usual and entered my room. I saw my mother sitting beside my bed and reading my diary with a smiley face. I was shocked and _____ (1. Describe my action). My mom was so startled that she let the diary fall down on the floor. We stared at each other for a while; I felt _____ (2. Describe my mood).   I heckled the reason why she read my diary; she did not answer but running out my room. The book was put back to the drawer, and I sat in front of my desk _____ (3. Describe my mood).

The following few days I _____ (4. Describe my mood) and did not talk to my mother. She knew _____ (5. Describe my temper) so she did not talk to me either. After one week, she apologized to me for her action. She explained that she did it only because she wanted to know more about my life. I realized she did that because of she cared about me, so I accepted the reason. I _____ (6. Describe my mood) and forgive my mother.

After that accident, I began to share my life with my mom. I would tell her what happened in school. She could _____ (7. Describe my mother's action) if the experiences were interesting. For example, I won the first prize in a swimming competition and I _____ (8. Describe my mood); when I told my mom about the news, she _____ (9. Describe my mother's mood/action). On the other hand, my mom could also _____ (10. Describe my mother's action) if the experiences were irritating and annoying. She could teach me how to handle those difficult situations that perplexed me. Since then, we became even closer than before.

Appendix 11

Test Items Distributions of the Awareness Test in the Main Study

Categories	Topics	Body-related descriptions	Order in Pretest	Order in Posttest	Test items
Metonymy	anger	Body-related	8	34	1. When I found out she lied to me, I almost *burst a blood vessel*.
		Counterpart	22	32	2. You'll *burst a blood vessel* if you keep drinking alcohol.
		None	3	8	3. The boss got *hot under the collar* when he found out that John lost the deal.
		Counterpart	7	3	4. People used to tuck ties *under the collar* when dressing formally.
	Happiness	Body-related	38	37	5. He *grinned from ear to ear* when he received the birthday gift.
		Counterpart	40	43	6. She leaned over and whispered something in Peter's *ear*.
		None	47	29	7. We *had a ball* during our spring vacation to Europe.
		Counterpart	25	36	8. The two boys were kicking a *ball* on the grass.
	Other	Body-related	11	47	9. The girl is so lovely that I can't *take* my *eyes off* her.
		Counterpart	24	30	10. The girl loved the dress so much that she didn't want to *take it off*.
		None	35	13	11. There are things that couples can do to bring the *spark* back into everyday life.
		Counterpart	41	25	12. After investigating, the police believed that it was cigarette *sparks* that started the fire.
Metaphoric Metonymy	anger	Body-related	15	10	13. Harry's mother gave him a *tongue-lashing* for telling family secrets.
		Counterpart	30	18	14. He *lashed* the horse across the back with a whip..
		None	45	6	15. Your mother would *have a fit* if she knew that you skipped class.
		Counterpart	36	42	16. He *had a fit of* coughing because he caught a serious cold.
	Happiness	Body-related	2	44	17. His eyes *glinted* when he saw the money on the ground.
		Counterpart	5	33	18. She thought the diamond was lost until she saw something *glinting* on the carpet.
		None	12	27	19. The host *wore a broad grin* as he greeted people in the room
		Counterpart	10	16	20. She was *wearing* a gold ring on her index finger.
	Other	Body-related	43	2	21. Their marriage is *on its last leg*; divorce is just a matter of time.

		Counterpart	48	9	22. I had to quit running everyday because of the severe pain in my *leg*
		None	42	23	23. Being a single-parent child, his mother' death really *hit* him *hard*.
		Counterpart	46	45	24. His dad *hit* him in the face so *hard* that he fell down on the ground.
Metonymic Metaphor	anger	Body-related	20	48	25. Listening to that guy playing his drums is *a pain in the neck* for me.
		Counterpart	9	5	26. His brother got *a neck pain* because of bad sitting posture.
		None	6	40	27. All I did was come twenty minutes late, and the manager *jumped down my throat.*
		Counterpart	39	11	28. A fish bone got stuck in my *throat* and wouldn't go *down* into my stomach.
	Happiness	Body-related	4	35	29. My heart is *soaring with happiness* beyond the capacity of anything to contain it.
		Counterpart	14	28	30. Local residents described the flames *soaring into* the night sky.
		None	16	41	31. On the wedding day everybody is *in high spirits*.
		Counterpart	1	38	32. The modern city has many *high*-rise skyscrapers and large mansions.
	Other	Body-related	33	19	33. It's a really exciting project. I can't wait to *sink my teeth into* it.
		Counterpart	34	17	34. The moment I *sank my teeth deeply into* that pizza, I knew I loved it.
		None	44	46	35. Making plans first can help you use your time *profitably*.
		Counterpart	37	4	36. It was several months before the company started to trade *profitably*.
Metaphor	anger	Body-related	21	7	37. The boss *flew into a towering rage* and fired all the employees offended him.
		Counterpart	23	12	38. The statue stands on a huge pillar, *towering* over the city.
		None	31	1	39. I could barely *contain* my excitement after reading the teacher's comments.
		Counterpart	26	31	40. This book *contains* all the information you are looking for.
	Happiness	Body-related	27	39	41. They were *filled* to *overflowing with joy* at the good news.
		Counterpart	19	21	42. The river often *overflowed* its banks during rainy seasons.
		None	18	15	43. When she saw Tom walking into the room, she *lit up*.
		Counterpart	13	26	44. She took out a match and *lit* it in order to get a warm flame.
	Other	Body-related	28	24	45. Pictures of war can *carry* more moral meaning than thousands of words
		Counterpart	32	14	46. David walked into the room, *carrying* his suitcases, looking tired.
		None	17	20	47. It took me some time to *digest* what I had heard.
		Counterpart	29	22	48. The baby is too small to *digest* food like meat.

Appendix 12

Test Items Distributions of the Comprehension Test in the Main Study

Possibilities	Topics	Order in Pretest	Order in Posttest	Test items
Possibility 1	Anger	1	5	1. When he found out he was not going to be promoted, he *gnashed his teeth*.
	Happiness	11	12	2. When they heard the news of their promotions, they all *danced for joy*.
	Other	7	4	3. How can I advance in my career when my competitor *holds all the aces*?
Possibility 2	Anger	10	3	4. Bill was *blue in the face*, arguing with Jack in a loud voice.
	Happiness	8	8	5. Happiness *welled up* within the groom when he saw the bride walking down the aisle.
	Other	2	11	6. In order to get anything done, we have to *budget* our time the same way we budget our money.
Possibility 3	Anger	5	9	7. The crowd's anger *reached a boiling point* when they saw the police shooting a boy.
	Happiness	3	1	8. The bride had *a glowing face* on her wedding day.
	Other	9	2	9. I was so *touched* by his stories that I bought his autobiography immediately.
Possibility 4	Anger	6	10	10. Supporters *stormed out* of the meeting place when they found out their candidate lost the election.
	Happiness	4	7	11. Thinking of my lovely girl friend always *gives me a lift*.
	Other	12	6	13. Many people *go bananas* during the World Cup football games.

Appendix 13

The PowerPoint Slides Used during the Teaching Phase in the Main Study (for the CM Group)

Note: Move on to the pretest.

Slide 7

- **Metaphor** 隱喻用法
  It also offer figurative comparisons, but these are implied rather than introduced by *like* or *as*.

- *Time* rushes toward us with its hospital tray of infinitely varied narcotics, even while it is preparing us for its inevitably fatal operation.

  By Tennessee Williams

- I'm *wasting* my time. It's not *worth my while* doing this job.
- The idea is *buried* in lengthy paragraphs.

Slide 8

Practice Your Understandings of Expressions of Metaphor

Metaphor is not only
(1) poetic expressions
(2) idioms
(3) collocations

But Metaphor is
(1) daily life language
(2) one word, two or more words, or phrases.

Slide 9

Formation of Metaphor

Slide 10

How to Think of a Metaphor?

- To bridge the gap, finding the corresponding traits.

Source ↔ Target

Note: Start to give the instruction about conceptual metaphor and metonymy.

Slide 11

What's the source? What is the target?

Example sentences:
- Look *how far we've come*.
- We are *at the crossroad*.
- We can't *turn back* now.
- We may have to *go our separate ways*.
- This relationship is a *dead-end street*.
- This relationship isn't *go anywhere*.
- We may have to *bail out* of the relationship.

Slide 12

Can you understand the sentences now?

Example: *Love is like a journey*.
- Look *how far we've come*.
- It's been *a long, bumpy road*.
- We can't *turn back* now.
- This relationship is a *dead-end street*.
- We need to *spinning our wheels* to overcome this.
- We've gotten *off the track*.
- Our marriage is *on the rock*.
- We may have to *bail out* of the relationship.
- This relationship isn't *go anywhere*.

Use metaphor to show abstract perceptions

13

Abstract perceptions

- Read the article now.
- Find metaphorical expressions used in this article. Circle those expressions.

- Can you categorize source domains used to describe the concept *anger*?

14

Handout

Note: Move on to the handout.

Appendix 14

The PowerPoint Slides Used during the Teaching Phase in the Main Study (for the MM Group)

Metaphor:
Making Language Lively

陳怡蓁 Yi-chen Chen
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Shall I compare you to a summer's day?
You are more lovely and more constant.
Rough winds shake the beloved buds of May
And summer is far too short.
At times the sun is too hot,
Or often goes behind the clouds;
And everything beautiful sometime will lose its beauty,
By misfortune or by nature's planned out course.
But your youth shall not fade,
Nor will you lose the beauty that you possess;
Nor will death claim you for his own,
Because in my eternal verse you will live forever.
So long as there are people on this earth,
So long will this poem live on, making you immortal.

William Shakespeare, Sonnet 18

What is Metaphor?

- **Old-day definition:**
  The decorative language used for poetry and literary work.

- **Contemporary definition:**
  The daily life ordinary language which shows what people think of one thing in terms of another.

- Links between two objects are constructed based on people's conceptions of daily life experiences; in other words, the metaphor we use reflects our metaphorical understanding of experiences.

Are you aware of metaphors?

Three aspects of developing a language ability:
- Awareness .
- Comprehension.
- Production.

Note: Move on to the pretest.

What Types of Metaphor can be Used?

- **Simile** 直喻用法 (明喻)
  Two fundamentally unlike things are explicitly compared, usually in a phrase introduced by *like* or *as*.

- I was happy *as* the grass was green.   - Dylan Thomas
- My love is *like* a red, red rose.   - Robert Burns
- The sun was *like* a glowing ball of fire.
- His skin is *like* marble—very pale, ice cold, and sunlight like diamonds

---

- **Metonymy** 轉喻用法
  One word or phrase is substituted for another with which it is closely associated.

- She is just a *pretty face*.
- We don't hire *longhairs*.
- The *White House* isn't saying anything.
- Her voice is *full of money*.   - F. Scott Fitzgerald

- **Metaphor** 隱喻用法
  It also offer figurative comparisons, but these are implied rather than introduced by *like* or *as*.

- *Time* rushes toward us with its hospital tray of infinitely varied narcotics, even while it is preparing us for its inevitably fatal operation.

  By Tennessee Williams

- I'm *wasting* my time. It's not *worth my while* doing this job.
- The idea is *buried* in lengthy paragraphs.

7

Practice Your Understandings of Expressions of Metaphor

Metaphor is not only
(1) poetic expressions
(2) idioms
(3) collocations

But Metaphor is
(1) daily life language
(2) one word, two or more words, or phrases.

8

Formation of Metaphor

9

How to Think of a Metaphor?

Example sentences:
- Look *how far we've come*.
- We are *at the crossroad*.
- We can't *turn back* now.
- We may have to *go our separate ways*.
- This relationship is a *dead-end street*.
- This relationship isn't *go anywhere*.
- We may have to *bail out* of the relationship.

10

Note: Start to give the instruction about metaphoric mappings.

Journey	Love
Two travelers are in a vehicle, traveling with common destinations. The vehicle encounters some impediment and get stuck. If the travelers do nothing, they will not reach their destinations. There are a limited alternatives for actions: 1. They can try to get the vehicle moving again either by fixing it or getting it past the impediment. 2. They can remain in the nonfunctional vehicle and give up reaching their destinations. 3. The can abandon the vehicle.	Two lovers are in a love relationship, pursuing common life goals. The relationship encounters some difficulty, which makes it nonfunctional. If they do nothing, they will not be able to achieve their life goals. There are limited alternatives for action: 1. They can try to get it moving either by fixing it or getting it past the difficulty. 2. They can remain in the nonfunctional relationship and give up on achieving their life goals. 3. They can abandon the relationship.

11

Linkings (Mappings)

JOURNEY	LOVE
• Travelers	• Lovers
• Vehicle	• Relationship
• Impediment	• Difficulty

Solutions

• Try to move again	• Try to fix it
• Remain nonfunctional	• Remain nonfunctional
• Abandon	• Abandon

12

Use metaphor to show abstract perceptions

13

Abstract perceptions

- Read the article now.
- Find metaphorical expressions used in this article. Circle those expressions.

- Can you categorize source domains used to describe the concept *anger*?

14

Handout

Note: Move on to the handout.

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