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USAGE-BASED COGNITIVE SEMANTICS IN L2 COLLOCATION: A MICROGENETIC ANALYSIS OF EFL STUDENTS’ COLLOCATIONAL KNOWLEDGE

A Dissertation in Applied Linguistics by Mei-Hsing Tsai

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ABSTRACT

This dissertation project seeks to offer an alternative approach to connecting form-meaning relationships of L2 verb-noun collocations whereby the two are not arbitrary, as are conventionally discussed in formal linguistics, but can be integrated as a unified entity from a cognitive and sociocultural perspective. L2 collocations have been recognized as posing difficulties for L2 adult learners. The present study derived from cognitive semantics and sociocultural theory proposes the practice of semantics of thought – the conceptualization process based word meanings. This study argues that verb meanings provide an orientating basis for conceptualizing a verb-noun collocation event. By learning the conceptual meanings of the target verbs (i.e., make, do, take, get and have) via the SCOBAs (Schemas for the Orienting Basis of Action) and forming a semantics of thought, L2 speakers can pay more attention to the relationship between the linguistic form and the conceptualization of the collocation event derived from the verb’s meaning.

Grounded in Vygotsky’s developmental education, this research recruited seven EFL undergraduate students and then involved them in a six-week pedagogical program. This study demonstrates how participants used conceptual structures of verbs as thinking tools and mapped verb meanings onto their encyclopedic knowledge of the world in order to develop thoughtful and personal understandings of collocations. Moreover, the microgenetic analysis highlights participants’ development by comparing their use and understanding of the collocated verbs before and after the enrichment program. Finally, both quantitative and qualitative analyses indicate that participants increased their collocational knowledge after concept-based instruction.
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Chapter 1

Introduction

1.1 Statement of Purpose

The present understanding of second language acquisition (SLA) stems from the assumption that L2 adult language learning is a cognitive process of building form-meaning connections (Robinson & Ellis, 2008). This assumption is driven by our field’s dedication to offering evidence for the learning of specific language features (e.g., grammar) independent from the meanings they express (Eliert, 2010). Linguistic meanings have been identified as posing difficulty in adult language learning. In particular, L2 adult learners already have well-built L1 concepts and they often acquire L2 meanings through their L1 knowledge. In addition, much research has shown that L2 users are capable of establishing language knowledge on their own by employing L2 structures with meanings that are not like the target language (e.g., Han, 2008; Jarvis & Pavlenko, 2008; von Stutterheim, 2003). Cognitive semantics offers a fruitful foundation for investigating form-meaning connections and word meanings. Only a few studies have attempted to scrutinize how language-specific meanings impact the learning of L2 form-meaning relationships (e.g., Lai, 2012; Lee, 2012; von Stutterheim, 2003). The range of semantic concepts and their corresponding meanings studied in the field of SLA is limited (e.g., temporality or space) and must be expanded in order to provide a better understanding of second language learning difficulty.
L2 educators and researchers have long recognized that an English verb-noun collocation is one of the most difficult linguistic features for L2 adult learners to master. “One of the main difficulties students encounter is relation to new items of vocabulary is knowing what their collocational properties are…” (Rudzka, Channell, Putseys & Ostyn, 1981, p.5). In fact, several studies have shown that English verb-noun collocations cause even the most advanced L2 users to make errors (e.g., Nesselhauf, 2003; Laufer & Waldman, 2011). Different languages construe events and thoughts about these events differently. The ways in which a language construes collocation events may lead us to expect that this may be a source of difficulties for L2 users when learning English verb-noun collocations. Additionally, several studies have shown that L2 speakers have difficulty with collocated verbs in verb-noun collocations. This observation may be explained by the fact that unlike L1 speakers, L2 speakers tend to produce collocations from the open choice principle rather than on the basis of the idiom principle (Sinclair, 1991). That is, when L2 speakers construct a collocation, they search for individual words that can refer to the meaning of the collocation word-by-word (Laufer & Waldman, 2011). Even though a substantial body of research exists in corpus linguistics (e.g., Kaszubski, 2000; Laufer & Waldman, 2011; Nesselhauf, 2003, 2005) and psycholinguistics (e.g., Durrant & Schmitt, 2010; Webb, Newton & Chang, 2013; Sun & Wang, 2003; Webb & Kagimoto, 2009, 2011) on the use/learning of English verb-noun collocations, few empirical studies have examined the relationship between L2 verb meanings and the production of English verb-noun collocations. More specifically, the goal of this dissertation is to explore how to help L2 speakers develop thoughtful and
personal understandings of form-meaning connections in collocations through L2 word meanings and the re-conceptualization of collocation events.

Because of the traditional dictionary metaphor, the learning of L2 word meanings is considered to be no more than a list of form and meaning (i.e., L1 meaning) mappings that can be fairly associated through rote learning in a second language classroom. However, the view that the learning of L2 word meaning involves dynamic, conceptual understandings of word meanings is gradually accepted. The research on the nature of L2 word meanings has only recently started to be securitized from a cognitive perspective. A major hypothesis of cognitive semantics is that a person’s memory is cognitively represented in the same conceptual form as word meanings (Gärdenfors, 2000). “The meanings of the words of a given language and how they can be used in combination, depends on the perception and categorization of the real world around us” (Ellis & Cadierno, 2009, p.122). In other words, language reflects the human perceptual and conceptual understanding of experience and the world. Moreover, the pedagogical materials of scientific concepts associated with word meanings (i.e., SCOBAs) illustrated in this dissertation are derived from usage-based cognitive theories of language. These perspectives are different from formal approaches to semantics. These coherent and systematic pedagogical materials can lead to a better understanding of word meanings and offer an alternative orienting basis for learning L2 verb-noun collocations.

Verb meanings represent the construals of the events (Croft, 2012; Levin & Rappaport Hovav, 2005). All verbs come with conceptual frames that indicate the nature of the eventuality to which the verbs are related. The present study argues that linguistic meanings of collocations can reside in event conceptualization. L2 semantic concepts can
function as conceptual bases for re-conceptualizing event construals of verb-noun collocations. The concept of semantics of thought is proposed (see the detailed discussion in chapter 2). Through the practice of semantics of thought, learners can reorganize vocabulary knowledge, presumably using those verb concepts as a framework to understand the meanings of collocation events.

Learning a verb-noun collocation requires understanding the conceptual meanings of verbs as well as building viable conceptual structures of collocation events. An L2 speaker who makes collocation errors based on misunderstanding the use of collocated verbs will revise either his and her semantic mapping or the event construal of the collocation through formation of a semantics of thought. The conceptualization of L2 collocations must be well attuned both to the perceptions of collocation events and the way we express event structures in language. This is crucial because of the need to coordinate the understanding of collocation events on the basis of event construals and linguistic information. Thus, effective coordination of learning L2 verb-noun collocations relies on having event conceptualizations that can incorporate linguistic information and extract the abstract structure of the collocation events.

More recently, applied linguists have shown an increased interest in examining the connection between resolving learning difficulties and applying explicit instruction to teach L2 collocations. This concept-based instruction has a fundamental impact on L2 speakers’ understanding of the semantic meanings of the target verbs and their collocations. L2 speakers’ understanding of word meanings constitutes the basis for developing the new event conceptualizations of collocations. I argue that this concept-based approach can lead L2 speakers to a better understanding of word meanings and an
overall conceptual understanding of L2 collocations. More importantly, this dissertation project presents a microgenetic study of the development of L2 collocational knowledge in seven university students of English as a foreign language (EFL). They participated in a six-week tutorial session. Applying Vygotsky’s perspective on developmental education, this study explores how concept-based word meanings function as a cognitive tool to mediate L2 speakers’ development of English collocations. Through learning the conceptual structures of the target verbs (i.e., *make, do, take, get* and *have*) and forming a *semantics of thought*, L2 speakers are able to pay more attention to the relationship between the linguistic form and the conceptualization of the collocation event derived from the verb’s meaning.

### 1.2 Research Questions

The present study aims to answer three research questions related to the development of collocational capacity among adult Chinese learners of L2 English.

1. To what extent can concept-based instruction (CBI) derived from cognitive semantics help L2 learners develop a conceptual understanding of the target verbs?
2. How does teaching verb meanings affect the acquisition of L2 verb-noun collocations?
3. Do L2 speakers develop awareness of the systematic, semantic motivated nature of verb use in L2 verb-noun collocations?
1.3 Significance of the Study

This study contributes to the body of research on L2 collocational development by implementing a concept-based approach to teaching L2 word meanings, thereby bridging the gap between L2 collocational developmental research and explicit language learning. This project is also the first study that adapts a sociocultural perspective to look at L2 collocational development, which has been rarely attempted to date in the collocation literature. The major focus is on the meditational role of conceptual meanings of the target verbs applied to the development of form-meaning relationships in L2 collocations. More specifically, understanding the semantic structures of the target verb is a fundamental step that facilitates the formation of the link between an L2 verb-noun collocation and its event construal.

As for explicit instruction, the study is the first attempt to shed important insight into the acquisition of L2 verb-noun collocations by providing systematicity of the semantic representations of the target verbs. Understanding the core meanings of verbs necessary to learn collocations explicitly provides a guide for designing L2 materials that can foster collocation learning. The current study may also inform how image schemas can also be designed to collocation learning.

Through the practice of *semantics of thought*, L2 speakers can develop thoughtful and personal understandings of collocations. This approach enables the learning of L2 collocations to become more meaningful and better retained by L2 users. The pedagogical model that this study develops to teach L2 word meanings has the potential to extend to L2 vocabulary learning in general. More specifically, the findings may be
used as evidence to support the idea that L2 vocabulary should be taught through its L2 semantic meanings rather than through L1 equivalents. Therefore, L2 speakers are not only able to learn the conceptual meanings of L2 words but also use those meanings as mediational tools to constitute collocations.

No study has shown L2 speakers’ perceptions of constructing an L2 collocation in real time. As for real-time data, L2 speakers’ internal construction of L2 collocations can be revealed in L2 speakers’ self-explanations and interactions with the researcher. Again, to date no study in L2 collocation research has proposed a method by which researchers can interpret L2 users’ collocational performance based on students’ articulation of their word choices. The present study proposes to understand students’ cognitive processes in selecting appropriate collocated verbs through interactions between the participants and the researcher. This study is relevant to future research on L2 collocational learning as well as in the field of L2 vocabulary acquisition.

1.4 Organization of the Study

This dissertation consists of seven chapters. The current chapter has stated the major problem, discussed the rationale and purpose of the study, introduced research questions, and demonstrated the significance of the project. Chapter 2 discusses the theoretical frameworks (cognitive semantics and sociocultural theory). Chapter 3 investigates literature on L2 collocations, and discusses the findings of previous studies on the integration of a concept-based and cognitive approach to L2 teaching. Chapter 4
outlines the research methodology and design, describing the data collocation and the approach to data analysis. Chapter 5 and 6 present the overall findings of the study, including the report of pre-enrichment and post-enrichment interviews. More specifically, these chapters emphasize the qualitative and quantitative aspects of participants’ development in the enrichment program and focus on the microanalysis of the development of three individual learners. Chapter 7 concludes the study by summarizing the main results and addressing limitations and pedagogical implications for L2 future research.
Chapter 2
Theoretical Framework

2.1 Introduction

The current study draws from various theoretical methodologies that include sociocultural and cognitive perspectives on language learning and teaching. Of these traditions, Sociocultural Theory of Mind (SCT) and Cognitive Linguistics (CL) function as the primary theoretical framework for the study. Pedagogical orientation to the teaching of L2 verb-noun collocations are originated from Vygotskian practitioners’ work (i.e., Davydov, 2004; Gal’perin, 1989, 1992). Their notions of concept-based approaches to teaching inform this study regarding instruction design and the nature of conceptual/cognitive development. Additionally, from a neurolinguistic perspective, Paradis’ (1994, 2004, 2009) and Ullman’s (2001) studies on declarative and procedural knowledge with regard to second language learning provide additional support for learning L2 metalinguistic knowledge.

As shown in the corpus analysis, L2 Chinese speakers of English experience difficulties in learning L2 verb-noun collocations (a detailed discussion is provided in the literature review chapter). Different languages construe events and thoughts differently. The ways in which a language construes collocation events and objects may lead us to expect that this may be a source of difficulties for L2 speakers when acquiring L2 collocations. Although the speaker may not be consciously aware of the features of the collocation events that are encoded in the L2, L2 speakers may need to pay more
attention, or become more aware of those aspects. Verb meanings represent the construals of the events (Croft, 2012; Levin & Rappaport Hovav, 2005).

The approach to teaching L2 verb-noun collocations supported by SCT and Cognitive Linguistics can create the starting point for development. Specifically, verb concepts related to collocation events can form a basis for teaching verb-noun collocations. Instead of teaching L2 speakers various words and expressions in a language classroom, the primary concept of the word can be introduced first in order to establish a foundation for understanding various, relevant linguistic items (See Lee, 2012 for similar arguments on the teaching of L2 phrasal verbs). The pedagogical materials of scientific concepts associated with word meanings (i.e., SCOBAs) illustrated in this study are developed from cognitive/usage-based theories of language. These perspectives are different from formal approaches to semantics and may lead to a better understanding of word meanings, which provides an alternative approach to learning L2 verb-noun collocations.

The approach, which I refer to as the practice of *semantics of thought*, is designed to orient L2 speakers to verbs concepts that can assist them in the task of reconceptualizing verb-noun collocation events. Furthermore, this practice may lead to a better understanding of the use of the verb in a verb-noun collocation. Producing correct linguistic forms is important in learning a second language; however, forms can become meaningless if they cannot be connected to the meanings (van Compernolle, 2012). The approach to L2 collocations advocated here helps L2 speakers develop thoughtful and personal understanding of meaning-form relationships in verb-noun collocations. This practice would encourage L2 speakers to learn collocations in a deeper level of mental
processing rather than rote learning. This type of mental operation, forming a *semantics of thought*, as it can function as a specific instance of the more general operation of semantic elaboration -- an L2 speaker’s rich processing of a lexical item regarding its meaning (Cohen, Eysenck, & LeVoi, 1986). Moreover, applying the core meaning of the verb in order to understand the collocation requires cognitive effort. The practice may stimulate deeper mental processing: first via the image schema of the verb, and subsequently via the application of the verb’s meanings to re-conceptualize L2 verb-noun collocation events. L2 speakers could be encouraged to infer the meaning of a collocation via the core meaning of the verb, and then verify the interpretation.

In the following sections, cognitive semantics inspired by the work of Langacker (2008) and Lakoff (1987) will be explored. A concept of *semantics of thought* will be proposed regarding the learning of L2 verb-noun collocations derived from the concepts of collocated verbs. Secondly, I will present a full discussion of SCT and CBI. Finally, implicit and explicit knowledge from a neurolinguistic perspective will be discussed as additional support to the present study.

### 2.2 Word Meaning

It is commonly understood that semantics is concerned with the relationship between words or linguistic expressions and their meanings. However, in terms of explicating this relationship, opinions diverge. The aim of the discussion here is not to settle the ongoing debate, but to provide a common ground for the current study,
especially for understanding the relationship between the linguistic expressions and meanings. In modern philosophy of language, we can find two fundamentally different theories of semantics to answer the question, what are word meanings:¹ realist and cognitivist. According to the realist approach to semantics, word meanings or linguistic expressions represent things that exist in the world (Gärdenfors, 2000). As for the cognitive linguists’ answer, meanings are mental entities, something that only exits in a person’s head.

In the referential types of semantics, the account for how a linguistic expression is related to its meaning needs to be discussed. Realist semantics includes two flavors: extensional and intensional. From the extensional perspective, the meaning of the linguistic expression is mapped onto a world. For example, a name is mapped onto an object. The main goal of this type of semantics is to form a truth condition for the linguistic expression in the language. The condition determines the meaning of the expression in that it specifies the way the world is constituted. Thus, by specifying a truth condition, realists intend to describe the semantic knowledge of a competent speaker. Moreover, word meanings are independent from how individual speakers understand the meanings. The semantic mapping can be demonstrated as in Figure 2.1.

¹ This question concerns whether or not there are actual objects that reflect the meanings of the linguistic expressions.
Intensional semantics is developed to deal with several phenomena for which extensional semantic theory cannot account (Fox & Lappin, 2005). In this approach, linguistic expressions are mapped onto a group of possible worlds rather than only a single world. The aim of intensional semantics is still to offer truth conditions for language. The word meaning is considered to be a proposition that is recognized with a group of possible worlds. This relation can be demonstrated as in Figure 2.2.

![Figure 2.1. Extensional semantics (from Gärdenfors, 2000, p. 153)](image1)

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![Figure 2.2. Intensional semantics (from Gärdenfors, 2000, p. 153)](image2)

In the cognitive approach to semantics, meanings of linguistic expressions are mental entities; that is, meanings are part of the cognitive structure in the language.
speaker’s head. Language is considered to be elements of a person’s cognitive structure and not an entity that is independent of it. The general structure of cognitive semantics is illustrated in Figure 2.3. A word meaning is seen as a mapping from linguistic expressions to the conceptual structure. This mapping is described as a set of associations between words and meanings: the associations can be established when the speakers learn the language. Most importantly, language represents a conceptual structure, but it does not directly correspond to the world. Word meaning is seen as a conceptual structure.  

![Figure 2.3. Cognitive semantics (from Gärdenfors, 2000, p. 154)](image)

In terms of relations between the conceptual structure and world, linguists adopt a pragmatic account. Consider color vision as an example. Thompson (1995, p. 25, as cited in Gärdenfors, 2000) argues for a pragmatic perspective of conceptual structures:

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2 According to Vygotsky (1987), a conceptual structure is not innate. Concepts result from the material, humanized world through social interaction with members of a culture. See a detailed discussion in section 2.6.1
The biological function of color vision is not to detect surface reflectance, but rather to generate a set of color categories that have significance for the perceptual guidance of activity. In my view, the categories that give structure to color perception are indeed modes of presentation in visual perception, but they are not modes of representation, at least not in the typical computationalist [realist] sense, because color perception does not represent something that is already present in the world apart from perceivers; rather, it presents the world in a manner that satisfies the perceiver’s adaptive ecological needs…

That is, unlike realists, cognitivists believe that conceptual structures do not completely represent the reality of the world, but are adapted to the speakers’ or perceivers’ pragmatic/ecological needs.

Therefore, it is understandable that different languages can correspond to different conceptual structures. Additionally, several researchers who work in the framework of cognitive semantics believe that word meanings actually are concepts (e.g., Jackendoff, 1983; Johnson-Laird, 1983). For cognitive semantics, meanings are in the head. Specifically, a word for a language is viewed as a mapping from linguistic expressions of the language to cognitive entities by means of social interaction.

Along with the notion of cognitive semantics, Rommetveit (1992) argued that descriptions of the outer world depend on the perspectives adopted by a language user, and that word meaning depends on its context of use. Rommetveit (2003) further stated that word meanings are dialogically constituted in terms of the situational contexts; in particular, he takes a second person (i.e., an interlocutor) into account. Rommetveit’s conception of word meaning forms dialogic semantics, which holds that meanings emerge in discourse and social interaction. Word meanings are actively negotiated by interlocutors based on the social context. Rommetveit’s (1980, 1990, 1992) famous
example in which Mr. Smith is mowing his lawn on a Sunday morning demonstrates Rommetveit’s conception of word meanings. In this example, Mr. Smith has already started mowing a lawn on an early Sunday morning, while Mrs. Smith is sitting in the kitchen with the morning coffee. One of Mrs. Smith’s friends, Betty, calls and asks “That lazy husband of yours, is he still in bed?” Mrs. Smith answers, “No. Mr. Smith is working this morning. He is mowing the lawn.” Several minutes later Mrs. Smith receives another phone call. It is Mr. Jones. She takes for granted that Mr. Jones as usual wants to find out if Mr. Smith is free to go fishing with him. He asks: “Is your husband working this morning?” She answers, “No. Mr. Smith is not working this morning. He is mowing the lawn.” What is striking in this example is that Mrs. Smith brings the same event, Mr. Smith’s mowing of their lawn, into language in two opposite ways. However, her words working and not working function effectively in their conversations. In the first conversation, working is defined as engaging in a physical activity rather than taking a rest. In the second conversation, working refers to a job for which Mr. Smith is paid rather than a leisure affair; therefore, Mrs. Smith responds to Mrs. Jones by stating that he is not working. Thus, word meaning fluctuates moment-by-moment based on the communicative partners’ mutual understanding and the goal of establishing intersubjectivity. Although the meanings of working emerge in dialogue, they are related to the prototypical sense of the word: performing a productive task (the task can be a paid assignment or a necessary activity). In other words, some semantic properties of the word are always activated when the word is employed in discourse. This phenomenon is called encyclopedic semantics, as illustrated below.3

3 Dialogic semantics rejects the idea that meanings are in an individual speaker’s
Traditionally, a word meaning is thought to include relatively few semantic features (especially concerned with its linguistic characters), which distinguish it from general knowledge about the type of entity represented (Evans & Green, 2006; Langacker, 2008). Consider bull for example. Its basic sense is often represented by the semantic features [MALE], [ADULT], and [BOVINE] (as cited in Langacker, 2008) to exclude anything else we may know about these lexical semantics (e.g., intrinsic or contextual word meanings). In this regard, word meaning can be viewed more like a dictionary entry. Hence, this approach is described as the dictionary view of word meaning, while an alternative approach is referred to as the encyclopedic view of semantic meaning. In an encyclopedia view, a word meaning represents “a particular way of assessing an open-ended body of knowledge pertaining to a certain type of entity” (Langacker, 2008, p. 39). Langacker (2008) developed two diagrams to indicate these two views. Regarding the dictionary viewpoint, represented in Figure 2.4.(a), the circle indicates the whole body of knowledge the speaker has about a lexical item (in various contexts), and the box refers to its linguistic meanings or descriptive statements. On the head. Word meanings are inherent in the speech community and created by interlocutors in speech events. Cognitive semantics seems unable to capture every nuance of meaning construction occurring in actual discourse. However, the essential idea of dialogic semantics is similar to the basic tenet of cognitive semantics. Word meanings are not fixed and predetermined, and they are constituted on the basis of contexts. Cognitive semantics and dialogic semantics are compatible. In terms of second language learning, L2 users are integrated into the L2 speech community. Language knowledge inside a speaker’s head is relevant in understanding the meanings of linguistic expressions since empty heads cannot interact and negotiate meanings. Cognitive semantics offers a starting point to assist L2 speakers in acquiring prototypical meanings of words, and reveals the context-dependent nature of word meanings in language use. Dialogic semantics further-formulates the concept that meanings emerge through communicative interaction between speakers whose heads are filled with L1/L2 conceptual knowledge.
other hand, the encyclopedic view is represented in Figure 2.4.(b) by concentric circles, demonstrating that the knowledge elements have different degrees of centrality. The ranking for centrality is one facet of a lexical item’s primary meaning. In terms of a given lexical meaning, some semantic properties are so central that they are virtually always activated when the word is used, while other semantic properties are activated less consistently, and the others are so peripheral that they are accessed only in certain contexts (Langacker, 2008).

![Diagram](image)

(a) Dictionary semantics  
(b) Encyclopedic semantics

Figure 2.4. Differences between dictionary semantics and encyclopedic semantics (from Langacker, 2008, p. 39)

In realist semantics, word meanings are viewed as objective and the purpose of semantics is to demonstrate the truth behind linguistic expressions and the outer world. In this tradition, the connection between a linguistic expression and its meaning is arbitrary (Saussure, 1996). Thus, word meanings are transcendent, disembodied and exist independently of humans’ minds. However, in the cognitive approach, word meanings correspond to cognitive/conceptual structures in the mind of a language user. It is
necessary to discuss how conceptual structures are formed. As earlier discussed, they are not innate (Vygotsky, 1986). The conceptual structures are formed in interactions with the material and humanized world. Because cognitive development is guided by social interaction, concepts and knowledge acquired are attuned to sociocultural environments. Conceptual structures are undeniably internal, taking place in the brain, in the sense of internalizing the conceptualizations of bodily and mental experiences. For example, children acquire their conceptual structures by adding new dimensions and integrating the structure of the domain mediated by social interaction as a result of development (Vygotsky, 1986).

The purpose of the following section is to look at the general principle of cognitive semantics and therefore to provide a fuller understanding of the context in which this study takes place.

### 2.3 Cognitive Semantics

In a conventional perspective, language is seen as a formal and rule-based system that occurs independently of language users and of humans’ other cognitive functions. On the contrary, cognitive semantics puts language in the heads of language users and associates it with human beings’ perception, memory, action, mental representation, and so forth (e.g., Gärdenfors, 2000; Lakoff, 1987; Langacker, 2008). Indeed, it is human beings who give meaning to language. Many traditional theories of language assume a distinction between the human mind and body where language is a fixed and determinate
product. For example, lexical semantic features can be viewed as having no inherent meanings but are made meaningful through the connections to objects and events in the external world. The human’s sensory systems are only sometimes considered to contribute to the conceptual distinctions that underline word meanings. In the late 1980, cognitive semanticists began to articulate the view that language reflects the way human beings perceive and interact with the external world. Language knowledge is not static or propositional, but is grounded in a human’s cognitive functions. Language reflects the conceptual structures in the head of a language user. These structures are derived from our embodied experiences such as perceptual interactions, bodily actions, or manipulation of objects (Evans & Green, 2006). In the following sections, I will present the guiding principles of cognitive semantics that are relevant to the current study.

2.3.1 Meanings are conceptual structures in human cognitive system

An important principle of cognitive semantics is that meaning resides in concepts that indicate how a speaker perceives the event. From a cognitive perspective, semantic structures (i.e., the meanings conventionally associated with words and other language units, Evans & Green, 2006, p 158) can be equated with conceptual structures. According to cognitive semantics, conceptual structures in our heads are directly or indirectly associated with our perceptual mechanisms. Meanings are at least partly perceptually grounded (Gärdenfors, 2004). Thus, meanings are embodied. In other words, the conceptual structures are associated with our bodily experiences and perceptions. This perspective is distinct from the realist’s version of semantics, which states that meaning is
a direct mapping between the linguistic expressions and outer world, perception is not involved in the meaning-making process. From this perspective, meanings are considered to be objective and the goal of semantics is to explain a relation between linguistic expressions and reality. However, cognitive semantics is well-suited for demonstrating the perceptual and embodied domains of semantics. As Regier (1996) noted,

The idea is that since the acquisition and use of language rest on an experiential basis, and since experience of the world is filtered through extralinguistic faculties such as perception and memory, language will of necessity be influenced by such faculties. We can therefore expect the nature of human perceptual and cognitive systems to be of significant relevance to the study of language itself. One of the primary tasks of cognitive linguistics is the ferreting out of links between language and the rest of human cognition (p.27).

In other words, semantics does not necessarily correspond with truth conditions in the world. Rather, it is a conceptual structure derived from the speaker’s cognitive system.

2.3.2 Conceptual structure is embodied

Meaning is embodied in that it “depends on an individual having had experience in their body in the actual world, where they recreate those experiences in response to linguistic input” (Bergen, 2007, p. 278). Along this line, Johnson (1987) explained how humans’ understandings of words are affected by bodily experiences. For example, because the human has a head at the top and feet at the bottom of the body, this provides a sense of top is up and bottom is down. Consider the use of stand in the sentences: please stand at attention, the clock stands on the mantle and he wouldn’t stand for such treatment (as cited in Gibbs, Beitel, Harrington, & Sanders 1994). The first sentence
refers to the physical sense of *stand* as the human bodily experience. In the second sentence, the action of standing is not bodily, but is extended to express how an object interacts with another landmark in that a clock takes up space on the mantle. Furthermore, just as bodily standing implies some equilibrium against the ground to counteract the forces of gravity, *stand* can also be understood metaphorically to counteract some nonphysical forces in order to remain in an abstract equilibrium in the last sentence (i.e., *he wouldn’t stand for such treatment*). This usage elaborates the idea of standing as resisting certain metaphorical force. These sample sentences suggest that the uses of *stand* are connected to the prototypical sense of bodily experience. In other words, the meanings of *stand* are not arbitrary, but are semantically motivated by humans’ recurring embodied experiences.

2.3.3 Meaning interpretation is encyclopedic and meaning construction is conceptualization

Cognitive semanticists are concerned with the relationship between conceptual structure and encyclopedia knowledge. They argue that word meanings are not neatly packaged (the dictionary view), but serve as *points of access* to the large repository of encyclopedic knowledge to which they are linked (the encyclopedia view). The dictionary view of a word’s meaning is the information limited to a word’s definition, while the encyclopedia view concerns how the linguistic meanings are related to a particular concept or a conceptual domain. From a cognitive semantics perspective, word

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4 According to Evans & Green (2006), encyclopedic knowledge is defined as knowledge about social interaction with others and physical experience with the world.
meaning is understood as depending on encyclopedic knowledge. Consider *open* as an example.

(1) The surgeon opened the wound  
(2) The military officer opened the dam  
(the sentences cited in Evans, 2009).

The meanings of *open* are different in the two sentences. In order to define the specific meaning of *open*, the speaker must tap into his/her encyclopedic knowledge. Specifically, it is the verb event that *open* is associated with, in part, that determines the meaning of *open* in both cases. For example, the concept of opening a wound indicates a physician who has skills to use a scalpel on a human body, to create an aperture for particular purposes such as to remove damaged tissues. On the other hand, the concept of opening a dam involves a military officer who uses specific knowledge of warfare in order to destroy a dam for a military purpose. Therefore, understanding the meaning of *open* involves using encyclopedia knowledge of different types of events, purposes, and agents.

Evans and Green (2006) further stated that meaning is constructed on the conceptual level; that is, meaning construction is equal to conceptualization. Conceptualization is “a dynamic process whereby linguistic units serve as prompts for an array of conceptual operations and the recruitment of background knowledge” (p.162). In other words, meaning is a process rather than a packaged, discrete entry in the dictionary. As discussed above, meaning interpretations draw upon our encyclopedia knowledge. More importantly, the dynamic process of meaning construction relies on mappings (more detailed information see Fauconnier, 1997).
2.3.4 Cognitive models are primarily image-schematics (not propositional)

The most essential semantic structure in cognitive semantics is an image schema. A fundamental assumption is that the image schema constitutes the representational format that is common to a person’s perception, memory and understanding of word meaning. Image schemas can be used to bridge the gap between words and representations of concepts. The schemas are often abstract images constructed from geometrical structures such as container, link, or source-path-goal. Additionally, most of the image schemas are closely related to kinaesthetic experiences. For some cognitive linguists, image schemas can be transformed by metonymic and metaphoric operations. Metaphors and metonymies are seen as exceptional features in realist semantic theories. However, they are treated as central semantic figures in cognitive semantics. Metaphors and metonymies are considered to be cognitive operations and are analyzed as transformations of image schemas. Along this line, Lakoff’s (1987, p. 283) “spatialization of form hypothesis” indicated that the meanings of linguistic expressions need to be analyzed as image schemas through metaphorical mapping. Consider prepositions as an example. Prepositions primarily have spatial meanings, but their metaphorical use can been viewed as a metaphorical mapping from a basis to another non-concrete domain.

2.3.5 Concepts show prototype effects

In cognitive semantics, researchers attempt to explain prototype effects of concepts (see Lakoff, 1987, chapter 2). Concepts are often modeled in the form of image
schemas. These schemas can be used to show variations in similar types of objects, such as differences between types of chairs. Moreover, concepts can indicate membership depending on how representative the members are. For example, a desk chair is judged to be a more typical instance of the category of chair than is a beanbag chair. The most representative member within a category is considered to be prototypical. However, the effects of prototypical meanings are difficult to demonstrate using traditional extensional or intensional notions of properties since each object is assigned a set of precise properties. Additionally, all objects within a category have equal status as class members (Gärdenfors, 2000). On the contrary, when properties are defined within the scope of cognitive semantics, prototype effects indeed can be expected. Specifically, different members of a category can be positioned as more or less central. Take the category *cup* for example. Cup (a) can be judged as more prototypical since it has a handle and saucer for drinking hot beverages such as tea and coffee, whereas cup (d) is less representative because it does not have a handle, nor does it normally contain drinks like tea or coffee; rather, it is more likely to be used for wine (examples as cited in Evans & Green, 2006, p.29). Regardless, within the concept of cup, the idea of holding beverages for drinking serves as the prototype across the members of the category.

![Figure 2.5. The category cup (from Evans & Green, 2006, p.29)](image)
Along the same lines, the basic sense of the word hand refers to a part of the human body. Its meaning can be extended metaphorically when a person asks for help as in give me a hand. The cognitive linguistic perspective is that all of the possible senses of a word are associated with one another in a radial category and include the basic meaning of the word, which serves as the prototype.

From a cognitive semantics perspective, experience is embodied and provides image schemas through which we can conceptualize word meaning (Johnson, 1987). In this respect, we encounter the question of how our different experiences can be gathered into common conceptualizations that create common meanings (Holme, 2009). The answer lies in cultures that gather common conceptualizations and meanings, which are encoded in languages. Different cultures have their own ways to conceptualize thoughts and events. In terms of second language learning, language learners may face challenges of acculturation and re-conceptualization. Therefore, I will explore the relationship between language and culture in the following sections.

2.4 Language, Culture and Thought

All human beings have the same biological characteristics that allow us to process the events and spatial features of the surroundings. Linguistic research examining semantic word meanings and event structures usually begins with the arguments that human perception and cognition are shared by all human beings and independent of languages and cultures (e.g., Fodor, 1975; Landau & Jackendoff, 1993). However, Pinker (1989) stated, “one’s language does determine how one must conceptualize reality when
one has talk about it” (p.360). Along this line, von Humboldt (1999) pointed out much earlier that languages are instrumental in conceptualization, and different languages give their speakers’ particular world views.

Language and culture are complexly interrelated. Each language is a by-product and transmitter of its own culture. Languages are mediational tools that help their speakers classify experiences and supply the forms to express them. In addition, languages are instruments by which concepts of time and space can be mastered, and they have a direct impact on an individual’s cognitive development (Klein, 1986). As Vygotsky (1978) claims, “Signs and words serve children first and foremost as a means of social contact with other people. The cognitive and communicative functions of language then become the basis of a new and superior form of activity in children, distinguishing them from animals” (p.28-29). Vygotsky pointed out that the fundamental difference between humans and animals is the human’s culture, language, and thought. According to Lucy (1996), the relationship among language, thought and culture can be explained as follows: “Understanding the cultural uses of language is essential not only for assessing the particular significance of given structure effects both within and across cultures, but also for assessing the general significance of language in social and psychological life” (p.37-38). His perspective can be extended to second language learning. What it means to learn another language is learning a new way of perceiving the world.

Linguistic relativity is primarily concerned with the nature of language and of culture. According to its hypothesis, two languages may encode the identical event employing semantic concepts, particular to each language, and thereby two linguistic
descriptions can reflect different aspects of the same reality (Gumperz & Levinson, 1996). Lado (1956) made a similar claim and stated “meanings, like forms, are culturally determined or modified. They represent an analysis of the universe as grasped in a culture” (p.113). These kinds of semantic distinctions reflect cultural differences and at the same time influence human cognitive representations. It is true that some domains of meaning are held to reflect universal semantic principles such as color. Nevertheless, “at least some aspect of semantic structure that is not universal, and at least some cognitive effect of such distinctive semantic properties, then there must be at least some systematic cognitive variation in line with linguistic difference. (Gumperz & Levinson, 1996, p.24).

Additionally, according to Levelt (1989), thoughts are encoded in language fundamentally by matching conceptual structures with semantic specifications of meaning, and then lexical information drives grammatical and phonological coding. In order to begin this coding process, the speaker must organize conceptual structures of events so that they match semantic specifications in the lexical words. If there is no match, the thought cannot be coded. This process can be called thinking for speaking (TFS) (here, thinking and speaking are different from thought and language) (Slobin, 1996).

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5 The TFS hypothesis suggests the impact of language on thought occurs when a speaker formulates or interprets verbal messages. Therefore, thinking is concerned with the spontaneous cognitive activity in the process of speaking, while I consider thought to be a speaker’s idea or conceptualization resulting from bodily or psychological experiences. Whether or not these two concepts of thought can be reconciled is an open question. Further investigation is required. Moreover, speaking indicates an online speech activity; however, language embraces all types of linguistic production (written forms, spoken forms or sign language).
Slobin, based on Talmy’s study (1985) in cognitive linguistics, proposed, “[i]n acquiring a native language, a child learns a particular way of thinking for speaking” (Slobin, 1991, p2). According to Slobin (1996), the first language trains the L1 speaker to pay different kinds of attention to events and experiences when speaking about them. He stated that each language (referring to L1) is not a neutral coding system of an objective reality; but rather “each [language] is a subjective orientation to the world of human experience and this orientation affects the ways in which we think” (p.91). That is, the L1 does not alter the mental representations that the speaker forms about the world, but it can impact which components of those mental representations are selected, the way those components are coded, and the specific details of those components that are expressed. Moreover, Slobin (1996) stated that “the ways one learns a language as a child constrain one’s sensitivity to what Sapir called ‘the possible contents of experience as experienced in linguistic terms’” (p.89).

Based on the framework of TFS, von Stutterheim and Nüse (2003) demonstrated that language is correlated with specific patterns/sequences of event conceptualization with regard to the perspectives underlying the selection process. They conducted an empirical study to investigate whether or not English and German speakers’ have different perspectives in selecting event components for coding. A silent film was selected to elicit the verbalization of event sequences. After English and German speakers watched a seven-minute film, they retold the content of the movie. Von Stutterheim and Nüse found that the participants recalled different details of the events even though the visual input was identical in both cases. Consider *falling* and *jumping* events for example. In the encoding of these two events, English speakers primarily used
bare verbs, as in cases such as *he jumps* or *he slips and falls*. On the other hand, German
speakers rarely use bare verb constructions but are more likely to specify the direction or
emphasize the endpoint of the events, as in cases such as *he jumps into the hole* or *he
falls down*. In other words, an English speaker’s perspective considers a verb event to be
ongoing, a view which does not include the outcome or endpoint of an action. However,
from a German speaker’s viewpoint, an event is viewed as holistic, and the closure of an
action does form a necessary component in coding an event.

These linguistically encoded perspectives indicate that the same events/actions
can be perceived from different angles and be encoded differently in languages. Given a
particular event, there are options regarding the conceptual representations of the event,
and therefore there are options in presenting events linguistically (von Stutterheim &
Nüse, 2003). These options concern the components chosen to represent the event and
perspectives under which it is perceived. In line with the work conducted by cognitive
linguists such as Talmy (2000) and Langacker (1987, 2008), they also show how
languages partition the world.

These studies concerned with L1 have shed light on

Models of cognition developed after Whorf’s day indicate ways in which thought can be influenced by cultural variations in the lexical syntactic, and
pragmatic aspects of language. Although much work remains to be done, there
appears to be a great deal of truth to the linguistic relativity hypothesis. In many
ways, the language people speak is a guide to the language in which they think
(Hunt & Agnoli, 1991, p. 377)

If L1 acquisition includes learning a particular way of thinking, for L2 speakers,
second language learning also potentially involves learning an alternative way of
thinking. As von Humboldt (1999) stated:
To learn a [second] language should therefore be to acquire a new standpoint in the world-view hitherto possessed, and in fact to a certain extent is so, since every language contains the whole conceptual fabric and mode of presentation of a portion of mankind (1999, p.60).

In other words, language-specific approaches to conceptualizing experiences have a significant impact on learning a second language.

In terms of L2 learning, many studies investigated L2 speakers’ TFS patterns in both speech and gestures by looking at the learning of motion events (e.g., Brown & Gullberg, 2008; Choi & Lantolf, 2008; Kellerman & van Hoof, 2003; Negueruela, Lantolf, Jordan & Gelabert, 2004; Yoshioka, 2008; Yoshioka & Kellerman, 2006). The findings on L2 speakers varied as a result of different study designs. However, several studies show that it is possible for L2 speakers to learn a new model of thinking. For example, Choi and Lantolf (2008) looked at the speech and gesture of L2 speakers to investigate how their TFS about motion changes throughout L2 learning. They focused on motion events by investigating the expressions of path and manner. The results showed that L2 speakers can partially shift to the L2 TFS pattern when expressing path, but not manner. More recently, Stam (2010) found similar results in which an L2 participant changed the expression of path linguistically and gesturally. Although it is difficult for L2 speakers to acquire the L2 expression of manner (for several possible explanations of this phenomenon, see the detailed discussion in Stam’s study), the speakers’ L2 TFS changes about path indicated the possibility of learning an L2 model of thinking.

The TFS hypothesis is that language not only offers speakers with a frame to express their thoughts and events; however, at the same time it guides how those thoughts
and events are expressed in the process of speaking. Thus, in spite of its limiting labels, the TFS hypothesis should include all forms of language activities (writing, speaking, listening, reading, etc.) and a full range of cognitive processes (viewing, understanding, imaging, etc.). Language influences a speaker’s processing of an event because language can force the fragmentation of events to be compatible with linguistic structures the language has for describing the event. I extend Slobin’s notion to learning L2 verb-noun collocations -- L2 users must learn different semantic structures when the L1 and L2 do not coincide in terms of the event construals of L2 verb-noun collocations or when L2 word meanings cannot be manifested in L1 equivalents. In other words, L2 users must learn particular details of verb-noun collocation events in order to attend to the linguistic expressions in L2. This study concentrates on L2 conceptual knowledge about event construals based on L2 word meanings. Thus, for the purpose of the present study, I proposed a notion of semantics of thought.

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6 It is crucial to note that L1 influence depends on whether or not L2 speakers use L1 knowledge to construct an L2 verb-noun collocation. According to the TFS hypothesis, when L2 speakers use L1 to articulate the meaning of an L2 collocation, they can only interpret the event that is coded in the L1. For example, take the sentence “he had a dream last night.” Chinese speakers can only interpret have a dream as 做夢 zuò mèng (*do a dream) in L1. Thus, when Chinese speakers of English employ their L1 concept to produce an L2 collocation, the mis-collocation do a dream occurs. However, the use of L1 knowledge to construct an L2 verb-noun collocation is not mandatory. Several collocational studies have also shown that L2 speakers employ different compensatory strategies (e.g., using familiar high-frequency verbs or using near synonyms) to make their intended meanings come across. Those compensatory strategies also contribute to collocation errors (see a detailed discussion in Chapter 3). However, if L2 speakers can understand what collocation events mean in the L2, they can become independent from the use of L1 concepts or other compensatory strategies.
Semantic structures can be taken to be the viewing frame in which human thought is couched -- it serves as the *semantics of thought*.

For the purpose of the present study, I defined this notion as a special type of thought that is constructed based on the L2 word meaning. Specifically, forming *semantics of thought* is the type of mental activity (or thinking) that takes place when L2 speakers reconstruct verb-noun collocation events based on the semantic properties of L2 lexicon. I propose this notion that in learning a second language, L2 speakers re-encode their conceptualizations of events via L2 semantic meanings. In cognitive semantics, semantic representations are intended to indicate conceptual structures rather than real conditions in the world. Thus, I argue that verb meaning can be a thinking tool available for understanding events expressed through verb-noun collocations.

In practice, forming a *semantics of thought* is the thinking activity that helps L2 speakers pay more attention to the re-conceptualization process in which they link conceptual structures derived from word meanings to the events in the world which they represent.

Every language and lexicon not only offer a speaker a framework for expressing events and thoughts, but also restrict the ways events and thoughts are expressed (Stam, 2006). While L1 speakers may not be consciously aware of that, L2 speakers may need to pay more attention to the features of the events that are encoded in the L2.

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7 My idea for this term comes from Fodor’s (1975) *language of thought* which indicates a system of semantic representations.

8 Conceptualization is an event or semantic structure that represents an experience in the real world. The present study defines the re-conceptualization process as a re-characterization of our mental experience of a verb-noun collocation event.
speakers have difficulty learning English verb-noun collocations, especially with the appropriate use of verbs since this usage is strongly associated with how relationships of time, space, instrument, etc. are encoded in the linguistic expressions. Many L2 verb-noun collocations have identical L1 equivalents (e.g., make a decision, 做決定 zuò jué dìng); however, the corresponding verb in an L1 equivalent does not directly reflect the underlying concept of an L2 collocated verb. When this occurs, L2 speakers are more likely confused by the use of verbs. On the other hand, in several cases, L2 verbs and perceptions are not necessarily the same in speakers’ first language. For example in the English-Mandarin Chinese pair, have a dream/做夢 zuò mèng (*do a dream), the same event is interpreted as a state of possession in English, but as a process in Mandarin Chinese, so that the Chinese and English verbs indeed do not show the identical description of the collocation event.

In cognitive semantics, the relationship between language and the outer world is taken to be mediated by the way the human mind perceives the external world. Langacker (2008) stated,

An expression’s meaning is not just the conceptual content it evokes – equally important is how that content is construed…It is hard to resist the visual metaphor, where content is likened to a scene and construal to a particular way of viewing it…In viewing a scene, what we actually see depends on how closely we examine it, what we choose to look at, which elements we pay most attention to, and where we view it from. (p. 55).

The person may choose to construe the situation with either a maximal or a restricted viewing frame: “Events which are viewed with a maximal viewing frame are seen externally and in their entirety . . . Events which are viewed with a restricted viewing frame are seen internally and in their progression” (Radden & Dirven, 2007, p.
As previously discussed, the perceptions can be linguistically encoded. Thus, the semantic structures of L2 words at the moment invite L2 users to view the world through the lens of the target language. Even though I do not conduct a comparative analysis of event construals with regard to the perspectives of English and Mandarin Chinese in the present study, it is clear that each language has its distinctive way to conceptualize an event semantically and syntactically. In addition, leaning a second language is to develop a way of conceptualizing the event in the world that it represents in the L2. Specifically, in the model of *semantics of thought*, semantic meanings of verbs manifested in image schemas can motivate the re-conceptualization of verb-noun collocations.

There is a close relationship between event conceptualization and the semantics of the verb involved in talking about the event (e.g., Croft, 2012; Goldberg, 2010; Langacker, 1991, 2008; Warglien, Gärdenfors & Westera, 2012). The happening that resides in the human mental world does not itself constitute the event. Langacker (2008) further states, “What makes it a world—not just an inventory of entities conceived in isolation from one another—are the relationships they enter into” (p.354). Our world is structured because most of relationships persist through time, offering a static base for understanding those with regard to changes. Whether or not it persists/remains or changes, a linguistic construal of a relationship is termed as an *event* (Langacker calls it a *process*; Langacker, 1991, 2008). A verb designates a type of event; that is, verb meanings can represent construals of events (Croft, 2012; Levin & Rappaport Hovav, 2005).

A systematic way of conceptualizing events is to model them as an *action chain* (Croft calls it as the *causal chain*, Croft, 1991, 2012), which determines participant roles
and the transmission of force relationships between participants. This cognitive model has been discussed in various instantiations, including Talmy (1976, 1988, 2000), Langacker (1991, 2008), and Croft (1991, 1998, 2012). The main facets of an event conceptualized in an action chain are set out by Croft (1991, p. 173) as follows.

(1) a simple event [i.e., what is named by the verb] is a (not necessarily atomic) segment of the causal network;
(2) simple events are nonbranching [action] chains;
(3) a simple event involves transmission of force;
(4) transmission of force is asymmetric, with distinct participants as initiator and endpoint.

The model can be schematized in Figure 2.6. Croft (1994) explained that a dot indicates a participant; an arrow indicates a relationship of transmission of force, which are described by the capitalized terms in Figure 2.6; a line without an arrowhead indicates a noncausal (stative) relation; a parenthesized dot indicates that it is the same participant as in the preceding causal (or noncausal) segment.

![Figure 2.6. Idealized cognitive model of a simple event (from Croft, 1994, p. 37)](image)

Croft (1991) stated, “The prototypical event type that fits this model is unmediated volitional causation that brings about a change in the entity acted on (i.e., the
manifestation of the transmission of force), that is, the prototypical transitive event…” (p. 173). Consider the sentence *Harry broke the vase*. This sentence includes three parts in an action chain: (1) an agent (Harry) acts on a patient (vase), (2) the patient changes state, and (3) the patient remains in an result state. This action chain conforms to Croft’s (1991) definitions. First, the action chain is nonbranching; in particular, there is only one single result. Moreover, there is an asymmetric transmission of force from the agent (Harry) to the patient (the vase), which distinguishes their participant roles.

Verbs that denote events in which animate agents act on, and persist or cause a change in patients such as *make*, *do*, *take*, *get*, and *have*, are transitive. In the case of a verb-noun collocation, it can be viewed as a type of transitive event in which the verb describes the semantic roles (e.g., agent and patient). Consider the event of *making a pie*. An agent generates force to take action (making) on a patient (a pie). The result is a change in the properties of the pie (from flour to a concrete pie). Thus, I argue that the meaning of a collocation can been seen as a conceptual structure. In addition, a verb plays a crucial role in a transitive event. The event includes an agent (i.e., a subject), an action (i.e., a verb/force), and a patient (i.e., an object). Although these three components provide fundamental ingredients for an event, verbs specifically represent dynamic properties of actions that determine the outcome of the event. Take *moving a book* for another example (as cited in Gärdenfors & Warglien, 2012). An agent generates force to take action (moving) on a patient (book). The result is a change in the location of the book. Although a verb cannot completely illustrate an event, the verb can bring out the most essential aspect of it (Warglien, Gärdenfors & Westera, 2012).
Verbs can have multiple and related senses, and those meanings can be organized in radial categories -- the most prototypical meaning lying at the center of a category and the more figurative senses lying towards the edges (Taylor, 2002). That is, the different meanings of an individual word are related to one another in a radial category, but the core meaning of the word serves as a prototype. Consider *make* as an example. Gibbs and Matlock (1997) and Lee (1996) examined the event contruals of collocations containing *make*, and argued that the semantic senses of *make* are related in that they share the same conceptual base, including an agent, force, and a new entity or a result. That is, the agent employs some force to bring a new entity or result into existence.9

(3) Bob made a pie.
(4) Ann made a statement.
(5) Paul made a recovery.

These sentences refer to a few of the many meanings of *make*. Specifically, *make* among those events links the different physical and non-physical event conceptualizations in the examples above: one of the senses indicates the physical action of making (e.g., make a cake) whereas others have non-physical, perhaps potentially metaphorical/figurative interpretations (e.g., make a recovery). The detailed elaborations are as follows.

(6) make a pie

This type of collocation includes an inanimate object as patient (pie) that is created by an agent’s effort (baking). In other words, the pie does not exist before the

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9 *Make* has multiple meanings, but here I discuss the senses related to the present study.
process of making, but it comes into being after the successful completion of the baking process (i.e., mixing ingredients and then subsequently baking the mixture). Thus, the main semantic meaning of make in the prototypical sense is to bring a new entity into being through processes or activities (Lee, 1996).

(7) make a statement

Another type of make-collocation is also resultative and occurs with an abstract entity as object. However, an agent does not combine concrete ingredients to create a new concrete entity. The object refers to some kind of language expression such as make a statement. The object is associated with sounds that the human produces. The sound is not visually observable, but it still takes place in time. This type of make-collocation is prevalent in English such as make a comment or make a suggestion.

(8) make a recovery

Unlike the previous type, objects denote entities that indicate processes that take place primarily in time. This metaphorical use of make extends its core meaning from the physical domain of events to the psychological domain. That is, the event representation of make a recovery entails that a healthy person has a poor state of health at a certain time, but later he becomes healthy again through the process of taking medication. There are many instances like this such as make progress.

In this discussion, we can see that the verb make collocates with different entities as objects. Those entities may or may not exist concretely, but they are conceptualized as coming into existence in the mind of the speaker through the process of making (Lee, 1996). This also explains how make and its direct objects collocate to form complex
linguistic expressions. For example, in make a speech (as cited in Lee, 1996), make entails a process through which a new entity can be forged. In the collocation, make a speech, the speech is the abstract entity that can be brought into existence. Additionally, the make-collocations are not completely distinct from each other. The resultative and durative properties appear to remain constant across the semantic meanings of make: the agent creates a new entity. The prototypical meaning of make constitutes a conceptual base for its extended meanings. Therefore, in verb-noun collocations, the primary sense of make supplies significant relevant information about the event, and can motivate the abstract entities and event construal of the make-collocation.

Verb meanings can represent the conceptual contents of transitive events. In line with this, one of the main purposes of this study is to explore the possibility of extending the understanding of verb meanings to the re-conceptualization of L2 verb-noun collocation events. Lexical meanings of verbs may help L2 speakers re-conceptualize the events (represented by verb-noun collocations) through a visualization/mapping process. In the following, I will first discuss the notion of image schemas and then the re-conceptualization process.

2.5 Image Schemas, Metaphorical Mappings and Conceptualization

Langacker (2008) further stated, “Image schemas are seen as basic, ‘perceptual’ structures that give rise to more elaborate and more abstract conceptions through combination and metaphorical projection” (p.32). In accordance with cognitive semantics, image schemas are employed to schematize the semantic meanings of verbs.
According to Langacker (1987), an event involves a set of stages. For example, Langacker’s image schema for *climb* (see Figure 2.7.) includes the first part referring to the beginning of the event, and the second and third parts for the middle and the end respectively. The horizontal axis is time drawn at the button and indicated as a thick line since the temporal aspect of the event is in focus. The trajectory (marked as a circle) functions as an agent and is in the contact with the landmark that is vertically extended. The different physical positions of the trajectory in the image schema indicate the space in which an agent is located. Image schemas are viewed as dynamic representations of spatial relationships and movements in space.

![Figure 2.7. Climb (from Langacker, 1987, p. 311)](image)

Metaphors are examined as *transformations* of image schemas. A word that represents a particular conceptual structure in one domain can be utilized as a metaphor to indicate the same structure in another domain (Gärdenfors, 2004). As for the previous discussion of the verb *make*, the topological event structure can derive from visual
information; that is, in abstract cases, the event structure still can be conceptualized based on the prototypical image. Lakoff (1994) stated:

The generalizations governing poetic metaphorical expressions are not in language, but in thought: they are general mappings across conceptual domains. [...] In short, the locus of metaphor is not in language at all, but in the way we conceptualize one mental domain in terms of another (p.203).

In other words, metaphorical use of words can stem from the same conceptual meaning. Metaphorical expressions can be formed through the conceptualization process. Lakoff (1994) discussed a closely related notion in his invariance principle. Metaphorical mappings sustain the cognitive topology (i.e., image-schema structures) of the source domain, “in a way consistent with the inherent structure of the target domain” (p.215). In this case, it accounts for the way a metaphor transfers information from one conceptual domain to another. Consider the expression the peak of a career for example (as cited in Gärdenfors, 2004). The literal meaning of peak indicates a topological structure in a physical domain, namely the highest point in a horizontally large object such as a mountain. This conceptual structure is manifested by two spatial dimensions (vertical & horizontal), as shown in Figure 2.8. A career is an abstract concept without location in space. However, the peak of a career can be applied to two dimensions including the horizontal dimension of time and a vertical dimension of social status.
Although image schemas stem from our perception and sensorimotor activity, they are not themselves sensorimotor processes (Gibbs & Matlock, 1997). Rather, image schemas are considered to be the “primary means by which we construct or constitute order and are not mere passive receptacles into which experience is poured” (Johnson, 1987, p.30). Moreover, image schemas can motivate important aspects of the way humans think, reason and imagine. The image schema that represents the prototypical sense of a word can be instantiated in different kinds of domains since the internal structure of the schema can be understood metaphorically (Gibbs et al., 1994). For example, the make image schema (show below) can be metaphorically elaborated in many abstract domains of experiences, which can motivate understandings of event construals since the mental or the abstract concept of make events can be understood through its basic sense.

Figure 2.8. The literal and a metaphorical meaning of peak (from Gärdenfors, 2004, p. 65)
In line with Langacker’s (2008) definition of linguistic meaning, linguistic meanings of collocations can reside in event construals, which can be presented as being dynamic, imagistic (in opposite of propositional), and imaginative (e.g., involving mental space construction). Semantic structures of verbs provide a conceptual base for the re-conceptualization process in which image schemas are used as the means of conceptualizing the event construal of the verb-noun collocation. Conceptualization can refer to the inner process that creates images in our mind. In this sense, “[conceptualization] is seeing with the inner eye” (Gärdenfors, 2004, p.52). In the case of semantics of thought, image schemas (i.e., semantic structures of words) are used in language understanding (i.e., inner re-conceptualization) of verbal events (represented by verb-noun collocations) in the thinking process; that is, re-conceptualize collocation events through the prototypical senses of verbs. Specifically, the underlying concepts of words function as explanations of the actions or events and thus allow rich interpretations of them. These interpretations can rely on L2 speakers’ encyclopedic knowledge (e.g., a personal experience or understanding of a verbal event). L2 speakers can try to match words to their encyclopedic knowledge of the collocation events based on the conceptual

Figure 2.9. Make schema (the rectangles represent the event an agent is carrying on)
structures of the words. In the practice of the *semantics of thought*, it is more likely that L2 speakers bring their knowledge of the event with them and try to figure out how to re-encode the collocation event regarding the conceptual structures of the verbs they learn.

### 2.6 Sociocultural Theory

The following discussion will review three relevant principles of SCT related to this study: Vygotsky’s ideas of word meanings, scientific concepts, and mediation.

#### 2.6.1 Vygotsky’s conception of word meanings and scientific concepts

Miller (2011) stated, “Word meaning is a phenomenon of both speech and thinking and that in psychological terms, word meaning is ‘nothing other than a generalization that is, a concept’ (Vygotsky, 1987, p. 244)” (p.67). In other words, word meaning is a concept. Vygotsky’s definition leads to the question of how the development of words that encode some types of concepts relate to the development of concepts. According to Piaget (1962), children need to develop concepts and can then develop linguistic features that encode them. This prerequisite view coincides with the neo-Chomskyan account of semantic development. However, Piagetian and Chomskyan views differ in two respects. First and more obviously, Chomskyans tend to view conceptual structures as innate rather than as something that develops (Chomsky, 1988; Fodor, 1992). Secondly, having conceptual representations of the world cannot determine
a speaker’s semantic representation. Chomskyans believe that only rules and constraints can determine what aspects of conceptual representations should be encoded in language.

From a cultural-historical perspective, Vygotsky (1986) considered semantic development and conceptual development related: they emerge spontaneously. The reason that they co-occur together is because of what Vygotsky (1987) further defined:

Word meaning, then, is a phenomenon of both speech and intellect. This does not, however, represent a simultaneous and external membership in two different domains of mental life. Word meaning is a phenomenon of thinking only to the extent that thought is connected with the word and embodied in it. It is a phenomenon of speech only to the extent that speech is connected with thought and illuminated by it. Word meaning is a phenomenon of verbal thought or of the meaningful word. It is a unity of word and thought (p. 244).

In other words, word meanings represent concepts themselves. According to Vygotsky (1986), concepts are not innately established; they are acquired by the means of social interaction with members of a culture. As research by Wertsch (1985) has shown, when young children are actively engaging in problem-solving and social activities mediated by an adult’s verbal actions, their attention can be drawn to the adults’ words that relate to those tasks. At the same time, children are drawn to acquire particular concepts because of their relevance to particular words. In other words, words and concepts are interconnected and are acquired simultaneously.

According to Vygotsky (1986), there are two types of concepts: scientific concepts and spontaneous concepts. Spontaneous concepts are derived from the everyday activity of children when they are socialized into their culture (Lantolf & Johnson, 2007). These concepts are unsystematic and often, though not always, not conscious. On the
other hand, scientific concepts are connected to an instructional activity in settings with a systematic symbolic system that students acquire in school. They are structured and need to be acquired consciously. Scientific concepts stem from a systematic investigation of a specific domain, which is “aimed at selecting the essential characteristics of objects or events of a certain class and presenting these characteristics in the forms of symbolic and graphic models” (Karpov, 2003, p.71, as cited in Lantolf & Johnson, 2007, p. 880). Therefore, scientific concepts are systematic, coherent and abstract. From a neurolinguistic perspective, scientific concepts are important for L2 adult speakers in learning an additional language. L2 adult speakers are more likely to rely on declarative memory to acquire L2 linguistic features (Paradis, 2009). Therefore, scientific concepts have developmental value by mediating L2 speakers’ in learning the L2. Consider L2 verb-noun collocations as an example. L2 adult speakers construct a collocation for the open principle in that they tend to choose individual words for collocations. L2 speakers may need to consciously choose an appropriate collocated verb. In this case, by learning scientific concepts (systematic verb meanings), L2 speakers can gain a better understanding of the use of collocated verbs in collocations.

Vygotsky (1986) claimed that education is responsible for teaching scientific concepts; however, it must be presented in a way that can help students learn the concepts through concrete practical activities and connect them to everyday knowledge. Robbins (2003) stated that conceptual development relies on instruction that can correlate everyday and scientific concepts because the process of establishing this connection indicates “the heart of internalization” (p.83, as cited in Lantolf & Johnson, 2007). In other words, a transformation starts from a social plane and then moves to a
psychological plane. Along this line, Vygotsky (1987) stated, “The development of scientific concepts begins in the domain of conscious awareness and volition. It grows downwards into the domain of the concrete, into the domain of personal experience” (p.220). Vygotsky claimed that learners develop their own sense of a word when it is internalized. This type of personal understanding of word meaning is associated with Vygotsky’s conceptions of znachenie and smysl. The Russian znachenie is related the verb znat (to know). Znachenie is associated with conventional and decontextualized word meanings, whereas smysl is associated with personal sense and highly contextualized word meanings (Wertsch, 2000). A usage-based perspective on the nature of word meaning (e.g., Langacker, 2008; Tomasello, 2003) proposes that word meaning is in relation to its usage in contexts. In line with cognitive semantics, Vygotsky (1987) claimed:

A word’s sense is the aggregate of all the psychological facts that arise in our consciousness as a result of the word. Sense is a dynamic, fluid, and complex formation which has several zones that vary in their stability ….In different contexts, a word’s sense changes. In contrast, meaning is a comparatively fixed and stable point, one that remains constant with all the changes, of the word’s sense that are associated with its use in various contexts… (p.276, as cited in Wertsch, 2000, p. 24).

In terms of L2 learning, znachenie is not sufficient for L2 proficiency. The ability to create smysl (personal meaning) from conventional meaning is required. Vygotsky (1987) further described the process of internalization through which meaning is internalized into an intramental plane: “the meaning of the word in inner speech as an individual meaning…” (p.279). Learning the meaning of a word (scientific concepts) is not enough. It is crucial for L2 speakers to connect scientific concepts with everyday concepts in order to construct personal understandings as a result of internalization. In
this respect, the practice of *semantics of thought* can be viewed as an internalization process. L2 speakers form personal understandings of verb-noun collocation events by connecting scientific concepts of word meanings to their encyclopedic knowledge of the world. Thus, L2 speakers can create a real, personal sense of the meaning of the collocation event that they construct through a verb’s meaning.

Vygotsky sees schools/education as an opportunity to learn scientific concepts. More importantly, by learning scientific concepts, students can raise their level of conscious awareness. Hedegaard (2007) wrote, “The appropriation of concepts within a system of knowledge gives the [student] a possibility to use them consciously and intentionally. The various subjects in school are the systems within which the [student] can come to act consciously and intentionally with concepts” (p.248). Thus, after students develop scientific concepts, their thinking starts to be mediated by these concepts, and then their spontaneous concepts would also be restructured and become accessible to conscious inspection (Karpov, 2003).

Vygotsky particularly drew an analogy between the process involved in the development of scientific concepts and the process involved in the learning of a second language. Vygotsky (1987) wrote:

The child learns a foreign language in school differently than he learns his native language. He does not begin learning his native language with the study of the alphabet, with reading and writing, with the conscious and intentional construction of phrases, with the definition of words, or with the study of grammar. Generally, however, this is all characteristic of the child’s first steps in learning a foreign language. The child learns his native language without conscious awareness or intention; he learns a foreign language with conscious awareness and intention. (p. 221)
In other words, L2 learning requires a relatively higher level of conscious awareness and intention. Introducing scientific concepts of verb meanings to L2 speakers can assist them in developing their conscious awareness of the use of verbs in collocations.

2.6.2 Mediation

The foundations of this study are drawn from what is viewed as one of Vygotsky’s most crucial contributions to the study of mind. Vygotsky argued that human consciousness (i.e., awareness and control over our mind) is mediated by culturally constructed artifacts (Lantolf & Thorne, 2006). This interaction between cultural and biological capabilities gives rise to human higher mental functions such as planning, learning, problem-solving, attention and intentional memory.

Artifacts (e.g., tools and signs) are simultaneously conceptual (i.e., ideal) and material (Cole, 1996). Artifacts are conceptual such as a table, which exists first in an ideal form in a human mind and then has a material form through human labor. In addition, artifacts are of two different types, and they have their own distinct functions in human activity. Physical tools (e.g., hammers, books or computers) are inserted between human activity and an external object and extend the power of human bodies (Lantolf & Thorne, 2006). On the other hand, linguistic signs can function as mediating tools to inwardly direct and control our thinking.

From Vygotsky’s perspective, the process of mastering a cultural artifact starts on the social plane. Vygotsky argued that higher psychological functioning first appears in
the *interpsychological* domain and then in the *intrapsychological* domain. When learning a new cultural tool/sign, the first stages of acquisition include social interaction or negotiation between an expert and novice. When individuals participate in this social interaction, meanings or interpretations can be first introduced, and therefore they become available to be internalized by individuals (Wertsch, 2007). When investigating mediation, Wertsch (2007) emphasized qualitative transformations rather than quantitative increments. In other words, the incorporation of tools and signs into human cognitive activity does not just lead to quantitative improvements regarding speed of efficiency. However, our focus should be on how the introduction of mediational tools leads to qualitative transformation. As Vygotsky (1981) pointed out, by being included in the process of behavior, the psychological tool [i.e., sign] alters the entire flow and structure of mental functions. It does this by determining the structure of a new instrumental act just as a technical tool alters the process of a natural adaptation by determining the form of labor operations” (Vygotsky, 1981, p. 137).

### 2.6.3 A neurolinguistic perspective

In the this section, I will discuss how scientific concepts (i.e., explicit knowledge) to L2 instruction is supported by the work of Paradis (1994, 2004, 2009) and Ullman (2001) on the declarative and procedural knowledge of L2 learning from a neurolinguistic perspective. Several scholars proposed that some aspects of language learning may be constrained by memory (e.g., Ullman, 2001). From the field of cognitive neuroscience,
human beings have distinct procedural and declarative memory systems. Those systems facilitate processing and storing different types of knowledge of and about language (N Ellis, 2008). Specifically, Paradis (1994) found that these two types of knowledge reside in different memory systems regarding neurological evidence. Explicit knowledge is stored in the tertiary cortex and incorporates the limbic system, while implicit knowledge is stored in the cortical processors and does not include the limbic system. Paradis (2004, 2009) further postulates that these two memory systems (i.e., declarative memory and procedural memory) can interact but disputes that knowledge can be transferred from one memory system to the other. Thus, he argued that practice cannot convert explicit knowledge into implicit knowledge because they are two distinct neurological systems that have no pathways connecting them.

Paradis (2004) argued that when a person acquires a first language, the knowledge of the language incidentally becomes implicit linguistic knowledge and is subserved by the procedural memory system. However, after learning the first language, he/she relies more extensively on L2 explicit metalinguistic knowledge during language use. In other words, one of the major differences between L1 and L2 adult speakers is the reliance on the declarative memory system in language learning. L2 adult speakers show diminished procedural memory and demonstrate less ability to discover underlying regularities or concepts in acquiring a second language (Ullman, 2001). Specifically, language acquisition via the procedural system is possible up to about 5 years of age (Paradis, 2009). Afterward, the use of procedural memory in learning a language rapidly declines (i.e., starting with phonology and moving through morphology and syntax). According to Paradis (2009), some implicit linguistic competence can still be acquired by L2 adult
speakers in certain aspects of L2 structures with repeated use; however, it becomes more
time-consuming and inefficient as age increases. Thus, the decline in procedural memory
for language may force L2 speakers to become more dependent on their declarative
memory: a large variety of learning mechanisms and processes operate in adult L2
learning (e.g., Hulstijn, 2007).

In the case of collocations (such as verb-noun collocations),\textsuperscript{10} Paradis (2009,
2013) believes that for L1 speakers, this type of knowledge is part of implicit linguistic
competence and stored in procedure memory. L1 speakers can automatically form a
correct verb-noun collocation, without knowing why certain verbs go with certain nouns.
However, L2 adult speakers tend to view collocations that are processed as part of the
syntax by L1 speakers as open-class words. In Sinclair’s (1991) words, L2 speakers
operate on the open principle rather than on the idiom principle. As Laufer and Waldman
(2011) pointed out, many verb-noun collocations are semantically transparent and
collocated verbs are often high-frequency words. However, L2 speakers still make
collocation errors. They explained that L2 speakers construct a collocation from

\textsuperscript{10} There is an important distinction between Paradis (2009) and Ullman (2001). Both
researchers believe that the semantics of lexical knowledge is declarative; however, they do
not concur with the issue of which memory system controls collocations for L1 speakers.
Collocational knowledge is part of the syntax of lexical knowledge (i.e., whether a verb
requires a direct object, an indirect object, etc). Ullman (2001) believes that this collocational
knowledge is learned by declarative memory for L1 speakers. On the other hand, Paradis
(2009) states that the syntax associated with a word (e.g., collocations) is supported by
procedural memory. It should be noted that Paradis agrees that the syntax is learned primarily
through declarative memory by L2 speakers.
individual words rather than from prefabricated patterns. L2 speakers sustain a word association in a verb-noun collocation through declarative memory. This process differs from that of L1 speakers. Specifically, L2 adult speakers may need to consciously choose an appropriate collocated verb. Therefore, explicitly knowing the use of collocated verbs can support L2 collocation learning.

Along this line, explicit teaching/learning can be beneficial to L2 adult speakers since they have full-fledged cognitive capacities to learn additional languages. In the meantime, L2 adult speakers depend more on explicit knowledge during language use. Consequently, the quality of L2 explicit metalinguistic knowledge provided in the L2 classroom is important. Several studies (e.g., Negueruela, 2003; van Compernolle, 2012) showed that rule-of-thumb-based L2 explicit knowledge can be unsystematic and cannot indicate the meanings created by the use of certain linguistic features. For instance, L2 speakers may learn simplistic rules of *tu/vous* presented in the L2 textbooks and experience difficulties when applying the rules to some given social contexts. Thus, this enhances the need for L2 meaning-based explicit knowledge to be presented in the language classroom.

Indeed, substantial practices cannot convert explicit metalinguistic knowledge into implicit linguistic knowledge. However, adult L2 speakers can develop an ability to accelerate access to declarative knowledge, which compensates for gaps in their L2 procedural knowledge (Paradis, 2009). From a neurolinguistic perspective, L2 instruction

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11 Laufer and Waldman (2011) further explained that L2 speakers are more likely to depend on L1 knowledge. Equivalent collocations in L1 may often include at least one word that is different from L2. Thus, L2 speakers make collocation errors.
needs to provide systemic L2 explicit knowledge, as well as offers conditions under which L2 speakers can accelerate their access to L2 metalinguistic knowledge. This viewpoint complements a concept-based approach to L2 instruction, which offers systematic, conceptual (meaning-based) explicit knowledge of the L2. In addition, the socioculture theory perceives explicit knowledge as a mediational tool that L2 speakers can use to achieve self-regulation (Lantolf, 2000, 2007). The developmental process begins with learning L2 conceptual knowledge (i.e., SCOBAs, see Lai, 2012 and, Lee 2012). With increased access, L2 speakers internalize the concepts. When L2 speakers continuously apply metalinguistic knowledge to problem-solving tasks, they gain greater control over language features. Eventually, these speakers can internalize the knowledge and move from other regulation to self-regulation.

2.6.4 Concept-based instruction

The concepts need to be “introduced in a systemic and explicit fashion, lead the [student] to conscious realization and deliberate use of his own mental operations” (van der Veer & Valsiner, 1991, p.277). This study adopted a concept-based approach to explicitly and systematically introduce scientific concepts of word meanings to participants. From a CBI perspective, L2 development is not only about following L1 norms or producing error-free linguistic features; it is about developing a thoughtful and personal understanding of meaning-form relationships in language (e.g., Neguereula, 2003; van Compernolle, 2011, 2012). Thus, L2 development should include the
development of conceptual knowledge serving as meaning mediation (Neguereula, 2003; Valsiner, 2001). In other words, L2 speakers are expected to develop language awareness and self-regulation through the internalization of L2 concepts.

In accordance with Vygotsky’s perspective on the value of conceptual knowledge (scientific concepts) in formal educational settings, Gal’perin (1989, 1992) argued that the learning of explicit scientific concepts has a profound influence on mental processing. In other words, he explicated that the psychological process of internalizing explicit knowledge and the implementation of internalized concepts are central to instruction. He further developed a model of instruction based on the importance of scientific concepts for thinking. The model is referred to as systemic-theoretical instruction (STI) model. Later, Davydov (2004) also developed a pedagogical approach referred to as movement-from-the-abstract-to-the-concrete (MAC) that aligns with Gal’perin’s theory, but more fully emphasizes the connection between conceptual knowledge and specific practical activity. For Davydov, the model is more flexible and does not suggest step-by-step procedures to guide students through the investigation of concepts.

Although differences exist between the Gal’perin’s and Davydov’s models, conceptual knowledge (i.e., scientific concepts) is viewed as the minimal unit of instruction. Additionally, both approaches highlight explicit instruction and state that learning “is explicit, linked to the leading activity [of instruction], … focused on conscious awareness of what and why one is doing what one is doing… and aims at developing autonomy and creativity in students” (Ferreira, 2005, p.55).

The CBI approach is concerned with Vygotksy’s (1986) notion of scientific concepts as basic unit of instruction. There are two remaining principles serve to support
learners’ internalization of scientific concepts: materialization and verbalization. Materialization has a significant impact on learning because it enables learners to gain access to underlying concepts. Gal’perin (1989, 1992) believed that any new learning must have a material beginning. He developed the term *Scheme for the Orienting Basis of Action* (SCOBA) to refer to a complete set of orienting materials available to learners, which can lead to successful execution of an action. In other words, the SCOBAs are sets of systematically constructed educational materials that transfer an abstract learning object into a material form for scientific understanding. Meanwhile, the SCOBA reflects Gal’perin’s educational philosophy that the learning process should be facilitated by complete guidance (Haenen, 1996). For example, Negueruela (2003) designed flow charts for teaching verbal aspect in L2 Spanish. These flow charts served a step-by-step guide for students to select appropriate verbal aspect to reflect the temporal perspective they wished to communicate either in writing or in speech. Moreover, SCOBAs can be in the form of models, charts, diagrams, images, drawings, etc. In fact, as Gal’perin and his colleagues discovered, students often employ superficial or nonessential properties of concepts to orient themselves, and they consequently fail to perform a task well. Nevertheless, once the student is provided with concrete concepts, he/she can start orienting himself/herself through the use of essential properties of the concepts, and gradually eliminate his/her dependence on nonessential properties of abstract concepts. Therefore, Haenen (1996) argued that well-developed instruction can only be formulated by means of the materialized form of the concepts: the materialized concepts can enable students to access the concrete content of the concepts and achieve the goals of instruction.
According to Gal’perin’s (1989, 1992) STI model, instruction can be more effective when equipped with SCOBAs. The fundamental idea is that students can carry out a task by relying on external support (i.e., a SCOBA) in the initial stage of development. Moreover, the materialized representation can gradually be replaced by students’ verbalization. Specifically, verbalization requires students to employ the SCOBAs as a guideline to explain the concepts to themselves in private speech. Verbalization forces learners to externalize their understanding for deploying the concepts that they do. Thus, during the process of verbalization (e.g., private speech), students can reconstruct or recontextualize their understanding and extend it to new practices. Verbalization influences and shapes as well as reflects learners’ internal cognitive processes. Additionally, verbalization plays an important role in the process of internalization. By externalizing target concepts, learners seek out relevant information to complete their understanding and make inferences in order to demonstrate a coherent conceptual understanding (Swain, Lapkin, Knouzi, Suzuki & Brooks, 2009). The more they verbalize their thoughts, the more can they internalize them, transforming the concepts from a surface understanding to a more conceptual one. Finally, the target concepts can be internalized. This conceptual understanding, internalized through verbalization, can provide a systematic orienting basis for its application.

I developed a triangular model to illustrate the design of the study in Figure 2.10. Mediated forms of cognitive activity are “those where the relation between subject and environment (subject and object) are linked through the vertex of the triangle

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12 This diagram is inspired by a powerful, graphic representation of Engeström’s (1987) model of activity theory.
mediational tools]” (Cole, 1996, p.119). Figure 2.10 represents the fact that the relationships exit among word meanings (representing mediational means and scientific concepts), forms and meanings of L2 verb-noun collocations, subjects, outer world, and language use. It should be noted that the components of this diagram do not help the researcher account for participants’ L2 development. Rather, it is the relations among these components that form a microgenetic analysis (see a detailed discussion in the methodology chapter) and support L2 instruction and transformation.

In this diagram, word meanings are scientific concepts, which represent mediational tools. The subject represents a speaker’s personal understanding of collocation events. The object indicates the outer world/environment. From Vygotsky’s perspective, mediational tools are understood as more than physical objects independent from human activity. Rather, mediational tools can be only understood as a constitutive element of the activity in which they are embodied (Cole, 1996). When we look at the largest triangle, learning the forms and meanings of L2 verb-noun collocations can be mediated by scientific concepts (word meanings). In the upper part of this diagram, L2 speakers make a stronger connection between the form and meaning of an L2 collocation by using an L2 verb meaning as a mediating frame to re-conceptualize the collocation event. That is, the verb meaning becomes a thinking tool to re-regulate their interpretations of experiences occurring in the outer world. In addition, as Lantolf and Thorne (2006) defined, the subject is an individual whose agency is the major focus of the analysis in language educational contexts. Individuals are not passive participants who wait for the activity to provoke meaning-making processes for them; however, through internalization, individuals make meanings of the world when they trigger
transformations of mediating artifacts or tools in the environment (Yamagata-Lynch, 2010). In this regard, the purpose of the activity (the enrichment program) in this study is to assist learners in processing scientific concepts through the practice of *semantics of thoughts* in order to have better understandings of the relations between forms and meanings. In other words, this practice can help participants develop personal understandings of the use of collocated verbs by connecting scientific concepts (verb meanings) with everyday concepts (encyclopedic knowledge of the world). This practice is a transformation of their understanding from the social plane (learning verb concepts from the tutor) to the psychological plane (forming a personal understanding of collocations). Thus, the activity (enrichment program) can help individuals find new meanings for the collocations in their world.

![Mediation triangle for learning L2 verb-noun collocations](image)

**Figure 2.10.** Mediation triangle for learning L2 verb-noun collocations
2.7 Conclusion

The conventional approach to L2 verb-noun collocations seems to believe that the target verbs (*make, do, take, get* and *have*) do not make a significant semantic contribution. It seems that the only available option for L2 speakers to master collocations was through noticing-exposure-memorization techniques. Developing a better understanding of L2 collocations relies upon a combination of two factors: having correct associations between collocated words and collocations and having viable event construals of collocations. The new insights from Cognitive Linguistics show the possibilities for more systematic pedagogical approaches to L2 collocations. A major hypothesis of cognitive semantics is that a person’s memory is cognitively represented in the same conceptual form as word meanings. If L2 speakers can develop a better understanding of the associations between collocated verbs and collocations on the conceptual level, they may be able to translate back and forth between the visual conceptualization of collocation events and linguistic words. Through the practice of the *semantics of thought*, L2 speakers can reorganize vocabulary knowledge, presumably using those verb concepts as a thinking tool to re-conceptualize collocation events. In other words, L2 semantic concepts functioned as conceptual bases for re-conceptualizing the construals of verb-noun collocation events. On the other hand, from a sociocultural perspective, L2 development can be defined with regard to awareness and regulation. Systematic concepts can be brought into the L2 speaker’s consciousness through concept-based instruction (e.g., Kim, 2013, Lai, 2012; Lee, 2012; van Compernolle, 2012). This
Vygotskian perspective on L2 development proposes that the concepts, meanings behind linguistic features can develop together with forms in learning L2 collocations.
Chapter 3

Literature Review

3.1 Introduction

This chapter reviews previous literature on L2 collocations, relevant L2 CL and CBI research. First, the available L2 collocation research to date is either descriptive or interventional. Descriptive studies will be reviewed in 3.2.1 and interventional studies will be examined in 3.2.4. Additionally, the concept of collocation will be discussed, and compensatory strategies used by L2 speakers will be presented in this chapter. The remainder of the chapter will review empirical research regarding L2 CL and CBI approaches (in 3.3 and 3.4), which include research design, learner data and design of pedagogical interventions. Finally, the contents of chapter 3 will be summarized in section 3.5.

3.2 Collocation

3.2.1 L2 Collocation studies

Since the late 1980s, most L2 collocation research has been mainly descriptive in nature, concerned with L2 speakers’ collocational knowledge and its influence on L2 speakers’ collocation errors (e.g., Bahns & Eldaw, 1993; Farghal & Obiedat, 1995; Nesselhauf, 2003). The studies can be divided into two lines of research: (1) those addressing L2 speakers’ collocational behavior on elicitation tests (e.g., Bahns & Eldaw,
To date the first line of research has focused primarily on explicate accounts of L2 speakers’ collocational behavior. Specifically, these studies shed light on L2 speakers’ knowledge of English collocations, especially on what collocations L2 speakers can produce. Initial studies employed elicitation instruments such as cloze tests and translation tasks (e.g., Bahns & Eldaw, 1993; Biskup, 1992; Hasselgren, 1994). For example, Bahns and Eldaw (1993) investigated L2 speakers’ collocational knowledge of 15 English verb-noun collocations based on cloze and translation tests. Their findings indicated that collocations were problematic for L2 speakers and that L2 speakers were likely to produce twice as many unacceptable collocations as other lexical items in a translation task. Thus, Bahns and Eldaw concluded that L2 speakers’ knowledge of collocations was less well-developed than their knowledge of single-word items.

The second set of studies also confirmed that mis-collocations are responsible for a considerable portion of errors in L2 users’ written production. Specifically, this group of studies showed that verb-noun collocations in particular pose difficulties for L2 speakers (e.g., Granger, 1998; Nesselhauf, 2003). More importantly, the results shed some light on the quantitative use and natural production of L2 collocations. Two distinct lines of study can be identified. The first addressed L2 speakers’ collocational errors by...
scrutinizing the homogeneous language background of L2 speakers (e.g., Chi et al., 1994; Lombard, 1997; Nesselhauf, 2003, 2005). Those studies investigated L2 speakers’ verb-noun collocations in written production by employing a mutual analysis approach. For example, Chi et al. (1994) conducted a close examination of the verbs *have, make, do* and *get* in a one-million-word Chinese-learner corpus. The findings showed that Chinese speakers of English tended to use these high-frequency verbs interchangeably. More recently, Nesselhauf (2005) explored the use of English collocations by German speakers of English based on the German subcorpus of the International Corpus of Learner English. Nesselhauf (2003, 2005) found that verbs are more difficult than nouns in verb-noun collocations for L2 users because verbs are relatively tied to nouns, and nouns can be freely chosen.

The second line of research compared L1 and L2 speakers’ written production in order to examine whether L2 speakers overuse or underuse certain collocations (e.g. Gitsaki, 1999; Howarth, 1996, 1998a, 1998b; Kaszubski, 2000; Laufer & Waldman, 2011). For example, Kaszubski (2000) compared the use of six verbs (*have, make, do, get, give* and *be*) along with their collocations in L1 and L2 corpora. The results showed that L2 speakers produced fewer collocations than L1 speakers. Additionally, L2 speakers were more likely to overuse some collocations, especially those having similar L1 equivalents. Recently, Laufer and Waldman (2011) investigated L2 speakers’ use of English verb-noun collocations at three proficiency levels, and compared the results with those of L1 speakers in corpus data. They also found that L2 speakers at all three levels under-produced collocations when compared to L1 speakers of a similar age. However, L2 speakers at an advanced level increased the use of collocations. The findings indicated
that a third of all the collocations that L2 speakers produced were deviant, and that erroneous collocations resulted from L1 influence.

3.2.2 Definition of collocation

Regarding the conceptualization of collocations, variation exists between researchers who work in different fields, and thereby the description of collocations is usually adjusted to different aims of their investigation (Nesselhauf, 2004). Two major viewpoints can be distinguished in the literature. One can be referred to as the frequency-based approach, which is primarily used by researchers who deal with the computational analysis of collocations either for lexicographical/lexicological purposes or for natural language processing (e.g., Nesselhauf, 2004; Barfield & Gyllstad, 2009). In this case, collocation is defined as “the occurrence of two or more words within a short space of each other in a text” (Sinclair, 1991, p. 170). The focus of this tradition is often on identifying statistically significant collocations; that is, collocation is viewed as a statistical phenomenon in which lexical items have higher frequency of co-occurrence than expected if those lexical items are merely combined randomly.

The other approach is regarded as the phraseological-based approach. Researchers in this tradition view collocations as a type of word combination situated on the continuum between free combinations and idioms. The distinctions are based on the degree of semantic transparency or restriction on substitutability. However, these differentiations are nebulous because the degree of arbitrariness is difficult to define (e.g., Cowie, 1991, 1994; Howarth, 1998b; Keshavarz & Salimi, 2007; Nesselhauf, 2003,
The frequency-based approach conceptualizes collocations as combinations that include two syntactically related elements (e.g., a verb and an object noun). The degree of semantic transparency distinguishes collocations from idioms. The meaning of an idiom is often opaque and not likely to be interpreted from the literal meanings of the components (e.g., *kick the bucket*). However, in contrast to idioms, the meanings of collocations to some extent reflect the meanings of their components.

Additionally, several researchers (e.g., Nesselhauf, 2003) claimed that the arbitrary nature of the restriction appears in verb-noun collocations. For example, in the collocation *take a picture*, where *take* is used in a restricted sense and cannot collocate with other nouns such as *movie* or *film* for no perceptible semantic reason (as cited in Nesselhauf, 2003). The meaning of arbitrary is considered to be *semantically unmotivated*. In other words, there is no clear semantic reason to select a verb in a collocation based on its word meaning (e.g., Chan & Liou, 2005; Smadja & Mekeown, 1991). Furthermore, this restricted co-occurrence distinguishes collocations from free combinations in which lexical items can be more easily substituted by those with similar semantic properties (e.g., *drink tea*).

Following other collocation research (e.g., Gyllstad, 2009; Wolter & Gyllstad, 2011), the present study adopts a view that straddles the perspectives both founded in the frequency-based and phraseological-based approaches. That is, both frequency and semantics are crucial aspects to be addressed in L2 collocations. Thus, a collocation is defined as a linguistic sequence that includes two or more words co-occurring more

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13 I view collocations as repeatedly co-occurring word combinations (i.e., recurring in language) in which the semantic meanings of words play a crucial role.
frequently than they would by chance. They can be predicted regarding the frequency of the co-occurrence of each individual word. With regard to collocational capabilities, verbs are often viewed as delexicalized or “tend to be semantically unmotivated” (Chan & Liou, 2005, p. 235-236) in verb-noun collocations. However, in line with other cognitive linguistics researchers (i.e., Kennedy, 2008; Liu, 2010; Walker, 2008, a detailed discussion is presented in the following section), I believe that the compositionality of words is not arbitrary but to some extent semantically-motivated (Liu, 2010). In other words, the use of a verb in a verb-noun collocation is not arbitrary, but is to some extent motivated by the core meaning of the verb.

3.2.3 Compensatory strategies

Many studies examining verb-noun collocations have shown that L2 speakers have problems with collocated verbs (e.g., Chi et al 1994; Kaszubski, 2000; Lennon, 1996; Nesselhauf, 2002, 2005). L2 researchers found that L2 speakers are more likely to use different ‘compensatory strategies’ (Levenston & Blum, 1977) to produce L2 collocations when they encounter collocational difficulties. Several studies indicated that different types of collocational errors may stem from imperfect knowledge of the collocated words, and thereby L2 speakers resort to compensatory strategies to express their intended meanings (e.g., Eyckmans, 2009; Dechert & Lennon, 1989; Farghal & Obiedat, 1995; Howarth, 1998b; Kellerman, 1977; Lennon, 1996; Revier, 2009; Wolter, 2006). These strategies include overusing familiar high-frequency verbs (e.g., Liu &
Shaw, 2001), using verbs with similar senses (e.g., Howarth, 1996), or extending L1 concepts to the L2 (e.g., Kaszubski, 2000; Laufer & Waldman, 2011; Nesselhauf, 2003).

High-frequency verbs are capable of collocating with many different nouns due to their polysemous nature. Several empirical studies have indicated that this lexical property makes these words a relatively safe choice for L2 speakers to rely on in order to compensate for their inadequate linguistic repertoire (Granger, 1998). For example, Hasselgren (1994) reported that Norwegian EFL speakers overused high-frequency verbs and clung to them as “lexical teddy bears” (p. 237). Liu and Shaw (2001) investigated the use of *make* by Chinese EFL speakers and L1 English speakers and found that L2 speakers were unaware of the collocational behavior of this high-frequency verb and overused *make* to fill a collocational void.

In addition to high-frequency verbs, L2 users also employ near-synonyms to fill a collocational gap. Howarth (1996) investigated verb-noun collocations from 10 essays written by EFL speakers with different L1 backgrounds, and compared them with those produced by L1 speakers. He found that most infelicitous collocations involved either semantically overlapping nouns that share some verbs or blends of two acceptable collocations with similar collocational capabilities (e.g., *gain food* as a result of blending *gain success* and *obtain food/success*).

In terms of L1 influence, although a few researchers hypothesized that L1 does not have significant influence on L2 collocational production, the role of L1 transfer on collocational errors has been widely discussed in the literature. Wolter (2006) argued that “a learner who produces unusual collocations or combinations of words in the L2 is probably relying too heavily on L1 collocational knowledge” (p.699). The same
assumption has been confirmed in a series of studies (e.g., Kaszubski, 2000; Laufer & Waldman, 2011; Nesselhauf, 2003) showing that L2 speakers tend to overlook collocational capabilities of verbs and rely heavily on their L1 knowledge to construct L2 verb-noun collocations.

3.2.4 Teaching and learning collocations

Since the 2000s, L2 researchers have become interested in collocations, especially in teaching and learning situations. This section will review the current literature on collocation teaching and learning. The collocation-based pedagogical studies range from those that focus on incidental learning to those which believe that L2 speakers should explicitly learn a large amount of collocations. This differentiation corresponds to L2 vocabulary learning regarding the two theoretical approaches: incidental and explicit learning. Krashen (1981, 1985, 1989) defined the implicit position. In Krashen’s (1981) input hypothesis, SLA is similar to L1 acquisition, which results naturally from the implicit processes in which L2 speakers receive comprehensible L2 input. The input hypothesis assumes that humans acquire language by understanding messages rather than language itself. Several aspects of his position are identical to Schmidt’s (1990) argument: when we acquire a language, we do not realize that we are acquiring (implicit learning) since our consciousness focuses on messages rather than on language (learning without attention to form). This acquisition process corresponds to what has been named incidental learning.
In incidental learning, the majority of L1 vocabulary is learned implicitly. Several L2 researchers hold a similar position and believe that L2 vocabulary may be learned incidentally. In this case, words are incrementally learned through repeated exposure through reading activities (e.g., Chen & Truscott, 2010; Webb, 2007). That is, the more often an unknown word is encountered, the more likely it would be learned.

This natural exposure to L1 vocabulary significantly influences L2 collocation learning. Many L2 researchers have argued that an increase in exposure alone may promote collocation learning (e.g., Durrant & Schmitt, 2010; Nesselhauf, 2005; Webb, Newton & Chang, 2013). Collocations are viewed as a type of formulaic language and therefore can be acquired as prefabricated patterns. L1 speakers can sustain collocations from the language to which they are exposed. An increase in language input can strengthen long-term memory of lexical items and help L1 speakers store collocations as patterns. In parallel, L2 adult speakers can also retain information about what words occur together in the input. For example, Durrant and Schmitt (2010) found that L2 speakers’ repeated encounters with target collocations effected the acquisition of L2 collocation form. Specifically, when L2 speakers read sentences aloud twice rather than once, they received significantly higher scores on the posttest than they did when only exposed to the target collocations once. Thus, Durrant and Schmitt (2010) argued that “any deficit in learners’ knowledge of collocation is therefore more likely to be the result of insufficient exposure to the language…” (p.184). In other words, the repeated exposure to collocations may play an important role in L2 collocation learning and facilitate L2 speakers in retaining memory of collocations. More recently, Webb, Newton and Chang (2013) conducted an empirical study on incidental learning of L2 collocations.
in an EFL classroom setting. They also found that repeated exposure to target verb-noun collocations through reading and listening had a significant effect on learning collocations. Additionally, more encounters positively impacted the learning of L2 collocations. The results indicated that participants who read and heard the target collocations 15 times had significantly higher scores on the collocation tests than those who only read and listened to the collocations fewer than 5 times. They also concluded that this implicit learning process may be more effective for ESL speakers who are able to receive a vast amount of L2 input in their everyday lives.

On the other hand, Nation (2001) suggested that noticing can trigger L2 learning and that collocations should be learned consciously. One of the most crucial steps in this process is to draw learners’ attention to target collocations. Teachers select materials (e.g., books or dictionaries) that include many collocations, in which L2 learners are instructed to conduct some activities such as: identify or mark collocations in passages or dictionaries, read passages with highlighted collocations, fill in the blanks with correct words in collocations, group collocations by their meanings, translate collocations from L2 to L1 or vice versa, memorize collocations through repetition or rehearsal, use collocations in writing, or pay attention to incorrect usages of collocations and differences between L1 and L2 collocations (e.g., Lewis, 2000; Miyakoshi, 2009; Webb & Kagimoto, 2009; Willis, 2003). For example, Webb and Kagimoto (2009) scrutinized L2 speakers’ receptive and productive knowledge of verb-noun collocations on reading and cloze tasks in EFL contexts. One hundred forty-five college students were divided into two experimental groups and one control group. One experimental group received receptive treatment, encountering 24 collocations with their L1 meanings followed by
three glossed sentences. The other experimental group received productive treatment, also encountering the same 24 collocations with L1 equivalents and identical glossed sentences. However, the collocations were replaced with blanks in each sentence, and therefore participants needed to write the collocations in those cloze tasks. All of the experiments were conducted within one 90-minute session. To evaluate the productive knowledge of collocations, the researchers provided participants with a node word from a target collocation and asked them to write down its verb collocate. Participants were also required to complete a multiple-choice test for measuring their receptive knowledge. Moreover, the participants translated target collocations from L1 to L2 to measure their productive knowledge of meaning and vice versa to measure their receptive knowledge of meaning. Results showed that both reading and cloze tasks significantly contributed to the improvement of participants’ productive and receptive knowledge of collocations and their meanings. These two types of tasks demonstrated little difference in their effects on learning with regard to productive and receptive of knowledge.

Miyakoshi (2009) also investigated L2 speakers’ use of verb-noun collocations and the effects of an intervention that directed participants’ attention to capabilities of collocations. Sixty EFL students completed a fill-in-the-blank task followed by one 40-minute instruction session. More specifically, the instruction included a discussion of common collocational errors and collocational restrictions. Moreover, it also focused on differences between the same collocation in L1 and L2. Two weeks after the pretest and intervention, participants completed a second fill-in-the-blank task, which served as a posttest. The findings showed that explicit instruction significantly improved participants’ performance on the posttest.
As computer-assisted language learning (CALL) became prevalent in the language classroom, corpus concordancing several studies (e.g., Chan & Liou, 2005; Guo & Zhang, 2007; Sun & Wang, 2003; Wu, Franken, & Witten, 2010). began to explore L1 corpora in language instruction. The researchers mentioned suggested that online concordancing software can help L2 learners identify collocations in context and raise their awareness of target collocations, and thereby enable them to perceive collocational patterns. Wu, Franken and Witten (2010) designed a digital library supported by the British National Corpus (BNC) that operates as a searchable corpus for learning L2 collocations. By using this online concordance, the learner could seek and study collocations in context. Moreover, the learner’s attention was drawn to highlighted collocations when he/she read the texts.

Sun and Wang (2003) investigated the effects of inductive and deductive approaches to acquiring grammatical collocations through use of an online concordance in the EFL classroom. The researchers conducted one hour-long online instruction session for four grammatical collocations (e.g., distinguish A from B). They divided 81 senior-high-school students into two groups. One group received an inductive teaching approach, and the other group received a deductive approach. The target grammatical collocations were divided into two sets based on the level of difficulty. The inductive group identified collocational patterns by using a concordance program, while the deductive group learned collocational rules with sample sentences. Results showed that the inductive group improved significantly more than the deductive group in the demonstration of collocational knowledge on the error correction test. In terms of the
level of collocational difficulty, easy collocations seem to be more suitable for the inductive learning approach.

Chan and Liou (2005) also examined the effectiveness of online concordancing on the learning of L2 verb-noun collocations in the EFL classroom. The researchers provided 32 college students with five web-based instructional units. Three of these lessons involved the use of a Chinese-English bilingual concordance. Each unit contained twenty online exercises, including multiple choice, L1-L2 sentence translation, and gap-filling sentences. In accordance with Sun and Wang’s (2003) study, the results indicated that participants benefited more from the units in which they used the bilingual concordancer. The findings also showed a significant difference in participants’ performance regarding four types of verb-noun collocations (i.e., collocations with synonymous verbs, collocations with hypernymic and troponymic verbs, collocations with delexical verbs, and collocations with L1-L2 noncongruent verbs). It seemed that participants learned de-lexical verbs more effectively in this educational context. Thus, Chan and Liou (2005) concluded that the web-based concordancer is more suitable for learning collocations with de-lexical verbs because the use of the concordance offered rich input for learning those verbs.

Although these studies provided insights into the learning and teaching of L2 collocations, they did not involve any semantic analysis of collocations (i.e., the analysis explains the reasons why a word collocates the way it does). Liu (2010) examined current materials for teaching collocations, and found a few pedagogical activities including the explanations on semantic motivations behind collocations. McCarthy and O’Dell’s (2005) and O’Dell and McCarthy’s (2008) books are the only two publications that
includes semantic explanations of collocations. In terms of the *make* collocations and the *do* collocations, these authors stated “If you remember that the basic meaning of *make* is about producing something and the basic meaning of *do* is about performing an action, then the collocations on this page may seem more logical” (McCarthy & O’Dell, 2005, p. 18, as cited in Liu, 2010). This semantic explanation can guide the learner to acquire relevant collocations of these two verbs. However, as Liu (2010) pointed out, there is no other discussion about the semantic motivation behind collocated verbs in McCarthy and O’Dell’s (2005, 2008) books. According to Liu (2010), collocations are semantically motivated based on cognitive semantic analyses. Take a well-known pair of collocations, *strong tea/a powerful car*, for example. *Strong* and *powerful* are considered to be synonymous. However, *strong* is used to modify *tea* and *powerful* to modify *a car* and not vice versa (Smadja & McKeown, 1991, p. 230, as cited in Liu, 2010). *Strong* expresses a higher degree of flavor, taste, and smell. On the other hand, the meaning of *powerful* is to produce great effort. Hence, *a powerful car* indicates that a car has a powerful engine that can produce great force. At the same time, *strong tea* expresses the concept that a cup of tea has a high degree in flavor, which does not map the semantic meaning of *powerful.*

In this regard, Liu (2010) proposed that the core meanings of verbs can help L2 speakers understand the use of verbs. He investigated many collocations in ESL teaching materials and found that most collocations that are

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14 It should be noted that the collocations, “powerful tea” and “a strong car,” are possible but they have different connotations. “Powerful tea” indicates that the tea has special effects on people who drink it (e.g., similar to a narcotic, perhaps). On the other hand, “a strong car” means that the car is well built and difficult to destroy. This meaning is different from that of “a powerful car,” which refers to the output of the motor.
considered arbitrary in fact are semantically motivated. This finding is consistent with
cognitive linguists’ argument that “linguistic structure is a direct reflex of cognition in
the sense that a particular linguistic expression is associated with a particular way of
conceptualizing a given situation” (Lee, 2001, p. 1, as cited in Liu, 2010). Thus, Liu
(2010) argued that understanding the semantic motivation behind a verb-noun collocation
may help L2 speakers achieve a better understanding of the collocation. He further stated
that learning verb-noun collocations is more likely to occur when L2 speakers gain deep
knowledge of verb meanings.

3.3 Cognitive Linguistics Literature

Cognitive linguistics has many applications (see a detailed discussion in
Kristiansen, Achard, Dirven & Ruiz de Mendoza Ibañez, 2006). The present discussion is
concerned with merely one of them, namely the integration of new insights from CL into
second language pedagogy. Unlike other linguistic paradigms which assume that
language is arbitrary, theoretical advances in CL provide crucial insights that demonstrate
that the meanings of linguistic features are motivated by speakers’ experiences of their
physical, social and cultural environments (e.g., Boers & Lindstromberg, 2009; Evans &
Green, 2006). These types of motivation suggest one important possibility for second
language teaching in general and vocabulary instruction in particular.  

When L2 speakers become aware that the target language is more than a linguistic system of
arbitrary form-meaning connections, they are more likely to “adopt mnemonically fruitful

Vocabulary instruction includes single-word and multi-word units (e.g., idioms or
collocaions).
practices of insightful learning rather than less effective ones associated with blind memorization” (Boers & Lindstromberg, 2009, p.18).

In this view, motivation involving the semantic pole of lexical items can provide L2 speakers with a pathway for semantic elaboration. This practice can be beneficial for comprehension and learning of vocabulary. Two veins of research that apply CL to L2 vocabulary seem particularly relevant to the current study (e.g., Achard & Neimeier, 2004; Boers & Lindstromberg, 2009; Holme, 2009; Hu & Fong, 2010; Littlemore, 2009; Robinson & Ellis, 2008; Tyler, Mueller & Ho, 2010, 2011). The first vein of research is a number of corpus-based studies that show how collocations are motivated by the semantic properties of the constituent words. As noted above, several researchers hold a position that collocations are arbitrary. It was believed that collocations cannot be taught in systematic or insightful ways. It seems that the only available option for L2 speakers to master collocations was through noticing-exposure-memorization techniques in a language classroom. However, the new insights from CL research show the possibilities for more systematic pedagogical approaches to L2 collocations. In particular, studies on corpus-based cognitive semantic analyses (e.g., Kennedy, 2003, 2008; Liu, 2010; Walker, 2008) revealed that many collocations are indeed semantically motivated rather than arbitrary. Therefore, L2 educators can teach collocations in a systematic and insightful way. The core meanings of the verbs enable learners to understand the meanings of the collocations. The verb meaning provides L2 users with a pathway for the event construal of the collocation. This enhances the likelihood of learners overcoming the meanings operating in their L1 and subsequently increases their chances of understanding and learning the new collocations in the L2. For example, Walker’s (2008) and Kennedy’s
(2003, 2008) studies demonstrated that collocational relationships to some extent are rule-governed. Adopting the frequency-based approach, Walker (2008) and Kennedy (2003, 2008) are among the few researchers who have analyzed the BNC to investigate the collocational behavior of particular lexical items. These studies revealed underlying semantic properties of the words that co-occur. For instance, Kennedy (2003) examined the collocational behavior of degree adverbs in the BNC including the differences and similarities between near synonyms, completely and totally. Completely tends collocate with adjectives having the negative semantic meaning abolition or destruction (e.g., eradicated, gutted, wrecked or eliminated). Twenty-three percent of the collocations contain a negative prefix (e.g., completely untrue or completely insane), ten percent include an out- or over- prefix (e.g., completely outclassed), and sixty-seven percent have an –ed suffix (e.g., completely unsuited). On the other hand, totally tends to collocate with words imparting an intrinsic negative meaning (e.g., lacking, alien, or pissed off). Sixty-five percent of the adjectives collocated with totally had a negative prefix and thirty-five percent ended with an ed- suffix. However, totally collocates with un-prefixed forms four times more often than completely does.

As with adverbs, verbs also have their own collocational behavior. Kennedy (2008) investigated eight verbs in the BNC based on frequency and demonstrated that high frequency verbs that are apparent synonyms have their own particular collocational features. Consider stop, end and finish. Thirty-nine percent of the stop’s collocates end in –ing. Some of its collocates also have the semantic senses of unpleasant, negative or disturbed, such as whining, crying, wasting, or blaming. Unlike stop, which tends to collocate with verbs, end tends to collocate with nouns. However, as with stop, end is
frequently associated with unpleasant processes such as rebellion, nightmare, violence or war. End is more associated with global events, while finish is associated with mundane or small-scale events such as work, jobs, or cook.

In addition, Walker (2008) investigated five groups of near synonyms in two corpora (i.e., the BNC and the Bank of English). He pointed out that “the characteristic collocates associated with a particular item reflect the semantics of that item. It is the characteristic collocates [the collocates of the target words] which identify those semantic features which are unique to that item and are not shared by the other members of the group” (p.294). Consider handle and deal with for example. Walker found that both verbs can collocate with inanimate (i.e., things, situations or complaints) and animate (i.e., people, customers or clients) entities. However, handle is more frequently linked with inanimate collocates, whereas deal with is more associated with animate ones. He further explained that this difference could be due to the fact that the literal sense of handle is related to physically touching, and therefore L1 speakers are reluctant to collocate handle with animate entities. Thus, these findings demonstrate that each lexical item has its own set of semantic properties, which significantly influences its collocational behavior.

The second research strand of CL is supported by empirical evidence for its pedagogical effectiveness (e.g., Hu & Fong, 2010; Tyler et al., 2010, 2011). For example, Hu and Fond (2010) investigated whether or not conceptual metaphors (Lakoff & Johnson, 1980) become useful mediational tools for teaching L2 idioms (Boers & Lindstromberg, 2009). Conceptual metaphors are used to understand one domain (the target domain) in terms of another domain (the source domain). For example, an argument (the target domain) is often considered to be analogous to warfare (the source
domain). Thus, the linguistic expression *your point is indefensible* can be understood through the conceptual metaphor ARGUMENT IS WAR. Similarly, the idiom *spill the beans* that means *revealing the secrets* includes two underlying conceptual metaphors THE MIND IS A CONTAINER and IDEAS ARE PHYSICAL ENTITIES. By understanding such metaphors, L2 speakers can acquire the meaning of the idiom. In line with previous research, findings indicated that the learning of conceptual metaphors increased the possibility of successful idiom interpretations. However, the CL-oriented approach is not a silver bullet. Cross-cultural differences still play an important role in interpreting L2 idioms. For example, L1 Chinese students still had difficulty with English idioms that instantiate the Western dualities of *mind vs. body* and *mind vs. heart* since Mandarin Chinese does not share these dualities with English.\(^{16}\) However, Hu and Fong (2010) concluded that the activation of conceptual metaphors is still likely to evoke the mental image of the concrete scene. The task of applying conceptual metaphors to understand L2 idioms requires cognitive effort. Thus, this type of operation occurs at deeper levels of mental processing than rote learning. This processing is more meaningful and enhances language retention.

The beneficial effects of cognitive semantic approaches to L2 learning were supported by several recent empirical studies. For example, Tyler, Mueller & Ho (2011) reported an experimental study designed to measure the pedagogical effect of a CL approach to teaching the meanings of the English prepositions *to, for* and *at*. Participants were 14 advanced L2 speakers who were professional English translators whose L1 was

\(^{16}\) Hu and Fong’s study did not aim to address this underlying concept of dualities between *heart* and *mind* in English. The interventions focused primarily on conceptual metaphors.
Italian. Participants were presented with diagrams that represented the core meaning of each preposition. Meaning extensions were explained through conceptual metaphors. In the case of *to*, participants were taught that its core meaning implies the endpoint of motion (as in *Janet drove to school*). In addition, people usually move an entity from one location to another by using *to* to mark the endpoint of the motion (as in *Mike gave a present to Mary*). Extended meanings of *to* were explained via metonymies and conceptual metaphors such as the receiver of the perception (i.e., the metaphorical endpoint of the motion, as in this cheesecake tastes good to me) and experiences as objects (as in *this Christmas music sounds good to me*). Participants completed a pretest and an immediate posttest in which they were asked to fill in gaps with prepositions. A comparison of the test results indicated that participants significantly improved their understandings of the prepositions’ meanings after receiving CL-based instruction.

### 3.4 CBI Literature

From a SCT perspective, education is responsible for enriching students’ cognition by providing psychological artifacts intended as mediational tools to promote development (Kozulin, 2003). Gal’perin’s (1989, 1992) systemic-theoretical instruction (STI) and Davydov’s (2004) movement-from-the-abstract-to-the-concrete (MAC), namely concept-based instruction, reflect this educational philosophy. Toward this endeavor, the application of SCT to L2 pedagogy holds the following tenets: (a) concepts are the major focus of the instruction; (b) SCOBAs assist students in understanding
concepts; (c) verbalization enables students to internalize concepts (e.g., Lantolf & Thorne, 2006; Lantolf & Poehner, 2008). Previous studies of CBI indicated that a meaning-based approach to developing teaching materials effectively facilitated the internalization of L2 concepts (e.g., Ferreira, 2005; Kim, 2013; Lai, 2012; Lee, 2012; Negueruela, 2003, 2008; Negueruela & Lantolf, 2006; Serrano-López & Poehner, 2008; van Compernolle, 2012; White, 2012; Yáñez-Prieto, 2008). In what follows, I will provide an overview of several of these studies, given that these projects have inspired the current study.

Negueruela (2003) introduced CBI to L2 pedagogy in a classroom setting. He developed flow charts (serving as scientific concepts) to teach L2 Spanish aspect in a university language classroom. These flow charts were used as a mediational tool to help L2 speakers decide on appropriate verbal aspect for the meaning they intended to create. Specifically, Negueruela’s concept-based teaching enabled L2 speakers to make creative and empowered choices in terms of using verbal aspect in order to impart specific temporal meanings to an interlocutor or reader. Negueruela concluded that the charts can promote learner understanding of verbal aspect; that is, the charts enabled the learners to connect language production with their conceptual understanding of how verbal aspect functions in Spanish.

Ferreira (2005) adopted Davydov’s MAC model to teach the concept of genre in a university ESL writing classroom. Applying Davydov’s germ-cell approach, Ferreira’s study provided L2 writers with an orientation to understanding the concept of genre rather than following a flow chart to perform error-free actions. Participants were
engaged in activities where they were able to bridge the gap from understanding the concept of genre to implementing the concept in order to analyze writing samples. It is important to note that Ferreira’s concept-based instruction does not aim to help participants produce error-free writing; rather was designed to help them explore the concepts of genre and reconstruct their own writing based on explicit knowledge of how texts are organized in English.

Serrano-López and Poehner (2008) also adopted Davydov’s approach to teaching Spanish locative prepositions. Although their clay model SCOBA was not in a completed format, it functioned as a meditational tool to assist students in demonstrating their understandings of L1/L2 prepositions. Students were first presented with conceptual explanations of Spanish and English prepositions, and then encouraged to identify the differences between these two sets of function words. Finally, they were required to create clay models to illustrate the meanings of the model they created. The results indicated that students clarified previous confusion with regard to overlapping spatial concepts between Spanish and English through this CBI approach. In addition, the learners became gradually independent from the external mediational tool when they internalized the concepts. The authors concluded that the CBI incorporated in the clay modeling activity assisted students in developing a deeper understanding of the concepts, eventually resulting in internalization.

More recently, van Compernolle (2012) developed pedagogical diagrams and written conceptual explanations to teach L2 university students to determine which French second-person pronoun, *tu/vous*, to appropriately use in specific contexts. Students in his study initially offered accounts of *tu/vous* that depended on rules of thumb
without completeness and coherence. In order to assist them in developing the conceptual knowledge of *tu/vous*, van Compernolle designed SCOBAs that represented the systematic sociopragmatic concepts of these two words. This explicit knowledge presented to students functioned as a psychological tool for cognitive processing. He argued that these comprehensive concepts reshaped participants’ knowledge about, and orientations to, the use of sociopragmatic variants and assisted them in making informed pragmatic decisions.

Lai (2012) reported a study adopting Gal’perin’s approach to teaching the Chinese temporal system to English-speaking university students. In the experimental group, the complex expressions of the Chinese temporal system were first introduced through SCOBAs that assisted participants during the process of deciding the appropriate word and aspect marker. Additionally, step-by-step guidance was also presented in order to lead participants to develop the target concepts. On the other hand, the two control groups participating in the study received traditional instruction. The findings indicated that the experimental group outperformed the two control groups on written tasks (i.e., translation and essay). Overall, the experimental group displayed improvement regarding accuracy, efficiency and consistency of performance in using Chinese temporal markers. Lai concluded that a concept-based approach provides more meaningful and innovative instruction for teaching Chinese grammatical concepts.

Kim (2013) implemented a concept-based approach to teaching L1 speaker’s of Korean to identify and appropriately interpret use of sarcasm in English. Participants in the study learned the concepts of sarcasm through pedagogical diagrams (SCOBAs) over 12-week tutorial sessions. In addition, they engaged in several pedagogical activities such
as discussing video clips and the SCOBAs in groups, completing homework assignments in which they detected speakers’ use of sarcasm in video clips, and producing movie scripts and student-designed SCOBAs. Findings showed that all participants improved their functional ability to detect and understand the speaker’s intent in sarcastic utterances as measured by the pre/posttests and delayed posttest. Moreover, the qualitative data also showed that participants developed their conceptual understandings of English sarcasm. Thus, Kim concluded that students gained confidence by fully understanding the subtle features of sarcasm that they had not previously recognized through this coherent and systematic teaching approach.

Lai’s and Kim’s studies demonstrate that the internalization of conceptual knowledge illustrated in SCOBAs is a crucial element of L2 development. As previously discussed, concept-based instruction addresses the notion that internalized concepts offer an orientation to action; that is, they can function as a mediational tool to control, monitor and evaluate communicative action. Therefore, conceptual knowledge is important in developing L2 speakers’ ability to control their L2 production.

Lee (2012) conducted a study adopting a concept-based approach based on Gal’perin’s pedagogical framework to teach L2 speakers English phrasal verbs in an ESL university classroom. L2 speakers often encounter difficulty with the metaphorical meanings of the particles in phrasal verbs. Thus, Lee provided detailed SCOBAs to guide L2 speakers to understand the literal and metaphorical meanings of the target prepositions (i.e., out, up and over). More specifically, the lessons included conceptual metaphors illustrated in SCOBAs, derived from cognitive linguistics research. The instructor emphasized the systemacticity of the meanings of phrasal verbs and reinforced L2
speakers’ conceptual understandings of the particles in different pedagogical activities over six class sessions. The results showed that participants not only displayed a conceptual understanding of the prepositions, but their performance improved on multiple-choice tests. Thus, Lee concluded that systematic presentations of the meanings of prepositions are essential for the learning of phrasal verbs.

White (2012) reported on a study that also integrated cognitive linguistics and a concept-based approach to teaching phrasal verbs in two university ESL classes. The six particles included in his study were up, out, through, off, down and in. Departing from Lee’s (2012) proposal of CBI, White introduced the concept of the zone of activity as a conceptual tool with which students reoriented their perspective on phrasal verbs. Instructors presented the zone of activity through sketches. For example, for the sentence “Throw out the trash,” the instructor drew a trashcan that is outside of the zone, a person who held the trash and an arrow that was directed from the person to the trashcan. Participants were also encouraged to draw the meaning of a phrasal verb in order to consider the spatial sense of particles. This activity prompted students to map metaphorical use of particles through their literal senses. Student performance was evaluated by pre- and post-instruction tasks, the pretest and the posttest. The pre-instruction task included phrasal verbs with the prepositions up, out, off and through, while the post-instruction task consisted of up, out down and in. Eight questions that included the up and out phrasal verbs were recycled in the post instruction task. These repeated phrasal verbs served as the pretest and posttest by which the researcher identified potential changes by each student for the same items.
The results showed that there was a slightly improved performance between the pre/post instruction tasks; however, this change was not significant. On the other hand, the increase from the pretest to the posttest was significant. The pretest and the posttest consisted of identical phrasal verbs that allow for direct comparisons of participant’s explanation for the same item. White investigated four trends in the change of the explanations of the same items. First, students incorporated the preposition into the second explanation. Consider *clean out* in the sentence “Some guys came in with guns and cleaned us out.” On the pretest, a student explained “Guys used guns to scare the clerks.” On the posttest, she explained “some guys used guns to force people (to) go out.” Although the explanation given on the posttest was still incorrect, the participant became more aware of the use of the preposition and incorporated it into the explanation. The second trend was providing more figurative explanations. Consider *worked up* in the sentence “Hillary Clinton really worked up the crowd.” A student wrote “worked hard” on the pretest and then changed the explanation to “she spoke powerfully” on the posttest. The third tread was offering more detailed information. A student only offered the answer “win” to account for *work up*. However, he wrote “Worked up means Hillary Clinton’s speech is very attractive and effective. Work the voters up means the voters are willing to vote (for) her.” on the posttest. The final thread was offering a more contextual response in the second explanation. Consider *feel out* in the sentence “You should feel her out before we make our holiday plans.” A student offered an explanation “get to know her” on the pretest and wrote “let her know you want a vacation” on the posttest. Overall, the changes in these responses did not improve participants’ performance (producing correct answers). However, the differences did reflect a new perspective, a
reorientation that can help L2 speakers over time. Thus, White (2012) concluded that a concept-based approach to teaching phrasal verbs can reduce confusion over the seemingly arbitrary nature of these word combinations and promote learner autonomy.

3.5 Conclusion

The review of L2 CL research has shown that CL studies incorporating conceptual metaphors and semantic meanings can yield insights into L2 vocabulary and collocation learning. Moreover, the reviewed CBI studies provide empirical evidence that the learning of systematic L2 concepts can prompt language development, which suggests that explicit instruction can be more beneficial than simple exposure to L2 input in language classrooms or tutoring programs. Although L2 researchers have made suggestions for teaching verb-noun collocations, and several empirical studies also shed light on teaching L2 collocations under different learning circumstances, few empirical studies to date have addressed the effect of explicit knowledge of the meanings of collocated verbs and their impact on the conceptual understanding of the complete collocation. The current study attempts to fill this gap and it seeks to assist learners in developing an understanding of L2 verb-noun collocations derived from verb concepts and in making connections between forms and meanings. It aims to achieve this through the integration of CL and CBI approaches that is largely missing in the current research on teaching L2 verb-noun collocations. This approach is different from more traditional
teaching approaches, which are more likely to map linguistic forms onto L1 meanings.

The methodology used in the study will be discussed in more detail in Chapter 4.
Chapter 4
Research Methodology

4.1 Introduction

This chapter discusses teaching materials, including approaches to conceptualizing verb events (e.g., profiling) and imagistic depictions of relevant verbal concepts (i.e., SCOBAs). The first element is particularly crucial. Specifically, the purpose of these meta-linguistic lessons was not to teach theoretical concepts, but to assist participants in understanding the differences among the target verbs. The five SCOBAs that illustrate the prototypical meanings of the target verbs are constructed on the basis of cognitive semantic analyses (e.g., Gallese & Lakoff, 2005; Gibbs & Matlock, 1997; Lee, 1996). The instruction focused primarily on the meanings of the verbs rather than on their form. Moreover, students were encouraged to practice a semantics of thought based on these meaning structures. This practice, based on the prototypical senses of verb meanings, can effectively enhance the metaphorical mapping between verb meanings and encyclopedic knowledge of the events described. The discussion of the actions denoted by the target verbs and types of objects that often co-occur were also presented along with examples.
4.2 Verb category and concepts of cognitive semantics

I present a discussion of verb events under the scope of event conceptualization because the linguistic interpretation of an event is based on how language users conceptualize the event (Levin & Rappaport, 2005). According to Levin and Pinker (1991), the properties of verb events are cognitively salient in some pretheoretically intuitive way. Following Levin and Rappaport (2005), we can assume that verbs designate a conceptual relation among event participants. The conceptual content can be manifested in a schematized conceptualization. Additional meanings related to each verb are eventually derived from the core meaning of the verb.

Even though human beings have similar embodied experiences of verb events, the events may be encoded differently in different languages. Two approaches to conceptualizing verb events are discussed. Introducing these two approaches may improve students’ understandings of the distinctions among target verbs. These two approaches focus on different cognitively salient properties of events. The first approach is Vendler’s (1957) aspectual approach that emphasizes the temporal facets of verb events. The second, the causal approach, highlights the transmission of force between event participants. I incorporate these two proposals concerning event conceptualizations of verb-noun collocations. For each one, I explain the types of semantic properties of verbs proposed to encode the relevant facets of a verb event. These two approaches particularly enhance participants’ understandings of the differences among make, do, take, get and have.
In terms of the internal temporal properties of events that verbs express, Vendler (1957) classified verbs into four classes: states, activities, achievements, and accomplishments. He used three primary distinctions: stativity verse dynamics, durativity verse instantaneousness, and telicity verse atelicity. By using these temporal distinctions, four types of verbs are described as follows: states, activities, accomplishments, and achievements. Non-homogeneous events can be divided into accomplishments and achievements. Accomplishments are extended events that cannot be said to have occurred until the processes have been completed (e.g., draw a circle). Do consists of the activity lexical concept, and make includes the accomplishment lexical notion that restricts the range of events with which it may be collocated. Even though Vendler originally intended to apply these classifications to verbs, these classifications in fact involve event descriptions (Levin & Rappaport Hovav, 2005, p.90).17

As discussed, do is an activity verb, and its verb-noun collocation denotes the event/action that is being operated on. The major semantic property of do is to perform an action or activity, denoting the concepts of intention and human activity. In other words, do denotes the fact that an agent is carrying out the action designated by the noun. Consider the collocational do business as an example. Through an agent’s actions (e.g., buying, selling goods and managing employees), the event is carried out. Most importantly, this collocation event represents a durative activity that indicates a sense of continuity without a necessary endpoint, as shown in Figure 4.1.

17 According to Levin and Hovav (2005), a verb meaning represents the construal of an event. For example, telicity is considered to be a property of an event description.
On the other hand, *make* falls under the *accomplishment* category, and its major semantic property is “to cause some state to come into being or being produced” (Clark, 1978, p.43). The conceptual meaning of *make* entails the sense that an agent creates a new entity, and its causative construction codes the result component of the event. The schema shown in Figure 4.2 encodes the semantic meaning of *make*. In addition, the endpoint of the collocation event occurs when the new entity is created. Thus, *make* is an accomplishment verb, and thereby includes an endpoint, whereas *do* is an activity verb and therefore atelic (unbounded) is necessary to differentiate the usage of the verbs.

Figure 4.1. Temporal schema for *do* (the rectangles represent the event being operated on)

Figure 4.2. Temporal schema for *make* (the rectangles represent the event being operated on)
Verb events can be understood as sets of temporally anchored properties. However, the differences among verbs may be associated with properties that are not related to time. In this case, the causal approach provides an alternative approach to modeling verb events. This approach emphasizes an action chain of event participants (as discussed in chapter 2) and transmission of force (Levin & Rappaport, 2005). Moreover, central to the causal approach is the concept of profiling (Croft, 1998; Langacker, 1987, 1991), which reflects different aspects of a particular semantic frame. Its function is similar to a movie director who distinguishes certain features of a scene visually by zooming in or zooming out on the scene. Further, Goldberg (1995) stated:

…verbs lexically determine which aspects of their frame-semantic knowledge are obligatorily profiled. Lexically profiled roles are entities in the frame semantics associated with the verbs that are obligatorily assessed and function as focal points within the scene, achieving a special degree of prominence (p.44).

Goldberg (1995) gave an example of lexical profiling to distinguish rob and steal. At first glance, these two verbs seem to be synonymous, notwithstanding their distinct syntactic rules. The verbs appear to resort to the same semantic frame, but their differences result in the participant roles profiled. The semantic frame includes three components: thief, target and goods. In the case of rob, the thief and target are profiled, while the goods and thief are profiled in the case of steal. The differences in profiling participant roles account for the differing syntactic realizations. Rob entails the person robbed and steal entails the goods that were taken. The differences in semantics can be shows as in Figure 4.3.
Several cognitive linguists developed the semantic analyses of the target verbs. As for *take*, *get* and *have*, I primarily followed Gallese and Lakoff (2005), who ground their analysis in the sensory-motor system. They further stated:

> the sensory-motor system not only provides structure to conceptual content, but also characterizes the semantic content of concepts in terms of the way that we function with our bodies in the world (p.456).

More specifically, they stated that the core meanings of those verbs are associated with forces, motion and paths. Additionally, a systematic, metaphorical association exits between our understanding of conceptual forces and paths, and our understanding of the verb events. Thus, I followed their analysis in order to manifest the intentional forces, directed motion and paths that are embodied in the conceptual meanings of the verbs.

The semantic representations of *take*, *get* and *have* can be manifested within the grasp schema (Gallese & Lakoff, 2005). The schema includes three major elements (i.e., an agent, forces, and an object), and the action of grasping can be structured in the *reach-grasp-receive-have* sequence (Cliton, 2009). The realization of grasping is constrained by
the conceptual metaphor of \( x \ acts on \ y \) in which \( x \) is viewed as a \textit{trajector} (i.e., an agent, the most important component in a relational structure), and performs an action on \( y \) (a patient). The energy flow is directed away from \( x \) to \( y \), and \( x \) can reach a final achievement by grasping and receiving \( y \). In other words, it schematizes an effortful action on an object, thereby resulting in movement of the object from its location to the agent. The \textit{grasp} schema can be manifested in a configuration of two phases of motion as shown in Figure 4.4. The energy is directed away from an agent toward a patient in the first phrase, and the object is relocated away from its original location to a new location in the second phrase. Thus, this schema includes the notion of \textit{take}, \textit{get} and \textit{have} as shown in Figure 4.4.

![Figure 4.4. Grasp schema](image)

Although \textit{take} and \textit{get} share certain semantic representations (i.e., \textit{reach-grasp-receive-have}), the differences in profiling of the path schema capture the primary distinction between these two verbs. \textit{Take} and \textit{get} are transfer-of-possession verbs whose semantic properties have overlapping components and their semantic representations can be illustrated in the image schemas in Figures 4.5 and 4.6. \textit{Take} implies the causation of a
transfer of possession, the semantic dimension of effort performed by $x$ (with the meaning of “grasping” an object) and agenthood of $x$ are emphasized. Specifically, *take* entails the path schema of *reaching, grasping*, and *receiving*, in which $x$ is represented as an origin of energy flow and performs an action on $y$. Thus, we can see that both phrases of energy flow are profiled as shown in Figure 4.5. On the other hand, *get* also schematizes the reach-retract-have circle. However, the agent is not associated with a prototypical way of agenthood; that is, causality in $x$ acts on $y$ is not profiled, but the notion of reception is (Bonnefille, 2006). Thus, the trajectory of the path schema highlights the path where the object follows toward the agent, but the path where the energy flow moves from the agent to the object is *de-profiling* (Goldberg, 1995) as shown in Figure 4.6. As discussed above, even though the verbs *take* and *get* share the semantic property of receiving an object, their semantic representations differ regarding what the verbs profile in the grasp schema.

![Figure 4.5. Take schema](image1)

![Figure 4.6. Get schema](image2)
In the case of have, only the agent and an object are profiled in the grasp schema. More specifically, the conceptual property of have is to own or to hold. In comparison to take and get, have addresses the final outcomes of the movement, obtaining and backgrounding the energy flow directed both from and to the agent. Consequently, the end-state (possession) of have is being highlighted in the grasp schema, as shown in Figure 4.7.

![Figure 4.7. Have schema](image)

Additionally, since have emphasizes an agent’s static possession of an object when an object is in an agent’s personal space, the conceptual representation corresponds to the container conceptual metaphor. Specifically, for have, an agent can be illustrated as a container that owns an abstract or physical object. Hence, the meaning of have can be illustrated in the diagram given in Figure 4.8.
As illustrated above, the verbs *take*, *get*, and *have* share the semantic meaning of possessing an object, but their semantic properties differ in terms of what they profile. As the semantic representations of *get* and *take* are linked to the *grasp* schema (*reach-grasp-receive-have*), they require an object that can be metaphorically relocated by an agent; that is, the object can be reached, grasped, retracted, and subsequently possessed by the agent. On the other hand, *have* requires entities that can be possessed by an agent (construed as a container) or that emerge in the agent itself. Therefore, by understanding these verb meanings and the differences among them, students can understand the use of the collocated verbs and determine the types of nouns that can collocate with them. More importantly, the practice of a *semantics of thought* is couched in the meaning structures of the verbs. Students can conceptualize a collocation event by mapping between the semantic meanings of verbs and their encyclopedic knowledge of the event.

Figure 4.8. Temporal schema for *Have*
4.3 Participants

The participants in the current study were seven students enrolled in their second or third year of economics at a major at Aletheia University in Taiwan. All of the students had received classroom instruction in English (i.e., English is taught as a subject) before they entered college. The participants reported having a rare exposure to English outside of a formal language classroom setting. The first language of all participants was Mandarin Chinese. The instructor helped the researcher distribute emails to the students who enrolled in the course that she taught at the beginning of the spring 2012 semester. In the recruitment letter, students were informed that they could either contact the instructor or the researcher if they were interested in participating in the study. Seven students responded to the email, and arranged an initial meeting with the researcher. The participants were provided with compensation for their time on the project in the amount of thirty-six dollars, prorated six dollars per session. The students met with the researcher once a week for six weeks. Two of the participants were female and five were male. All students were assigned pseudonyms in order to protect their anonymity. A summary of their biographic information is provided in Table 4.1.

Table 4.1. Participant information

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Year in college</th>
<th>Started learning English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pei</td>
<td>Female</td>
<td>Junior</td>
<td>junior high school</td>
</tr>
<tr>
<td>Yu-Chia</td>
<td>Female</td>
<td>Sophomore</td>
<td>elementary school</td>
</tr>
<tr>
<td>Yan</td>
<td>Male</td>
<td>Junior</td>
<td>junior high school</td>
</tr>
</tbody>
</table>
4.4 Target Collocations

The purpose of the current study is twofold: (1) to understand reasons for miscollocations, and (2) to investigate how the understandings of L2 verb meanings can enhance the development of L2 collocational knowledge. For these purposes, I selected verb-noun collocations from two sources: the Spoken English Corpus of Chinese Learners Version 2.0 (SECCL 2.0) (Wen, Liang, & Yan, 2008) and the Corpus of Contemporary American English (COCA). The analysis of the learner corpus illustrated that Chinese-speaking learners encounter difficulties in producing verb-noun collocations. Thus, I selected the specific collocations that were more likely to pose challenges to L2 speakers from the learner corpus. At the same time, I retrieved collocations from the COCA on the basis of their mutual information (MI) value and frequency. The major reason for choosing the COCA corpus is because of the free online access and the large size of comprehensive data that comprise academic English, other forms of written language (e.g., from fictions, magazines or newspapers), and spoken

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18 The SECCL 2.0 provided insights into the collocational difficulties that L2 speakers experienced. Its analysis facilitated the design of the program.
English. The corpus operates on a web interface, user-friendly search engine. As for each target verb, I first generated a list of collocations using the ‘collocates’ web-interfaced function of COCA. Additionally, MI was also undertaken. The MI value is employed to understand the actual frequency of two co-occurring words with the predicted frequency of their co-occurrence if those words were randomly distributed (Church & Hanks, 1990). The MI value reveals the strength of association between two words in a combination. The concordances used for retrieving the instances of potential object noun collocates were based on a window size of four to the right of the verb. I selected high-frequency collocations when there were more than 150 instances occurring in the COCA and their MI values were more than 3.\(^{19}\) The BBI Dictionary of English Word Combinations (Benson, Benson, & Ilson, 1997) and Oxford Collocations Dictionary For Students of English (Deuter, Greenan, Noble, & Phillips, 2002) were also used to confirm the selected collocations. To sum up, a total of seventy-one collocations were chosen from the two corpora.\(^{20}\)

It should be noted that the distance between the node and collocated words could vary in the text as did the form of the collocation: for example, made the choice, make your choice, making a choice, made a good choice all belonged to the collocation make a choice. This reflects authentic encounters with lexical collocations in real contexts (Webb et al, 2013).

\(^{19}\) The collocations selected from the learner corpus are also high-frequency collocations.

\(^{20}\) Thirty collocations were used in pre- and post-enrichment tasks. Nineteen of these collocations were used in the enrichment program, which included fifty collocations. There was a sixty-three-percent overlap as shown in Table 4.5.
4.5 Data Collection

4.5.1 Pre-enrichment task

The pre-enrichment task investigated the participants’ understanding of the ways in which the verbs contribute to the meanings of collocations. This task included thirty fill-in-the-blank test questions where the object nouns of the target collocations were proffered and the verbs were produced by the participants. Thirty collocations used for the pre-enrichment were selected from the SECCL 2.0 and COCA. The task questions were extracted from the COCA. An L1 speaker of English was also consulted to confirm that the selected questions were authentic and appropriate. The participants were asked to respond with collocations that matched the meanings embedded in the English sentences and to produce as many collocations as they were able regarding the meanings they tried to convey. Three blank spaces were given for each question as shown in Table 4.2. The procedure was a fill-in-the-blank task where the object noun of the collocation was provided. The participant had to produce the collocated verb. There were three blanks for participants to fill in. If participants believed that more than one verb could be used in the sentence, they could indicate this in their response. The rationale for this design was that the researcher attempted to understand if participants used make or do interchangeably or considered take, get and have as near synonyms. Chinese speakers tend to use these two sets of verbs interchangeably in their relevant verb-noun collocations as shown in the corpus analysis of the SECCL 2.0. Moreover, participants were also required to indicate

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21 The intended meaning here refers to the whole concepts of collocations that participants tried to express.
the confidence levels of their answers and to explain why certain verbs could be used in given sentences. In terms of confidence levels, 10 meant that participants were very sure that their answer was correct, while 1 indicated that they were very unsure whether or not their answer was an appropriate collocation.

Table 4.2. A sample item in the pre-enrichment task

<table>
<thead>
<tr>
<th>The teacher expected all of students to _______ homework.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] 1—2—3—4—5—6—7—8—9—10</td>
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<tr>
<td>[ ] 1—2—3—4—5—6—7—8—9—10</td>
</tr>
<tr>
<td>[ ] 1—2—3—4—5—6—7—8—9—10</td>
</tr>
</tbody>
</table>

Participants may produce correct collocations and still assign different meanings or concepts to the collocations or their collocated verbs. A means to access participants’ underlying mental conceptualization is needed, and therefore the meanings they assign to the collocations or verbs can become apparent. A way to study participants’ L2 knowledge is for them to externalize it verbally. Hence, the participants were asked to explain their choices/answers. The participants were allowed to spend as much time as

22 The primary reason for requiring participants to indicate their confidence levels was to understand their certainty about their answers. A high degree of uncertainty may imply that they guessed the answers.
they needed to complete the assessment. The total assessment time that the participants spent was between thirty minutes and ninety minutes.\textsuperscript{23}

It should be noted that the pre-enrichment task involved cooperative interactions from the researcher. The purpose of the mediation was twofold: 1) to make sure that participants had a clear understanding of the sentences and target collocations; 2) to help participants articulate their explanations of choices and thinking process. In other words, the current project focused on collocation learning rather than reading comprehension. It was important that participants had a clear understanding of the sentences. Therefore, students chose collocated verbs when they had a clear understanding. Because this project was the first time most of the participants carried out verbalization tasks, the tutor’s prompt questions assisted them in elaborating on their thoughts during the process.

This approach was adapted from interventionist approaches to dynamic assessment (Poehner, 2008), which include standardized intervention from the tutor during the pre-enrichment task. The tutor’s sequential mediational moves listed below primarily helped participants conduct the pre-enrichment task without interfering with participants’ answers. Their answers reflected their understandings of collocated verbs. The tutor’s mediation primarily followed the moves. If the participant gave different responses, the tutor nevertheless reacted in order to explore his/her thinking process. For example, if the student changed his answer, the tutor required an explanation in the

\textsuperscript{23} Some participants took a longer time to decide which verbs that they would employ in the given sentences.
following turn. Thus, the tutor employed a semi-interventionist approach to manage the pre-enrichment task.

1. Ask students to read aloud a task question.

2. Request that students demonstrate their understanding of the task question; if they do not understand the vocabulary word, offer an explanation.

3. Articulate the meaning of the collocation if students have difficulties figuring it out.\(^24\)

4. Inquire which verb should be used in the question.

5. Ask students to explain why they chose certain verbs.

6. Inquire if there are any other verbs that can be used in the question.\(^25\)

\subsection*{4.5.2 Enrichment program}

During the enrichment program, participants received explicit instructions on the core meaning of each target verb. Inspired by Lee’s (2012) study, the meta-linguistic lessons were introduced to participants, including the concepts of world viewpoints and profiling. The purpose of those lessons was to facilitate participants in understanding the

\(^{24}\) If the participants had difficulty with the meanings of the collocations within the sentences, the tutor made a clarification. However, when offering relevant information about the L1 meanings of the target collocations, the tutor avoided using L1 direct equivalents since a direct translation may encourage students to apply L1 knowledge to choose a collocated verb.

\(^{25}\) Since students in Taiwan are more familiar with single-answer questions, this prompt primarily checked whether they considered any other options.
verb events from L1 culture that significantly influences the nature of human experiences. In other words, although human beings may have similar embodied experiences and perceptions of the world, different cultures may demonstrate their unique experiences and entailments (Gibbs, 1999; Lee, 2012).

The instruction focused primarily on the core meanings of the target verbs via image schemas and the practice of a *semantics of thought*. The tutor’s presentations included a brief introduction of meta-linguistic lessons (from a cognitive linguistic viewpoint). Following this, the image schemas were introduced. Since the image schemas consisted of simplified abstract images, the meanings of each target verb were explained in detail verbally. Participants received the handouts of image schemas and worked in pairs to practice how to re-conceptualize collocation events derived from the verbs’ meanings. Specifically, this practice of applying the verb concepts to re-conceptualize the collocation events enhanced participants’ understanding of the collocations and the use of the verbs. In other words, the practice of a *semantics of thought* was provided to familiarize participants with a new way of perceiving verbal events by mapping their relevant lived experiences onto conceptual structures of words in the SCOBAs.

At the end of each session, the tutor assigned homework to the students. The students were asked to elaborate on the meanings of the verbs regarding image schemas. The purpose of the homework assignments was to enhance participants’ conceptual understanding of each verb and to assist them in internalizing the concepts through the verbalization of a given verb’s meanings. In other words, verbalization tasks prompted participants to internalize the concepts they learned in the enrichment program and
simultaneously externalize their emerging understanding of the concepts in speech (Lee, 2012; van Compernolle, 2012).

4.5.3 Post-enrichment tasks

The first post-enrichment task was conducted immediately after the enrichment program. A sample question is shown in Table 4.3. This task consisted of the same thirty collocations, but they were presented in semantically different sentences. The participants were unaware that the same target collocations were evaluated in the task. As in the pre-enrichment task, participants were also asked to provide answers to each question, which illustrated their understandings of collocations in the sentences. The participants were allowed to spend as much time as they needed to complete the task; they spent between sixteen and seventy minutes. A transfer task was conducted one week after the post-enrichment task. This task had the same format, but the task questions were completely different from those in the post-enrichment task. The purpose of the transfer task was to investigate the transferability of conceptual knowledge of the verbs’ meanings. The total number of transfer task items was fifteen. Five collocations were from the enrichment program and ten were newly added. The following is a sample sentence from the post-enrichment tasks.

Table 4.3. A sample item in the post-enrichment task

| When you get home, you’re supposed to ________ your homework before you play video games. | }
The tutor was responsible for engaging participants in pedagogical activities. The collaborative interactions involved the post-enrichment and transfer tasks. These cooperative interactions had dialogic roles of assessing participants’ emerging abilities and supporting their continuing development in the tasks. The tutor’s mediational moves are listed as follows.26

1. Ask students to read aloud the task question.

2. Request that students demonstrate their understanding of the task question; if they do not understand the vocabulary word, offer an explanation.

3. If students have difficulty understanding the meaning of the collocation, articulate its meaning.

4. Inquire what verb should be used in the question.

5. Ask students to explain why they chose certain verbs.

6. If students cannot answer the questions correctly, provide a correct answer and offer explanations by refereeing to the SCOBAs if needed.

**4.5.4 Personal questionnaire and interviews**

At the beginning of the study, participants were asked to fill out the personal information questionnaire. Questions were concerned with the two following areas: participants’ L2 learning backgrounds, and language use (e.g., everyday English use, or

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26 The tutor also adopted a semi-interventionist DA approach to conduct the post-enrichment and transfer tasks. This approach allowed additional moves to occur in order to capture participants’ understandings of verbs or collocations.
travel/study experience in English speaking countries). The major purpose of collecting this information was to help the researcher gain insights into participants’ English learning history and English language use. Two semi-structured interviews conducted in Mandarin Chinese were implemented before and after the enrichment program respectively. The entry interview was conducted to understand participants’ previous English learning experiences and the way in which they learned the target English verbs. Example questions are “How did you learn the verb make before?” and “How did you use those words in a collocation?” (How did you learn its collocations?). The researcher often asked follow-up questions in order to further understand participants’ learning history. The post interview was aimed at participants’ reflections on concept-based instruction. Three major questions were included: “What do you reflect on the instruction you received?” “Do the image schemas help you understand verb meanings” “Did the instruction help you understand the collocational options of the target verbs?” The information from these two interviews is presented in the interview chapter.

4.6 Microgenetic Analysis

This study adopts a microgenetic analysis. The term microgenetic refers to a methodological tool to investigate developmental processes and outcomes of language learning over a relatively short period of time (Lantolf, 2000; Vygotsky, 1978). The

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27 Since the target verbs (i.e., make, do, take, get, and have) are high-frequency words, I assumed that all of the participants had learned those words before this study. The students confirmed this assumption.
concept originates in Vygotsky’s (1978) study of psychological functioning. Vygotsky’s primary interests include the study of higher mental capacities and the four genetic domains he posited to investigate these. The phylogenetic domain studies how the human mind grows differently from other primates through culturally mediated tools. The sociocultural domain relates to different mediational tools created and adopted by a society over the course of history. The ontogenetic domain investigates the appropriation of these tools and how they can be employed during the course of an individual’s life. The microgenetic domain studies development when it happens during cognitive activity over relatively brief spans of time, ranging from a few seconds or even less to perhaps minutes, hours, or days. Furthermore, microgenesis is discussed by Wertsch (1985, p.55) as “a very short term longitudinal study.” Through this microgenetic approach, the researcher can trace the origins and qualitative development of cognition rather than emphasizing abilities that are already developed. This approach was adopted in order to illustrate the mediated and emergent qualities of the changes that occurred in participants’ cognitive functioning (i.e., conceptual knowledge) after the enrichment program.

4.7 Summary of the Research Design

The study includes three stages as shown in Table 4.4. At the first stage, the participants were required to complete an interview and a pre-enrichment task, which aimed to understand their actual level of development (their conceptual knowledge of the target verb). At the second stage of the study, the researcher presented conceptual
knowledge of the target verbs via SCOBAs and concept explanations in order to help students learn or reconstruct their L2 concepts. At the same time, the students practiced re-conceptualization of collocation events derived from verbs’ meanings. The last stage of the program served as a means of comparing the development of the participants’ conceptual knowledge between the first and second stages. Therefore, the first post-enrichment task centered on the same target collocations as the pre-enrichment task in stage 1, which used as direct comparison measurement of development following mediation. In addition, all of the participants were required to complete take-home assignments. The assignments included verbalization tasks in which participants verbalized their conceptual understanding of the target verbs. The tasks also gave them an opportunity to think of a verb’s use in collocations by practicing a semantics of thought. In other words, the homework assignments aimed to help students understand the verbs’ meanings and the differences among them and to help the students internalize the concepts through verbalization.

Table 4.4. Research design

<table>
<thead>
<tr>
<th>Stage</th>
<th>Session</th>
<th>Procedure</th>
<th>Procedure Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Pre-enrichment task</td>
<td>* personal questionnaire *pre-interview *pre-enrichment task</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Enrichment program</td>
<td>* the learning of semantic meanings of the target verbs based on the concept-based materials *the practice of a semantics of thought</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>Post-enrichment tasks</td>
<td>*two post-enrichment tasks (The second was a transfer task) *post-interview</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td></td>
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</tbody>
</table>
In order to clarify the collocations that were taught or practiced in the enrichment program, Table 4.5 lists all of the collocations. It includes three categories: the enrichment program, pre/post enrichment tasks and transfer task. The “enrichment program” involves the collocations that also appeared in the pre/post enrichment and transfer tasks. In particular, these collocations are underlined. Moreover, the other two categories consist of new collocations that were not the focus of instruction during the enrichment program.

Table 4.5. Target collocations

<table>
<thead>
<tr>
<th>make</th>
<th>do</th>
<th>take</th>
<th>get</th>
<th>have</th>
</tr>
</thead>
<tbody>
<tr>
<td>make a cake</td>
<td>do homework</td>
<td>take notes</td>
<td>get a job</td>
<td>have a car</td>
</tr>
<tr>
<td>make a speech</td>
<td>do a project</td>
<td>take a picture</td>
<td>get an interview</td>
<td>have a dream</td>
</tr>
<tr>
<td>make a choice</td>
<td>do research</td>
<td>take an order</td>
<td>get a degree</td>
<td>have pain</td>
</tr>
<tr>
<td>make a recovery</td>
<td>do some work</td>
<td>take courses</td>
<td>get attention</td>
<td>have ability</td>
</tr>
<tr>
<td>make coffee</td>
<td>do the cooking</td>
<td>take responsibility</td>
<td>get some experience</td>
<td>have motivation</td>
</tr>
<tr>
<td>make suggestions</td>
<td>do the cleaning</td>
<td>take action</td>
<td>get a scholarship</td>
<td>have a reason</td>
</tr>
<tr>
<td>make mistakes</td>
<td>do exercise</td>
<td>take a break</td>
<td>get approval</td>
<td>have breakfast</td>
</tr>
<tr>
<td>make money</td>
<td>do some housework</td>
<td>take a test</td>
<td></td>
<td>have dinner</td>
</tr>
<tr>
<td>make a telephone call</td>
<td></td>
<td>take a shower</td>
<td></td>
<td>have a cup of coffee</td>
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<tr>
<td>make friends</td>
<td></td>
<td>take a walk</td>
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<td></td>
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<tr>
<td>make progress</td>
<td></td>
<td>take time</td>
<td></td>
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<tr>
<td>make a photocopy</td>
<td></td>
<td>take medicine</td>
<td></td>
<td></td>
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<tr>
<td>make notes</td>
<td></td>
<td>take a sip of wine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>make sandwiches</td>
<td>do laundry</td>
<td>take a bite</td>
<td>get a message</td>
<td>have a feeling</td>
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<tr>
<td>make a contribution</td>
<td>do business</td>
<td>take a test</td>
<td>get a chance</td>
<td></td>
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<td>make a decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>make a statement</td>
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<tr>
<td>make a judgment</td>
<td>do the annual review</td>
<td>take a deep breath</td>
<td>get support</td>
<td>have tendency</td>
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<td></td>
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<td></td>
<td>get a result</td>
<td>have confidence</td>
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<td></td>
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<td>get information</td>
<td>have a sense of</td>
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<td>total no.</td>
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<td>humor</td>
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<td>18</td>
<td>11</td>
<td>17</td>
<td>12</td>
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</tbody>
</table>
Chapter 5

Data Analysis I

5.1 Introduction

This chapter presents the results and the microgenetic analysis of development of L2 collocations among participants. For this purpose, chapter 5 focuses primarily on two specific areas: (1) the practice of semantics of thought as evidenced in the enrichment program; (2) the use of collocated verbs by participants in L2 verb-noun collocations as evidenced in pre/post/delayed-post-enrichment tasks. The first section presents the findings of the enrichment program in which participants were asked to practice a semantics of thought by employing L2 concepts. Moreover, the following section presents reports one case study and the findings are related to a participant’s orientation to L2 verb-noun collocations before/after the enrichment program.

5.2 Enrichment Program

5.2.1 Make and do

This section presents participants’ practices of semantics of thought: re-conceptualizing collocation events derived from L2 verb meanings in the enrichment program. The discussion centers on participants’ orientation to collocation events evidenced by their narratives and imagistic illustrations. More specifically, this section begins with a presentation of the practice of make and do in which students were required
to describe their understanding of these collocations. The following section reports the practices of *take*, *get* and *do* and their collocations. Examples are representative of the re-conceptualization process that they aim to illustrate. Even though each student had unique and interesting interpretations of collocation events, all of the re-conceptualization process stemmed from verbs’ meanings. Therefore, a number of properties of explanations were common throughout the data. I selected the cases from five participants based on their illustrative qualities from the tutorial sessions or homework assignments.

The purpose of the CBI is to help students develop thoughtful, personally significant understandings of L2 meaning-form relationships (Negueruela, 2003; van Comemolle, 2012). The enrichment program focused primarily on the verb meanings and event construals of collocations. Specifically, in group tutorial sessions, participants were guided through a brief set of exercises that facilitated them becoming aware of their own encyclopedic knowledge of events and the use of collocated verbs.

The prototypical meaning of the verbs constitutes a basic scheme by which participants re-conceptualize verb-noun collocations. Word meanings help constrain the way we think and help participants conceptualize events in new ways. This is particularly true for concepts of L2 collocations that do not correspond to those of their L1 counterparts. Students were provided with a handout in each group tutorial session. The image schemas of each verb, in which the tutor introduced the relations among an agent, action (force) and patient were presented. The tutor also helped participants understand the prototypical semantic meanings of verbs.
Metaphorical uses of each verb in collocations, in fact, arise from the verb’s prototypical meaning. Metaphorical uses of verbs in different verb-noun collocations can be viewed as *transformations* of the basic image schema. In a *semantics of thought*, metaphorical mapping has operated. According to Lakoff’s (1987) *spatialization of form hypothesis*, the meanings of linguistic expressions can be considered to be spatial image schemas plus metaphorical mappings. The metaphorical mapping refers to a correspondence between physical space and conceptual space. That is, as Lakoff (1987, p.283) stated, “Spatial structure is mapped onto conceptual structure. More specifically, image schemas (which structure space) are mapped onto the corresponding abstract configurations (which structure concepts).” In line with this, the basic sense of the word, *make* is to bring a new physical entity into existence through purposeful activity (Lee, 1996). This prototypical and image-schematic word meaning can be directly understood regarding physical experiences. Many usages of the verb *make*, which are primarily derived from a prototypical sense, are viewed as metaphorical when applied to other conceptual domains (Gärdenfors, 2004). There are many different kinds of entities that can be created through the process of *making*. Therefore, different types of entities can be referred to as different types of conceptual domains.

Through forming a *semantics of thought* (i.e., the re-conceptualization process based on meaning structures of verbs), the L2 speaker develops personally significant understandings of the relationships between the forms of L2 collocations and their event construals. These construals are derived from word meanings and matched onto L2 speakers’ encyclopedic knowledge of the events. A *semantics of thought*, using the word concept (i.e., a verb’s conceptual structure) as a thinking tool, represents L2 speakers’ re-
conceptualization process on verb-noun collocation events. Take *making coffee* for example. A cup of coffee does not exist, but it comes into being after the process of *making*. Pei’s event conceptualization of *making coffee* is constructed based on the conceptual structure of the verb, *make*. In Figure 5.1, we can see that Pei conceptualizes the collocation event in which a person has raw materials (coffee) at the first stage, uses a coffee machine to make coffee at the second stage, and finally has a cup of coffee in hand. Pei creates her personal understanding of the collocation event by following the SCOBA (Figure 4.2) that denotes a notion of process in which an agent gradually creates a new physical entity. Pei’s image of *making coffee* corresponds to her subsequent verbal account of the event. Pei states, “making coffee that is having coffee beans, using a coffee machine, and finally having a cup of coffee.”

![Figure 5.1. The imagistic illustration of making coffee by Pei](image)

This personal, significant conceptualization is derived from the speaker’s encyclopedic knowledge of the event. Dang also forms his qualitatively new, personally significant construal of the event through the imposition of *profiling/de-profiling*. In Dang’s image, he selects the entity as the central aspect of the event and de-profiles the
role of an agent. Although the agency is not foregrounded, a cup of coffee is brought into being after the successful completion of the process of making, including such steps as the grinding of coffee beans into powder, the subsequent boiling of coffee on a stove, and finally the outcome of a cup of coffee. Dang’s verbal description also illustrates Figure 5.2.: “take coffee beans and grind them into powder, boil the coffee, and pour it out to a mug.”

![Image](image_url)

Figure 5.2. The imagistic illustration of making coffee by Dang

During this re-conceptualization process, the participants more than just learned prepackaged semantic concepts of verbs. They demonstrated that they can use the image-schematic concept to create personally relevant meanings of the collocation events. In other words, both of the participants used the verb meaning as a frame to re-conceptualize the collocation event. As such, verb meaning functions not merely as a rule-based system to follow, but as a mediational tool for thinking and meaning-making.

Take making a telephone call for another example. The event of making a telephone call is constructed based on the prototypical sense of the verb, make, but it
maps from a physical domain onto a conceptual domain (in which the entity indicates a form of language expression). In Figure 5.3, Pei conceptualizes the collocation event in which a person has an intention to call her mother at the first stage, dials a phone number at the second stage, and finally reaches her mother and starts a conversation. Pei verbally describes her image as: “making a phone call means that someone intends to call her mom, and then she dials the number, and finally she reaches to her mom and starts a conversation.”

![Figure 5.3. The imagistic illustration of making a phone call by Pei](image)

In other words, the basic-level image schema of the verb provides a conceptual structure by which the L2 speaker can create a personal understanding of the collocation by metaphorical mapping between her/his own perception of the event and the semantic meaning of make. Yu-Chia also demonstrated her own understanding of making a phone call as shown in Figure 5.4. Yu-Chia’s verbal account is: “a person goes to pick up a phone and dials a number, the phone is ringing, and she starts having a long conversation after the phone call is connected.”
Encyclopedia knowledge includes our experiences of the events, and reflects the ways we conceive of those experiences. The experiences themselves may be human universals, but different cultures may have their own language-specific linguistic expressions. According to Levin and Rappaport Hovav (2005), phrases containing verbs can be considered as event descriptions. I adopted their notion to argue that verb-noun collocations can also be seen as a type of event description. “Verb meanings represent construals of events rather than the event themselves” (Levin & Rappaport Hovav, 2005, p. 19). In other words, verbs lexicalize conceptual properties of events. Therefore, different languages can construe the same event in many different ways. As Hale and Keyser (1998) stated, “There is no guarantee, or necessity, that languages should agree in their conventional descriptions of entities, events, conditions, and states - where these are understood as something outside language, related to language only by the names they are given...” (p.95, as cited in Levin & Rappaport Hovav, 2005). Verbs employed to describe an event may not be identical if the event is profiled differently in various languages. Consider the collocation events, *make coffee* and *make a telephone call* as
examples. In Mandarin Chinese, the event of *making coffee* is construed as 煮咖啡 zhǔ kā fēi (its literal meaning, is cooking coffee; therefore in Dang’s schema, we can see a pot on a stove). Regarding the collocation event of *making a phone call* 打電話 dǎ diàn huà, the metaphorical use of the verb dǎ (the literal meaning is hitting) in the context of *making a phone call* signals the action of dialing a phone number. Therefore, the Chinese equivalent (打電話 dǎ diàn huà) focuses less on a process, than on the manner of dialing, when compared to its English counterpart.

As previously discussed, different languages use distinctive verbs to signify different aspects of the collocation event. As for the case of *making progress*, in Chinese, there is no collocation that involves making and progress together, since the event of *making progress* refers to *progress* as a final result that is possessed by an agent. The sequential configurations of the conceived event are not activated, but only the endpoint is being profiled, as shown in Figure 5.5. However, the same event can be seen from a different perspective. In English, *make progress*, profiles a process of rational configurations; that is, the successive components of the configurations are being activated, as described in Figure 5.6. In other words, *progress* is construed as a state of possession 有進步 yǒu jìn bù in Mandarin Chinese, but as a process in English. The use of verbs reflects the way that English and Chinese speakers perceive this collocation event. Thus, it is very important for Chinese speakers of English to re-conceptualize the event in order to understand the event construal of *making progress* in English and the use of the verb.
The constituents of the event knowledge become mapped onto the semantic structures of the word: L2 speakers re-conceptualize the collocation event in terms of verb meanings. This process mediates L2 speakers to understand the meaning of the collocation in that it specifies the way “the world view” is constituted by the meanings of L2 words. In other words, this formation of a *semantics of thought* can be viewed as building associations between forms and meanings. In particular, it enables L2 speakers to reach an advanced understanding of the relation between the form and the meaning of the collocation. Thus, although image and concept oriented practices in L2 collocations
are new to L2 speakers, this re-conceptualization practice may be meaningful and beneficial to them in that this practice assists L2 speakers in making strong connections with forms and meanings of L2 collocations.

Yu-Chia’s and Pei’s schemas provide important information on how L2 speakers orient themselves to the profiled properties of the collocation event in the L2. In Pei’s image (Figure 5.7), *making progress* means that someone attempts to improve her English. She reads English newspapers and magazines every day. Finally she can speak well in an English class. On the other hand, Yu-Chia’s image is as shown in Figure 5.8: at the beginning, a person does not succeed (in terms of the test scores); he tries to improve and receives better scores; finally, he tries his best and achieves full scores. The two schemas demonstrate that Pei and Yu-Chia understand *making progress* as taking place over time, as it is conceptualized in English. In other words, English describes *making process* as an event that takes place over time rather than a result that already exists.

![Figure 5.7. The imagistic illustration of *making progress* by Pei](image)
In the conceptual domain, L2 speakers can create the scenario based on their encyclopedic knowledge of the event. Conceptual structures of words can be taken to be the template by which L2 speakers develop personal understandings of the collocation events regarding metaphorical mappings (onto certain conceptual domains). *Do* is an activity verb, and when collocated with nouns indicates the object whose activity is being operated. The major characteristic of the verb *do* in its prototypical sense is to perform an action. In Figure 5.9., Pei illustrates the crucial property of the event, *do homework* – performing an action in a sense of continuity, distinguishing the verb’s meaning of *do* from that of *make*. In the process of *doing homework*, although an agent is de-profiled, an action designated by the collocated noun is being carried out. In Figure 5.9, Pei attempts to express that the math homework assignment is being worked on, one question by one question, which matches the conceptual structure of *do*. Additionally, this event signifies a homogeneous durative activity, in particular a sense of continuity.
Through the re-conceptualization process, Pei can orient to the semantic representations of the verbs and form a *semantics of thought* by using a conceptual structure of the verb to re-conceptualize collocation events. For another example, consider the collocation, *do a project*. In Pei’s schema of *doing a project* (Figure 5.10), which is also based on the conceptual meaning of the verb, the collocation event takes place over time. Even though an agent is not being profiled, a project that should include a number of pages is being carried out page by page.28 On the other hand, Yu-Chia’s image (Figure 5.11) is fairly distinctive compared to Pei’s; however, Yu-Chia’s image still manifests the crucial conceptions of the collocation event. That is, an agent has different projects that have to be carried out, and she works on one project at a time.

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28 The interpretation of the event is also based on participants’ verbalized reflections.
5.2.2 Take, get and have

As previously discussed, Chinese speakers are more likely to be confused with the use of the verbs *take*, *get* and *have* in their verb-noun collocations. The enrichment program focused primarily on the conceptual structures of these three verbs and the practices of semantics of thought. The conceptual structures of the verbs, *take*, *get* and
have can be illustrated in the grasp schema (Gallese & Lakoff, 2005). Get emphasizes the action of receiving in the grasp schema. Participants practiced the collocation of getting a scholarship in a homework assignment.

I believe that you have the ability to _______ (take/get/have) a scholarship.

The following utterances are Wei-Han’s verbalization of the word choice. Wei-Han stated, “A scholarship is something that must have a person who gives it to me. So I use get.” His explanation signifies the important semantic property of get: receiving an entity from others. This sense distinguishes get from the other two verbs take and have.

In the case of have, it emphasizes the meaning of possession when an object is in an agent’s personal space. Thus, the use of have addresses the final outcomes of the movement – obtaining in the grasp schema. Thus, in the enrichment program, the entities that can be possessed by human beings have been highlighted. The following example is retrieved from one of the homework assignments in which participants chose an appropriate verb for the collocation, have a reason.

Everyone will _______ a reason (take/get/have) not to believe him.

Wen chose have and explained that “everyone has a reason not to believe him. Because here we emphasize a sense of owning something. That means something that you’ve already had so the event has a sense that is not related to either getting something or taking something.” Wen’s verbalized reflections successfully distinguished have from take and get by emphasizing the sense of possession.

The prototypical sense of take specifies the grasping action: reach-grasp-receive-

have (Cliton, 2009). In other words, schematizes an effort action on an object (patient),
thereby resulting in movement of the object directed from one location to an agent. Consider *take notes* as an example. In the practice of *semantics of thoughts*, Pei used the semantic meaning of *take* as a frame to re-conceptualize the collocation event of *taking notes*. Pei’s conceptualization of the event *take notes* is illustrated in Figure 5.12. Pei’s verbalized reflections indicate, “a person is writing down what another person is saying in her notebook, having a sense of grasping. The event has a sense of grasping information.”

![Figure 5.12. The imagistic illustration of *taking notes* by Pei](image)

### 5.2.2 Summary

This section presents a number of re-conceptualization practices over the three sessions of the enrichment program, focusing on five participants’ verbalized reflections and imagistic illustrations of two sets of target verbs (i.e., *make/do* and *take/get/have*). The discussion demonstrates how the enrichment program worked through deep
qualitative treatments of representative instances. Chinese speakers are more likely to have
difficulty producing verb-noun collocations with these five verbs. In particular, they
tend to use *make* and *do* interchangeably, and treat *take*, *get* and *have* as near synonyms.
By learning the underlying semantic meanings of the verbs, students can understand their
differences and distinguish among them.

More importantly, the practices of a *semantics of thought* facilitated students in connecting
the meanings and forms of the collocations. These practices enabled students to start re-conceptualizing
the collocation events derived from verb meanings. Because the verb concept formed the orientating basis
for conceptualizing a collocation event, the students took on a qualitatively new meaning of a collocation.
Moreover, the verbalized reflections and imagistic illustrations functioned as learning opportunities
to develop students’ conceptual knowledge. This internalization process encourages students to map between
the encyclopedic knowledge of the event and the semantic meaning of the verb, eventually
demonstrating their emerging ability to create their personal understanding of the collocation event.
Therefore, verb meanings did not only function as prepackaged concepts to reach correct answers,
but as thinking tools for meaning-making and problem solving. This study aims to understand if participants
can develop their conceptual knowledge of collocations before and after the enrichment program.
I will discuss this issue in sections 5.3 and chapter 6.
5.3 Case Study 1: Pei

Since it is impossible to present all of the data (approximately 17 hours of audio recordings) collected over the six-week tutorial sessions, I decided to select representative cases that illustrated developmental processes based on two criteria. First, selected cases were chosen because they were representative of the group of participants as a whole. Representative does not mean identical (van Compernolle, 2012). The results indicate that although each individual student had their unique developmental patterns, many phenomena and certain characteristics shared by participants were common in the data. Secondly, cases were selected for their illustrative qualities, which means that the developmental process in the discussion is demonstrated in a single episode or a set of excerpts.

The following data analysis is organized around three case studies that illustrate the representative development before and after the enrichment program. Specifically, these three cases reveal the effect of the concept-based approach on students’ knowledge of L2 verb meanings and understandings of verb-noun collocations. The first and second sections focus specifically on the target verbs make and do (Pei) and the following section in chapter 6 analyzes the target verbs take, get and have (Dang and Wei-Han). These sections present students’ development of conceptual knowledge in the post-enrichment task, by comparing it to their abilities in the pre-enrichment task. The analyses presented below are representative of the group, but at the same time allow for individual learning differences (some verb-noun collocations may be more or less challenging than others). Applying a microgeneric analysis approach, the three case
studies offer a holistic view of changes in three students’ cognitive functioning (i.e., conceptual knowledge of the target verbs and collocations before and after the concept-based instruction). In preparation for the analysis of data, all the excerpts presented in this chapter were transcribed in Mandarin Chinese and English. Appendix B shows conventions of the transcriptions used to capture essential elements of speech. The data analysis focuses on the content of participants’ utterances, indicating their development of L2 collocational knowledge.

As previously discussed, L2 speakers resort to different compensatory strategies to construct English verb-noun collocations when they encounter difficulties. Applying L1 concepts to L2 collocations is one of the major strategies, as shown in Figure 5.13. Many studies show that L1 semantic knowledge of an L2 verb’s meaning is activated in constructing a verb-noun collocation (e.g., Laufer & Waldman, 2011; Nesselhauf, 2003, 2005; Wolter, 2006), as shown in Figure 5.13. However, L1 knowledge includes relatively few semantic features of L2 verbs. Thus, L2 speakers are more likely to make collocational errors when they relate an L2 verb meaning to its L1 counterpart.

![Figure 5.13. Applying L1 concepts to L2 collocations](image)

The enrichment program provided systematic and coherent meaning of the L2 verbs. Moreover, L2 conceptual knowledge denotes the underlying semantic properties of
verbs, which can be integrated with an L2 speaker’s encyclopedic knowledge of events. L2 conceptual knowledge reflects central specifications of L2 verbs, which can be virtually activated whenever the verb is used. In addition, the meaning of an L2 verb can help L2 speakers become independent from their L1 knowledge. More importantly, L2 conceptual knowledge of a word can serve as a cognitive tool to mediate the L2 speaker’s thinking process.

5.3.1 Section I: from L1 concepts to L2 concepts

In Section I, I will explain how Pei shifts the use of the mediational tools from L1 semantic knowledge to L2 conceptual knowledge of the verb meaning in producing L2 verb-noun collocations. Specifically, Pei shifts from dependence on L1 semantic knowledge to application of L2 conceptual knowledge by mapping an L2 conceptual structure onto an encyclopedic knowledge of an event. Figure 5.14 represents the L2 speaker’s independence from L1 semantic knowledge and her exploitation of L2 word meanings as a mediational tool. In other words, during the cognitive process, the L2 speaker relies more on L2 semantic meanings and encyclopedia knowledge of events.

![Diagram](image)

Figure 5.14. Applying L2 concepts to L2 collocations
**Excerpt 5.1 Pei: pre-enrichment task**

1. Pei: 從事商業的活動 =
   
   conducting a business activity

2. Tutor: = 嗯
   
   hmm

3. Pei: (+) make, take (+++) for (+) doing, making, °taking°,
   getting, have, (+) taking

   make, take, for doing, making, taking, getting, have, taking

4. Pei: °我不太清楚°

   I don’t know

5. Tutor: 就是去, 他們可以去做買賣呀, 從事商業的活動

   that means that they can sell and purchase (some goods), conducting a business activity

6. Pei: 就是做生意

   which means doing business

7. Tutor: 嗯

   hmm

8. Pei: (+++) (+++) °taking°, °making° (+++) business ((writing down the answer))

   taking, making business

9. Tutor: 你可以解釋一下為什麼你要選這兩個字?

   can you explain why you chose these two verbs?

10. Pei: 因為他們做商業性的活動

    because they do business activities

11. Tutor: 嗯, 所以做商業性活動, 妳覺得是 making

    hmm, so as for doing some business activities, you think
(it) is *making*

12. Pei: taking 的話, (+) 也是

*taking also has the same meaning*

13. Tutor: 什麼意思?

*what do you mean by that?*

14. Pei: take 也是做, 製做, 不是製做, 是做, °做生意° 我覺得它 比 make 適合

*take also means zuò, zhì zuò, (it) doesn’t mean zhì zuò,*

*(it) means zuò, doing business I think it works better than make*

15. Tutor: okay

*okay*

In line 1, Pei interprets the target collocation as 從事商業活動 *cóng shì shāng yè de huó dòng* conducting a business activity. After Pei tries different verbs in line 3, she whispers “I don’t know,” indicating that she is not sure which verb should be used in the collocation. This seems to result from the lack of a clear understanding of the collocation. The tutor therefore elaborates on the meaning of the collocation by indicating that conducting a business activity means spelling and purchasing some goods in line 5. In response, Pei paraphrases the elaboration by stating 做生意 *zuò shēng yì*, the identical Chinese equivalent of *doing business*. It still seems that Pei encounters some difficulty when trying to think of appropriate collocated verbs in line 8. Here, Pei hesitated, as evidenced by multiple pauses before thinking aloud *taking* and *making* business. After the tutor asks Pei to explain why she chooses *make* and *take*, by adapting from 做生意 *zuò shēng yì* (in line 6), she reinterprets the collocation as 做商業活動 *zuò shāng yè de*
From line 10, evidence shows that Pei employs L1 semantic knowledge of the L2 verb 作 zuò to construct a collocation.

Since the Chinese verb 作 zuò can correspond to do and make in English, Pei cannot completely distinguish make from do and uses them as synonyms. In essence, Pei seems to understand that make means creating a new entity (製做 zhì zuò) in line 14. Therefore, when Pei explains that take shares the same meaning as make, she demonstrates that take means 作 zuò rather than 製做 zhì zuò in order to fit in the Chinese equivalent of doing business. That is, Pei first links take to the meaning of make (i.e., 作 zuò and 製做 zhì zuò), at which point she reverts to considering that take means 作 zuò since make means 製做 zhì zuò. Thus, Pei appears to state that take works better than make because the Chinese meaning of make 製做 zhì zuò cannot collocate well with business (生意 shēng yì) in the L1. In addition, the collocational errors (using make and take) may result from the lack of systematic L2 semantic knowledge of take and make.

Although L1 knowledge (L1 equivalents) of L2 collocations is not holistic and systematic (e.g., potential discrepancies exist such as make progress and have progress as discussed in excerpts 5.3 and 5.4), L1 knowledge assists L2 speakers in understanding the meaning of the collocations. More specifically, L1 semantic knowledge of the collocated verb can function as a guideline for constructing an L2 collocation. Figure 5.12 represents L2 speakers’ dependence on L1 semantic knowledge to construe L2 verb-noun collocations, especially for collocated verbs in the present study. L1 semantic knowledge refers to an L2 speaker’s understanding of the meaning of the collocated verb in the L1,
which may not fully entail L2 verb meanings. Additionally, since L1 semantic knowledge cannot completely reflect the semantic properties of the L2 verb, it may potentially lead to ambiguities (such as using *do* and *make* interchangeably).

**Excerpt 5.2 Pei: post-enrichment task**

1. **Pei:** 他從事一個金融工作?
   
   *he conducts financial business?*

2. **Tutor:** 對，他跟外國人從事一個家具生意的往來
   
   *right, he conducts furniture business with foreign clients*

3. **Pei:** 嗯, (+++) do (++), hmm, (+) have 是狀態性動詞人裡面想的 (++)
   
   *hmm, do, hmm  have is a static verb, which indicates something that a person is thinking*

4. **Tutor:** 嗯, 這邊要講地是從事一個商業的行為，從事一個

5. **Tutor:** 商業行為要怎麼說?
   
   *hmm, here (the collocation) means that (you) conduct a business exchange, what would be another way to express conducting a business exchange?*

6. **Pei:** 從事商業行為 (+++) 嗯(+) 它不是製造, 也不是 take, take 是得取, get 是
   
   *conducting a business exchange hmm here it (the collocation) does not mean making (something new), it does not mean take, take means grasping, get means receiving*

7. **Tutor:** 為什麼你最後決定選 does
why did you finally decide to choose *does*

9. Pei: 因為他是從事一個商業行為, 可以(XXX)他賣家具, 家具裡面可以賣
   *because he is conducting a business exchange, which means he is*
   *selling furniture, such as chairs and tables to foreign customers, that*
   *is, for example selling furniture to foreigners*

10. Pei: 桌子椅子跟外國人一起, 就是比如說賣家具給國外的人
   *continuously doing the same something*

11. Tutor: 所以 do 是什麼意思?
   *so what does *do* mean?*

12. Pei: 就是持續做同一件事情
   *okay, that’s right*

13. Tutor: okay, 對

In line 1, Pei states that the collocation event reflects that a person is doing financial business. It seems that Pei is uncertain. The tutor repairs the meaning of the event by explaining that the person is conducting furniture business with foreigners. Pei acknowledges the tutor’s utterance and starts thinking about which verb can be used. Pei initially considers *do*; however, she is not completely sure in line 3, as evidenced by multiple pauses. Additionally, Pei uses the core meaning of each target verbs as a mediational tool to assist herself during the thinking process. She first considers the underlying concepts of *have*, by referring to something happening in a human’s mind. Pei’s last pauses in line 3 may indicate her confusion. The tutor restates the meaning of the collocation in line 4. In response, Pei thinks aloud and states that conducting business does not mean making something new, which is very different from her word choice in the pre-enrichment task where Pei mainly depends on L1 semantic knowledge 做 *zuò* and
chooses *make* and *take*. During the post-enrichment task, Pei is independent from L1 semantic knowledge: she does not refer to any relevant Chinese equivalents to be mediators. Rather, Pei employs L2 conceptual knowledge of words as a mediational tool by thinking through semantic meanings of the verbs. In line 5, she verbalizes the core meaning of *take* and *get*. It seems that the meanings of these verbs cannot reflect the properties of the collocation event *doing business*. Pei decides to choose *do* rather than *take* and *get*. She further explains that *doing business* in this sentence means selling different kinds of furniture to foreigners in lines 9-10. As Pei explains in lines 9, 10 and 12, the verb *do* is an activity verb and it signifies the lexical representation of performing a continuous action. Moreover, Pei states that in this sentential context, conducting furniture business means selling chairs, tables etc. to customers. Thus, it seems that Pei maps between the conceptual meaning of the verb and the encyclopedic knowledge of the event. This is significantly different from the pre-enrichment task in that Pei shifts from dependence on L1 concepts to application of L2 word meaning in order to construct an L2 collocation.

*Excerpt 5.3 Pei: pre-enrichment task*

1. Pei: we’ve taken progress on the economy (++) ((writing down the answer))  
   *we’ve taken progress on the economy*

2. Tutor: 嗯，為什麼妳選 taken?
hmm, why did you choose taken?

3. Pei: (++)°我不知道°，我觉得 taken 好像不行。((erasing the answer))

4. 我們有一個越來越好的經濟(++) gotten

   I don’t know it seems that taken doesn’t work here. we have a better economy. gotten

5. Tutor: 女可以先解釋為什麼你把 taken 改掉?

   can you first explain why you eliminated taken?

6. Pei: 因為 taken 帶進去解釋不回來

   because when taken is put here, it cannot be explained

7. Tutor: okay, 為什麼是 gotten?

   okay, why gotten?

8. Pei: gotten 的話就是代表說我們有一個進步的經濟

   gotten means we have an economy that is progressing

[...]

19. Tutor: 女可以解釋為什麼你選 had?

   can you explain why you chose had?

20. Pei: 就是我們擁有進步的經濟

   that is (had also means) we own a progressed economy.

21. Tutor: okay

   okay

In this excerpt, Pei employs the L1 concept to select a collocated verb. The event construal for making progress emphasizes the endpoint of the event in Chinese; that is, Chinese L1 speakers have a preference for constructing the event as a whole, thereby indicating the end result. Thus, the different perspective on the event is shown in the use of the verb: the Chinese equivalent of making progress is 有進步 yǒu jìn bù (having progress). Specifically, progress on the economy (i.e., a progressed economy) is viewed
as an end-result entity that can be possessed by an agent. Pei thus utters “we have a better economy” in line 3. Since the meaning of have focuses on a sense of possession, and get here is seen as a synonym of have, Pei chooses these two verbs to collocate with progress. Thus, we can see that she applies the L1 semantic knowledge of the L2 verbs to constitute an L2 collocation.

Excerpt 5.4 Pei: post-enrichment task

1. Pei: 這些學生有好的進步在自我的成長, 在此階段. these students take progress (xxx), in this (+) take cannot work, do also cannot (++ make)
2. Tutor: 為什麼你選 make?
   why did you choose make?
3. Pei: 階段, 嗯, progress 成長, 成長是一步步的
   a process, hmm, progress means growth, growth is step by step.
4. Tutor: 嗯
   hmm
5. Pei: 從沒有到有
   from not having to having
6. Tutor: okay, 对
   okay, right

In this excerpt, Pei switches the mediational tool from L1 knowledge to L2 word meanings after the enrichment program. In line 1, Pei interprets the whole sentence as
“these students ‘have’ a great improvement in self-development in this stage” in the L1. In this respect, although Pei still understands the meaning of the collocation through an L1 equivalent (有进步 yǒu jìn bù) in line 1, she does not rely on the L1 to construct the L2 collocation. That is, she does not spontaneously find a corresponding L2 verb for 有 yǒu in the Chinese equivalent 有进步 yǒu jìn bù. Instead, Pei directly considers L2 words and sees whether or not the words can match the event construal of the collocation. In line 2, Pei thinks aloud and indicates that take and do do not work, but make suits the collocation.

Line 4 indicates that Pei considers progress as a personal growth which happens step by step in this sentential context. Gumperz and Levinson (1996) pointed out that two languages can reflect different aspects of the same reality. In Chinese, there is no collocation that involves making and progress together since the event of making progress refers to progress as an end-result entity. In the enrichment program, Pei practices forming a semantics of thought by mapping between the conceptual structure of make and her significantly personal understanding of the collocation event, make progress. Here, Pei shows that she changes her orientation to the event of progress. That is, in the post-enrichment task, Pei conceptualizes progress as an event that is occurring step by step.

This event construal guides Pei in choosing an appropriate verb in the collocation. “From having nothing to having something” in line 6 signifies Pei’s understanding of the conceptual semantic knowledge of make. Since this conceptual meaning of the verb can be mapped onto the event structure of progress, Pei chooses the verb make to collocate
with progress. It is also important to note that make becomes a conceptual thinking tool rather than a one-to-one correspondence with the L1. Because Pei previously learned an L2 verb meaning through the L1 (as shown in the pre-enrichment interview), she understood the verb make via its corresponding Chinese equivalent prior to the enrichment program. Thus, the L2 word meaning (via L1 equivalent) seems to be static and cannot be re-contextualized, and the understanding of the word can only reside in the L1. After the enrichment program, the L2 word meaning represents a systematic concept instead of corresponding directly to the L1 word.

Excerpt 5.5 Pei: pre-enrichment task

1. Pei: 我們讓經理做個決定跟告訴我們如何做
   
   we let the manager make a decision and tell us what to do

2. Tutor: okay, 妳覺得這邊妳會用那一個字?
   
   okay, you think which word you will use here?

3. Pei: get a decision, (+) get, make a decision, make a decision, 做決定,

4. take a decision, ° get a decision° (+) make, 不對, get a decision (+)
   嗯 ((writing an answer))

   get a decision, get, make a decision, make a decision make a
decision, take a decision, get a decision make, it’s wrong, get a
decision hmm

5. Tutor: 妳可以跟我講一下為什麼妳選 get?
   
   can you tell me why you decided to choose get?

[...]

10. Pei: 就是覺得他好像帶進去之後,因為做決定是抓住一個方法, 就

11. 是一個方式然後告訴他們如何做,我覺得她要去抓住那個邏輯
(I) feel after (I) put it in, making a decision is about grasping an approach and then (the manager) could tell employees what to do I think he needs to grasp that logic

12. Tutor: okay, 好
   
   okay, right

[...]

20. Tutor: 女覺得還有其他字嗎?
   
   do you think there is another word?

21. Pei: (+++) make a decision °make a decision °°°take a decision°, take
   
   make a decision, make a decision, make a decision, take a decision, take

22. Tutor: 嗯，為什麼妳寫 take?
   
   hmm, why did you write down take?

23. Pei: (xxx) take a decision (+) make (+) ((changing the answer))
24. 製做一個決定, 告訴我們如何做
   
   take a decision make make a decision, tell us what to do
25. Tutor: 所以妳是從中文想來的嗎?做決定就是 make,可能可以通
   
   hmm, so were you thinking in Chinese? making a decision is make, it seems to work here

26. Pei: 對
   
   yes

27. Tutor: okay
   
   okay

In addition to L1 concepts, the L2 speaker’s perception of the event also plays a crucial role in constructing L2 collocation during the pre-enrichment task. In line 1, even though Pei interprets the collocation as 做個決定 zuò ge jué ding, Pei decides among
three verbs *get*, *take* and *make* by mumbling *get a decision*, *take a decision*, and *make a decision* in line 3. In line 4, Pei thinks aloud 做决定 zuò jué dìng (make a decision) again, but she rejects the choice of *make* by uttering “it’s wrong”. Then Pei decides on the verb, *get*. She further elaborates on her choice by indicating that making a decision is as to “grasp” the best idea or approach: the manager needs to grasp a logic in order to tell other employees what to do in lines 10 and 11. It is interesting to note that if Pei relied on a Chinese equivalent of the collocation (做决定 zuò jué dìng or 做個決定 zuò ge jué dìng) at the first place, she would have chose *make*. However, Pei applied her personal interpretation of the collocation, and thereby chose *get* instead.

Additionally, Pei also considers *make* and *take* to be collocated verbs in line 21. Pei first chooses *take*. However, she changes the answer to *make* by explaining that *making a decision* is to produce a final choice in line 24. Since the answer reflects the identical Chinese equivalent of *making a decision*, the tutor inquires whether or not she thinks in Chinese when she makes a choice. Pei merely produces an affirmation marker, yes, without any further elaboration. It is worth noting that Pei’s interpretation switches from 做決定 zuò jué dìng (line 10) to 製做一個決定 zhì zuò yī ge jué dìng (line 24) that is more tied to the Chinese literal meaning of *make*. Here we can see that L2 word meaning (such as *make*) reflects a one-on-one correspondence with the L1. This type of L2 word meaning via the L1 can represent some usage of the word, but cannot entail meaningful components of the L2 word. Moreover, it seems that L1 semantic knowledge of an L2 verb’s meaning limit the speaker’s understanding of the word at the literal level.
Excerpt 5.6 Pei: post-enrichment task

1. Pei: 一家店可以營業的時間是六點到九點, 我有幾個小時的
   a store’s hours are from 6:00 to 9:00 (pm). I have several hours to
   make my own decision

2. 時間, 一些時間去(+)做我的決定
   time, some time to (+) make my decision

3. Tutor:  嗯
   hmm

4. Pei: do, have, do, (+) a decision, do, have a decision (++), hmm, have (++)
   ((writing down the answer))
   do, have, do, a decision, do, have a decision, hmm, have

5. Tutor: 為什麼選 have?
   why did (you) choose have?

6. Pei:  嗯, 用 make, ° 用 make° ((erasing the answer and changing it to
   make))
   hmm, use make, use make

7. Tutor: 女為什麼要改 make?
   why did you change to make?

8. Pei:  make 就是我在這幾個小時的時間, 我可以做比如說從沒有到有,
   make means during those store’s hours, I can make (a decision),
   for example from having no decision to having a decision, that is, I
   want to buy something and there are many things (I) can choose.
   finally, I chose one thing that I need, a decision

9. 就是我想說我要買什麼東西比如說還蠻多東西可以選擇地,

10. 最後選擇我需要的, 一個決定
    a final result so you used make. but (I am wondering)

11. Tutor:  嗯, okay, 所決定是本來沒有到最後有的一個結果嘛
    hmm, okay, so a decision is a final choice, starting from nothing to
    something, a final result so you used make. but (I am wondering)

12. 所以你是用 make 但是女之前為什麼想用 have
    so a decision is a final choice, starting from nothing to
    something, a final result so you used make. but (I am wondering)
why you chose have earlier on

13.  Pei:  因為我是想說, 決定是我們人腦中的一個想法

14.  Tutor:  嗯, okay, 後來為什麼改了

15.  Pei:  因為想說就是比如說我可以就是要買東西的話, 我有很多的

16.  選擇. 然後最後產生出一個最後的一個決定

17.  Tutor:  對

right

Similar to the previous excerpt, event though Pei first interprets the collocation event as 做決定 zuò jué dìng in line 1, she does not immediately refer to make. However, Pei considers the collocated verb between do and have in line 4. The initial word choice have shows Pei’s understanding of the collocation event in which she views a decision is something that already exists in a person’s head (in line 13). This shows that an L2 speaker’s perception of the event plays an important role in constructing an L2 collocation.

Although Pei chooses have, she immediately changes her answer to make after the tutor asks her to articulate herself in line 5. Pei realizes the event of making a decision with regard to the domain of purchasing in lines 6 and 8-10. Purchasing includes a decision on which product to be bought by looking around, finding some interesting goods, and making a final choice. Pei states that during those store’s hours, I can make a decision from the beginning when I don’t have any ideas what I want to buy till when I’d
like to buy something. For example, there are many things on which I can decide. And finally, I choose one thing which I need in lines 8-10. That is, the decision-making process profiles several options on which a buyer can decide. Since she found that the semantic meaning of *have* does not map onto the event construal, she changes the answer in line 6. Pei further elaborates that “I have many choices. At the end, I’ll choose one and come out with a final decision” in lines 15 and 16.

It is also worth noting that the event construal (derived from the selection of collocated verbs) can not only be affected by L1 concept, but also derives from the participant’s perception of the event in the relevant domain. In excerpts 5.5 and 5.6, even though Pei understands the collocation event through the L1 equivalent (*做决定* zuò jué dìng), she does not merely reply on the L1 concept. Rather, Pei depends on her perception of the collocation event and makes an initial choice. Therefore, the speaker’s subjective perception of the event can influence the way to construal a collocation. It is also interesting to note that the word choice changes from *have* to *make* in this excerpt shows that Pei becomes more aware of the event construal of the collocation after the enrichment program. Her initial perception of the collocation is that a decision is an idea that exists in a person’s head. After Pei reconsiders the collocation event, she realizes that her original perception does not match the encyclopedic knowledge of purchasing something. The decision of purchasing something in a store more likely emerges from a process rather than a preexisting choice. Additionally, although Pei also produces *make a decision* in the pre-enrichment task, her explanation of choosing *make* can only remain at the literal level of the verb’s meaning. However, in the post-enrichment task, she provides a more sophisticated explanation by articulating a decision-making process.
Beyond being tied to the L1 equivalent, Pei becomes more aware of the conceptualization of the collocation event derived from the semantic structures of *make*.

### 5.3.2 Summary

The data analyzed above provides insight into the verb-noun collocations that prove difficult for Pei; that is, Pei has trouble selecting appropriate collocated verbs. L1 knowledge becomes a primary linguistic source which remedies this difficulty and assists Pei in constructing collocations. Since L2 speakers in an EFL setting learn English vocabulary words through L1 Mandarin Chinese equivalence, it is understandable that L2 speakers use L1 semantic knowledge of the verbs as a cognitive tool to constitute an L2 collocation. As previously discussed, L1 semantic knowledge of an L2 verb’s meaning seems static and cannot be re-contextualized. For example, Pei previously learned the word meaning of *make* via its Chinese equivalents, and thereby her understanding of *make* is tied to Chinese literal meanings such as in the case of *making a decision* (製做一個決定 *zhì zuò yī ge jué ding*, creating a decision). After the enrichment program, the L2 word meaning represents as a systematic concept which the L2 speaker can use as a mediational tool to understand and construct an L2 collocation. Even though there is a discrepancy of a collocation event between the L1 and L2, the L2 speaker still can apply the essential conceptual meaning of the word to map onto her/his encyclopedic knowledge of the event. Take *making progress* for example. As discussed, the Chinese literal meaning of *make is* 做 *zuò*. If the L2 Chinese speaker understands the collocation
the collocation is considered to be a mis-collocation in the L1. Excerpt 5.4 shows that Pei not only becomes independent from the L1 semantic knowledge of an L2 verb’s meaning, but also can use the conceptual structure of make to re-contextualize the word meaning in the collocation make progress. L2 conceptual knowledge of the L2 verb’s meaning can function as a conceptual thinking tool and makes an L2 verb not a one-to-one correspondence with the L1.

In addition to L1 semantic knowledge of the verb, L2 speaker’s perception of the event influences the selection of the collocated verbs. In the case of making a decision, Pei considers that making a decision means ‘grasping’ an idea or approach, and thereby she chooses get in the pre-enrichment task. After the enrichment program, Pei becomes more aware of the event construal of the L2 collocation. Pei can refer to the encyclopedic knowledge of the collocation rather than just her personal perception of the event. In the post-enrichment task, even though Pei initially considers a decision to be something that exists in a human’s head, she reconsiders and realizes that a decision comes from a process of decision-making. Therefore, Pei raises her awareness of the event construal of the collocation in the post-enrichment task. This may result from the practice in the enrichment program. In the enrichment program, L2 speakers practice forming a semantics of thought by mapping semantic structures of verbs onto the encyclopedic knowledge of the collocation events. Through this process, L2 speakers develop awareness of the event construal of the L2 collocation occurring in the real world that plays a crucial role in choosing an appropriate verb. More specifically, according to Karpov (2003), L2 speakers’ thinking starts to be mediated by verb meanings and their
spontaneous concepts of collocation events become more accessible to conscious inspection after they internalized those scientific concepts.

Slobin (1996) made a claim on L2 acquisition by stating, “Each native language has trained its speakers to pay different kinds of attention to events and experiences when talking about them. This training is carried out in childhood and is exceptionally resistant to restructuring in adult second language acquisition” (p.89). According to Slobin, it seems that attention to events cannot be re-oriented. However, consider make progress as an example. The L2 speaker’s attention to the event can be re-directed through the re-conceptualization process to form a semantics of thought by mapping between a systematic concept of the L2 word and the encyclopedic knowledge of the event. One of the important consequences of the CBI in the present study is to bridge the gap between the speaker’s perception of the event and the linguistic construal of the event. Therefore, L2 conceptual knowledge of words can provide L2 speakers with an additional coherent, systematic orientation to understanding the use of the target verbs in collocations.

One of the important consequences of the CBI illustrates in this section is that Pei and other participants are able to apply their conceptual knowledge of L2 verbs’ meanings to new collocation events. Take doing business for example (do business is a transfer). Pei is able to transfer her conceptual knowledge of the L2 verb’s meaning to another relevant collocation by mapping the semantic concepts onto a new domain (selling furniture). More importantly, L1 semantic knowledge of an L2 verb’s meaning may not be transferable to other collocations; however, L2 semantic structures of the verb’s meaning have the advantage of being abstract and systematic, thus enabling their
use in the more full range of collocations. Moreover, the verb’s meaning is explicit, and thereby it is available for conscious control.

5.3.3 Section II: thinking conceptually

The first section primarily presents the incidents in which Pei improved her performance by choosing correct collocated verbs after the enrichment program. On the other hand, section two includes the excerpts in which Pei makes correct word choices in both pre-enrichment and post-enrichment tasks. However, the change occurs after the enrichment program. That is, Pei thinks conceptually and demonstrates a better understanding of event construals of collocations derived from verb meanings.

Excerpt 5.7 Pei: pre-enrichment task

1. Pei: 期望學生去做功課 to do °homework °(+ ) do hmm

   (the teacher) expects students to do homework to do homework do hmm

2. Tutor: 可以解釋一下為什麼?

   can (you) explain why (you chose this answer)?

3. Pei:  do homework 做功課

   do homework means zuò gōng kè

4. Tutor: 對,是怎麼想地為什麼是 do? 為什麼選 do?
right, how did (you) think about (it)? why do, why did (you) choose do?

5. Pei: 以前學過
(I’ve learned it)

6. Tutor: 以前有學過這個片語, 好 okay (+) 那妳覺得還有其他的嗎?
you learned this word combination before, right, okay do you think there is another (word)?

7. Pei: 本来有學這個片語, 好 okay (+) 那妳覺得還有其他的嗎?

8. have seems suitable, but have homework, have, but I forget the use of have. to have homework seems unsuitable

[...]

14. Pei: 本来有學這個片語, 好 okay (+) 那妳覺得還有其他的嗎?

have, (I) think that (I’ve) learned the word combination that includes have to mean doing homework, but I forget it

15. Tutor: okay

okay

Pei does not convey the key importance of semantic meanings or event descriptions of the collocation do homework in the pre-enrichment task. When the tutor first asks Pei to elaborate on her word choice do, she offers the L1 equivalent 做功課 zuò gōng kè as the explanation in line 3. After the tutor acknowledges Pei’s answer, the tutor further pursues Pei to articulate her explanation in line 4. Pei just briefly indicates that she previously learned the collocation do homework before. Pei’s production of the collocation is based on L1 concept and her memory of a previously learned collocation.

Further, Pei seems confused about the meaning of the collocation, have homework: she considers that having homework has the same meaning as doing
homework. More specifically, Pei indicates that she is not completely sure about the meaning of *having homework* since she forgets the use of *have* in lines 7 and 8. Moreover, Pei shifts from forgetting the use of *have* to forgetting the whole combination. In line 14, Pei states that she previously learned the collocation *have homework* that means the same as *doing homework*, but she just forgets about the collocation.

This phenomenon reveals the fact that Pei neither has a clear understanding of the verb *have*, nor knows the meaning of the collocation *have homework*. At the vocabulary level, even though Pei demonstrates her understanding of the meaning of *have* in the L1 during the pre-enrichment interview -- *have* signifies the sense of possession. Indeed, this L2 word meaning via the L1 equivalent cannot be re-contextualized in the collocation, *have homework*, and thereby Pei is confused about whether or not *having homework* means the same as *doing homework*. It seems that Pei’s L1 semantic knowledge (equivalent) of an L2 verb’s meaning may be merely tied to the verb itself; however, the word meaning cannot be used to understand the collocation. The word can be understood individually; but it cannot be understood when collocated with another word.

In other words, the word meaning of *have* for Pei seems to be static and refer to individual, un-related senses among word combinations containing *have*, as illustrated in Figure 2.4. In this respect, a lexical meaning is more like a dictionary entry (as discussed in chapter 2). The circle indicates the body of knowledge about *have*, and each box represents the use of *have* in linguistic expressions. At the collocation level, it seems that Pei cannot understand the meaning of *having homework*. Instead, Pei can only reply on
her memory. When Pei cannot recall the meaning of the collocation from her memory, she may not have any another approach to assessing it.

Excerpt 5.8 Pei: post-enrichment task

1. Pei: do your homework
   do your homework

2. Tutor: 為什麼用 do?
   why did (you) use do?

3. Pei: 嗯，做功課，就是功課比如說妳有很多種功課，然後妳需要把
do homework means, for example, you have many assignments and you need to write down the answers one by one

4. 答案一題一題的寫完
do homework

5. Tutor: Okay
   Okay

This excerpt also shows that Pei is independent from L1 knowledge because she gains abilities to explain the construal of collocation event after the intervention. In the enrichment program, Pei practices forming a semantics of thought by mapping between the semantic structure of do and her encyclopedic knowledge of do homework. Here, Pei shows here internalization of the event construal. More specifically, after the enrichment program, Pei develops a better conceptual understanding of the collocation event by indicating that the collocation, do homework, refers to “you have many assignments and you need to write down the answers one by one.” This event description captures the central semantic property of do, performing a continuous action.
Excerpt 5.9 Pei: pre-enrichment task

1. Pei: do, do doing do, 我會想說要用 do

do, do doing do, I will want to use do

[...]

7. Tutor: 妳可以解釋一下為什麼要用 do?
can you explain why (you) chose do?

8. Pei: 以前有學過
(I) learned (it) before

9. Tutor: okay,妳覺得還有其他的字嗎?
okay, did you think there is any other word?

10. Pei: 沒有
No

In excerpt 5.9, Pei indicates that she chooses do as a collocated verb because she previously learned the collocation do exercises. Pei does not provide any further explanation of the collocation. Pei’s word choice is based on her memory of the previously learned collocation. It seems that Pei’s production of the collocation lacks a coherent and systematic understanding of the collocation event.
Excerpt 5.10 Pei: post-enrichment task

1. Tutor: 为什么选 do?
   **why did (you) choose do?**
2. Pei: 做运动，就是比如我做的运动有很多的比如有跑步慢跑打篮球。尝试一次到两次一天内十到十五分钟
   **doing exercise means for example I do a lot of different exercises such as running, jogging, hmm, playing basketball once or twice a day, 10 to 15 minutes**
3. Tutor: 嗯，okay
   **hmm, okay**

Compared to the pre-enrichment task, this excerpt shows that Pei is more able to articulate her understanding of the collocation event. This may result from the fact that Pei has a better understanding of the verb’s meaning, *do*. Pei’s explanations of the collocation event in lines 2 and 3 illustrate the essence of *do*: performing a continuous action. At the same time, she is capable of mapping between the verb’s meaning and her encyclopedic knowledge of the event. In addition, Pei uses “I.” This first-person pronoun represents the significance of her personal understanding of the event (Negueruela, 2003; van Compernolle, 2012). After the concept-based instruction, it seems that Pei becomes more aware of the event construal. Pei’s discussion can be viewed as evidence of conceptual development because the event construal derived from the verb’s meaning becomes visible to the L2 speaker.
This discussion points to an important issue: why L2 speakers need to develop a conceptual understanding of L2 words and collocations, since advanced L2 speakers are able to use L2 spontaneously and communicative effectively? Additionally, from a perspective of natural approaches to L2 learning, L2 input can assist L2 speakers in developing the ability to use an L2 without learning all of the linguistic concepts. From Vygotsky’s (1987) perspective, learning conceptual structures of L2 words is not an ultimate goal in itself. Cognitive semantic meanings of words serve as a thinking tool that can be used by L2 speakers in learning L2 collocations that leads L2 development. Secondly, L2 researchers have argued for empowering L2 speakers. From the perspectives of the CBI and SCT, L2 speakers cannot be considered to fully understand the meaning of the L2, unless L2 speakers can become aware of the conceptual meanings behind linguistic features. L2 educators may teach those concepts in order to enable L2 speakers to become aware of the meanings implied by linguistic expressions (e.g., Negueruela, 2003; van Compernolle, 2012). More importantly, from Vygotsky’s (1987) perspective, it is crucial for L2 speakers to develop their own sense of words, namely smysl that represents personal senses and highly contextualized word meanings (Wertsch, 2000). In this data analysis, Pei demonstrates the ability to create smysl (the personal meaning of the collocation event) by connecting the scientific concept of do with her everyday concept of the event as a result of internalization of the verb meaning.
Excerpt 5.11 Pei: post-enrichment task

1. Pei: to do his work, 作, (+) do (++) ((writing down the answers))
   *to do his work, zuò, do*

2. Tutor: 为什么觉得=
   *why did (you) think*

3. Pei: =do his work, 做工作, 然后 make 的话就是一样也是做的意思
   *do his work, zuò gōng zuò, then make has the same meaning*

4. Tutor: 好, 所以你觉得=
   *right, so you feel*

5. Pei: =都可以
   *both of them work*

6. Tutor: okay
   *okay*

This excerpt demonstrates that Pei does not have a unified semantic understanding of these two verbs *do* and *make*. In line 1, Pei refers to the Chinese verb 做 zuò as a guide to search for its L2 counterparts. As discussed above, the literal sense of the Chinese verb 做 zuò can correspond to *make* or *do*. It is not too surprising that L2 Chinese speakers may be confused with these two verbs when they do not have systematic understandings of these verbs. Additionally, in line 3 show that Pei understands the collocation event through its Chinese equivalent 做工作 zuò gōng zuò. Pei indicates that *make* means the same thing as *do* when collocating with *work* in this sentence.
Excerpt 5.12 Pei: post-enrichment task

1. Pei: 他持續做他的工作 some work, do (writing down an answer)
2. do some work in a hospital
   he’s continuously doing his work some work, do, do some work in a hospital
3. Tutor: 嗯, 為什麼選 do?
   hmm, why did (you) choose do?
4. Pei: 就是做他的工作嗯就是醫院的工作比如說看 (xxx) 然後探訪病人
   that is (he) just does his work hmm (it is) a job in a hospital, for example examining patients
5. Tutor: 嗯, 就是持續做他的事情
   hmm, that is continuing to do his work
6. Pei: 對
   yes
7. Tutor: okay
   okay

Pei’s initial conceptualization of the collocation event prior to the enrichment program is primarily based on the L1 equivalents and relies on a one-to-one correspondence with the L1. In excerpt 5.11, Pei is confused about the meanings of *make* and *do*. After the enrichment program, Pei is able to capture the key importance of the semantic meaning of *do* -- a sense of continuity in line 1. This lexical aspect of performing a continuous action can help the L2 speaker make a distinction between *make* and *do*. It seems that Pei develops a much more coherent semantic understanding of the verbs. Moreover, the emergence of conceptual understanding of the collocation event
occurring in line 3 shows Pei’s metaphorical use of *do*: Pei is able to map between the conceptual structure of *do* and the encyclopedia knowledge of the event in this sentential context. Thus, this is clear evidence of Pei’s conceptual development after the enrichment program.

*Excerpt 5.13 Pei: pre-enrichment task*

1. **Tutor:** 賺錢妳要怎麼說？
   
   what do you explain earning money (in English)?

2. **Pei:** 沒有學過
   
   (I)’ve not learned (it)

3. **Tutor:** (+) 女你覺得可能用哪個字？
   
   which word would you think that it is possible to use here?

4. **Pei:** make money, 製做錢, 可是好像不是, 嗯? 製做錢 (+) do money,

5. have money, take money, get, make ((writing and erasing)) make money

   *make money, printing money the verb seems not to work here, huh? printing money, do money, have money, take money, get, make, make money*

6. **Tutor:** 為什麼你要寫 make?
   
   why did you want to write down make?

7. **Pei:** 製做錢 (+) 就是賺錢的意思

   *printing money means earning money (in English)*

8. **Tutor:** 還有其他的嗎?

   *any other (words)?*

9. **Pei:** 沒有

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29 The metaphorical use of verbs in the present study indicates mapping conceptual structures of verbs from one conceptual domain to another domain.
no

10. Tutor: okay

okay

Pei indicates that she did not learn the linguistic expression *making money* in English before. The tutor encourages her to think about what would be a possible verb that can collocate with money to express the concept of *making money*. Pei first suggests the collocation *make money*. However, Pei interprets the collocation *make money* at a literal-sense level: printing new dollars bills in lines 4-5. She is not sure if this collocation can express the sense of earning money. Hence, she tries different combinations, by uttering “do money, have money, take money.” It seems that these combinations do not work. Pei chooses *make* as a final answer. More specifically, she explains that “printing money means earning money” in line 7. Thus, prior to the enrichment program, even though Pei produces the correct collocation, her production of the collocation seems to lack a meaningful understanding of the collocation event.

*Excerpt 5.14 Pei: post-enrichment task*

1. Tutor: 為什麼選 make? 什麼叫作 make money?

*why did (you) choose make? how did (you) explain making money?*

2. Pei: 就是從我們沒有賺取到有, 就是比如我從事服務業, 我從做

3. 服務的事情之後到了一段時間以後, 別人才給我一筆錢從沒有

4. 到賺取到有

*that is we went from having no income to making money for example, I have a job in service industry after I worked in the*
service industry for a period of time someone gave me some money. from having no income to making money

5. Tutor: 嗯

hmm

6. Pei: 所以我從沒錢到有錢

so I went from having no money to having some

7. Tutor: 對

right

During the post-enrichment task, Pei demonstrates a more sophisticated conceptual interpretation of the event, making money. Compared to the pre-enrichment task, she understands that the event, making money, is not just with regard to the literal meaning of the verb make, but that it is pointed to the metaphorical sense of earning money through a job (in lines 2-4). It is interesting to note that the core meaning of make manifested in the image schema can function as a basis for conceptual and abstract thinking through metaphorical mapping. In other words, the image schema can serve as a template which Pei can map onto her encyclopedia knowledge. This cognitive mechanism plays a crucial role in an account of the metaphorical expressions of making money.

From a Vygotskian point of view, it is worth noting that after the enrichment program, Pei can exemplify the collocation event with her personal experience of making money. This signifies the change from the initially simplistic understanding to the conceptual understanding of the collocation. The occurrence of agency emerges through the use of the pronounce “I” that can mark a degree of significance to the speaker. In
other words, Pei is able to construct a new, personally significant conceptualization of the collocation event which is missing in the pre-enrichment task. Additionally, Pei’s understanding of the collocation event also reveals a meaningful and metaphorical use of the verb *make*. Her understanding emphasizes the importance of semantic properties of the verb, a notion of “from having nothing to having something.” Overall, Pei’s explanation of her word choice shows a great degree of conceptual understanding of the verb and collocation.

### 5.3.4 Summary

The data from the post-enrichment task show that a change of constructing a collocation occurs, from dependence on the participant’s memorization of expressions or L1 equivalents to a clear semantic and conceptual understanding of collocations. First, in the cases of *doing homework*, *exercises* and *work*, the L1 equivalent of the collocated verb in these three collocations is *做 zuò*, which can correspond to *do* and *make*. Since Pei previously learned the first two collocations, she produces correct collocation forms. However, this indicates neither that Pei fully understands the event construals of the collocations, nor that Pei understands why *do* is an appropriate verb (why using *do* rather than *make*). Although Pei is able to produce correct collocation forms based on her memory of previously learned collocations, without any further articulation of the collocation, it seems that Pei’s understanding of the collocation events is limited. Furthermore, L2 Chinese speakers are often confused with the use of *do* and *make* since
they have the same correspondence with the L1. If the L2 speaker does not have systematic concepts of these two verbs, he and she is more likely to misuse these two verbs in a verb-noun collocation such as in the case of doing his work where Pei chooses both verbs do and make for the collocation.

After the enrichment program, Pei is capable of articulating the event construals of the collocations and shows a more coherent systematic understanding of the collocated verbs. This is a crucial distinction from more conventional approaches to collocation teachings in EFL classrooms that typically aim to help L2 speakers first acquire forms by memorizing or noticing a verb-noun collocation as a fixed unit, and secondly mapping the forms onto L1 meanings. The memorization-noticing approach can be problematic because L2 speakers encounter problems when they cannot retrieve the forms or meanings of the collocations from memory. In the case of having homework, Pei indicates that she can remember neither the use of have nor the form of the collocation that includes have to show the same meaning as doing homework. It seems that Pei has no another way to access the meaning of the collocation. The memorization-noticing approach ignores the semantically-motivated nature of many verb-noun collocations and takes away the meanings of the collocated verbs from the collocations. At the same time, it seems that the Pei cannot re-contextualize L1 word meanings in L2 collocations. As several cognitive linguistics practitioners pointed out, most collocations are to some extent semantically-motivated, especially for verb-noun collocations (e.g., Kennedy, 2008; Liu, 2010; Walker, 2008). Each verb in verb-noun collocations conveys a distinctive meaning of its own. The semantic meaning of do is to perform an action which is different from that of make. Understanding the differences between these two verbs
regarding their core meaning helps L2 speakers distinguish the respects of collocation events.

One of the positive values of the concept-based approach to L2 collocation is to make a significant connection between forms and meanings through the re-conceptualization process. The linguistic meaning of a verb-noun collocation can reside in conceptualization, and the re-conceptualization of the collocation can be crucial and useful part of the L2 acquisition process. Even though Pei already produces the correct forms of *doing homework*, Pei practices forming a *semantic of thought* on the collocation *do homework* in the enrichment program. This enhances her understanding of the linguistic construal of the collocation event derived from the verb’s meaning.

Regarding the collocation *make money*, L1 semantic knowledge of the L2 verb’s meaning is still a primary cognitive tool for Pei to construct L2 collocations in the pre-enrichment tasks. However, Pei only understands the semantic meaning of *make* on the surface level. Hence, she interprets the collocation event *make money* as the creation of new dollar bills. After the enrichment program, Pei also shows a better understanding of the collocation event by mapping the semantic structures of *make* onto the encyclopedia knowledge of earning money through a job.
Chapter 6
Data Analysis II

6.1 Introduction

The purpose of chapter 6 is three-fold. First, the chapter discusses the microgenetic analysis of development of L2 collocations of two participants with regard to the verbs *take*, *get* and *have*. It is impossible to present analyses of every participant showed in the tasks (approximately 17 hours). I selected these two participants because of their illustrative quality. Next, the chapter presents a statistical analysis of collocation performance in pre and post-enrichment tasks, with a description of an analytical procedure. Finally, the chapter reports the data collected from participant interviews conducted before and after the enrichment program.

6.2 Case studies: other compensatory strategies

According to the TFS hypothesis, when L2 speakers use L1 to articulate the meaning of an L2 collocation, they can only interpret the event that is coded in the L1. Thus, many studies have shown that L1 influence is pervasive in the production of L2 collocations (e.g., Laufer & Waldman, 2011; Wolter, 2006). However, the use of L1 knowledge to construct an L2 verb-noun collocation is not mandatory. Several collocational studies (e.g., Eyckmans, 2009; Hasselgren, 1994; Howarth, 1996; Liu & Shaw, 2001) have also found that L2 speakers employ different compensatory strategies
(e.g., using familiar high-frequency verbs or using near synonyms) to convey their intended meanings. In the following excerpts, we will see that even though direct L1 equivalents exist, Dang employed his language intuition as a compensatory strategy rather than using L1 knowledge to construct target collocations. Mis-collocations therefore occurred. In addition, although Wei-Han employed direct L1 equivalents to choose appropriate verbs, he tended to use *take*, *get* and *have* as near synonyms. This is due to his lack of semantic knowledge of L2 verbs’ meanings. However, changes occurred following the enrichment program. Dang’s and Wei-Han’s collocational behavior started to be mediated by the conceptual meanings of L2 verbs.

### 6.2.1 Case Study 2: Dang

*Excerpt 6.1 Dang: pre-enrichment task*

1. **Dang:** 除了頭之外還有哪裡痛嗎?
   *besides your headache, where else do (you) feel pain?*

2. **Tutor:**  嗯嗯，你覺得要填哪一個?
   *hmm, which one do you want to fill in here?*

3. **Dang:**  痛 (++)，應該可以用 get 吧?
   *pain, (I) should be able to use *get* here, right?*

4. **Tutor:**  為什麼?
   *why?*

5. **Dang:**  得到一個痛吧?
   *getting pain?*

6. **Tutor:**  嗯嗯
   *hmm*
Tutor: 是從中文來的意思，還是語感

(it’s) from a Chinese meaning or (your) language intuition

Dang: 感覺這個字唸比較順

(I) feel that this word reads more smoothly

Tutor: 好，你覺得還有其他的字嗎?

okay, do you think there is another word?

Dang: (+++) take 的話是 (+) 覺得美國人有在用吧?

take, (I) feel that there are Americans who use it?

Tutor: okay

okay

Dang cannot rely on L1 knowledge because his interpretation of the sentence in line 1, “你除了頭之外還有哪裡痛嗎? (besides your headache, where else do you feel pain?)”, implies a sense of feeling pain rather than a notion of having pain. It is important to note that language can force the speaker to fit thoughts into linguistic frames in the process of speaking (Slobin, 1996). Having pain refers to feeling pain in this sentential context in the L1. Since no target verbs correspond to the concept of feeling pain in Chinese, L1 knowledge cannot become a mediational tool.

More importantly, Dang seems not to have a clear idea of how the event (having pain) is conceptualized in the L2 by using the target verb have. Thus, he creatively, though inappropriately, uses the target verbs get and take: getting pain and taking pain. Dang believes that pain should collocate with get based on his language intuition (i.e., get pain sounds better). More specifically, the initial reason that Dang suggests get pain is because he interprets the collocation event as receiving pain in line 5. Indeed, Dang is not
sure about this explanation since the Chinese equivalent of *getting pain*, 得到疼痛 dé dào téng tòng, is considered to be a mis-collocation as well. Therefore, when the tutor inquires if the collocation *get pain* results from a Chinese equivalent or language intuition in line 10, Dang states that the reason he chooses *get* is because *get pain* sounds better. Furthermore, Dang suggests that *take* can also collocate with *pain* since he guesses that American people might have collocated *take* with *pain*. Since *take* and *get* share a similar sense (i.e., receiving), it is understandable that Dang chooses *take* as well.

It is also worth noting that Dang indeed understands the meaning of *get*, (receiving something in line 5). However, he may not incorporate the meaning of *get* in choosing an appropriate collocated verb. In other words, he may be not aware of that event contrual of *getting pain*, which in fact does not correspond to encyclopedic knowledge of the event. Dang seems not to pay attention to what conceptualization of *getting pain* is referred to. This creative usage indicates that Dang focuses more on *forms* rather than *meanings* when he constructs the collocations.

*Excerpt 6.2 Dang: post-enrichment task*

1. Tutor: 我已經厭倦了(+) being heavy 這麼肥胖，然後呢?  
   *I’ve been sick of being heavy being so heavy, then?*

2. Dang: 跟膝的疼痛
Dang merely refers to foot pain in line 2. It seems that he does not have L1 knowledge to assist him in constructing the collocation (i.e., no corresponding words). A similar situation occurs in the pre-enrichment task. However, unlike his pre-enrichment task, Dang considers have as a collocated verb in line 4. The tutor inquires why Dang chooses have. In response, he first indicates that a person has a condition of having pain, and he further elaborates that the person who has a condition of foot pain because he is over-weight. This indicates that Dang can refer to a person as an entity who contains a feeling of pain, which matches the conceptual structures of the verb have. In the previous excerpt, it seems that Dang does not have a clear idea of the event construal since the L1 and L2 construct this collocation event differently. More specifically, Dang lacks a clear idea of how the event construal is constructed in the L2. By learning the conceptual
structure of *have* and forming a *semantics of thought*, Dang can pay closer attention to the relationship between the linguistic form and the conceptualization of the collocation event derived from the verb’s meaning. Therefore, in this post-enrichment task, Dang develops awareness of the condition of *having pain*, meaning a person contains pain within his/her body (as a container). This excerpt shows that Dang internalizes the L2 concept and becomes more aware of the use of the collocated verb *have* after the enrichment program.

*Excerpt 6.3 Dang: pre-enrichment task*

1. Dang: 決定去做那個事情要有一個原因, 所以, 有一個原因 (+) 有一個原因 (+)  
   應該是 make 或是 have (++) (writing down the answer))  
   *deciding to do something needs to have a reason, so, having a reason,  
   having a reason should be make or have*

2. Tutor: 嗯, 為什麼是 make?  
   hmm, why is (it) make?

3. Dang: 感覺比較順  
   feels more smooth

4. Tutor: okay, 還有其他字嗎?  
   okay, do (you) think there is another word?

5. Dang: 有一個原因 (+) 這個字應該是跟這個字用的 ((laughter)) 應該, 應該是這樣  
   have a reason, this word (make) should be used with this word (reason) it should be, should be like this

6. Tutor: 所以你覺得沒有其他字  
   so you don’t think that there is any other word (that can collocate with reason)

7. Dang: 如果是用 have 的話 (+) 有一個原因 (+) 感覺好像可以又不太可以
If (I) use have, have a reason, (I) feel it could be possible but at the same time, (I) feel it could be wrong

9. Tutor: okay, 好

okay, right

This excerpt shows that a discrepancy exists between Dang’s understanding of the collocation event and the meanings of his verb choices. He uses the L1 concept to understand the collocation by uttering 有一個原因 yǒu yī ge yuán yīn (having a reason) three times when he interprets the meanings of the sentence in line 1. Then Dang suggests two verbs, make and have. Since Dang finalizes the answer with make, the tutor asks him about his word choice, make in line 3. Because Dang makes a choice based on his language intuition, he responds with “I feel it sounds better.” When the tutor asks if there is another word that can collocate with reason, Dang first emphasizes that make and reason should go together. Moreover, Dang considers the word choice have again in line 8. It is interesting to note that even though Dang thinks aloud by uttering the Chinese equivalent of the collocation 有一個原因 yǒu yī ge yuán yīn (having a reason), he does not choose have at first and explains that he feels have may or may not work in this collocation in line 8.

This indicates that Dang does not rely on L1 knowledge of the L2 verb’s meaning as a cognitive tool. Rather, he depends more on his own language intuition – whether or not a word combination sounds correct. Additionally, the word choice make points to an important issue: Dang does not use the word meaning to choose an appropriate collocated
verb. That is, if Dang had considered the meaning of make in the L1, he would have understood that make a reason is a mis-collocation. The pre-enrichment interview shows that Dang understands make through its L1 equivalent. Regarding its verb-noun collocation, Dang seems to ignore its meaning when constructing the collocation, make a reason. This may result from a conventional teaching approach to L2 collocations. The target verbs such as have and make are viewed as delexical verbs that do not make a significant semantic contribution to the collocation (e.g., Chan & Liou, 2005). Moreover, in many EFL settings, verb-noun collocations have been taught as fixed units and the meaning of verbs are not emphasized. Therefore, L2 speakers may not be aware of a verb’s meaning when learning a collocation.

Excerpt 6.4 Dang: Post-enrichment task

1. Dang: 理由, 就是(+有一個原因跟理由就是(+ 就是自己有那個意像,
2. 然後就是那個原因,就在自己腦之裡, 嗯

   **an explanation, that is, having a reason or an explanation that is, that is I have that image, then that is that reason, in my head, hmm**

3. Tutor: okay, 好, 對

   **okay, right, correct**

In line 1, Dang also thinks aloud through the Chinese equivalent 有一个原因 yǒu yī ge yuán yīn (having a reason) to interpret the meaning of the collocation. In the
previous excerpt, it seems that Dang ignores the verb’s meaning when constructing a collocation. Through the practice of forming a semantics of thought, he is able to articulate the meaning of the collocation by exemplifying that having a reason means that a person has a reason in his head. This signifies that Dang can apply the semantic structure of have (as shown in Figure 4.8, and through his explanation, a person possessing a reason) to understand the event construal of the collocation having a reason. In other words, Dang has a better understanding of having a reason on a conceptual level. More importantly, he becomes more aware of the verb’s meaning in a verb-noun collocation. In the pre-enrichment task, Dang may not consider the verb’s meaning (just depending on language institution) and thereby constructs a mis-collocation make a reason. After the enrichment program, he can bridge the gap between the conceptualization of the collocation event and the verb’s meaning through metaphorical mapping.

Excerpt 6.5. Dang: Pre-enrichment task

1. Dang: 我總是有一個熱情對於化妝品的事業, (+)跟我總是感覺 (+) 我會在 (++)
   I always had a passion for the cosmetics industry, I’ve always felt, I will

2. Tutor: 在業界工作, industry 是業界的意思
   working in the industry, industry means yè jiè
This excerpt demonstrates that Dang does not have a unified semantic understanding of *make* and *have* prior to enrichment. In line 5, Dang interprets the collocation as 有一個感覺 *yǒu yī ge gǎn jué* (having a feeling). He uses L1 knowledge (equivalent) to choose appropriate verbs. He chooses *make* because he thinks that *make* may have the same meaning as *have* in lines 5-7. Liu and Shaw (2001) showed that Chinese speakers tend to over-use *make* compared to L1 English speakers. At the same
time, Dang depends on the Chinese equivalent 有一个感觉 yǒu yī ge gǎn jué to construct a collocation. Therefore, he can only interpret make as imparting the same meaning as have when he overuses make. This interpretation signifies that he does not have a clear understanding of the meaning of make. In line 8, when the tutor inquires why Dang chooses have, he merely responds by indicating that he feels it is a correct word when reading it aloud. This phenomenon shows that Dang does not have a systematic understanding of have and can only rely on his language intuition (i.e., having a feeling sounds smooth for him).

*Excerpt 6.6 Dang: Post-enrichment task*

1. Tutor: 我感觉 Patty 不會來這個婚禮
   *I feel that Patty won’t come to this wedding*

2. Dang: 嗯 (++) 應該是 have 吧, 我有一個感覺
   *hmm, it is supposed to be have, I have a feeling*

3. Tutor: 為什麼要選 have, 什麼是 have a feeling?
   *why did (you) want to choose have what does have a feeling mean?*

4. Dang: 擁有感覺, 就像有一個原因一樣
   *owning a feeling is as same as having a reason*

5. Tutor: okay
   *okay*
Since Dang is confused about the word *wedding*, the tutor paraphrases the sentence for him in line 1. In response, Dang chooses *have* as a collocated verb and interprets the collocation as 我有一個感覺 wǒ yǒu yí ge gǎn jué (I have a feeling). In the pre-enrichment task, Dang relies more on language intuition (i.e., whether or not the collocation sounds smooth when he reads it aloud) and thereby he questions the word choice of *have* and produces a collocation error, *make a reason*. However, Dang becomes more confident about the use of *have* after learning its semantic meaning, and further explains that owning a feeling is identical to having a reason. This parallel shows that Dang categorizes a feeling and a reason as the same entities that can be owned by a person.

### 6.2.2 Summary

Departing from Pei, Dang also demonstrates that L2 speakers can employ different compensatory strategies to convey an intended meaning when they do not have a clear understanding of a verb’s meaning. Dang relies more on his language intuition prior to enrichment. For example, Dang constructs the collocations *getting/taking pain* based on whether or not the collocation sounds good to him. Moreover, as for having a reason, Dang interprets the collocation through the direct Chinese equivalent 有一個原因 yǒu yí ge yuán yīn. However, he still employs his language intuition to produce making a reason. The more conventional approach to teaching L2 verb-noun collocations

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30 Pei relies more on L1 knowledge.
in an EFL setting depends on L1 equivalents to articulate the meanings of the collocations. When L2 collocations have identical L1 equivalents and L2 speakers use the L1 concepts to construct L2 collocations, L2 speakers produce correct collocations. However, when a discrepancy exists between L1 and L2 collocations, an L2 learner is likely to produce creative, though often inappropriate, collocations.

More importantly, Dang does not consider the verb’s meanings in the collocations. If Dang had applied L1 meanings in choosing collocated verbs, he would have realized that *get/take pain*, *make a reason* and *make a feeling* are mis-collocations in the L1. As previously discussed, in the conventional teaching approach, high-frequency verbs (especially for the target verbs in the present study) are viewed as delexical verbs. These verbs are considered not to make semantic contributions to verb-noun collocations. Collocations are memorized as fixed terms, and therefore L2 speakers may ignore the verbs’ meanings in the collocations. In addition, Dang is not aware of the event construals of collocations. Even though he demonstrates his understanding of the collocated verb *get*, he still constructs the collocation *get pain*. This mis-collocation indicates that the speaker cannot become aware of the event construal of the collocation through an L1 verb’s meaning.

In the cases of *making a reason* and *making a feeling*, Dang seems to overuse *make* to produce collocations. Even though Dang interprets these two collocations through their direct Chinese equivalents *having a reason* and *having a feeling* respectively, he still attempts to choose *make* as a collocated verb. Liu and Shaw (2001) noted that Chinese speakers overuse *make* in verb-noun collocations when compared to L1 speakers. It is understandable that Dang thinks that *make* has the same meaning as
have when he applies L1 knowledge 有一个感觉 yǒu yí gé gǎn jué to producing the collocation make a feeling. This overuse of make shows that Dang does not have a coherent systematic understanding of the verb make. It is also interesting to note that Dang is not sure whether or not have can be used in the collocations have a feeling and have a reason. This uncertainty about the use of have may result from the lack of a clear understanding of the verb as well.

Learning verb meanings via SCOBAs and forming a semantics of thought lead to a better understanding of the use of the verb in verb-noun collocations. Specifically, following enrichment Dang was able to link the meaning of have to the conceptualizations of the collocations have a reason and have pain by metaphorical mapping of the conceptual structure of the verb and the event construals. After the enrichment program, Dang shifted from the dependence on language intuition to the application of systematic L2 meaning to produce L2 collocations. The conceptual structure of the L2 verb meaning have becomes a mediational tool for understanding the event construals of the collocations. Thus, following enrichment Dang demonstrated a better understanding of meaning-form relationships in verb-noun collocations.

6.2.3 Case study 3: Wei-Han

Excerpt 6.7 Wei-Han: Pre-enrichment task

1. Wei-Han: attention, 嗯 (+) attention 是注意, 注意的話 (+) 注意, 我印象中只有 pay attention 那時候要注意, 但是這一題要填 pay 的話, 不太對吧, 感覺
2. attention, hmm, attention is zhù yì, regarding attention, attention, as I
recall, I only remember pay attention means giving attention, but in this question, if I fill in pay, it’s wrong, (I) feel

3. Tutor: 那這邊是什麼注意?
what kind of attention is it here?

4. Wei-Han: 讓大家都能夠知道的注意啊
attention that lets everyone be able to know

5. Tutor: 主詞是 speech, 所以這個演講怎麼注意
the subject is speech, so how is this speech related to attention

6. Wei-Han: 這個演講怎麼注意 (+) 還是不知道要怎麼寫
how is this speech related to attention, (I) still don’t know how to write (it)

7. Tutor: 就是這個演講獲得大家的注意, 或是引起大家的注意, 對不對?
that means this speech receive everybody’s attention or evoke everybody’s attention, doesn’t (it)?

8. Wei-Han: 喔, 引起大家的注意, 它能夠引起大家的注意應該是(+), 引起大家的注意
注意就是獲得大家的注意, 嗯, 感覺應該 have 好像有一點關係, 那寫
have 好了, 感覺 have 好像可以耶

oh, evoke everyone’s attention, it can evoke everyone’s attention, it should, evoke everyone’s attention means receiving everyone’s attention, hmm, (I) feel that have has some relation, (I’m) writing down have. (I) feel that have seems to work here

9. Tutor: 你可以在解釋清楚一點, 為什麼 have 可以?
can you explain (it) more clearly, why have works here?

10. Wei-Han: 因為從那個就是說, 它要吸引大家注意所以就是獲得,
因為從那個就是說, 它要吸引大家注意所以就是獲得, 獲得感覺好像可以
像可可以用 have 來詮釋獲得的意思
because that means it wants to attract everybody’s attention so it means receiving (attention) it seems that have can express receiving

11. Tutor: 嗯嗯
hmm

15. Wei-Han: 因為不確定所以是 60%, 然後如果用另一個字詮釋獲得的話，應該可以用 get 才對，一樣是 60%跟 have 的原因一樣

because (I’m) not really sure, (I gave it) sixty percent (confidence levels), then if (we) can use another word to express receiving, (it) should be get, (I) also (gave it) sixty percent (confident levels) as I did to have

16. Tutor: 可以解釋一下？

can (you) explain?

17. Wei-Han: get 感覺可以詮釋獲得, 獲得它那個注意的獲得

(I) feel get can express receiving, receiving as in the one that receives attention

18. Tutor: 嗯嗯

hmm

In the pre-enrichment task Wei-Han remembers a verb-noun collocation, pay attention, in lines 1-2. However, he feels that pay does not work since paying attention means giving attention. Furthermore, the tutor inquires what kind of attention is meant here. Wei-Han responds to the question by uttering “attention that lets everybody know” in line 4. Because Wei-Han seems not to understand the issue, the tutor points out that the subject in this sentence is a speech and further asks Wei-Han how the speech and attention are related to each other in order to help him understand the meaning of the collocation. However, Wei-Han still cannot figure out the meaning. The tutor explicitly explains it in line 7. Wei-Han acknowledges the tutor’s explanation by repeating the utterance 引起大家注意 yǐn qǐ dà jiā zhù yì and then switching to 獲得大家注意 huò dé
dà jiā zhù yì. He uses the latter term as a primary guidance to choose appropriate verbs. After Wei-Han realizes that the meaning is *receiving attention* in the phrase through the L1, he suggests the verb *have* in lines 9-10.

It is interesting to note that the Chinese equivalent 獲得注意 *huò dé zhù yì* directly corresponds to the collocation *get attention*. However, in lines 9-10, Wei-Han feels that *have* could be relevant to this collocation rather than *get*. This choice of *have* indicates that Wei-Han does not have a clear idea of its word meaning. The tutor requests that Wei-Han articulates his choice. Wei-Han replies that the verb *have* can be used to express a sense of *receiving* in lines 12-13. This discrepancy seems to occur between the participant’s understanding of the individual word meaning and its use in the collocation. Wei-Han indicates that the meaning of *have*, a sense of possession in the pre-enrichment interview. However, Wei-Han seems not to be able to contextualize its meaning in the collocation and explains that *have* can express a sense of *receiving*. This phenomenon illustrates that an L1 identical equivalent to an L2 counterpart cannot completely lead to the production of the correct collocation when the L2 speaker does not have a clear understanding of a verb’s meaning.

*Excerpt 6.8 Wei-Han: Post-enrichment task*

1. Wei-Han: 我什麼從同學身上得到一些注意，因為我數學很好
   
   *I receive attention from my classmates because I’m good at math*

2. Tutor: 嗯嗯
   
   *hmm*

3. Wei-Han: attention, 這裡填 *got*
Then why did (I) fill in got? because attention this kind of stuff is other people’s attention, attention is received from others, so I should fill got

Similar to the pre-enrichment task, Wei-Han interprets the meaning of the collocation as receiving attention from others in line 1. After the enrichment program, he is able to distinguish get from have through reliance on the meanings of get and have, and thereby he immediately chooses get as a collocated verb in line 3. Moreover, Wei-Han describes that attention here refers to other people’s attention, and it is received from others. In other words, Wei-Han can map the encyclopedic knowledge of the event (receiving others’ attention) onto the semantic structure of get.

Excerpt 6.9 Wei-Han: Pre-enrichment task

1. Wei-Han: 學位, 然後有一個學位 (+) 所以去得到那個學位應該可以用 get,
2. 去 get 那個學位, get 得到那個學位, 所以我覺得可以用 get a degree, then having a degree, so to receive a degree, (I) should be able to use get, to get that degree, get receiving that degree so I feel that (I) can use get
This excerpt demonstrates that Wei-Han seems to use three verbs, *get*, *have* and *take*, as synonyms. First, Wei-Han uses *get* to collocate with a degree since he applies L1 knowledge 得到學位 dé dào xué wèi receiving a degree to choose a correct verb. In line 4, he expresses that he is one-hundred percent sure about the use of *get* in the collocation.

However, Wei-Han thinks aloud that *have* is also an appropriate verb by switching his reasoning from 得到學位 dé dào xué wèi (getting a degree) to 擁有學位 yōng yǒu xué wèi (owning a degree).
As previously discussed, participants’ perceptions of the event affect the constructions of L2 collocations. Wei-Han’s changed perception also indicates that he may not have a thorough understanding of the event construal. In other words, even though *get a degree* and *have a degree* are both correct collocations, in fact, they refer to different realities. However, Wei-Han seems to consider that both verbs are near synonyms. He states that *get* and *have* both have the sense of possession in lines 4 and 5. Therefore, he notes that he should be able to use these two verbs with *degree*.

The tutor inquires if there is any other word that can be used here. Wei-Han produces a self-directed question, “as for possession verbs, only these two (verbs) right?” and then he feels that *take* can also collocate with *degree*. This instance indicates that Wei-Han chooses *take* based on his intuition and also implies that Wei-Han may think that *take* shares the sense of possession with *get* and *have*. As shown in the SCOBAB (Figure 4.4), these three verbs *get, take, have* all can signify the meaning of possession. It is therefore understandable that these three verbs can be seen as synonyms by an L2 speaker.

*Excerpt 6.10 Wei-Han: Post-enrichment task*

1. **Tutor**: 你怎麼解釋這句話？
   **how do you interpret this sentence?**

2. **Wei-Han**: 你可以讀書然後什麼一個*得到* 財政學位

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31 The event construal of *take a degree* does not match the conceptualization of *receiving a degree*. The notion of *getting a degree* is conceptualized as the fact that a student takes classes and then he/she receives the diploma. The verb *take* emphasizes the agency and the action of grasping, which does not correspond to the event construal of *receiving*. 
You can study and then receive a financial degree

3. Tutor: 嗯, 財經學位, 對, 所以你要用什麼動詞
   hmm, a financial degree, yes, so which verb do you want to use here

4. Wei-Han: (+) 這裡邊用 get
   here (I) use get

5. Tutor: 嗯, 為什麼你要用 get a degree?
   hmm, why did you use get a degree?

6. Wei-Han: degree 是要別人發給自己的, 所以要用那接受性的動詞 就 is get
   degree is something that another person gives me, so (I should) use a verb that indicates a sense of receiving that is get

7. Tutor: 嗯嗯
   hmm

In line 3, Wei-Han interprets the collocation as 得到學位 dé dào xué wèi in the L1. Compared to the pre-enrichment task, Wei-Han can differentiate get from take and have after learning the semantic meaning of these three verbs in the enrichment program. Specifically, he can articulate the essential element of the event construal of the collocation, receiving, by indicating “so (I should) use a verb that indicates a sense of receiving that is get.” On the other hand, getting a degree indicates that a student receives a diploma from a principal at a graduation. The participants form a semantics of thought by profiling the second scenario of the collocation event, which can correspond to the semantic structure of the verb, get. This excerpt demonstrates that Wei-Han developed a conceptual understanding of the collocation event, and internalized the metaphorical
mapping between the semantic structure of *get* and the encyclopedic knowledge of receiving a degree.

### 6.2.4 Summary

Several previous studies (e.g., Laufer & Waldman, 2011; Nessaulf, 2005) indicated that L2 speakers are more likely to produce correct collocations when the collocations have identical L1 equivalents. However, excerpts 5.7 and 5.9 show that the L2 speaker may not be able to construct correct collocations when he/she does not have a full and systematic understanding of a verb’s meanings. For example, prior to enrichment Wei-Han interpreted the L2 collocation *getting attention* as a direct L1 counterpart 獲得注意 *huò dé zhù yì*. He, however, considered *have* to collocate with *attention* in order to express the meaning of receiving attention from others. This phenomenon demonstrates that an L1 identical equivalent to an L2 counterpart does not always lead to the correct collocation when the L2 speaker does not have a clear understanding of a verb’s meaning.\(^{32}\)

In addition to L1 equivalents, the L2 speaker’s perception of the event impacts the selection of the collocated verbs. In the case of *getting a degree*, Wei-Han initially interpreted it as a direct L1 equivalent 得到學位 *dé dào xué wèi* (*getting a degree*) and chooses *get*. After he switches his perception to 擁有學位 *yōng yǒu xué wèi* (*owning a*学位* institution*)

\(^{32}\) This is the case when L2 speakers employ L1 knowledge (L1 equivalents) to produce L2 collocations. However, they still make collocation errors.
degree), Wei-Han collocates all three verbs get, take and have with degree. According to the SCOBA (Figure 4.4), these three verbs indeed share the same sense of possession. However, the event construals derived from their verb meanings signify different conceptualizations. L2 speakers need a coherent systematic understanding of verbs’ meanings in order to construct correct collocations and to establish correct event construals.

Learning a collocation requires associating with the conceptual meanings of verbs as well as having viable conceptual structures of collocation events. An L2 speaker who makes collocation errors, by misunderstandings the use of collocated verbs, is expected to revise either his/her semantic mapping or the construal of the collocation events through practicing a *semantics of thought*. The conceptualization of L2 collocations must be well attuned both to the perceptions of collocation events and the way to express event structures in language. This is crucial because of the need to coordinate the understanding of collocation events on the basis of event construals and linguistic information.

### 6.3 Analysis of Task Answers

All answers on the pre-enrichment and post-enrichment tasks were coded by the researcher and were also verified by a second reader, an L1 English speaker. Of the 210 items, none demonstrated discrepancy in coding. This section compares answers produced by the learners on the pre- and post-enrichment tasks with regard to appropriate target verbs. The coding system used was adapted from White’s (2012) study. The following five patterns were coded: (a) instances when a participant offered the answer
without any appropriate verbs on the pre-enrichment task and then offered an appropriate target verb for the same item on the post-enrichment task; (b) instances when a participant offered the answer with at least one appropriate verb along with other inappropriate verbs on the pre-enrichment task, and then offered an appropriate target verb for the same item on the post-enrichment task; (c) instances when a participant offered the answer with appropriate verbs (at least one was the target collocated verb) on the pre-enrichment task and then offered the answer with an inappropriate target verb for the same item on the post-enrichment task; (d) instances when a participant offered the answer without any appropriate (target) verbs on the pretest and then offered an inappropriate target verb for the same item on the posttest; (e) instances when a participant offered the answer with an appropriate verb along with other inappropriate verbs on the pretest and then offered an inappropriate target verb for the same item on the post-enrichment task.

In terms of changes to individual responses, there were 96 items out of a total of 210 where participants offered incorrect answers on the pre-enrichment task but offered a correct answer for the same item on the post-enrichment task. There were 10 reverse cases in which participants changed from providing responses with appropriate verbs to offering incorrect answers. There were 25 cases where participants offered incorrect answers both on the pre-enrichment task and on the post-enrichment task. Of these cases, the same verb was offered 9 times.

Incorrect answers include answers without any appropriate verbs or answers with (an) appropriate verb(s) along with other inappropriate verbs.
Table 6.1 and Figure 6.1 show the accuracy rates of learner performance across the five verbs on the pre and post-enrichment tasks and delayed post-enrichment task. Collocations are considered correct when appropriate verb(s) are provided. Consider *make* as an example in Table 6.1. Seven participants produced fifteen correct collocations out of forty-two *make*-collocation items (7 participants multiplied by 6 *make*-collocations). Thus, the accuracy rate for the production of *make* collocations is 36% on the pre-enrichment task. In addition, participant performance improved on the post-enrichment task: the accuracy rate increased to 69% from 36%. The accuracy rate of *make*-collocations seems to remain at a similar level (71%) on the delayed post-enrichment task. Moreover, as for the pre-enrichment task, *make* and *get* have lower accuracy rates (36%), and *do*, *have* and *take* have relatively higher accuracy rates (48% for *do* & *have*, and 50% for *take*). However, all of the accuracy rates across these five verbs are below 50%. In terms of the post-enrichment task, the accuracy rates across these five verbs increased. The average rate increased from the pre-enrichment task to post-enrichment task by 37.4%. As for the delayed post-enrichment task, the accuracy rates of the verbs, *get*, *take* and *have* decreased slightly (6%). However, compared to the pre-enrichment task, participants still performed better on the delayed post-enrichment task as shown in Figure 6.1.

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34 The accuracy rates are measured by the number of the correct items divided by the number of total items.
Table 6.1. A summary of participants’ accuracy rates across five target verbs on the pre-, post-, and delayed-post enrichment tasks

<table>
<thead>
<tr>
<th>Verb</th>
<th>Pre (42)</th>
<th>Post (42)</th>
<th>Delayed (21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>make</td>
<td>15</td>
<td>29</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>36%</td>
<td>69%</td>
<td>71%</td>
</tr>
<tr>
<td>do</td>
<td>20</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>48%</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>get</td>
<td>15</td>
<td>37</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>36%</td>
<td>88%</td>
<td>85%</td>
</tr>
<tr>
<td>take</td>
<td>21</td>
<td>33</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>79%</td>
<td>71%</td>
</tr>
<tr>
<td>have</td>
<td>20</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>48%</td>
<td>93%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Figure 6.1. Summary of participants’ accuracy rates across five target verbs on the pre-, post-, and delayed-post enrichment tasks
The following section compares the explanations for the target verbs between the pre-enrichment and post-enrichment tasks. Since these two tasks include thirty of the same collocations, the following analysis can focus on direct comparison.

The researcher also coded participants’ explanations as follows: (a) the explanation for the target verb was correct if it matched an English verb concept defined in the research literature (e.g., Gallese & Lakoff, 2005; Gibbs & Matlock, 1997; Lee, 1996), or if the explanation reflected the context of the sentence; (b) the explanation of the target verb was incorrect (e.g., using L1 concepts or relying on language intuition) (c) no explanations existed (i.e., the answer did not include any appropriate verbs). Two points were assigned for type (a), 1 point for type (b), and 0 points for type (c) responses. Table 6.2 shows participants’ scores across the two tasks.

Table 6.2. Learner raw scores on pre- and post- enrichment tasks

<table>
<thead>
<tr>
<th></th>
<th>Pre-enrichment task (the maximum is 60)</th>
<th>Post-enrichment task (the maximum is 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pei</td>
<td>24</td>
<td>55</td>
</tr>
<tr>
<td>Yu-Chia</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Wei-Han</td>
<td>36</td>
<td>52</td>
</tr>
<tr>
<td>Dang</td>
<td>19</td>
<td>52</td>
</tr>
<tr>
<td>Wen</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>Yan</td>
<td>33</td>
<td>50</td>
</tr>
<tr>
<td>Li-Ci</td>
<td>20</td>
<td>34</td>
</tr>
</tbody>
</table>
Table 6.3. Mean scores, standard deviations, and comparison of the pre-/post-enrichment tasks on the Wilcoxon signed rank test

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std. Division</th>
<th>Wilcoxon signed rank test</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-enrichment task</td>
<td>7</td>
<td>25.286</td>
<td>6.726</td>
<td>28</td>
</tr>
<tr>
<td>Post-enrichment task</td>
<td>7</td>
<td>49.286</td>
<td>6.945</td>
<td></td>
</tr>
</tbody>
</table>

The analysis of the task scores in Table 6.3 indicate that participants significantly improved their task performance following the concept-based enrichment program. More specifically, the Wilcoxon signed-rank test was employed to compare differences among the pre-enrichment task, the post-enrichment task as illustrated in Table 6.3.

In terms of participants’ confidence (how correct they thought each answer was), they rated each verb they produced on a 10-point confidence scale. Table 6.4. demonstrates two average confidence levels for each participant: the numbers in the first row are confidence levels reported when participants produced inappropriate verbs and the numbers in the second row indicate confidence levels reported when they produced appropriate verbs. Overall, participants were on average more confident on the correct answers than on the incorrect responses, as shown in Figure 6.2.
Table 6.4. Learner average confidence levels on incorrect and correct answers

<table>
<thead>
<tr>
<th></th>
<th>Pei</th>
<th>Yu-Chia</th>
<th>Wei-Han</th>
<th>Dang</th>
<th>Wen</th>
<th>Yan</th>
<th>Li-Ci</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect</td>
<td>4.65</td>
<td>5.65</td>
<td>7.45</td>
<td>5.22</td>
<td>7.86</td>
<td>4.79</td>
<td>6.17</td>
</tr>
<tr>
<td>Correct</td>
<td>6.25</td>
<td>6.37</td>
<td>8.93</td>
<td>6.80</td>
<td>7.94</td>
<td>6.45</td>
<td>6.40</td>
</tr>
</tbody>
</table>

Figure 6.2. Learner average confidence levels on incorrect and correct answers

6.4 Interview Data

6.4.1 Word meanings

This section presents data from the interviews with the learners that took place before and after concept-based instruction. The interviews focused primarily on participants’ understandings of verb meanings and their learning experiences. First, the participants were asked to demonstrate their understanding of word meanings regarding
the five target verbs before and after the enrichment program. The questions that participants received before instruction were merely related to the meanings of the verbs and their differences. After the enrichment program, participants answered the same questions. They were also encouraged to refer to the image schemas and to provide examples to illustrate the meanings of the target verbs. The interviews were conducted in a flexible way in which the researcher could interrupt and ask additional questions regarding participants’ responses. The two major prepared questions are given below.

*Can you tell me the meanings of these five verbs (i.e., make, do, take, get and have)?*

*Is there any difference among them (i.e., the differences between make and do and differences among take, get and have)?*

It seems that participants did not have problems identifying individual L2 word meanings of *make* *do*, and *have* before the enrichment program. However, *take* and *get* seemed troublesome for participants. Pei and Wei-Han explained their understandings of the meanings of these verbs below. Even though participants could articulate individual word meanings, they had difficulty recognizing their usage in collocations as shown in the previous chapters.

Pei: *make* is *zhì zuò* producing something such as *make a cake*, then *do* is *zuò* conductingsomething; then *get* is *nà*; *take* also; *have* is possessing

Pei: *make* is *zhì zuò* producing something such as *make a cake*, then *do* is *zuò* conductingsomething; then *get* is *nà*; *take* also; *have* is possessing

In the pre-enrichment interview, Pei stated that *make* meant *zhì zuò* and *do* meant *zuò*. She further elaborated on their meanings: *make* meant creating something and *do* indicated conducting a certain activity.
Pei also had no problems with the meaning of *have*. However, it seemed that Pei believed that *take* and *get* had the same meaning, 拿 ná and could not distinguish differences between them. Wei-Han was another student who provided similar answers. He could also distinguish *make* from *do* by clearly indicating that *make* meant bringing something into reality and *do* meant conducting a certain activity. However, he also believed that *take* and *get* were very similar. He was not able to see the differences between these two verbs.

Wei-Han: make 就是做把東西做出來的那個做, do 也是做但是是做事情的做. get 就是我要拿東西; take 和 get 感覺很像但是我不知道要怎麼講他們的不同, have 算是擁有吧, 這兩個(take & get)都有拿的意思, 但是他們的不同我現在想不到

Wei-Ha: *make* means zuò that indicates the notion of creating something; *do* also means zuò but it signals conducting a certain activity. *get* means I’m grabbing something, it seems that *take* and *get* are very similar. I don’t know how to articulate their differences. *have* means owning something Both of them (take & get) mean grabbing something. But I cannot think of their differences now.

Although participants were able to demonstrate their understandings of differences between *make* and *do* when discussing individual word meanings in the pre-interview, they had difficulty applying these meanings to relevant collocations. Table 6.1 shows that no significant difference exists with regard to learner performance between the two sets of verbs, *make/do* and *get/take* on the pre-enrichment task. The mean values for the average accuracy rates are similar: 42% for *make* and *do* and 43% for *take* and *get*.

Indeed, both verbs can correspond to the same Chinese equivalent zuò. Moreover, several English collocations such as *do business* or *make a decision* use the same
collocated verb zuò in their Chinese equivalents. Even though participants were able to adequately distinguish individual word meanings of *make* and *do*, they did not really understand the implications of the meanings and assumed that both verbs are used interchangeably in English as they are in Chinese. Moreover, participants indicated that they learned the meanings of *make* and *do* by memorizing their Chinese equivalents. The misuse of these two words on the pre-enrichment task indicates that participants did not really understand the conceptual differences between these two verbs.

After the enrichment program, most of the participants were able to elaborate on the underlying concepts of the target verbs. For example, Wei-Han was able to differentiate *make* and *do* by stating their key characteristics: processing and continuity respectively. Even though participants were able to adequately distinguish *make* and *do* prior to enrichment, Wei-Han produced more sophisticated and complex understandings of the meanings after the enrichment program as demonstrated in the following post interview data. Furthermore, Wei-Han was also able to distinguish *take* from *get*. He stated that *take* entails a sense of agency by which a person initiates the action of grasping. On the other hand, *get* is more likely to signify a sense of passivity. Hence, Wei-Han stated that getting something is primarily about receiving something. These verb concepts can assist participants in producing verb-noun collocations through metaphorical mapping. The following data come from Wei-Han’s and Pei’s post interviews with regard to their explanations of the target verbs.

Wei-Han: Post-interview data

Wei-Han: *make* 它就是一個階段性的動詞, 從無中生有但是是要一個人有意識地去創造一個東西像是 *make coffee*, *do* 是活動動詞它是去接有持續性多
元性的動作，take 是一個人抓取一個東西讓他便屬於自己的意思。get 就是接受的那種感覺。have 是強調有那個東西就是那個人擁有那個東西，也就是 take 與 get 的不同點在於 get 只有單純接受但是 take 是我主動去拿，have 就是單純擁有跟拿來拿去沒有什麼關係

Wei- Han: *make* is a verb that signals processes -- from nothing to producing something, and indicates a person who is producing something such as *making coffee*. *do* is an activity verb, which collocates with a noun signifying continuity and dynamic action. *take* is when someone grasps something and then it belongs to him. *get* has a sense of receiving. *have* emphasizes a person who possesses something. The major difference between *take* and *get* is that *get* is merely receiving something, but *take* is about a person who has agency to take the initiative to grasp something. *have* means possessing is not related to getting and receiving.

Pei: Post-interview data

Pei: *make* 就是製做一個新的東西，它是從沒有到有比如像是做蛋糕一個人然後他要做一個蛋糕需要有器材然後製做的過程就是將東西弄好之後放到烤箱做完之後就變成一個蛋糕。*do* 也是做可是他是指行動的那種做，比如說做功課 *do homework* 就是比如說我們做一項功課然後他有很多個題目從第一題做到最後一題。*take* 就是抓取主事者抓取被事者，被事者被主事者抓回來，變成主事者所擁有的。比如 *take an order* 服務人員幫客人點餐把客人所需要的東西寫在小本子上。*get* 就是得到，主事者接受了被事者。比如說 *get attention* 就是演講者演講的時候被其他人受到矚目，*have* 是擁有只有擁有這個意思比如說 *have a dream*。他在睡覺的時候他有一個夢，夢是一個在人裡面的一種想法。

Pei: *make* is *zhì zuò* which means creating something new. The whole process starts from nothing to something such as *making a cake*. This means a person who wants to *make a cake*, and he needs some equipment. The whole process starts from mixing ingredients and put the mix into an oven. Then the mix becomes a cake. *do* also means *zuò* but it is specifically related to action such as *do homework*. *Doing homework* means we have homework including many questions. And we answer the first question till last question. *take* means grasping something. An agent grasps a patient. A patient is grasped and owned by agent. For example, *take an order*. The waitress is helping customers with their order and writes down what they want on a notebook. *get* means receiving. An agent receives a patient. Take *get attention* for example. A speaker receives other people’s attention when he makes a speech. *have* merely means possession such as *have a dream*. When a person is sleeping, he has a dream. A dream is a kind of thoughts in a person’s body.
Compared to Pei’s understanding of the word meaning in the pre-enrichment task, her explanations after the intervention sessions became richer and systematic, including essential features of the relevant concepts, which established a distinctive point of reference from other verbs. As for make, Pei used the same Chinese equivalent 製做 zhì zuò to define the meaning of make and provided the same example, making a cake, before and after the enrichment program. She was, however, able to articulate a more complex understanding by elaborating on key features of the verb’s meaning: the creation of a new entity and the characteristic of processing. In terms of do, Pei was also able to point out the underlying concept of the verb by implying the continuity of action through an example: doing homework.

Crucially, following the enrichment program, Pei could clearly distinguish the differences between take and get. She explained by stating that take means 抓取 zhuā qǔ grasping something and get means receiving. Additionally, Pei provided two examples to illustrate the meaning of the respective verbs, which further demonstrates her understanding of the differences. Finally, regarding have, Pei merely defined its meaning with its Chinese equivalent 擁有 yōng yǒu before the instruction. However, she not only provided the example, have a dream, but also explained that the collocated noun, dream, is within a person’s head. This explanation corresponds to the container image schema of have. It seems clear then that Pei showed conceptual development as a result of the enrichment program.
6.4.2 Learning experiences

This section addresses participants’ previous English learning experiences and the way in which they had learned the target English verbs. Additionally, all of the seven participants had positive feedback on concept-based instruction. Thus, I include Wei-Han’s post instruction interview as a typical response from the participants regarding their attitudes toward concept-based instruction.

Pei, Dang and Wei-Han offered similar answers that English teachers taught them the meanings of the five target verbs through their Chinese equivalents. Then the teacher introduced several sentences that included the verbs in order to assist students understanding of how the verbs are used.

Tutor: How did you learn these target words and their collocations?

Pei: Memorization. I tried my best to memorize whatever the teacher taught in class. For example, *make* means *zhì zuò* and *jiàn zào* in Chinese. I memorized its Chinese equivalents in my mind, but I did not understand the concepts of *make*. As for its collocations, for example, *make money*, the way I learned it was to directly translate this collocation into Chinese, and then I memorized its English form and Chinese meaning. However, I did not know why we use *make* in this collocation.

Wen is another student who expressed similar prior learning experiences.

Wen: 单字就是死背, apple, a-p-p-l-e, 就是死背她怎麼拼地, 單字的意思也是死背. 小時候還是不懂, 老師就說你想辦法把它背起來就好, 久了就習慣了. 動詞的背法也是他的意思先用中英文連想起來, 然後有句子可以做(字意上)思考性的連結, 看就像中文的克漏字 一樣, 像你把 make 拔掉 Mary ___ a
paper boat. Mary 怎麼弄個紙船然後這時候放個 make 我們就會去想這個用中文來填就是做或是製造的意思

Wen: vocabulary, (I) just dolly memorize it. apple, I just dolly memorize its spelling alphabet by alphabet. I also memorize its word meaning. When I was young, English teachers merely asked us to memorize in any way that suited us. So I got used to this type of learning. The way to memorize an English verb is also through connecting Chinese meanings to its English form. And then a sentence that includes the verb can strengthen our memorization regarding the word meaning, which is like the Chinese version of fill-in-the-blank tasks. Take Mary ____ a paper boat for example. The sentence is about Mary has done something to the boat. When I know the collocated verb is make, I will think in Chinese and interpret the word meaning as zuò or zhì zuò.

In terms of the differences among these five target verbs, Pei indicated that the teacher did not particularly teach their differences, especially with regard to the important comparative differences between make and do, on the one hand and take, get and have on the other.

Tutor: 好, 妳可以跟我講一下這些字有沒有什麼不一樣或是妳在學的時候老師有沒有教這兩個字的不同或是妳自己的理解他們不同的地方

Tutor: okay, can you tell me if there are any differences between these words? When you learned about them, did teachers teach their differences or did you understand the differences among them?

Pei: 沒有耶! 老師沒有特別教他們之間的不同點, 只是會帶句子, 讓你潛意識知道說她們運用在什麼地方

Pei: No, the teacher did not particularly teach their differences. They only introduced several sentences that include these verbs, which let students implicitly understand their usage.

Wei-Han and Dang made a similar comment and discussed this issue in more detail.

Dang: 好像沒有特別學, 一樣就是背拼法還有他的中文意思, 還有就是記什麼時候要塞進這個動詞, 比如說看到 homework, 我就反應說要塞進 do 這個
Dang: It seems that I did not particularly learn the differences between these two verbs. As I did with other English words, I memorized its spelling and Chinese meanings. I also memorized when I was going to fit a certain verb into a verb-noun collocation. For example, when I saw homework, my first response was to fit in the verb, *do*. Then I memorized the meaning of this collocation in the L1. But I didn’t understand the relationship between *do* and *homework*.

Wei-Han:以前是如果是沒有背過這個語詞, 我為無法直接了解他的意思, 但是現在比如說 *make coffee*, 我知道我是創造 *coffee* 這個東西所以我要用 *make* 就是有一種強烈的是做出一杯咖啡來的感覺, 但是我以前我會把要表達的語詞翻成中文比如說做一杯咖啡, 可能以前會寫 *do* 或 *make* 其中一個或是都會寫因為他們翻成中文都有做的意思, 但是現在不會寫 *do coffee* 因為這樣會很奇怪

Wei-Han: before if I didn’t previously memorize this collocation, I couldn’t directly understand its meaning. Take *making coffee* for example. Even if I hadn’t learned this collocation, now I could understand its meaning through the collocated verb because the verb, *make* gives a strong sense of creating something new. On the other hand, if this collocation were a task question, I would have translated the meaning of the collocation into Chinese. Then I would think of *zuò*. I would have chosen either *do* or *make* as the collocated verb since both of the verbs have the same Chinese equivalents. But now I wouldn’t choose *do* because it would be very strange.

In the following section, I primarily present Wei-Han’s reflection on the enrichment program in the exit interview. The reason to present his data is due to his great improvement and illustrative qualities.

Tutor:那你覺得現在這個學法跟以前有什麼不一樣？*How do you feel the previous and current approaches to teaching English collocations differ?*

Wei-Han: 跟以前有很大的不一樣, 現在藉由了解動詞如何使用, 這樣對文法那些也很有幫助. 比如說 *a breath* 呼吸, 我現在就知道說要用 *take a breath* 來呼吸. 我知道就知道說不會用 *make a breath* 來代表呼吸或 *do a breath*. 我知道因為這樣會很奇怪, 因為意涵不搭在一起

Wei-Han: What I learned from the enrichment program is totally different from the way I previously learned collocations. Now I learn collocations through verbs’
Tutor: 這樣做題目上面，像這種填空式，在上課前後有什麼不一樣  When you answered the fill-in-the-blank questions, did you answer differently before and after the enrichment program?

Wei-Han: 以前感覺是記憶力的挑戰，這是對於有學過地，如果是沒學過地只好用猜，靠從小到大培養出來的語感，就是念念看，念得順地就選那一個，但是現在就會去思考說後面的名詞或是動作，任務是意涵來選擇前面的動詞要選什麼比如說 cleaning 他是一個打掃的活動就要用 do，來表示這個人去做這個打掃的工作

Wei-Han: I feel that it is like a memorization task before the enrichment program, especially for the collocations I’ve learned. In terms of the collocations I hadn’t learned before, I could only guess the answers regarding the language intuition I gained throughout the years when I learned English. That is, I tried different verbs and read them aloud. I picked the one that sounds correct. But now I consider collocated nouns and collocation events. For example, cleaning is an activity. So I choose do since this collocation means that a person carries out the activity of cleaning.

Tutor: 以前我們是透過中文去學習動詞的意思，但是現在你學的是我們去了解每個動詞的真正涵義是什麼，你覺得這對你去了解整個語詞有什麼樣的影響 Before we learned a verb’s meaning through its Chinese equivalent. But now what you learn is to understand the underlying concept of each verb. What kind of influence does this approach have on understanding a whole collocation?

Wei-Han: 就是更直接的了解動詞所要表達的感覺，比以前那種只是背好很多，以前就是老師講 make 是做，製造的意思，就是把這個意思死記在腦海裡面，這個動詞跟他的中文意思就是有直接的關係。想到 make 就想到做，製造。但是現在想到 make 會有創造階段性的意境，比以前背的豐富

Wei-Han: Now I can be more aware of and more directly understand the event that a verb tries to signify. It is better than just memorizing a verb’s Chinese meaning. Before the teacher taught the verb make through its Chinese equivalents, zuò or zhì zào. So the direct connection I have for the meaning of make is zuò or zhì zào. But now when I think of make, I think of the concepts of creating and
processing. It is more meaningful than just memorizing the Chinese equivalents of the verb.

Tutor: 除了我們有學到每個動詞的基本涵義是什麼 , 我們有練習去想一下語詞的意像比如說 make coffee, 你覺得想這些意像的練習對你有什麼幫助 In addition to learning the basic concept of each verb, we also practiced conceptualizing the collocation events (based on verbs’ meanings) such as make coffee. What kind of benefits did you receive from these types of practices?

Wei-Han: 以前是如果是沒有背過這個語詞, 我為無法直接了解他的意思, 但是現在比如說 make coffee, 我知道我是創造 coffee 這個東西所以我要用 make 就是有一種強烈的是做出一杯咖啡來的感覺, 但是我以前我會把要表達的語詞翻成中文比如說做一杯咖啡, 可能以前會寫 do 或 make 其中一個或是都會寫因為他們翻成中文都有做的意思, 但是現在不會寫 do coffee 因為這樣會很奇怪

Wei-Han: Before, if I hadn’t previously memorized this collocation, I couldn’t directly understand its meaning. Take making coffee for example. Even if I haven’t learned this collocation, now I can understand its meaning through the collocated verb because the verb, make gives a strong sense of something new. On the other hand, if this collocation were a task question, I would have translated the meaning of the collocation into Chinese. Then I would think of zuò. I would have chosen either do or make as the collocated verb since both of the verbs have the same Chinese equivalents. But now I wouldn’t choose do because it would be very strange.

Wei-Han: 另一個例子 make progress. Another example, making progress

Wei-Han: 还有像 make progress 以前學就是背起來他是有進步的意思, 看到 make progress 就是直覺有進步但是現在會看到 make progress 就會想到說有一個人他的某項能力在持續性的上升, 會有類似像這樣的圖案的推理這樣子

Wei-Han: Another example is making progress. I previously learned the meaning of this collocation through its Chinese equivalent yǒu jìn bù. When I saw the collocation make progress, I thought of yǒu jìn bù. But now when I see this collocation, I think of a person who is improving a certain skill, and this ability is continually getting better. It seems that I can get to know the meaning of the collocation from this act of conceptualization/imagination.

Tutor: 所以現在做題目會用中文意思來想嗎? When you completed the post-enrichment tasks, were you still thinking in Chinese?

Wei-Han: 現在做題目幾乎不會用中文想, 現在變成有一點是像用圖像式的思
Wei-Han: Now when I answer the questions, I mostly don’t think in Chinese. Now I use my imaginary thinking and then I combine this with a little bit of Chinese. For example, as for the task question we just answered – the one about a sense of humor, I think this is a person’s ability. Since this is a person who owns this ability, I won’t write down get a sense of humor or do a sense of humor. It would be very strange.

Tutor: 總體而言用這樣的學習方式你有什麼想法嗎? Overall, what do you think about this style of learning?

Wei-Han: 我觉得用這樣的學習動詞很好, 不用像以前要用死背的方式這樣比較沒有什麼意義. 現在這種學習方法是會去理解, 這樣比較好

Wei-Han: I think this is a good way to learn English verbs. I don’t need to dolly memorize (English collocations). I like the way we learn (collocations) now because I can try to understand the underlying concepts. It seems better for me.

Wei-Han had no problems identifying individual meanings of the verbs make and do. However, he encountered difficulty when relying on L1 knowledge. It would be problematic, especially when do and make can be translated into the same Chinese equivalent 做 zuò. In this case, the L1 word meaning may prevent L2 speakers from understanding verb usage within a collocational context. Consider make coffee as example. As Wei-Han pointed out, make coffee can be translated as 做一杯咖啡 zuò yī bēi kā fēi. Both make and do have the same Chinese equivalent zuò used in different collocations, which causes confusion for learners of English. They may choose either make or do. After the enrichment program, Wei-Han changed his orientation to construct a verb-noun collocation. Image and concept oriented instruction to L2 collocations offer an additional learning opportunity. The SCOBAs helped Wei-Han re-contextualize/re-
conceptualize verb meanings in a wider variety of verb-noun collocations by mapping verb meanings onto encyclopedia knowledge of collocation events. As a result, Wei-Han became independent of L1 knowledge and gained better understandings of meaning-form relationships in verb-noun collocations.

6.4.3 Summary

This section presented student interviews conducted before and after the enrichment program. In the entry interview, participants discussed their previous learning experiences and demonstrated their understandings of the five target verbs. Specifically, the findings show that participants were able to articulate the target verbs through their Chinese equivalents in an entry interview since the participants had previously learned verb meanings in English courses by memorizing direct correspondence in Chinese. For example, Pei and Wei-Han were able to explain the meanings of the verbs, *make* and *do* as *zhì zuò* and *do* meant *zuò* respectively in their Chinese equivalents in the entry interview. However, the learners did not really understand the conceptual differences among the verbs and the implications of their meanings in collocations. This phenomenon led to mis-collocations such as *making business*. Moreover, the pre-interview data show that *get* and *take* are considered near synonyms. Both verbs were used interchangeably.

CBI bridges the gap between the use of verbs and the event contruals of collocations. First, the learners gained a clear understanding of the target verbs via SCOBAs. Furthermore, they were able to link the meanings of the verbs to the
conceptualizations of relevant collocations by metaphorically mapping the conceptual structures of the verb and the event construals. The quantitative analysis reveals that participant performance significantly improved in the post-and delayed post-enrichment tasks. Specifically, in the post-enrichment task, the participants could use the semantic concepts as a thinking tool by mapping word meanings to their encyclopedic knowledge in the process of selecting verbs for target collocations. At the same time, participants became more aware of form-meaning relationships. Before the enrichment program, it seems that they lacked a clear idea of how an event construal is constructed in the L2. By learning the conceptual structure of the verbs and forming a *semantics of thought*, they could pay closer attention to the relationship between the linguistic form and the conceptualization of the collocation event derived from the verb’s meaning.

In addition, the participants provided positive feedback on the enrichment program in the exit interview. Students considered SCOBAs very helpful. Specifically, the participants explained how CBI (i.e., learning verb meanings through SCOBAs) impacted their learning of the verb-noun collocations and reported their impressions about the practice of *semantics of thought*. The SCOBAs assisted participants in identifying the differences among target verbs. Moreover, the students indicated that they did not have to rely exclusively on their L1 to try to understand L2 meanings or use language intuition to constitute collocations when they were not sure about the use of a collocated verb. For example, Pei, Dang, Wei-Han and Wen had developed a more systematic and reliable resource to mediate their understanding of and performance in the L2. When constructing verb-noun collocations, they often consider the underlying concepts of verb meanings and the relations to their encyclopedic knowledge of
collocation events. Students pointed out that learning verb meanings through SCOBAs helped them choose appropriate collocated verbs. Overall, we can conclude that the enrichment program helped participants gain fuller understandings of the target verbs and improved the production of collocations.
Chapter 7

Conclusion

7.1 Introduction

The present study aimed to empirically investigate production of verb-noun collocations by Chinese learners of English and to improve L2 collocational capacity through concept-based instruction based on the integration of pedagogical principles derived from sociocultural theory and language analysis derived from cognitive semantics. The approach focuses on the development of systematic verbal concepts and employed them as an orienting basis for re-conceptualizing verb-noun collocation events. This study sought to answer three following research questions:

(1) To what extent can concept-based instruction help L2 learners develop a conceptual understanding of the target verbs?

(2) How does teaching verb meaning affect the acquisition of L2 verb-noun collocations?

(3) Do L2 speakers develop awareness of the systematic, semantic motivated nature of verb use in L2 verb-noun collocations?

These principle questions revolve around one fundamental issue: L2 learners are guided by appropriation of conceptual tools. Word meanings assist L2 speakers in making connections between semantic concepts and collocational events in the process of development. Moreover, with regard to metaphorical extensions and the practice of semantics of thought, participants can map semantic structures of the target verbs onto their encyclopedic knowledge of collocation events. This practice may reduce confusion over some seemingly opaque verb-noun collocations. The findings further suggest that
the CBI was indeed successful in helping L2 speakers increase awareness of the use of verbs and make better connections between forms and meanings in collocations. The post- and delayed-post enrichment tasks demonstrated that participants’ verbal knowledge and collocational performance improved as a result of the pedagogical intervention. In the following sections, I synthesize the findings reported in chapter 5 and 6 and discuss the implications for future research and limitations of the study.

7.2 Summary of the Study

The conceptual development data of collocational knowledge includes three subcategories: participants’ understandings of verb concepts in pre- and post- interviews, participants’ self explanations of the use of collocated verbs on the same target collocations before and after the enrichment program, and participant performance on the pre-, post-, and delayed post-enrichment tasks. The entry interview indicated that participants based their understandings of the five target verbs *make, do, get, take* and *have* on Chinese equivalents. Moreover, in previous English classrooms, participants had learned verb-noun collocations involving these five target verbs through noticing-exposure-memorization strategies. The pre-enrichment task in which they needed to fill out the blanks with appropriate verbs left them frustrated since they sometimes had difficulty recalling verbs or were confused by the use of verbs in collocations. Vygotsky (1986) stated, “a concept is not an isolated, ossified, and changeless formation, but an active part of the intellectual process, constantly engaged in serving communication,
understanding, and problem solving” (p.98). The primary argument is that the semantic meanings of verbs can be used by L2 speakers in learning verb-noun collocations. Unless L2 speakers can become aware of conceptual structures of L2 word meanings, they might not completely understand the meanings of the L2 words and collocations and without this understanding they will have difficulties learning and using the collocations. First, learning word meanings via SCOBAs helped participants draw boundaries between verbs. Although participants were capable of adequately distinguishing individual word meanings of the target verbs such as make and do (since participants memorized their Chinese equivalents), they did not really understand their conceptual differences. Thus, participants used these two verbs interchangeably. After the enrichment program, participants had clear understandings of the verb and were able to produce more sophisticated and complex understandings of verb meanings.

Additionally, Bakhtin (1981) stated, “The word in language … becomes ‘one’s own’ …when the speaker…appropriates the word, adapting it to his own semantic and expressive intentions” (p. 293). In the enrichment program, forming a semantics of thought is part of the internalization process because it implies more than merely learning prepackaged verbal concepts. It demonstrates the participants’ emerging ability to make their own understanding by using the concepts to create personally relevant meanings. In this case, the concepts functioned not only as coherent bases to follow but as tools for thinking, problem-solving, and meaning-making. Moreover, the findings show that participants actively applied their conceptual knowledge of word meanings to the fill-in-the-blank questions on the post- and delayed-post enrichment tasks in order to figure out which verbs should be used to describe certain verbal events. Through conceptual
understanding, the participants were able to overcome L1 influence and previous pedagogical approaches which focused on memorization of collocational patterns. For example, Pei switched the mediational tool from L1 knowledge to L2 word meanings after the enrichment program. This change may indicate that Pei became more aware of the role that a verb meaning can play in the event construal of the collocation.

The results of the post-enrichment task showed that participants viewed L2 verb-noun collocations differently than they had from their previous instructional experiences. In particular, participants demonstrated the degree of relatedness of semantic meanings of verbs (manifested in image schemas) to their encyclopedic knowledge of the events or the embodied meanings of the events in sentences.

Additional evidence of the impact of the SCOBAs and the practice of semantics of thought was observed in the pre-, post-, and delayed-post enrichment tasks. Accuracy rates of participant performance across the five verbs on the post-enrichment and delayed post-enrichement task significantly increased compared to the pre-enrichment task. More importantly, participant development was not through rote learning or memorizing the concepts of word meanings but a case of active reception (Lantolf, 2011) in that they integrated the new conceptual word meanings into their L2 knowledge. Because L2 development can be defined with regard to awareness and regulation, systematic concepts can be brought into the L2 speaker’s consciousness through concept-based instruction (Kim, 2013; Lai, 2012; Lee, 2012; van Compernolle, 2012). This Vygotskian perspective on L2 development proposes that the concepts and meanings behind linguistic features can develop together with forms in learning L2 collocations.
7.3 Theoretical Implication: Learnability of Collocations

There is a theoretical dispute concerning how an L2 speaker can understand form-meaning connections of L2 collocations. The conventional approach to L2 verb-noun collocations seems to believe that the target verbs do not make a significant semantic contribution. Moreover, the connections between collocated nouns and verbs in L2 collocations are considered arbitrary (Liu, 2010). It seems that the only available option for L2 speakers to learn collocation forms is through noticing-exposure-memorization techniques, and to master collocational meanings through L1 concepts. In addition, L2 speakers tend to look for individual words that can indicate the meaning of the collocation word-by-word. The L1 meanings of L2 words, however, are grounded by varied L1 collocation-specific equivalents. Moreover, L1 concepts may not be able to completely reflect L2 word meanings. In this case, L1 word meanings may prevent L2 speakers from using appropriate words within an L2 collocational context. It is understandable that there is a long-standing learning difficulty with L2 collocated verbs.

A cognitive semantics view of linguistic meaning provides new insights into word meanings: linguistic meanings are mental entities. The meanings of linguistic expressions are not static or propostional, but are grounded in a human’s cognitive functions. Along these lines, the present study has argued that linguistic meanings of verb-noun collocations can reside in event conceptualization. In particular, a verb designates a type of event. Verb meanings can represent event construals (Croft, 2012; Levin & Rappaport Hovav, 2005). Thus, the present study also argues that conceptual meanings of verbs include a knowledge component that allows L2 speakers to judge
whether or not a verb can collocate with a certain noun in order to represent a particular transitive event in the L2 on the basis of how the verb functions. Furthermore, L2 collocational development consists of pervasive interactions between the re-conceptualization of the verbal events and the semantic categories of the target language, not merely a mapping from L1 meanings (preexisting concepts) to collocation forms.

L2 speakers clearly have an extensive understanding of the same verbal event encoded in the L1 long before learning a second language. It is important for L2 learners to re-conceptualize event construals of collocations in order to establish form-meaning relationships in the L2. Therefore, the present study also argues that the L2 verbs meanings (manifested in SCOBAs) offer a coherent, systematic orienting basis for re-conceptualization. These perceptual and conceptual dispositions for verbal events can shape L2 speakers’ understanding of the use of verbs in collocations. In other words, L2 verb concepts function as the conceptual bases for re-conceptualizing collocation events. Moreover, the concepts of the target verbs may help L2 speakers re-contextualize/re-conceptualize their word meanings in a wider variety of verb-noun collocations. This cognitive semantics approach has a fundamental impact on L2 speakers’ understanding of the meanings of the target verbs.

7.4 Pedagogical implications

The findings of the present study indicate the importance of employing a concept-based approach to teaching the core meanings of English verbs in the learning of English
collocations or in a broader sense of learning English vocabulary. Specifically, this might entail facilitating L2 speakers overcoming some collocational difficulties they commonly experience.

Conventionally, non-congruent collocations are considered more difficult for L2 speakers since L2 speakers tend to employ L1 knowledge to construct L2 collocations. As the current study has presented, even collocations that are semantically transparent (having direct L1 equivalents) can be considerably problematic for L2 speakers when they do not have a clear understanding of a verb’s meaning (e.g., *make a reason or *make a feeling). It is essential for L2 educators to realize that congruent collocations indeed deserve attention in language teaching. In other words, a substantial number of the collocations that are easily understood and constructed with high-frequency verbs may not be noticed by L2 educators as problematic. Indeed, congruent collocations can cause problems in production when L2 speakers do not have a full understanding of the verb’s meaning. This phenomenon is related to conventional L2 vocabulary teaching. The conventional L2 vocabulary teaching is to map L1 meanings onto L2 words. This may not lead to the holistic and systematic understanding of L2 verbs. Therefore, the findings show that even though L2 speakers could articulate the correct verb meaning via L1 in the entry interview, they did not understand the conceptual differences among the verbs and their implications in collocations. Thus, many mis-collocations occurred on the pre-enrichment task.

Additionally, rote learning or noticing-exposure-memorization techniques are likely to result in learners failing to notice the meaning and use of verbs in verb-noun collocations. Furthermore, there are too many verb-noun collocations to memorize, and
thereby it is very difficult if not possible for L2 speakers to appropriate all of these through direct memorization. Concerning L2 speakers’ substantial difficulties in constructing the collocations that were the focus of this study, L2 verb-noun collocation instruction was shown to be an effective approach to helping learners gain control over these constructions. This was achieved through the meanings conveyed through SCOBAs (visual memory). Word meaning encoded in image schemas can help L2 speakers to understand the world as visually perceived by L1 speakers. Specifically, the present study argues that the conceptualization of the collocation events is derived from a verb’s meaning. Therefore, applying L2 conceptual structures to form a *semantics of thought* in L2 collocations provides L2 speakers with an additional opportunity for processing collocations, and helps L2 speakers pay more attention to the compositions of the collocations. The re-conceptualization process should raise L2 speakers’ consciousness of event construal of the verb-noun collocations by mapping a conceptual structure of a verb onto the encyclopedic knowledge of the collocation event, which can make significant connections between forms and meanings. In other words, a likely positive value of forming a *semantics of thought* in the learning of verb-noun collocations is that it may not only enhance L2 speakers’ use of the verb in a collocation, but also enable L2 speakers to gain a better understanding of the meaning of the collocation. It is hoped that a concept-based approach to English collocations can provide a basis for improving the instruction of English vocabulary and collocation in the future.
7.5 Limitations of the study

This study had a number of limitations. The first has to do with the design of the pre-, post-, and delayed-post enrichment tasks. The pre- and post-enrichment tasks included thirty collocation items, but the delayed-post enrichment task consisted of fifteen task items, naturally limiting direct comparison.\(^{35}\) Similarly, due to the written task adopted in this study, little can be known about the participants’ oral performance. Finally, with seven participants and a six-week program, this study has limited generalizability. Despite these limitations, the present study begins to shed some light on the ways in which Chinese learners of English develop collocational knowledge of connecting forms and meanings in verb-noun collocations.

7.6 Future directions

The second language learning process is complex, nonlinear, gradual and dynamic (Larsen-Freeman, 1991), L2 speakers can progress on any aspects of L2 learning at varying degrees. It is impossible for L2 users to internalize all of the collocation knowledge in a short period of time. The development of fully-fledged conceptual understandings of collocations may take time. Thus, a longitudinal study is required in order to investigate and document how adult learners’ L2 development may change over time quantitatively or qualitatively. Moreover, long-term retention was not examined in

\(^{35}\) Because of time limit, the delayed post-enrichment task only consisted of 15 items. Since the researcher tried to complete a post-interview and a transfer task in the last session (around sixty minutes), the researcher decided to include fewer task items when conducting this study.
the present study. The delayed post-enrichment task was conducted a week after the post-enrichment task. Whether or not participants can maintain improvements over a relatively long period of time is clearly a key aspect for future research to investigate.

Additionally, a follow-up study can be conducted from a cross-linguistic perspective, focusing primarily on non-congruent collocations. Specifically, future research can examine the discrepancy that exists between English verb-noun collocations and Chinese equivalents. Several studies (e.g., Nesselhauf, 2005; Miyakoshi, 2009) have shown that L2 speakers make more mistakes on L2 verb-noun collocations when collocations do not have corresponding L1 words; that is, the speakers seem to choose inappropriate verbs when L1 and L2 counterparts do not coincide. Hence, collocations with cross-linguistic differences may cause more difficulty for L2 speakers. For example, in the case of *make progress*, findings show that its corresponding Chinese counterpart (*have progress*) implies different conceptualizations of the collocation event from the L2. All of the participants either chose *get* or *have* for this target collocation. After re-conceptualizing the event by metaphorically mapping the concept of *make* onto their encyclopedic knowledge, the participants could understand how this collocation event is encoded in English. Therefore, future research should focus more on cross-linguistic comparison and investigate the effects of the practice of *semantics of thought* on helping L2 speakers learn non-congruent verb-noun collocations.

Not all of the verb-noun collocation events are semantically-motivated by verb concepts, at least not by prototypical senses of collocated verbs. Sometimes applying a verb’s meaning to understanding a particular verb-noun collocation event may fail. In light of this fact, in addition to the practice of re-conceptualization derived from verb
meanings, multiple cognitive mechanisms (e.g., metaphor or metonymy) may also help participants learn event construals of verb-noun collocations. A further study could address a variety of cognitive mechanisms involved in re-conceptualizing event construals of collocations and their effects on learning verb-noun collocations.

A cognitive and sociocultural approach to L2 collocations is an emerging area that has great potential benefits to second language learning. Unlike more traditional approaches, it attempts to implement a meaning-oriented approach to instruction. In addition, L2 speakers’ understandings of word meanings constitute the basis for developing the new event construals of the collocations. This learning process can promote deeper understandings of form-meaning relationships and lead to conceptual development in collocation. Although the present study cannot solve all of the learning difficulty, participants showed that they were able to think systematically and conceptually and take advantage of CBI. Finally, even though much remains to be done on L2 collocation research, it is hoped that this study is a contribution to the growing body of research on this issue.
Appendix A

Consent Form

Informed Consent Form for Social Science Research
The Pennsylvania State University

Title of Project: Usage-based cognitive semantics in L2 collocations

Principal Investigator: Mei-Hsing Tsai, Graduate Student
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1. Purpose of the Study: The purpose of the current study is to explore the implementation of cognitive semantics and a concept-based approach in group tutorial sessions.

2. Procedures to be followed: You will first take a pre-task. Following the pre-task, you will participate in three tutorial sessions. After the enrichment program, you will conduct post-tasks. Additionally, you have an interview with the researcher. All of the sessions will be audio taped.

3. Duration: You will meet with Mei-Hsing Tsai an hour per week for six weeks.

4. Statement of Confidentiality: Your personal information and your conversation occurring in six sessions will be kept confidential. You will be referred to by a pseudonym in the reporting of the data. All of the audio recordings will be stored on a computer in Dr. James P. Lantolf’s office. Only Dr. James P. Lantolf and Mei-Hsing Tsai have access to the recordings. The recordings will be maintained for five years.

5. Payment for participation: You will be offered $36 (1080 NT dollars) for participation.
6. **Right to Ask Questions**: Please contact Mei-Hsing Tsai at 0933-054-865, or via email at meiht112@gmail.com with questions or concerns.

7. **Voluntary Participation**: Your decision to take part in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer.

You will be given a copy of this form for your records.

______________________________________________  ___________
Participant Signature       Date

______________________________________________  _____________
Person Obtaining Consent      Date
參與研究同意書

研究標題：結合認知語言學與社會認知理論配合第二語言語詞搭配習得之研究

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1. 研究目的：本研究的目的在於探索認知語言學與概念式學習在英語團體輔助教學之應用。

2. 進行步驟：第一週進行前測，之後將進行三週的團體教學活動；在第五與第六週將進行動態式的後測。此外，您將有與主要研究者進行學習訪談。所有的團體教學與評量都將進行錄音。

3. 參與時間：您將與主要研究者有每週一小時的見面，為期六週。

4. 保密聲明：您個人的資料與和在參與研究的各項學習、評量結果與訪談內容都會保有其私密性，將僅作為學術研究之用。您在論文中會給予別名。所有的錄音都會存在Dr. James Lantolf’s研究室。只有主要研究者和其指導教授有權利去使用這些音檔資料。這些資料會被保存為期五年。

5. 參與研究報償：每位參與者將獲得新台幣一千零八十百元的報償。

6. 發問權利：如果對此項研究有任何疑問，請隨時蔡玫馨聯絡。手機：0933-054-865；電子郵件：meiht112@gmail.com。

7. 自願參加：這項研究的參與是採自願性的，您可以於任何時候終止對於此項研究的參與，也可以選擇不回答任何您不想回答的問題。
本同意書為一式兩份，若您同意參與此項研究，也同意以上所述各項，請於下列簽名並填上日期。請您自行保留一份副本留作日後參考

_________________________________________  _____________________
學生簽名  日期

______________________________________________ _____________________
研究者簽名  日期
Appendix B

Transcription Conventions

A plus sign within parentheses / (+) / short pause

Two plus signs within parentheses / (++) / long pause

Three plus signs within parentheses/ (+++) / very long pause

Series of x’s within parentheses / (xxx) / unintelligible speech

Degrees symbol around texts / “but” / softer speech

Texts in double parentheses / ((laughter)) / transcriber’s comments or descriptions

Italicized texts / okay / spoken in English

Texts in single parentheses/ (word) / not mentioned in Mandarin Chinese, but

inserted in English translation at convenience

Equals symbol / = / latching speech

Period / . / falling intonation

Comma / , / continuous rise only

Question mark / ? / rising intonation
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Research Assistant, the Center for Advanced Language Proficiency, Education, and Research (CALPER), The Pennsylvania State University (2009~2010)

PUBLICATIONS AND PRESENTATIONS

Tsai, Mei-Hsing and Kinginger, Celeste (accepted). Giving and receiving advice in computer-mediated peer response activities. Submitted to CALICO Journal.


HONORS AND FELLOWSHIPS


Government Scholarship for Study Abroad, Ministry of Education in Taiwan (2011~2013)

University Graduate Fellowship, The Pennsylvania State University (2007~2008)