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LEXICAL KNOWLEDGE OF VERB-PARTICLE BY SAUDI ENGLISH LEARNERS

Fadwi Waleed ALTURKI
Southern Illinois University Carbondale, fodaflower4@siu.edu

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By

Fadwi Alturki

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Approved by:

Dr. Jeffrey Punske, Chair

Dr. Krassimira Charkova

Dr. Vicki Cartsens

Graduate School
Southern Illinois University Carbondale
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Verb-particle constructions are one of the most complex components of the English language. Understanding and producing such difficult constructs in a second language (L2) is a challenge for L2 learners of English. This research was based on the study by Blais and Gonnerman (2013). The purpose of the current study was to measure American and Saudi participants' sensitivity to the degree of semantic similarity between verb/verb-particle constructions. The survey of similarity ratings was administered to 107 American native English speakers and 67 Saudi English learners. The participants were asked to rate 78 items based on their knowledge of the semantic similarity between verb/verb-particle pairs. Results revealed two major findings; American native speakers and Saudi English learners did not behave consistently with the similarity rating task, and the results did not support the previous categorizations of 78 items that established by Blais and Gonnerman. Extrapolating from these findings, it appears that similarity judgments of verb/verb-particle pairs may be sample-specific, even among native speakers. Therefore, it is questionable whether Blais and Gonnerman's instrument can be used to reliably compare the judgments of different samples of native and non-native speakers.

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CHAPTER 1

INTRODUCTION

> "However, a problem arises for English which, perhaps alone among Indo-European languages, has come to regularly position satellite and preposition next to each other in a sentence." — *Talmy (1985), comparing particles to satellites*

Verb-particle constructions have a bad reputation in the field of second language acquisition, since learning these constructions is considered a difficult part of the lexicon (Neagu, 2007). In fact, this kind of acquisition seems to be particularly challenging for second language (L2) learners, especially for those— such as Arabic, Spanish, and Romanian—whose mother language lacks verb-particle constructions. As a result, those learners tend to avoid using these constructions by employing more individual-word verbs instead (Neagu, 2007). However, these constructions are commonly used in both written and spoken English. Previous studies (Abel, 2003; Dagaut & Laufer, 1985; Siyanova & Schmitt, 2007) have proposed that non-native speakers of English display awkwardness using verb-particle constructions but have failed to determine the source of this struggle.

Purpose and Research Question

The purpose of this thesis was to measure the sensitivity of American native English speakers and Saudi English learners' to the degree of similarity in meaning between a verb-particle construction and its corresponding verb (e.g. *Close off/Close*). My motivation to focus on that issue was based on the significance of this component in L2 acquisition. The results of this research can help better understand whether non-native speakers of English process English phrasal verbs as one unit possessing a unique idiomatic meaning or as two units where the meaning depends on the particle. Moreover, it was crucial to know whether non-native speakers

of English would show native-like responses. If the non-native speakers showed sensitivity consistent with that of native speakers, this would indicate a high level of acquisition. However, if the non-native speakers were significantly different from native speakers, this would indicate acquisition difficulty.

This study was inspired by Gonnerman and Hayes (2005) and Blais and Gonnerman (2013). In the first study, the authors tested the English monolingual speaker's explicit and implicit measures of phrasal verb comprehension. The second study conducted these tasks on native English speakers and French-English bilingual speakers. In the current study, American native English speakers and Saudi English learners were asked to rate the degree of similarity between verb-particle constructions and their corresponding verbs (e.g. *Eat up*/*Eat).* It is important to acknowledge that the instrument, 78 verb particle/verb pairs, was taken from the study conducted by Blais and Gonnerman (2013). However, it was predicted that results would reflect a fundamental difference between American and Saudi participants, in contrast to Blais and Gonnerman's results.

Specifically, the present study examined the performance of native and non-native English speakers on explicit tasks that show their degree of sensitivity towards the same semantic variations of the verb-particle constructions. The study was thus guided by the following research question:

> How do Saudi English learners compare with native speakers of American English in their sensitivity to the semantic transparency of verb-particle constructions?

Definitions of Verb-Particle Constructions

Since verb-particle constructions, also known as phrasal verbs, are commonly used in both written and spoken English, they are considered to be a significant lexical component of the

English language. However, the concept of verb-particle constructions can be varied based on certain terms.

According to Machonis (2010), phrasal verbs are composed of a verb with a particle (either an adverb or a preposition), which are stored as one semantic and syntactic unit. Phrasal verbs can also be recognized as multiword verbs, two-word verbs, or verb-particle combinations. Generally, they can be categorized as either continuous or discontinuous in form. As illustrated below, Example 1 is continuous and Example 2 is discontinuous.

1) *Ann turned on the computer*.
2) *Ann turned the computer on*.

Machonis (2010) demonstrated that there must be an obvious difference between "simple verb plus prepositional phrase*"* and phrasal verb constructions. According to Machonis, the prepositional phrase behaves as one syntactic unit distinct from the verb (See Example 3). Thus, the prepositional phrase could not be transferred, as illustrated in Example 4, as the transformational case allowed in Examples 1 and 2.

3) *The bus driver tuned on 48th Street* (verb + prepositional phrase).
4) **The bus driver turned 48th Street on.*

Blais and Gonnerman (2013) define verb-particle constructions as semantic units consisting of a verb and a particle. They compare the particle to either an adverb (e.g. *break the question down*) or a preposition (e.g. *turn out of the house*). There are several common expressions of English phrasal verbs, such as *throw out, look up, chew out, finish up,* and *pull over*.

The position of the particle is an interesting element of phrasal verbs that has been widely discussed in the literature. Gonnerman and Hayes (2005) illustrated the effect of particle

position. For example, a verb *take* and a particle *off* can be either adjacent to the verb, as in *take off your coat*, or separated, as in *take your coat off* (the noun phrase serves as intervener between the verb and particle).

Based on the placement of the particle of a phrasal verb in a sentence, many researchers have explained pragmatic, semantic, syntactic, and phonological elements that influence the particle's position in a sentence (Gonnerman & Hayes, 2005). For instance, Bolinger (1971) pointed out that the position of the particle affects the semantic interpretation of the sentence. He explained that the meaning of the particle near the verb is different from its meaning near the direct object.

Remarks on Verb Particles

Definition of the Term "Particle"

According to Neagu (2007), the term "particle" customarily indicates the components of uninflecting parts of speech available in such languages as Dutch, German, and English. She adds that the term "particle" has been classified into three meanings. First, they can indicate all uninflected components in general. Second, they are considered, in a more narrow definition, as modal and focus particles. Third, they are considered parts of a larger group of invariables, such as conjunctions, prepositions, and adverbs.

A significant issue with phrasal verbs is that there are restrictions on the particle position and on passivizing these constructions. As mentioned in Neagu (2007), the less symbolic the verb particle is, the less it makes a tight unit. In other words, when the verb-particle construction has idiomatic meaning, the verb and particle cannot be separated. For example, the following phrase is not acceptable ***make one's mind up***. However, the phrase *make up one's mind* is

correct. Thus, according to Neagu, verb-particle restrictions are derived by the meanings of the verb and the particle individually as well as their meaning together as a whole.

The Frequency of English Particles

Based on Lindstromberg's (1997) observation, some particles are more common than others. For instance, the particle *up* is used more frequently than *down*, whereas the particle *under* is less common or nearly absent from phrasal verbs. Neagu (2007) claimed that to determine which of two particles with similar meanings (e.g. *over*, *above*) is more frequently used in phrasal verbs, the choice should be the particle with the more general meaning.

Basic Issues Concerning Particles and Prepositions

Phrasal verbs, as mentioned by Machonis (2010), can be divided into prepositional verbs and phrasal prepositional verbs, although the majority of phrasal verb dictionaries categorize them under the term "phrasal verb". However, the movement of the preposition is not allowed in prepositional verbs that act as a single semantic unit. For example, in *Max called on his neighbor* (*call on* meaning 'visit'), the preposition cannot be moved (e.g. *Max called his neighbor on*). Phrasal prepositional verbs, on the other hand, are followed by a particle and a preposition, and their structure also acts as one semantic unit, as demonstrated in Example 5. Any kind of movement is not allowed, as shown in Example 6.

5) *The students looked up to the teacher* (*looked up to* meaning 'admire').
6) **The students looked the teacher up*.

Neagu (2007) stated that phrasal verbs are clear and understandable when the verb has a well-known meaning and the particle has spatial meaning. He proposed that the main meanings of prepositions and particles are based on the locative domain whether it is "changing location or spatial location" (p.125), as illustrated in the following sentences:

7) *The secret has leaked out.*

8) *He ran up a heavy bill.*

9) *He wiped the event off his memory.*

The Nature and Processing of Phrasal Verbs

Jackendoff (1995) defined phrasal verbs to be generally stored as lexical units like idioms or words. In other words, the interpretations of phrasal-verb expressions can be memorized either from the whole or separate meanings of the combined words. Previous studies have shown little agreement on whether it would be sufficient to process phrasal verbs as lexical units similar to word units or as syntactical units. For instance, Farrell (2005) mentioned that phrasal verbs can be processed based on a language's derivational morphology, as when verbs become nouns in such constructions as *show-off* or *a passer-by*. However, the verb and particle are obviously different units since a noun phrase or an adverb can be a good intervener between the verb and particle. For example, the verb and particle are separated either by a noun phrase, such as *take the coat off*, or by an adverb, such as *fixed it right up*. According to Chomsky (1970), a single unit should not be separated by any kind of intervener or insertion. In other words, based on Chomsky's Lexical Integrity Principle, phrasal verbs act comparably to syntactic phrases.

Currently, linguists have investigated through the techniques of neuroimaging and psycholinguistics, this issue of whether phrasal verbs behave similarly to words or phrases (Gonnerman & Hayes, 2005). For instance, one conclusion drawn by Konopoka and Bock (2009) demonstrated that ordering preferences for phrasal verbs can be primed. In this study, it was found that whenever the subjects had been exposed to several sentences containing a phrasal verb with the same structure frequently, the subjects remembered it better. This evidence has prompted researchers to consider the structure of the processing of verb-particle constructions.

A different view argues that this modular perspective of the lexicon vs. syntax produces a false dichotomy that does not successfully account for verb particles. As a result, several researchers have classified phrasal verbs as either "transparent" that is, they can be interpreted literally based on the understanding of the word constituents, or "idiomatic" that include obscure meaning that cannot be interpreted literally. Thus, the only way to elicit the right idiomatic meanings of phrasal verbs is to memorize them (Dagut & Laufer, 1985).

Processing of Particle Placement

Lohse, Hawkins, and Wasow (2004) claimed that a processing approach can interpret diverse elements that influence particle position. Thus, they investigated two components: 1) length of the direct object NP and 2) dependency relationship between the verb and particle that influence particle position. Their corpus study demonstrated that as long as the number of words in the direct object NP increased, the particle position tended to be adjacent to the verb.

Lohse, Hawkins, and Wasow (2004) also examined how changing semantic dependency relationships between the verb and particle affected the position of the particle in different corpora. Regarding particle constructions, they concluded that dependency was based on the relationship between the verb and particle and that a verb often depends on its particle for the meaning of the whole construction. For instance, some verbs do not depend on their particles for their meaning, such as *finish up*. However, the verb *chew* relies completely on its particle *out* for its meaning in *chew out*. The results showed that dependent particles, such as *Chew/Chew out*, are more likely to be positioned adjacent to the verb. Therefore, the sentence *the boy takes back the pen* is more common than *the boy takes the pen back*.

Processing of Phrasal Verbs by L2 Learners

Verb-particle constructions have been considered among the most difficult aspects of learning English as a second language (Blais & Gonnerman, 2013). Although many studies have investigated this phenomenon in L2 learners, most studies have concentrated on the learners avoiding phrasal verbs in production. Dagaut and Laufer (1985) found that Hebrew speakers avoided using verb-particle constructions in written tasks in English. For instance, they avoided using *let down* in favor of its synonym *disappoint*. Dagaut and Laufer concluded that the reason behind this avoidance of phrasal verbs was the absence of such constructions in Hebrew.

Laufer and Eliasson's (1993) study on Swedish speakers and Hulstiju and Marchena's (1989) study on Dutch speakers demonstrated that not only do learners whose L1 lacks phrasal verbs have difficulty using them, but speakers whose L1 contains these constructions have such difficulties as well. On the other hand, Dutch and Swedish speakers might acquire verb-particle construction more easily than Hebrew speakers. In these studies, the Dutch and Swedish speakers had an advanced level of English proficiency and displayed behavior like that of native English speakers more so than Hebrew speakers, even though they were also at an advanced or intermediate level. The reason for the hindrance L2 learners feel with phrasal verbs is likely due to the blending of semantic and syntactic functions. In other words, it is semantically difficult for L2 learners to acquire such idiomatic expressions. In addition, it is syntactically difficult due to the differences of each language (Blais & Gonnerman, 2013). A later investigation by Liao and Fukuya (2004) emphasized English proficiency level as a beneficial factor that enables L2 speakers to use more phrasal verbs instead of avoiding them.

Although most research has focused on the phenomenon of avoiding verb-particle constructions, it is important to discuss the level of receptive processing for these constructions.

In order to determine L2 learners' knowledge and competence with verb-particle constructions, it is important to focus on the language structures that come before their production in their inter-language.

Matlock and Heredia (2002) compared how much time monolingual and bilingual speakers need to read pairs of English sentences that were almost the same. Each English sentence was presented in two different contexts: a verb particle (*John ate up the pizza*) or a verb preposition (*John ate up the street*). It was found that English monolingual and bilingual speakers who had acquired English at the age of 12 or below showed faster response times to the phrasal verbs. However, bilingual speakers who had acquired English at a later age seemed to understand verb-preposition phrases less well. In other words, these results proved that English monolingual and early non-native speakers could process the figurative language better than late non-native English speakers, who needed to restore the meaning literally before choosing alternative meanings.

Despite these results, Blais and Gonnerman (2013) argued that the preceeding study had several limitations. They argued that the type of task used by Matlock and Heredia (2002) was limited because it measured the participants' response time to the whole sentence. Such a method cannot isolate the processing of the phrasal verb itself. Secondly, Blais and Gonnerman (2013) mentioned that Matlock and Heredia (2002) lacked careful control for the participants' interlanguage proficiency level.

Similar to verb-particle constructions, idioms combine words that may occur in different contexts but take new interpretations in different combinations and contexts. This tendency causes idioms and phrasal verbs to be considered difficult aspects in L2 acquisition. Based on discourse and contextual components as well as the types of verb-particle constructions, the

majority of recent hypotheses agree that monolingual English speakers may start by processing either the literal or non-literal interpretation of an idiom with equal ease (Giora, 2002). However, there is less agreement about whether bilingual English speakers enjoy the full benefit of this complicated processing.

Cieslicka and Heredia (2011) proposed the Literal Salience Hypothesis, which states that non-native speakers of English always process literal meanings of idioms first before they engage in figurative interpretations. On the other hand, Bulut and Gelik-Yazici (2004) argued against this hypothesis. Some psycholinguistic research proposes that verb-particle constructions, idioms, and other kinds of figurative language are handled in different processes by monolingual and bilingual speakers. Due to this controversy, there is an important need for additional research to explain the processing of phrasal verbs in L2 comprehension.

Blais and Gonnerman (2013) suggest that people need to recognize the differences between verb-particle constructions and full idioms, such as *kick the bucket* and *let the cat out of the bag*. According to Dixon (1982), idioms are composed of a large variety of expressions with flexible variation in syntax, whereas phrasal verbs are syntactically similar to the combination of non-figurative verb-particle phrases.

Moreover, Blais and Gonnerman (2013) stated that some particles act more like morphemes in the way they are applicable to any verb as a completive. For instance, the perfective *up* can be applicable to any verb, such as *wash up, roll up, grow up,* and *write up*. Therefore, the ability to distinguish verb particles from idioms enable non-native English speakers to not have to depend heavily on an initial non-figurative interpretation. In addition, Blais and Gonnerman discussed the importance in L2 research of being aware of the difference between two kinds of knowledge: explicit language processing and implicit language processing.

Bialystok (1979) found that explicit language processing skills developed with increased instruction when the learner began receiving implicit and explicit input from the L2. Based on the processing needs of the different tasks, L2 learners were able to use explicit or implicit input. Ellis (2005) highlighted the distinction between these types of language knowledge, including standards such as learnability, time available, and certainty knowledge. Ellis concluded that there was a correlation between learners' implicit knowledge and their age of acquisition.

This chapter provided an outline of the theoretical framework of the study. First, it offered the purpose of the current research and then demonstrated different definitions of verb-particle constructions. After that, it offered a brief overview of phrasal verb processing hypotheses based on studies with native and non-native English speakers. The chapter looked at how L2 learners process verb-particle constructions. The next chapter investigates the empirical literature relevant to the present study.

CHAPTER 2

LITERATURE REVIEW

This chapter provides an overview of previous research related to verb-particle constructions and idioms in L2 acquisition. Few studies have investigated whether non-native speakers of English process multiword phrases the same way native speakers do. Most of the studies on phrasal verbs have concentrated on production. The literature review is followed by a summary of the major findings.

Dagut and Laufer (1985) conducted one of the earliest studies that documented the difficulties that L2 learners of English experience when processing phrasal verbs. The authors examined the avoidance of phrasal verbs by conducting three tasks on Hebrew English learners. In the first task, the participants were asked to complete the sentences by choosing one of four verb choices. In each of these four choices, there was a phrasal verb. The researchers found that Hebrew speakers were more likely to choose single verbs rather than verb-particle constructions. The researchers speculated the participants' avoidance of using verb-particle constructions was due to the absence of these constructions in Hebrew.

Other studies have replicated Dagut and Laufer' (1985) study, exploring phrasal verb production in native and non-native speakers of English. For example, Hulstijn and Marchena (1989) tested Dutch speakers to explore the avoidance of verb-particle constructions. The results revealed that although Dutch speakers showed avoidance of the idiomatic verb-particle constructions that they perceived as too Dutch-like, they did not avoid verb-particle constructions categorically. Laufer and Eliasson (1993) examined avoidance among advanced Swedish learners of English of verb-particle constructions, confirming that high proficiency level affects the usage of L2 learners of English for such constructions. In addition, Sjöholm (1995)

conducted the same study on native Finnish and Swedish learners of English. The results of that study proposed that the distance between the L1 and L2 as well as the proficiency level of the L2 learners could determine the extent to which L2 speakers avoided using phrasal verbs.

Siyanova and Schmitt (2007) examined native and non-native English speakers' usage of one-word verbs and multiword verbs. The study contained 26 single verbs and multiword verbs. The participants, both native and non-native speakers of English, were asked to choose their preferred usage on a six-point Likert scale. The authors found that native English speakers showed a higher tendency to use multiword verbs compared to non-native speakers. These results contradicted previous studies (e.g. Hulstijn & Marchena, 1989; Laufer & Eliasson, 1993; Sjöholm, 1995), which supported the assumption that highly proficient learners of English use and process phrasal verbs the same way English native speakers do. As Siyanova and Schmitt concluded, even advanced English learners were more likely to use single verbs as opposed to multiword verbs.

These studies focused on exploring how native and non-native speakers of English use and produce phrasal verbs. However, few studies have examined how native and non-native speakers of English comprehend verb-particle constructions. One such study was by McPartland-Fairman (1989), who used a cross-modal lexical priming paradigm. The purpose of the study was to measure whether the literal or the figurative meanings of the verb-particle constructions were being activated or retrieved. In this study, the sentences contained both verb + preposition combinations and verb-particle constructions. The sentences could be biased toward the figurative or literal meaning interpretation, as seen in the examples below.

10) *Peter shocked everyone at the party. It was an expensive antique lamp that he broke in*1* a million pieces.*

11) *The criminal trained a monkey to enter and steal money. It was during his vacation that he broke in*$_{*1*}$ *a policeman said.*

The participants, both monolingual and bilingual English speakers, listened to verb-particle constructions to categorize the target words with either literal or nonliteral interpretations, or unrelated control items. Each verb-particle was preceded by contextual clues that were biased towards the literal meaning, as in Example 10, or biased towards the figurative interpretation, as shown in Example 11. The verb particle *broke in* in Example 10 means 'destroyed'. However, the information that preceded the same verb particle *broke in* in Example 11 was biased towards the figurative interpretation of 'stealing'.

McPartland-Fairman's (1989) results revealed that the participants were faster in naming related targets than naming control ones. The author found that naming times in both groups were similar for target words related to figurative and literal meanings. This supported the Lexical Representation Hypothesis, which states that idiomatic expressions and ambiguous words are processed similarly (Swinney & Cutler, 1979). McPartland-Fairman concluded that both figurative and literal meanings of verb-particle constructions were activated by non-native speakers of English. Thus, both groups responded similarly in the phrasal verb comprehension task.

Abel (2003) conducted a study concerning idiom decomposability with native English speakers and German learners of English. The participants were required to make a decomposability judgment about certain English idioms. Specifically, they were asked to determine to what extent the single constituent of the idiom contributed to the idiom's total figurative meaning. The researcher found that both groups showed differences in decomposability judgments. Native English speakers were more likely to rate idioms as non-

decompsable. However, the German English learners were more likely to judge the idioms as decomposable even if the given items were opaque and could not be decomposed. It was concluded that the L2 learners relied on the literal interpretations of idiom constituents. This provided evidence that the figurative interpretations of idioms are less salient for the L2 learner than for native English speakers.

Matlock and Heredia (2002) examined the distinctions between native and non-native speakers in processing phrasal verbs by conducting two tasks: a sentence completion task and an online reading comprehension activity. The purpose of the first task was to investigate whether non-native speakers of English preferred to produce phrasal verbs based on their figurative interpretation or their literal interpretation as single verb + preposition. The researchers found that both native and non-native speakers of English produced more figurative interpretations than literal ones. They concluded that both groups had similar responses, which meant that both groups were equally comfortable using phrasal verbs and interpreting them figuratively.

In the online reading task, Matlock and Heredia (2002) examined the "time-course" of computing figurative versus literal interpretations. The purpose of this task was to investigate whether native and non-native speakers of English would activate the literal meaning of the phrasal verbs or the figurative meaning. In this experiment, the L2 participants were divided into two groups: early bilingual speakers (who learned English before the age of 12) and late bilingual speakers (who learned English after the age of 12). In the end, it was found that the native and early bilingual speakers read sentences with phrasal verbs more quickly than other sentences that required literal interpretation. As a result, the L1 and L2 speakers of English who learned English before the age of 12 processed the figurative meanings of phrasal verbs more quickly than the literal meanings. Late bilingual speakers, on the other hand, showed difficulty

processing the sentences with phrasal verbs. In other words, the sentences with multiword verbs were processed with more difficulty by late bilingual speakers. The results of the second experiment supported results of several previous studies that stated that non-native speakers showed difficulties using phrasal verbs (e.g. Dagut & Laufer, 1985; Liao & Fukuya, 2004). Liao and Fukuya (2004), for instance, concluded that intermediate Chinese-English learners avoided using phrasal verbs.

In Gonnerman's and Hayes' (2005) study, monolingual English speakers were required to rate the degree of similarity between verb-particle constructions and their corresponding verbs. In the similarity rating task, monolingual speakers were asked to rate the similarity between *take off/take*, on a scale of 1 (very dissimilar) to 9 (very similar). The task materials consisted of 209 verb-particle/verb pairs. The subjects showed highly uniform ratings. For instance, the pair *Add up/Add* was rated to be very similar. However, *Throw out/Throw* was considered to be highly dissimilar. Some pairs, such as *keep up/keep*, showed moderate similarity. After the explicit similarity rating task was conducted, the authors used masked priming to test whether participants' judgments were reflected in the implicit on-line task or not. A prime was presented for 35 ms, and then target words were presented on a computer screen, and the participants were asked to make the lexical decision. This lexical decision could be simplified when a target verb *finish* was primed with a low-dependency particle *finish up.* However, in cases when a high-dependency verb-particle construction was primed with its target verb, such as *chew out*, the lexical decision became more difficult. Therefore, the respondents were encouraged to notice dependency variations in explicit tasks and implicit tasks.

Blais and Gonnerman (2013) explored French-English bilingual speakers' sensitivity to semantic variability between verb particles and verb pairs. Similar to Gonnerman and Hayes

(2005), the semantic similarity task was conducted on English monolinguals and French-English bilingual speakers. First, the participants were asked to rate the degree of semantic similarity between verb pairs on a scale of 1 to 9, where 1 = very dissimilar and 9 = very similar. For example, they would be asked how similar *turn on* is to *turn*. Both groups were sensitive to semantic variability between verb-particle/verb pairs, the results showed that bilingual participants had similar responses to native English speakers.

Blais and Gonnerman (2013) investigated L2 sensitivity to 78 different verb particles ranging from more transparent to less transparent or opaque. In the experiment, the French-English bilingual speakers were required to complete a masked priming lexical decision task in which the target verb (e.g. *show*) was primed by its corresponding verb-particle construction (e.g. *show off).* Each trial was presented with an asterisk "*" as a fixation point for 1000 ms, followed by a mask (%#@!&^$) that displayed for 500 ms. After that, the prime was presented for 35 ms followed by the target, which appeared on screen for 200 ms. In other words, the prime was displayed for a few ms between the visual mask and the target. The participants were thus required to make a lexical decision based on the target. Blais and Gonnerman concluded that regardless of an L1's lack of verb-particle constructions, advanced L2 learners tended make similar decisions to the monolingual English speakers.

Summary of Previous Literature

Previous studies on the acquisition of phrasal verbs in an L2 have focused on L2 learners' performance in verb-particle production and comprehension experiments. Earlier research has revealed that non-native speakers of English are more likely to avoid using verb-particle constructions in production studies (Dagaut & Laufer, 1985; Siyanova & Schmitt, 2007). Others found that L2 learners relied on literal analyses rather than figurative analyses when they

processed phrasal verbs (Abel, 2003). On the other hand, other findings have proposed that highly proficient L2 learners of English showed native-like responses, though not identically to native speakers of English, in the phrasal verb production tasks (Hulstijn & Marchena, 1989; Laufer & Eliasson, 1998; Sjoholm, 1995).

Few studies have explored how phrasal verbs are represented in the mental lexicon of L2 learners of English and how they process and comprehend verb-particle constructions, but their findings have generally come to one of two conclusions. First, non-native speakers of English process phrasal verbs based on their literal meaning interpretations (Abel, 2003). This finding supports the Model of Dual Idiom Representation, which suggested that when L2 learners are exposed to less common idiomatic expressions, they rely on literal interpretations to elicit the idiomatic meaning of such expressions. The second conclusion, which is opposed to the first, suggests that highly proficient L2 learners and bilingual speakers (who learned English at an early age) show similar responses to native English speakers in phrasal verb comprehension tasks (Matlock & Heredia, 2002).

Overall, the L2 phrasal verb processing studies discussed in this chapter demonstrate a number of elements that strongly interact in determining how non-native speakers of English process, understand, and use verb-particle constructions. The next chapter describes the methodology of the current study.

CHAPTER 3

METHODOLOGY

This chapter describes the research methodology of the present study. It used a mixed design involving quantitative and qualitative methods of analysis. This chapter includes the following sections: the purpose of the study, participants, variables, instruments, procedure, and data analysis.

Purpose of the Study

The present study aimed to measure American and Saudi participants' sensitivity towards the semantic variations of English verb-particle constructions (e.g. *Soak/Soak up*). It sought to provide further insight into how L2 learners process and understand verb-particle constructions. These constructions are a significant component in the L2 acquisition process. Results of this research could be used to explain whether non-native speakers of English process phrasal verbs as one unit that have a shared idiomatic meaning or as two units where the meaning depends on the particle. Verb-particle constructions are ambiguous and can be interpreted literally or idiomatically. Therefore, the current study was guided by the following research question:

> How do Saudi English learners compare with native speakers of American English in their sensitivity to the semantic similarity between verb/verb-particle constructions?

Participants

Participants for this study consisted of 107 American native speakers of English (33 male and 74 female) and 40 Saudi English learners (41 male and 26 female). Native speaking participants were undergraduate students at Southern Illinois University Carbondale. The researcher had been granted approval by the SIU Human Subjects Committee to administer the survey in a LING 200 class. Non-native speaking participants were undergraduate and graduate

SIU-admitted students who had met the university's minimum language requirement (80 in TOEFL IBT and 6.5 in IELTS). The researcher contacted the Center for International Education and the Saudi Association at Southern Illinois University to obtain contact information for Saudi students to ask them to volunteer to take apart in the research. For the reliability of the study, they were selected from the same nationality, spoke Saudi Arabic, and were exposed to the same quality of education. This was done to prevent such factors from influencing their responses in the rating task.

The fields of study represented by the participants included accounting, applied linguistics, architecture, business administration, communication disorders, computer science, curriculum, education, health care management, international studies, marketing, psychology, science, sociology, and TESOL. The demographic data is presented in Table 1.

Table 1

Demographic Data of the Participants

Nationality	N	Male	Female	Mean Age	Minimum age range	Maximum age range
Saudi	67	41	26	26.6	18	35
American	107	33	74	20	18	33
Total	174	74	100	23.3	18	33–35

Variables

The dependent variable in this research was participants' degree of sensitivity towards the semantic variations of the verb-particle constructions. Thus, verb-particle similarity ratings were conducted, in which 78 items were deconstructed into the following subcategories in terms of meaning similarities:

1) High similarity: total of 26 items.

2) Mid similarity: total of 26 items.

3) Low similarity: total of 26 items.

For the independent variables, the subjects were divided into two groups: native speakers of English (US citizens) and non-native speakers of English (Saudis).

Instrument

As mentioned above, in order to measure participants' responses to the semantic transparency of phrasal verb/verb pairs, an explicit similarity rating task was conducted. In this rating task, the 78 verb-particle constructions from the study by Blais and Gonnerman (2013) were used. These 78 verb-particle constructions were divided into three groups: 26 high similarity constructions, 26 mid similarity constructions, 26 low similarity constructions. The similarity rating scale was 1 = very similar, 2 = somewhat similar, and 3 = very dissimilar.

The participants were asked to rate the verb pairs based on the degrees of similarity in meaning. For example, the verb pair (*Eat/Eat up*) have low similarity; thus they were supposed to select *very dissimilar*. An example is given in Figure 1.

Eat / Eat up

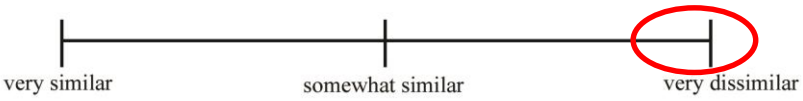

Figure 1. Similarity Scale for *Eat/ Eat up*.

Procedure

After receiving approval from the Human Subjects Committee, the group of American native speakers was recruited from an undergraduate core curriculum class (LING 200). The participants were given a consent form and were informed that their participation was voluntary

and that they could choose not to participate. Students who agreed to participate signed the consent form and returned it to the researcher. After receiving the signed form, the researcher gave the participants the survey.

Saudi participants were recruited throughout the Center for International Education and the Saudi Association at Southern Illinois University in Carbondale. The accessible population of SIUC Saudi students were contacted by email addresses and asked to contact the researcher if they were interested in taking part in the study. The participants who participated voluntarily were asked to read and sign a consent form in compliance with the SIU Human Subjects Committee requirements. They were assured that their real identities would be kept confidential. The survey took 8 to 10 minutes to complete.

Analysis of the Data

The analysis of the data was performed through the SPSS program, version 20 (2010). Frequency statistics and chi-square tests were calculated for the participants' responses in each of the three similarity rating groups, amounting to 78 chi-square tests.

1) Twenty-six chi-square comparisons between the group of American speakers and Saudi English learners for high similarity pairs.
2) Twenty-six comparisons between the group of American speakers and Saudi English learners for somewhat similar pairs.
3) Twenty-six comparisons between the group of American speakers of English and Saudi English learners for low similarity pairs.

CHAPTER 4

RESULTS

This chapter provides a detailed account of the results of the present study, which aimed to examine the sensitivity of native and non-native speakers of English towards the semantic variations of verb-particle constructions and their corresponding verbs. For example, *Block out/Block* was considered to be very similar, *Mark out/Mark* was categorized as somewhat similar in meaning, but *Shoot up/Shoot* was considered to be very dissimilar.

The data were analyzed through the SPSS software, version 20 (2010). Frequency statistics were calculated for all 78 verb/verb-particle constructions in the survey, as well as the chi-square test of each item. The results for each of the three sub-constructs are presented in separate sections in tables, followed by narrative summaries. The tables contain the distribution of the ratings given by American and Saudi participants among the three similarity degrees on the scale (very similar, somewhat similar, and very dissimilar), interpreted in the narrative summaries in detail.

The study used a survey methodology with 78 verb pairs, each measured on a Likert scale of 1 to 3, where 1 = very similar, 2 = somewhat similar, and 3 = very dissimilar. In other words, the first 26 items show high similarity in meaning, the second 26 items show moderate similarity, and the third 26 items show low similarity. The participants were asked to rate how the verb pairs were similar in meaning depending on how they felt.

Results for High Similarity Items

The first research instrument concerned Sub-construct 1, high similarity items that were categorized as very similar in meaning were based on previous research. Thus, the first 26 very similar items aimed to provide evidence about whether the participants were sensitive to the

semantic similarity between verb-particle constructions and their corresponding verbs. Table 2 summarizes the frequency results for the first 26 items that were expected to be very similar in meaning based on the categorization of Blais and Gonnerman (2013) and the chi-square test for each item.

As seen in Table 2, a significant difference between the native and non-native speakers of English was observed in 17 items. Based on the ratings of the American participants, they judged most verb pairs differently from Saudis. For example, in rating *Chew/Chew out,* 77.6% of American participants considered them to be very dissimilar in meaning, while 61.2% of Saudis rated them as very similar, χ^2 (1) = 60.885, $p < .001$. In response to *Call/Call off,* 58.9% of Americans rated them as very dissimilar, while 76.1% of Saudis considered them to be very similar, χ^2 (1) = 83.555, $p < .001$. Also, in the rating of *Blow/Blow off,* 56.1% of the American participants rated them as very dissimilar. In contrast, 52.2% of Saudis considered them somewhat similar, χ^2 (1) = 22.447, $p < .001$. In the same way, American participants were divided between 47.7% (somewhat similar) and 32.7% (very dissimilar) in rating *Beat/Beat up,* while 73.1% of Saudis judged them to be very similar, χ^2 (1) = 27.974, $p < .001$.

Table 2

Descriptive Statistics for the 26 Items Considered Very Similar

Verb/verb particle construction	Group	N	% very similar	% somewhat similar	% very dissimilar	Chi-square	*p*
Bail/ Bail out	American	106	39.3	45.8	14	2.403	.301
	Saudi	67	11.9	58.2	29.9		
Act/ Act out	American	106	21.5	44.9	32.7	4.383	.112
	Saudi	67	19.4	49.3	31.3		
Block/ Block out	American	107	39.3	46.7	14	15.543	.000**
	Saudi	67	40.3	32.8	26.9		
Blow/ Blow off	American	107	7.5	36.4	56.1	22.447	.000**
	Saudi	67	22.4	52.2	25.4		
Break / Break out	American	107	.9	40.2	58.9	24.877	.000**
	Saudi	67	41.8	34.3	23.9		
Build/ Build up	American	107	41.1	50.5	8.4	26.137	.000**
	Saudi	67	28.4	62.7	9.0		
Buy/ Buy out	American	107	16.8	47.7	35.5	17.212	.000**
	Saudi	67	67.2	20.9	9.0		
Carry/ Carry off	American	107	17.8	55.1	27.1	1.145	.564
	Saudi	67	22.4	53.7	23.9		
Chew/ Chew out	American	107	.9	21.5	77.6	60.885	.000**
	Saudi	67	61.2	28.4	10.4		
Clean/ Clean out	American	106	33.6	51.4	14	3.158	.206
	Saudi	67	20.9	56.7	22.4		
Close/ Close off	American	107	29	49.5	21.5	.025	.988
	Saudi	67	20.9	50.7	28.4		
Add/ Add up	American	107	63.6	33.6	2.8	48.453	.000**
	Saudi	67	38.8	40.3	20.9		
Ball/ Ball up	American	107	12.1	43.0	44.9	4.921	.085
	Saudi	67	28.4	58.2	13.4		
Boil/ Boil off	American	107	9.3	50.5	40.2	25.259	.000**
	Saudi	67	11.9	53.7	32.8		
Bring/ Bring forth	American	107	40.2	51.4	8.4	2.611	.271
	Saudi	67	16.4	47.8	35.8		
Bust/ Bust out	American	107	17.8	51.4	30.8	15.254	.000**
	Saudi	67	6.0	68.7	25.4		
Cast/ Cast off	American	107	8.4	44.9	46.7	11.720	.003**
	Saudi	67	73.1	22.4	4.5		
Clear/ Clear off	American	106	37.4	43.0	18.7	14.012	.001**
	Saudi	67	22.4	65.7	11.9		
Count/ Count off	American	106	28	54.2	16.8	6.189	.045*
	Saudi	67	6.0	52.2	41.8		
Cover/ Cover up	American	106	49.5	38.3	11.2	30.238	.000**
	Saudi	67	43.3	40.3	16.4		
Beat/ Beat up	American	106	18.7	47.7	32.7	27.974	.000**
	Saudi	67	73.1	23.9	3.0		
Back/ Back in	American	106	12.1	46.7	40.2	1.356	.508
	Saudi	67	41.8	40.3	17.9		
Box/ Box off	American	106	8.4	41.1	49.5	23.045	.000**
	Saudi	67	26.9	35.8	37.3		
Bump/ Bump off	American	105	16.8	36.4	44.9	27.626	.000**
	Saudi	67	11.9	40.3	47.8		
Call / Call off	American	106	8.4	31.8	58.9	83.555	.000**
	Saudi	67	11.9	11.9	76.1		
Catch/ Catch up	American	106	15.9	46.7	36.4	4.492	.106
	Saudi	67	52.2	38.8	9.0		

Note. Double asterisk (**) shows significance at *alpha* = .01; Single asterisk (*) shows significance at *alpha* = .05. Categories based on Blais and Gonnerman (2013).

On the other hand, the difference between groups was not statistically significant for eight items. For example, in response to *Close/Close off*, 49.5% of American participants judged them as somewhat similar, 29% as very similar, and 20.9% as very dissimilar. Following the same order as the Americans, 50.7% of Saudis considered these pairs as somewhat similar, 28.4% as very dissimilar, and 20.9% as very similar. As shown in the chi-square test, the ratings were not significantly different, χ^2 (1) = .025, p = .988. Next, *Carry/Carry off* showed no significant difference between groups, χ^2 (1) = 1.145, p = .564; 55.1% of Americans judged them as somewhat similar, 27.1% as very dissimilar, and 17.8% as very similar. Likewise, 53.7% of Saudi participants rated *Carry/Carry off* as somewhat similar, 22.4% as very dissimilar, and 20.9% as very similar. In the same way, the participants' ratings of *Back/Back in* showed no significant differences, χ^2 (1) = 1.356, p = .508. Among the American participants, 46.7% considered *Back/Back in* as somewhat similar, 40.2% as very dissimilar, and 12.1% as very similar. Similarly, 40.3% of Saudi participants rated them as somewhat similar, 41.8% as very similar, and 17.9% as very dissimilar.

As seen in Table 2, the participants' sensitivity towards the semantic similarity of the verb pairs varied. Based on the American participants, the approximate majority of the participants' judgments on the verb pairs such as *Act/Act out, Bail/Bail out, Block/Block out, Clear/Clear off,* and *Back/Back in* fell between approximately 40% very similar to very dissimilar and about 50% somewhat similar. For example, in response to *Build/Build up*, 50.5% of American participants rated them as somewhat similar and 41.1% considered them very similar. However, 8.4% of Americans judged them as very dissimilar. The only rating that

conformed to the category of high similarity with the verb/verb-particle construction in Blais and Gonnerman (2013) was when the participants judged *Add/Add up* (63.6%) as very similar.

Saudi participants were also sensitive to the variability between the verb and verb-particle constructions. Their judgments were similar to the American participants towards some items, such as *Close/Close off, Back/Back in, Bail/Bail out, Bring/Bring forth,* and *Catch/Catch up.* In response to these items, Saudi participants' ratings were distributed between somewhat similar and either very similar or very dissimilar. For example, in response to *Back/Back in*, 41.8% of them rated the pair as very similar and 40.8% as somewhat similar. Saudis consistently considered only 5 out of the 26 pairs to be very similar: *Buy/Buy out, Chew/Chew out, Cast/Cast off, Beat/Beat up, and Catch/Catch up*. However, based on native English speakers' ratings, the only item that conformed to Blais' and Gonnerman's high similarity category was *Add/Add up.* Therefore, Saudis' ratings showed higher conformity to the categories established by Blais and Gonnerman.

Results for Moderate Similarity Items

The second 26 items were categorized by Blais and Gonnerman as somewhat similar in meaning. The participants' ratings showed where each group was sensitive toward similarity in these items. Table 4 summarizes the frequency results for the second 26 items and shows the chi-square test for each item.

As seen in Table 3, the difference between Saudi English learners and American native speakers was highly significant in 21 items. *Let/Let down* showed a highly significant difference between groups, χ^2 (1) = 117.777, $p < .001$; 72.9% of Americans rated them as very dissimilar and 23.4% as somewhat similar. However, 80.6% of Saudis considered them somewhat similar and 16.4% as very dissimilar. *Eat/Eat up* also showed a significant difference between groups, χ^2 (1) = 104.134, $p < .001$. It was found that American participants rated the pair between 51.4% as very similar and 43.9 % as somewhat similar. In contrast, 79.1% of Saudis considered them very similar. In the same way, 68.2% of Americans rated *Live/Live down* as very dissimilar and 1.9% as very similar, while 64.2% of Saudis judged the pair as very dissimilar and 14.9% as very similar. Thus, both groups, judged most verb pairs differently.

Table 3

Descriptive Statistics for the 26 Somewhat Similar Items

Verb/verb particle construction	Group	N	% very similar	% somewhat similar	% very dissimilar	Chi-square	*p*
Cut/ Cut back	American	107	12.1	55.1	32.7	17.243	.000**
	Saudi	67	10.4	56.7	32.8		
Eat/ Eat up	American	107	51.4	43.9	4.7	104.134	.000**
	Saudi	67	79.1	6	14.9		
Give/ Give away	American	107	39.3	43.9	16.8	.473	.789
	Saudi	67	13.4	43.3	43.3		
Hold/ Hold back	American	107	16.8	43.9	39.3	10.807	.005**
	Saudi	67	16.4	65.7	17.9		
Let / Let down	American	107	3.7	23.4	72.9	117.777	.000**
	Saudi	67	3.0	80.6	16.4		
Lock/ Lock up	American	107	44.9	40.2	15	16.358	.000**
	Saudi	67	14.9	68.7	16.4		
Pass/ Pass out	American	107	1.9	22.4	75.7	35.548	.000**
	Saudi	67	35.8	38.8	25.4		
Ring / Ring up	American	107	7.5	38.3	54.2	1.466	.481
	Saudi	67	44.8	46.3	9.0		
Draw/ Draw up	American	107	26.2	57	16.8	21.186	.000**
	Saudi	67	46.3	46.3	7.5		
Drive/ Drive away	American	107	25.2	52.3	22.4	2.109	.348
	Saudi	67	14.9	62.7	22.4		
Finish/ Finish up	American	107	58.9	32.7	8.4	81.683	.000**
	Saudi	67	70.1	25.4	4.5		
Hand/ Hand out	American	107	12.1	30.8	57	62.827	.000**
	Saudi	67	9.0	23.9	67.2		
Keep/ Keep up	American	107	8.4	40.2	51.4	16.688	.000**
	Saudi	67	82.1	14.9	3.0		
Live/ Live down	American	107	1.9	29.9	68.2	87.655	.000**
	Saudi	67	14.9	20.9	64.2		
Lay/ Lay down	American	107	55.1	38.3	6.5	58.094	.000**
	Saudi	67	56.7	28.4	14.9		
Level/ Level off	American	107	26.2	44.9	29	21.318	.000**
	Saudi	67	7.5	34.3	58.2		
Make/ Make over	American	107	6.5	30.8	62.6	50.885	.000**
	Saudi	67	17.9	32.8	49.3		
Mark/ Mark out	American	106	9.3	54.2	35.5	28.850	.000**
	Saudi	67	77.6	17.9	4.5		
Patch/ Patch up	American	106	50.5	41.1	7.5	29.640	.000**
	Saudi	67	28.4	58.2	13.4		
Find/ Find out	American	106	39.3	44.9	15	56.007	.000**
	Saudi	67	68.7	26.9	4.5		
Head/ Head off	American	105	11.2	29.9	57	33.909	.000**
	Saudi	67	14.9	49.3	35.8		
Knock/ Knock over	American	106	13.1	42.1	43.9	20.287	.000**
	Saudi	67	11.9	62.7	25.4		
Line/ Line up	American	106	33.6	48.6	16.8	32.653	.000**
	Saudi	67	56.7	34.3	9.0		
Look/ Look up	American	106	19.6	63.6	15.9	.167	.920
	Saudi	67	17.9	61.2	20.9		
Pull/ Pull apart	American	106	30.8	52.3	15	11.637	.003**
	Saudi	67	4.5	40.3	55.2		
Cross/ Cross out	American	106	20.6	48.6	29.9	3.359	.186
	Saudi	67	17.9	59.7	22.4		

Note. Double asterisk (**) shows significance at *alpha* = .01; Single asterisk (*) shows significance at *alpha* = .05. Categories based on Blais and Gonnerman (2013).

On the other hand, the difference between groups was not statistically significant for five items. In response to *Look/Look up*, both groups rated them as somewhat similar, χ^2 (1) = .167, *p* = .922; 63.6% of American participants judged them as somewhat similar, 19.6% as very similar, and 15.9% as very dissimilar. Similarly 61.2% of Saudi participants considered this pair somewhat similar, 20.9% as very dissimilar, and only 17.9% as very similar. In the same way, the participants' ratings for *Give/Give away* showed no significant differences, χ^2 (1) = .473, *p* = .789. American participants varied between somewhat similar and very similar; 43.9% considered *Give/Give away* as somewhat similar. Likewise, 43.3% of Saudi participants rated them as somewhat similar. Additionally, there was also no significant difference between groups in their responses to *Drive/Drive away*, χ^2 (1) = 2.186, *p* = .348. It was found that 52.3% of Americans rated them as somewhat similar, 25.2% as very similar, and 22.4% as very dissimilar. Similarly, 62.7% of Saudis considered them somewhat similar, 22.4% very dissimilar, and 14.9% very similar. *Cross/Cross out* likewise showed no significant difference between groups, χ^2 (1) = 3.359, *p* = .186. As shown in Table 3, 48% of Americans judged *Cross/Cross out* as somewhat similar, 29.9% as very dissimilar, and 20.6% as very similar. Saudi responses were comparable to the American judgements; 59.7% rated them as somewhat similar, 22.4% as very dissimilar, and 17.9% as very similar.

From the results in Table 3, it is clear that the participants' ratings of the semantic similarity of the verb/verb particle pairs varied. The American participants' ratings of the verb pairs—such as *Find/Find out, Give/Give away, Eat/Eat up, Patch/Patch up, Keep/Keep up,* and *Knock/Knock over*—varied between approximately half as somewhat similar and the other half as either very similar or very dissimilar. For example, in response to *Find/Find out*, 44.9% of

Americans rated them as somewhat similar, 39.3% as very similar, and only 15% as very dissimilar.

Pairs including *Give/Give away, Pass/Pass out, Ring/Ring up, Draw/Draw up, Make/Make over,* and *Head/Head off,* and *Pull/Pull apart* showed Saudis' sensitivity to the semantic similarity of the items. They could not distinguish the degree of the meaning similarity; as a result, the ratings went between two scales. For instance, in response to *Draw/Draw up*, 46.3% of Saudis rated them as very similar and 46.3% as somewhat similar. In addition, in rating *Ring/Ring up*, 46.3% of Saudis considered them somewhat similar and 44.8% very similar.

As opposed to the categorization of the items in Blais and Gonnerman (2013), participants in both groups rated most constructions in ways that contradicted that study. In response to *Let/Let down, Pass/Pass out, Ring/Ring up, Hand/Hand out, Live/Live down, Make/Make over,* and *Head/Head off,* American participants rated them as very dissimilar. On the other hand, Americans rated other constructions, such as *Eat/Eat up, Finish/Finish up, Lay/Lay down,* and *Patch/Patch up,* as being high similar items. These ratings did not conform to the categorization of Blais and Gonnerman (2013) for the moderate similarity items. Only 6 out of 26 verb pair constructions met the category of somewhat similar: *Cut/Cut back, Draw/Draw back, Drive/Drive away, Look/Look up, Cross/Cross out,* and *Mark/Mark out.* Among the Saudi judgments, there were only 9 items out of 26 rated as somewhat similar: *Cut/Cut back, Hold/Hold back, Drive/Drive away, Let/Let down, Lock/Lock up, Look/Look up, Cross/Cross out,* and *Knock/Knock over*. However, they rated *Hand/Hand out, Live/Live down, Level/Level off,* and *Pull/Pull over* as very dissimilar. In addition, Saudi participants judged *Eat/Eat up, Finish/Finish up, Keep/Keep up, Lay/Lay down, Mark/Mark out, Find/Find out,* and *Line/Line up* as being very similar in meaning.

Results for Low Similarity Items

In order to examine the performance of American and Saudi participants with the semantic variability between verb and verb-particle constructions, participants were asked to rate 78 items based on degree of semantic similarity. Table 4 summarizes the frequency results for the last 26 items categorized as very dissimilar along with the chi-square test for each item.

As shown in Table 4, a significant difference between American and Saudi participants was observed in 24 items. Based on the results, the chi-square tests showed highly significant differences between both groups. For example, *Stand/Stand up* recorded the highest significant difference between Americans and Saudis, χ^2 (1) = 114.935, p < .001; 64.5% of Americans rated the pair as very similar and 31.8% as somewhat similar. However, 82.1% of Saudis considered them as very similar, and 11.9% as somewhat similar. Along the same lines, 58.9% of Americans rated *Start/Start up* as very similar, 32.7% as somewhat similar, and only 6.5% as very dissimilar. In contrast, 80.6% of Saudis rated them as very similar, 16.4% as somewhat similar, and only 3% as very dissimilar. This difference was shown to be significant, χ^2 (1) = 102.593, p < .001. In addition, with regard to *Settle/Settle down*, American participants varied between 49.5% very similar and 43.9% somewhat similar, with only 6.5% as very dissimilar. In contrast, 76.1% of Saudis considered them very similar and 3% very dissimilar. The chi-square showed a highly significant difference, χ^2 (1) = 94.311, *p* < .001.

Table 4

Descriptive Statistics for the 26 Very Dissimilar Items

Verb/verb particle construction	Group	N	% very similar	% somewhat similar	% very dissimilar	Chi-square	*p*
Rub/ Rub out	American	107	15.9	44.9	39.3	25.946	.000**
	Saudi	67	7.5	82.1	10.4		
Run/ Run off	American	106	25.2	55.1	18.7	40.549	.000**
	Saudi	67	9.0	16.4	74.6		
Settle/ Settle down	American	107	49.5	43.9	6.5	94.311	.000**
	Saudi	67	76.1	20.9	3.0		
Shut/ Shut up	American	107	4.7	41.1	54.2	8.488	.014*
	Saudi	67	68.7	20.9	10.4		
Soak/ Soak up	American	106	42.1	43	14	31.880	.000**
	Saudi	67	13.4	82.1	4.5		
Step / Step up	American	107	15.9	57.9	26.2	12.058	.002**
	Saudi	67	7.5	82.1	10.4		
Think/ Think over	American	107	45.8	43	11.2	6.276	.043*
	Saudi	67	23.9	44.8	31.3		
Wring/ Wring out	American	107	44.9	38.3	16.8	25.946	.000**
	Saudi	67	14.9	44.8	40.3		
Screw/ Screw up	American	107	5.6	30.8	63.6	42.669	.000**
	Saudi	67	28.4	25.4	46.3		
Shoot/ Shoot up	American	107	15	38.3	46.7	16.771	.000**
	Saudi	67	16.4	62.7	20.9		
Stand/ Stand up	American	107	64.5	31.8	3.7	114.935	.000**
	Saudi	67	82.1	11.9	6.0		
Smell/ Smell up	American	107	9.3	43.0	47.7	28.394	.000**
	Saudi	67	11.9	83.6	4.5		
String/ String along	American	106	16.8	40.2	43	37.976	.000**
	Saudi	67	10.4	88.1	1.5		
Throw/ Throw up	American	106	4.7	24.3	70.1	49.601	.000**
	Saudi	67	25.4	28.4	46.3		
Rule/ Rule out	American	106	6.5	37.4	55.1	60.371	.000**
	Saudi	67	5.9	21.3	72.7		
Scale/ Scale up	American	106	39.3	50.5	9.3	1.245	.536
	Saudi	67	44.8	43.3	11.9		
Set/ Set back	American	106	6.5	28.0	64.5	45.672	.000**
	Saudi	67	19.4	37.3	43.3		
Shake/ Shake up	American	106	38.3	45.8	15	68.223	.000**
	Saudi	67	77.6	16.4	6.0		
Show/ Show off	American	106	18.7	49.5	30.8	51.442	.000**
	Saudi	67	6.0	20.9	73.1		
Smooth/ Smooth over	American	105	33.6	43.9	20.6	13.980	.001**
	Saudi	67	13.4	73.1	13.4		
Space/ Space out	American	106	19.6	29.9	49.5	18.418	.000**
	Saudi	67	17.9	44.8	37.3		
Stamp/ Stamp out	American	106	10.3	41.1	47.7	22.069	.000**
	Saudi	67	16.4	77.6	6.0		
Start/Start up	American	105	58.9	32.7	6.5	102.593	.000**
	Saudi	67	80.6	16.4	3.0		
Strike/ Strike down	American	106	16.8	48.6	33.6	24.364	.000**
	Saudi	67	4.5	83.6	11.9		
Take/ Take back	American	105	23.4	45.8	29	13.033	.001**
	Saudi	67	11.9	40.3	47.8		
Tie/ Tie in	American	106	36.4	48.6	14	25.471	.000**
	Saudi	67	6	17.9	76.1		

Note. Double asterisk (**) shows significance at *alpha* = .01; Single asterisk (*) shows significance at *alpha* = .05. Categories based on Blais and Gonnerman (2013).

As seen in Table 4, it was clearly demonstrated that American participants showed sensitivity in rating the low similarity items. The ratings of American participants here were more variable: their judgments falling between two rating scales. For instance, 43% of them rated *Soak/Soak up* as somewhat similar and 42.1% as very dissimilar. Verb pairs with similar ratings included *Rub/Rub out, Think/Think over, Wring/Wring out,* and *Smell/Smell up.*

On the other hand, the only time the difference between groups was not statistically significant was in the case of *Scale/Scale up*. In response to this item, American participants varied between 50.5% as somewhat similar, 39.3% as very dissimilar, and 9.3% as very similar. Likewise, 44.8% of Saudis considered them very similar, 43.3% somewhat similar, and 11.9% very dissimilar. This was clearly seen through the chi-square test, χ^2 (1) = 1.245, p = .536.

Ratings of the two groups varied the most for the category of dissimilar verb/verb particle pairs. However, regardless of the fluctuating judgments given by native and non-native English participants, most of their ratings contradicted the low similarity categorization of these items that was based on Blais and Gonnerman's (2013) study. For example, American participants rated only four items as very dissimilar: *Shut/Shut up, Screw/Screw up, Throw/Throw up, Rule/Rule out,* and *Set/Set back,* while they rated *Run/Run off, Step/Step up,* and *Scale/Scale up* as being somewhat similar. Finally, they judged *Stand/Stand up* and *Start/Start up* as very similar.

Saudis considered nine items to have moderate similarity (somewhat similar), such as *Soak/Soak up, Step/Step up, Rub/Rub out,* and *Smell/Smell up*. As seen in Table 4, Saudi participants rated verb pairs like *Settle/Settle down, Shut/Shut up, Stand/Stand up,* and *Start/Start up* as being very similar. However, only 5 items were rated as very dissimilar based on Blais and Gonnerman (2013): *Run/Run off, Rule/Rule out, Show/ Show off, Tack/Tack back,* and *Tie/Tie in*.

This showed that both native and non-native speakers failed to follow Blais and Gonnerman's categorizations.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter discusses how the results of the present study come to bear on the research question posed in Chapter 1. The study's limitations are also mentioned, recommendations for future research are outlined, and the final conclusions are stated at the end.

The current study was conducted to test the performance of American native English speakers and Saudi English learners with explicit measures of phrasal verb comprehension in order to determine whether they were sensitive to the semantic similarity of the verb/verb-particle constructions and their corresponding verbs. Based on several previous studies conducted on second language learners, it was expected that Saudi learners would have more difficulty with an explicit rating task and that, unlike native speakers of English, they would behave consistently in determining the semantic similarity between verb/verb-particle constructions.

Discussion of the Research Question

The research question of the present study was as follows:

> How do Saudi English learners compare with native speakers of American English in their sensitivity to the semantic similarity between verb/verb-particle constructions?

This research question is related to the similarity rating task, as American and Saudi participants rated the degree of semantic similarity between verb/verb-particle constructions. Based on the results, there were two major findings. First, American native speakers and Saudi English learners behaved differently. The findings indicated that American native speakers of English and Saudis who learned English as a second language, showed significant differences ($p < .001$) in the ratings of the semantic variability of the verb pairs. These significant differences

between American and Saudi judgments were statistically observed in 63 out of 78 items. Second, the results did not support the previous categorizations for items based on semantic similarity established by Blais and Gonnerman (2013).

As the similarity ratings did not correspond to the categorizations of the items as stated in that study, the findings of the verb/verb-particle pairs' similarity in meaning were outlined in summary tables based on the judgments of American and Saudi participants. Thus, in this chapter, two major analyses are discussed: the differences between American and Saudi judgments, and the limitations found in this type of similarity rating task.

Discussion of the Results for the High Similarity Items

As seen in Figure 2, results showed that participants' ratings were very different. The total number of the different ratings between groups for the high similarity items was 17 out of 26. Based on the chi-square test, both groups showed disagreement in rating 17 of the high similarity items as established by Blais and Gonnerman's classifications (2013).

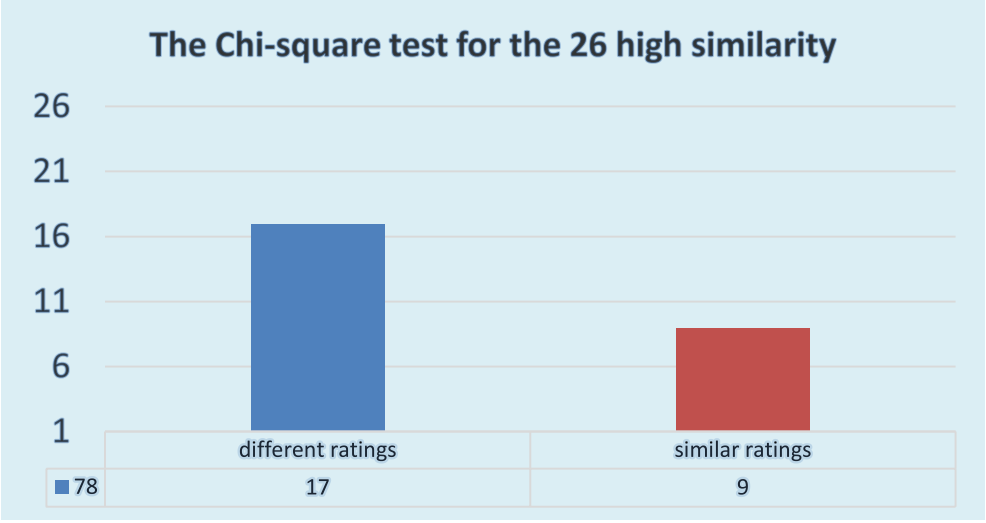

Figure 2: Americans' and Saudis' ratings based on the chi-square test for the 26 high similarity items.

As seen in Table 5, Americans' ratings were not consistent with the similarity categorizations of the items as determined in Blais' and Gonnrman's research (2013). They categorized only 12 out of 26. American participants considered 7 out of the 12 categorized items as somewhat similar, and 4 out of 12 categorized items as very dissimilar in meaning.

Looking at the very similar items based on Blais and Gonnerman, it was found that American participants in this task treated only one item *Add/Add up* out of the whole high similarity category as very similar (See Table 5). This strongly suggested that this type of similarity rating task was unreliable for the items. This is because differences were expected to be found between native and non-native speakers, but it was impossible to find such fundamental differences among native speakers of the same language.

Table 5

American and Saudi Participants' Ratings of the Very Similar Items

Very Similar Items, based on Blais and Gonnerman (2013)			
American participants' categorizations for very similar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Add/ Add up	Build/ Build up Carry/ Carry off Clean/ Clean out Boil/ Boil off Bring/ Bring forth Bust/ Bust out Count/ Count off	Blow/ Blow off Break/ Break out Chew/ Chew out Call/ Call off
Saudi participants' categorizations for very similar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Buy/ Buy out Chew/ Chew out Cast/ Cast off Beat/ Beat up Catch/ Catch up	Bail/ Bail out Blow/ Blow off Build/ Build up Carry/ Carry off Clean/ Clean out Close/ Close off Ball/ Ball up Boil/ Boil off Bust/ Bust out Clear/ Clear off Count/ Count off	Call/ Call off

Results showed that Americans' judgments fell between two scales for the remaining 14 items. For example, in rating *Back/Back in*, 47.7 % of American participants considered them as somewhat similar and 40.2 % as very dissimilar. Also, 46.7 % of Americans rated *Cast/Cast off*

as very dissimilar, and 44.9 % considered them somewhat similar. This showed American participants'' sensitivity in distinguishing the semantic similarity between verb/verb-particle constructions.

Overall, American and Saudi judgments were statistically different in 17 items, and their ratings were not consistent with the high similarity category established by Blais and Gonnerman (2013).

Discussion of the Results for the Moderate Similarity Items

American and Saudi participants behaved differently in rating the semantic similarity between verb/verb-particle constructions. Based on the chi-square test, both groups showed disagreement in rating the somewhat similar items. The total number of the different judgments between groups was 21 out of 26 items, while they rated 5 items similarly (See Figure 3).

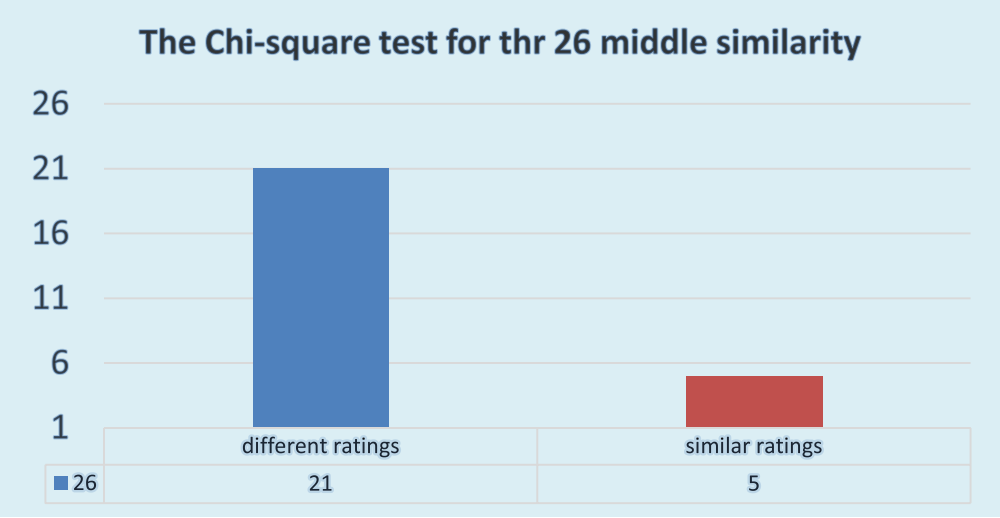

Figure 3: American and Saudi ratings based on the chi-square test for the 26 moderate similarity items.

As seen in Table 6, American ratings did not agree consistently with the similarity categorizations of the somewhat similar items as described by Blais and Gonnerman (2013). For

this reason, Table 6 demonstrates the findings of the current study and the semantic similarity ratings of American and Saudi participants.

Table 6

American and Saudi Participants' Ratings of the Somewhat Similar Items

Somewhat Similar Items, based on Blais and Gonnerman (2013)			
American participants' categorizations for somewhat similar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Eat/ Eat up Finish/ Finish up Lay/ Lay down Patch/ Patch up	Cut/ Cut back Draw/ Draw up Drive/ Drive away Mark/ Mark out Look/ Look up Pull/ Pull apart	Let/ Let down Pass/ Pass out Ring/ Ring up Hand/ Hand out Keep/ Keep up Live/ Live down Make/ Make over Head/ Head off
Saudi participants' categorizations for somewhat similar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Eat/ Eat up Finish/ Finish up Keep/ Keep up Lay/ Lay down Mark/ Mark out Find/ Find out Line/ Line up	Cut/ Cut back Hold/ Hold back Lock/ Lock up Drive/ Drive away Patch/ Patch up Knock/ Knock over Look/ Look up Cross/ Cross out Let/ Let down	Hand/ Hand out Live/ Live down Level/ Level off Pull/ Pull apart

Regardless of Blais' and Gonnerman's (2013) categorizations of the moderate similarity items, American participants categorized 18 out of 26 items. Most of their judgments agreed consistently in the low similarity scale (See Table 6). They rated 8 items out of 18 as being very dissimilar in meaning. For example, in response to *Let/Let down*, 72.9% of Americans judged them as very dissimilar. Moreover, 75.7% of Americans rated *Pass/Pass out* as being a low similarity item.

Despite the pre-established category for moderate similarity items, Saudi participants could categorize 20 out of 26 items (See T able 6). It is important to note that Saudis' ratings tended to lean more toward the previous category established by Blais and Gonnerman. They classified nine items as being somewhat similar.

Overall, despite the significant differences between groups, Americans and Saudis determined the semantic similarity of most of the items. Although these judgments did not

support the previous categorizations of Blais and Gonnerman (2013), it is a paradox that Saudi ratings for nine items showed agreement with similarity categorizations of the previous research.

Discussion of the Results for the Low Similarity Items

Regardless of whether the participants, in both groups, categorized the items correctly or incorrectly based on semantic similarity, both groups' ratings were significantly different. The total number of different judgments between groups was 25 out of 26. This means that they only had one similar response (See Figure 4).

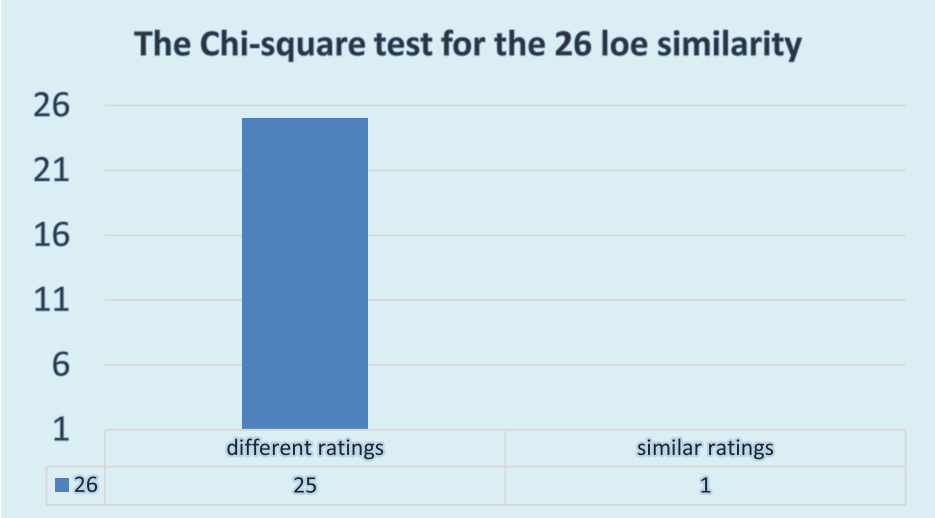

Figure 4: American and Saudi ratings based on the chi-square test for the 26 low similarity items

As seen in Table 7, ratings from both groups did not correspond to the low similarity categorizations for the verb/verb-particle constructions as determined in Blais and Gonnerman (2013). For example, Americans were able to categorize only 10 out of 26 items based on the similarity ratings. Out of 10, there are 5 items categorized as very dissimilar. This means that the only American ratings that corresponded to Blais' and Gonnerman's category for low similarity were 5 out of 26 items. For the remaining 5 items, American participants judged *Run/Run off,*

Step/Step up, and *Scale/Scale up* as somewhat similar, and *Stand/Stand up* and *Start/Start up* as very similar.

There were other items whose degree of semantic similarity Americans could not distinguish. As a result, they tended to fall within one of two scales. For example, in rating *Think/Think over*, 45.8% of Americans considered them very similar and 43% somewhat similar. Similarly, 43% of American participants judged *String/String along* as very dissimilar, and 40.2% considered them somewhat similar. In the same way, 43% of American participants treated *Soak/Soak up* as somewhat similar, and 42.1% rated them as very similar. This provided evidence that phrasal verbs are the most complex components of language processing.

Table 7

American and Saudi Participants' Ratings of the Very Dissimilar Items

Very Dissimilar Items, based on Blais and Gonnerman (2013)			
American participants' categorizations for very dissimilar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Stand/ Stand up Start/ Start up	Run/ Run off Step/ Step up Scale/ Scale up	Shut/ Shut up Screw/ Screw up Throw/ Throw up Rule/ Rule out Set/ Set back
Saudi participants' categorizations for very dissimilar items	**Very similar**	**Somewhat similar**	**Very dissimilar**
	Settle/ Settle down Shut/ Shut up Stand/ Stand up Shake/ Shake up Start/ Start up Tie/ Tie in	Rub/ Rub out Soak/ Soak up Step/ Step up Shoot/Shoot up Smell/ Smell up String/ String along Smooth/ Smooth over Stamp/ Stamp out Strike/ Strike down	Run/ Run off Rule/ Rule out Show/ Show off Tie/Tie in Take/Take back

Looking at Saudi ratings in Table 7, although they could categorize 18 out of 26 items, most of the judgments did not conform to Blais and Gonnerman's category of low similarity items. Moreover, regardless of the validity of the item category of their study, Saudi participants rated items that had different meanings as very similar or somewhat similar. For example, *Smooth* and *Smooth over* have different meanings. The single verb *Smooth* means "to polish or make a surface flat." However, the phrasal verb *Smooth over* means "to reconcile." As shown in

Table 4, 73.1% of Saudi participants rated *Smooth/Smooth over* as somewhat similar. In order to confirm that the Literal Salience account of idiom processing applied to Saudi English learners' processing of verb-particle constructions, it is necessary to develop another knowledge task to see whether Saudis' judgements were based on the literal interpretations or not. Finally, the results showed fundamental differences between American and Saudi participants, and the judgments of both groups did not correspond to the previous similarity classifications established by Blais and Gonnerman (2013).

General Discussion

The basic research question that Blais and Gonnerman (2013) established—whether native and non-native speakers are sensitive to the semantic similarity between verb/verb-particle constructions—appeared to be flawed. The current study attempted to replicate Blais and Gonnerman's research (2013), but it ended up with seemingly random behavior among native speakers of English on how these items can be categorized with respect to the three-category scale (very similar, somewhat similar, and very dissimilar). Native English speakers did not behave consistently in the rating task due to the unreliability of the research instrument, which is discussed in limitations section.

Another major finding was that the ratings of both native and non-native speakers of English were very different. The chi-square test ($p > .001$) indicated significant differences between the two groups. There are several reasons that might explained why and how native speakers of English behaved differently from previous research. However, there was no sufficient evidence to demonstrate that these differences were due to the unreliability of the research instrument.

As expected, the responses of Saudi English learners, whose L1 (Arabic) lacks verb-particle constructions, were different from those of native English speakers in most of the ratings. According to the results, it appeared that Saudis' non-native-like responses contradicted the findings of Blais and Gonnerman (2013) which had concluded that non-native speakers of English were able to improve their competence and master the use of verb-particle constructions despite their L1. The results of the present study reflected a fundamental difference between the two groups' performances in determining the semantic similarity of the items.

Saudi responses in the present study were not as native-like as those of the French participants in Blais and Gonnerman (2013). It is important to mention that although French-English bilingual speakers did recognize the semantic similarity between verb/verb-particle pairs, their judgments were less consistent than those of English native speakers.

It should be noted that the L2 learners in the current study had a very different L1 background and experience from the French-English bilingual speakers in Blais and Gonnerman (2013). The present study's participants were non-immigrant Saudi undergraduate and graduate students at an American University where English was used in formal and informal contexts. As a result, the Saudi students were proficient L2 learners of English. In contrast, the French participants in the previous study were Canadian French speakers in Canada, where English and French are both official languages. Therefore, the English competence of Canadian French speakers would be different from the French speakers in France, due to greater exposure to English. Canadian French speakers acquire the English language at an early age, meaning they are more frequently bilingual in English and French, having used both languages in formal and informal settings from an early age. On the other hand, the status of English in Saudi Arabia is very different from its status in Canada. In Saudi Arabia, English is taught as a foreign language,

and Saudis are exposed to it only in educational settings. Saudis start to learn English when they are 13 years old. The students are taught very basic English—single words and grammar. Therefore, even if students devoted more effort and time to be proficient in English, idiomatic expressions, such as idioms and phrasal verbs, would be difficult to learn and might take time and practice to understand and use like native speakers. As a result, a significant difference was observed in the results between the Saudis and Americans due to the typological distance and differences between their language backgrounds.

Limitations and Recommendations

As mentioned above, the results of this research presented two main findings. First, both American and Saudi participants, behaved differently in rating the semantic similarity in most of the items. Based on the chi-square test, Tables 5, 6, and 7 showed the major differences between American and Saudi judgments. Second, judgments of the participants, especially those of native English speakers, did not support previous categorizations of the items based on semantic similarity (Blais & Gonnerman, 2013). Unfortunately, there was no enough evidence to fully explain these differences, due to the unreliability of the rating task. There were several reasons provide evidence that the similarity rating task was not reliable.

Native English speakers' ratings varied such that judgments tended to fall into one of two similarity scales. As a result, it was hard to determine the similarity degree for many items because of low-percentage ratings. As shown in the very similar category with the pair *Block/Block out,* 46.7% of Americans rated them as somewhat similar and 39.3% as very similar. There was no significant difference between these two percentages, so it could not be stated that Americans rated *Block/Block out* as being somewhat similar since their rating of this item did not

show a high percentage (46.7%). This is only one example out of many where most problems were seen in the American judgments for the high and low similarity items.

As mentioned above, American judgments failed to recognize a range of semantic similarity between verb/verb-particle constructions since they generally varied in their ratings. A problematic trend was observed in the participants' ratings; most of the judgments in both groups were in the middle of the scale. In other words, the scale of somewhat similar ended up containing most of the ratings, likely because participants were unsure whether the verb/verb-particle pairs were very similar or very dissimilar. The American judgments of most of the items did not show high percentages and varied between the two extreme ends of the scale. For example, in rating *String/String along*, 43% of Americans rated them as very dissimilar and 40.2% as somewhat similar.

Blais and Gonnerman's (2013) categorizations for verb/verb-particle constructions based on degree of similarity were not reliable. Many of these constructions have very different meanings but are still categorized as very similar. For example, *Chew/Chew out, Call/Call off,* and *Blow/Blow off* were categorized as very similar, but 77% of Americans judged *Chew/Chew out* as very dissimilar. Moreover, *Let/Let down, Pass/Pass out,* and *Make/Make over* were categorized as somewhat similar by Blais and Gonnerman, although they were rated as very dissimilar by native English speakers in this study. For instance, 75.7% of American participants rated *Pass/Pass out* as very dissimilar. In addition, *Start/Start up* and *Stand/Stand up* were classified as very dissimilar. However, 64.5% of Americans considered them very similar. For this reason, ratings from both groups did not show consistency with categorizations of the item similarity degrees put forth in Blais and Gonnerman.

The basic nature of the numeric grading system (1 = very similar, 2 = somewhat similar, 3 = very dissimilar) was flawed. For that reason, future research should develop this scale to be more reliable. For example, the scale could consist of two similarity degrees: 1 = more similar, 2 = more dissimilar. In that way, the participants would have to decide whether the item showed a more similar or more dissimilar meaning. In some cases, the phrasal verb could imply the same meaning and be used for any target, or the item could show similar meaning in general but should be used with another target. For instance, *Shut/Shut up* would be a good item for 1 = more similar. Both terms mean "to close something," but the phrasal verb *Shut up* has a more specific meaning, which is "close your mouth, or stop talking." In other words, *Shut up* has a figurative meaning but is not very different from its corresponding verb *Shut*. In addition, *Call/Call off* have different meanings, so, this item would be best represented under 2 = more dissimilar. *Call* has several meanings: "to speak aloud, invite, request." However, the phrasal verb has a very different meaning from its corresponding verb. *Call off* means "to cancel." Therefore, the suggestion of creating a scale of two similarity degrees would be helpful to future studies.

The results for American native speakers of English were very different from Blais' and Gonnerman's results (2013). In other words, although the task was conducted on the same population, native English speakers, the sample of this research did not correspond to the previous categorizations. For instance, in the high similarity items, it was found that American participants considered only one of these categories—*Add/Add up*—to be very similar. This suggested that this task was unreliable since fundamental differences between L1 and L2 speakers of English would be expected. However, the original categorizations suggested major differences among the L1 English speakers would be found.

Another piece of evidence that showed the unreliability of the research instrument was the low percentages of the Americans' ratings. If the rating task was reliable, then the ratings-percentages should have 90% to 100% agreement among native speakers of English. However, in this research, the ratings never reached as high as 80%, and there were only a few items ratings around 70 %. Most of the ratings ranged between 60% and 50%: therefore, these percentages were not reliable either. It is necessary to have 90% to 100% agreement in ratings which was never the case with Americans' judgments.

One of the strange facts mentioned in Blais and Gonnerman (2013) was that native English speakers showed consistent judgments "across a spectrum ranging from low (*Chew out/Chew*) to mid (*Look up/Look*) to high (*Chew out/Chew*) similarity." They concluded that English native speakers' ratings were consistent, but this consistency was not clear in terms of percentages.

Overall, this judgment task was not enough to generalize the results of the study. It is recommended that future research include multiple tasks that confirm participant responses. Moreover, it is important to mention that the similarity categorizations of the 78 items were unreliable. This was clearly shown in the judgments of the American participants, which did not show high percentages and were extremely varied.

In addition, the survey question was very subjective and rather general ("How are the verb/verb-particle similar in meaning?"). The participants, specifically native English speakers, gave random responses that varied from time to time. For this reason, the approximate majority of the ratings were in the middle of the similarity scale. This was because the verb particles had more than one meaning: if one meaning were very similar to the verb itself, it may have a very different meaning from its corresponding verb based on the context. Thus, this was not a real

measure to test participants' judgments unless it is followed by knowledge tasks that could confirm the participants' responses and provide reliable data. Future studies could focus on the role of sentence context to explore whether the figurative analyses of phrasal verbs could be approached when discourse context is inclined toward the literal interpretations. This would also show the mechanism proficient L2 learners use to process verb-particle constructions.

The findings of the current study suggested that L2 learners of English used different mechanisms when processing phrasal verbs. L2 learners appeared to favor literal interpretations over figurative ones. As a matter of fact, figurative meanings must be learned over time. However, the research instrument was unreliable and failed to provide any insight to confirm any facts. For this reason, future research should examine when L2 learners of English depend on figurative meanings rather than literal ones when they process phrasal verbs. It was suggested by Matlock and Heredia (2002) that the age of language acquisition can affect the processing mechanism. In other words, a test could be conducted on proficient L2 learners of English with the same L1 background in order to see when figurative meaning interpretation was preferred as the default analysis. Such testing would allow researchers to evaluate how language transfer affects processing mechanisms.

Further research is needed to determine whether the variability between native and non-native speakers of English shows a fundamental difference or whether this difference might not happen when L2 speakers of English are advanced L2 learners. It is recommended that while administering such an experiment on English learners, it is important to determine whether those learners have learned English in an EFL environment or an ESL environment. Reliable results from such a study could confirm the results of the present study and those of Blais and Gonnerman (2013).

More research using different neurocognitive techniques is also needed to explore differences and similarities between native and non-native speakers of English when processing verb-particle constructions.

Conclusion

The present study has attempted to shed light on the processing of phrasal verbs by Saudi second language learners of English. It examined whether English native and non-native speakers were sensitive to determining the semantic similarity between verb-particle constructions and their corresponding verbs. The results of the similarity rating task revealed two major findings. First, American and Saudi ratings were significantly different in most of the items. Second, native speakers of English did not behave consistently with respect to the item classifications based on semantic similarity. As a result, it was impossible measure the second language learners' performance due to the unreliability of this type of task.

The judgments of American native English speakers and Saudi English learners were significantly different ($p < .001$) in most of the items, indicating that second/foreign language learners cannot make similar ratings of semantic similarity to English native speakers. These data contradicted the results of Blais and Gonnerman (2013), which concluded that bilinguals could recognize the semantic similarity between verb/verb-particle constructions similarly to those monolingual English speakers.

The results for Saudi English learners did not corroborate previous research findings (e,g, Hulstijn & Marchena, 1989; Laufer & Eliasson, 1998; Sjoholm, 1995; McPartland-Fairman, 1989) that production and comprehension of verb-particle constructions are not necessarily difficult for L2 learners of English. For instance, McPartland-Fairman (1989) examined how

native and non-native speakers of English understand verb-particle constructions and found that both groups understood phrasal verbs similarly, in contrast to the present study.

The findings of the current study supported the results of previous studies (e.g. Abel, 2003; Dagaut & Laufer, 1985; Siyanova & Schmitt, 2007) that demonstrated that native and non-native speakers of English use and comprehend verb-particle constructions differently. For example, Siyanova and Schmitt (2007) explored native and non-native English speakers' usage of single verbs and phrasal verbs. They found that the L2 learners of English preferred to use single verbs rather than phrasal verbs. Abel (2003) concluded that German learners of English relied on literal interpretations of idiom constituents. In the current research, regardless of Blais' and Gonnerman's categorizations, Saudi participants rated items that had very dissimilar meanings as very similar or somewhat similar. These findings agreed with Saudi judgments of idiomatic phrasal verbs in the present study, although evidence could not be produced due to the lack of another confirmation task.

Given the significance of communicative and idiomatic competence for achieving fluency in an L2, one of the points the current study has highlighted is the need for further neuropsychological and psycholinguistic studies in L2 phrasal-verb acquisition and processing. In other words, future research should investigate the phrasal-verb processing in the second language domain using advanced methodologies that could contribute to more effective pedagogical approaches to teaching verb-particle constructions in the L2 classroom.

The present study started as a replication of Blais and Gonnerman (2013). However, in the process of doing the research, many problems, stated in the limitations section, occurred. This study attempted to solve these problems by establishing a standard base of the present

sample, native English speakers, but their ratings were varied and not consistent. Thus, the present study provided evidence of the unreliability of this type of measurement.

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APPENDICES

APPENDIX A

Consent Form for American English Speakers

(*Survey administered in LING 200 class with the permission of Dr. Jeffrey Punske*)

Dear participant,

My name is Fadwi Alturki, and I am a graduate student in the Linguistics Department at SIUC. I have been granted approval by the Human Subjects Committee at SIUC to contact you to request your participation in a research study, which I am conducting as part of my thesis requirement. The purpose of my study is to measure the American native speakers' and Saudi English learners' sensitivity to the degree of similarity between a verb-particle construction and its corresponding verb.

Participation in this study is VOLUNTARY.

1) **If you do not want to participate,** return this form to me without signing it. While your classmates who agree to participate are doing the survey, you will be given a task related to your LING 200 class that you will complete silently.

2) **If you agree to participate,** sign this form and return it to me. **After I receive the signed form,** I will give you a pilot study, which includes 78 verb-particle/ verb pairs. They will have to rate these pairs based on the degrees of similarity scale; very similar, somewhat similar, and very dissimilar. This pilot study takes about 8-10 minutes to complete.

Those students who volunteer to participate will not be given extra credit for participation.

I can assure you that your responses will be kept confidential and will not be linked to your name. The people who will have access to the survey are: my thesis chair, Dr. Jeffery Punske, Research Advisor, Department of Linguistics, and myself. Our contact information is given in the next paragraph.

Questions about this study can be directed to me, Fadwi Alturki, address: 1942 Evergreen Terrace drive east, Carbondale, Il, 62901. Tel: (618)-303-5025; email: fodaflower4@siu.edu or my thesis chair, Dr. Jeffrey Punske, Research Advisor, Department of Linguistics, Faner Building 3230 SIUC, Carbondale, IL, 62901, office tel: (618)-453-3414, email: punske@siu.edu.

Thank you for your precious collaboration and assistance in this research.

Signing this form indicates voluntary consent to participate in this study.

Signature ____

- -

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Sponsored Projects Administration, Southern Illinois University, Carbondale, IL 62901-4709. Phone (618) 453-4533. E-mail: siuhsc@siu.edu

APPENDIX B

Email Consent Message
(For Saudi students at SIU who were contacted by email)

From: Fadwi Alturki

Subject: Research Request

Greetings!

You are receiving this email because you are an American student at Southern Illinois University Carbondale. Your email was obtained through a Freedom of Information Act (FOIA) request. My name is Fadwi Alturki, and I am a graduate student in the Linguistics Department at SIUC. I have been granted approval by the Human Subjects Committee at SIUC to contact you via email to request your participation in a research study, which I am conducting as part of my thesis requirement. The purpose of my study is to measure Saudi English learners' sensitivity to the degree of similarity between a verb-particle construction and its corresponding verb.

Participation in this study is VOLUNTARY.

1) **If you do not want to be contacted again,** please respond to this email by writing*: I want to opt out of further contact*.

2) **If you do not respond**, I will contact you one more time within a period of two weeks and if you do not respond to my second message, I will NOT send any further messages.

However, your participation will be of great help in collecting an adequate amount of data for my study. **I can assure you that** your responses will be kept confidential and will not be linked to your name. I am using a blind copy format, so the list of recipients does not appear in the header. The people who will have access to the survey are: my thesis chair, Dr. Jeffrey Punske, Research Advisor, Department of Linguistics, and myself.

If you agree to participate, you will complete an online survey, which will take approximately 8-10 minutes to complete. Select the link below and you will be directed to the online survey.

Completion and submission of this survey indicates voluntary consent to participate in this study.

In order to participate, you may either:

1. Click on this link

OR

2. Copy-paste the entire following link between quote marks (NOT including the quote marks) in a web browser

OR

3. Click on the following URL and enter the login information provided below:

Questions about this study can be directed to me, Fadwi Alturki, address: 1942 Evergreen Terrace drive east, Carbondale, Il, 62901. Tel: (618)-303-5025; email: fodaflower4@siu.edu or my thesis chair, Dr. Jeffrey Punske, Research Advisor, Department of Linguistics, Faner Building 3230 SIUC, Carbondale, IL, 62901, office tel: (618)-453-3414, email: punske@siu.edu.

Thank you for your precious collaboration and assistance in this research.

- -

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Sponsored Projects Administration, Southern Illinois University, Carbondale, IL 62901-4709. Phone (618) 453-4533. E-mail: siuhsc@siu.edu

APPENDIX C

Instrument

Rate the similarity in meaning of verb particle/verb pairs on scale of 3; (very similar) to (very dissimilar).

Verb particle/verb pairs	1	2	3
act out/act			
add up/add			
back in/back			
bail out/bail			
Ball up/ ball			
Beat up/beat			
Block out/block			
Blow off/blow			
Boil off/boil			
Box off/box			
Break out/break			
Bring forth/bring			
Build up/build			
Bump off/bump			
Bust out/bust			
Buy out /buy			
Call off/call			
Carry off/carry			
Cast off/cast			
Catch up/catch			
Chew out/chew			
Clean out/clean			
Clear off/clear			
Close off/close			
Count off/count			
Cover up/cover			
Cross out/cross			
Cut back/cut			
Draw up/draw			
Drive away/drive			
Eat up/eat			
Find out/find			
Finish up/finish			
Give away/give			
Hand out/hand			
Head off/head			
Hold back/hold			
Keep up/keep			

Knock over/knock
Lay down/lay
Let down/let
Level off/level
Line up/line
Live down/live
Lock up/lock
Look up/look
Makeover/make
Mark out/make
Pass out/pass
Patch up/patch
Pull apart/pull
Ring up/ring
Rub out/rub
Rule out/rule
Run off/run
Scale up/scale
Screw up/screw
Set back/set
Settle down/settle
Shake up/shake
Shoot up/shoot
Show off/show
Shut up/shut
Smell up/smell
Smooth over/smooth
Soak up/soak
Space out/space
Stamp out/stamp
Stand up/stand
Startup/start
Step up/step
Strike down/strike
String along/string
Take back/take
Think over/think
Throw up/throw
Tie in/tie
Wring out/wring

Note: These 78 verb-particle constructions and their correspondent verbs were equally distributed into three groups: the first 26 verb pairs have high similarities, the next 26 have middle similarities, and the last 26 items have low similarities.

APPENDIX D

RESEARCH INSTRUMENT

Dear Participant,

Thank you for your time in doing this questionnaire. I would like to inform you that this is not a test. The results will be used for the purposes of my research and not to evaluate your knowledge of the English language. Please, answer every question before you submit your answers.

Thank you for your cooperation.

PART ONE

Demographic Information

1. Your gender: …….
2. Your age: …….
3. Your home country: …….
4. Your native language: ……
5. Your education level:

   O Undergraduate O Graduate

6. Your major: …….
7. Do you speak other languages?
   …….

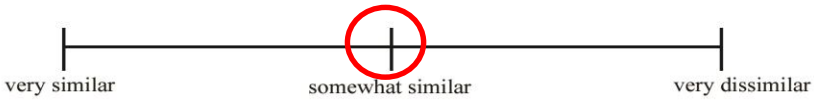
PART TWO

Explicit task

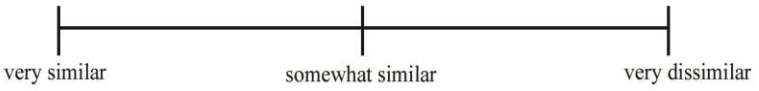
How similar in meaning are the verb pairs given below? Circle one of the three options: (very similar, somewhat similar, and very dissimilar), depending on how you feel about their meanings as shown example below

For example, if you think that the verb pair (e.g. look after/ look) have middle similarity, you have to choose somewhat similar.

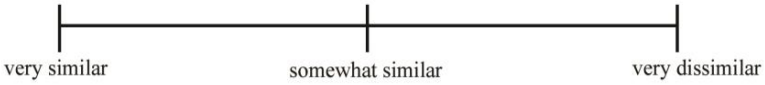
Look / Look after



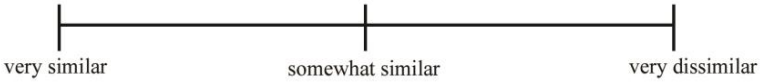
1- Act / Act out



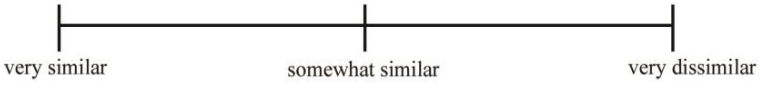
2- Add / Add up



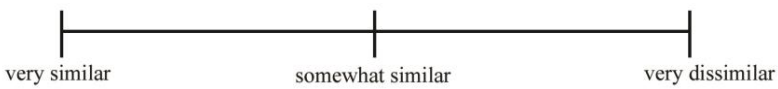
3- Back / Back in



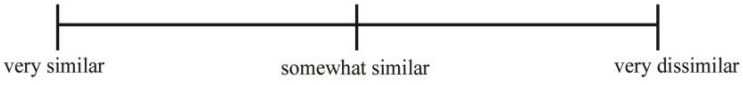
4- Bail / Bail out



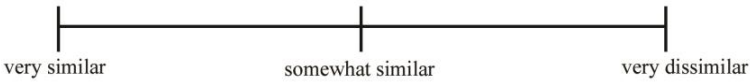
5- Ball / Ball up



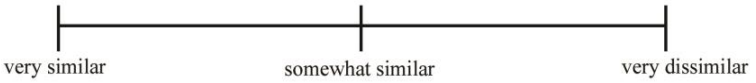
6- Beat / Beat up



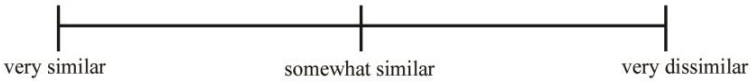
7- Block / Block out



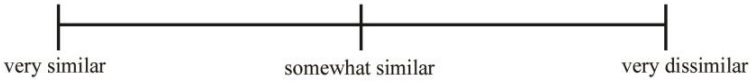
8- Blow / Blow off



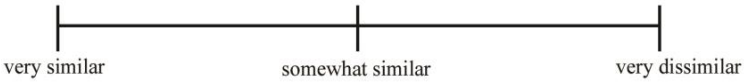
9- Boil / Boil off



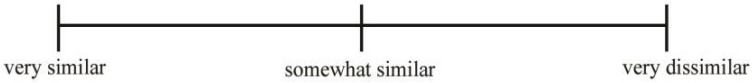
10- Box / Box off



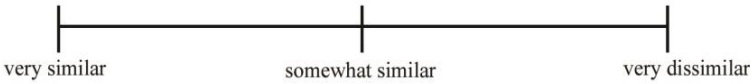
11- Break / Break out



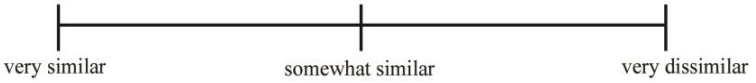
12- Bring / Bring forth



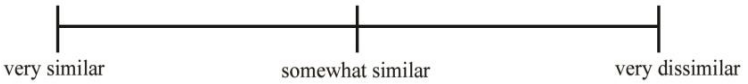
13- Build / Build up



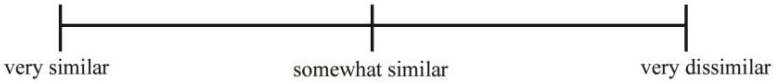
14- Bump / Bump off



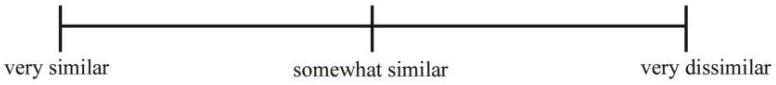
15- Bust / Bust out



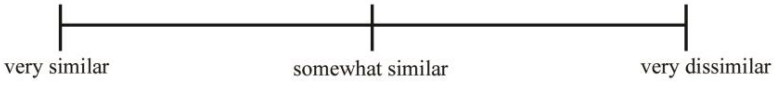
16- Buy / Buy out



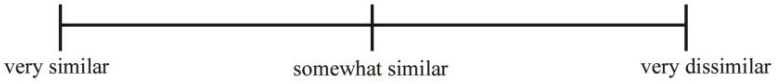
17- Call / Call off



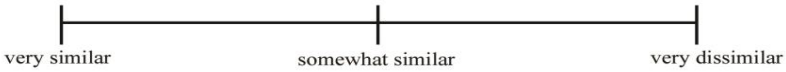
18- Carry / Carry off



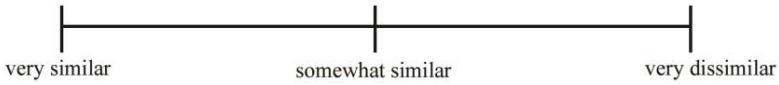
19- Cast / Cast off



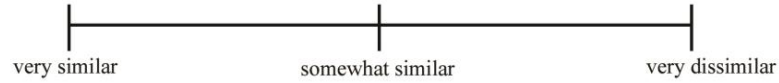
20- Catch / Catch up



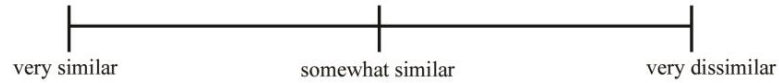
21- Chew / Chew out



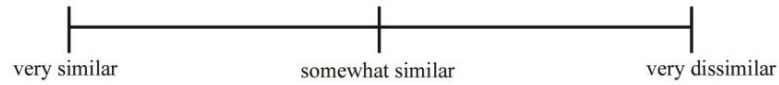
22- Clean / Clean out



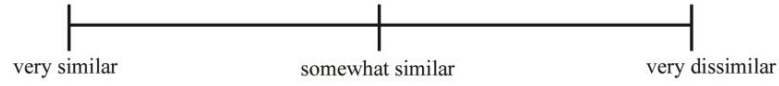
23- Clear / Clear off



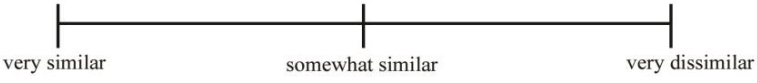
24- Close / Close off



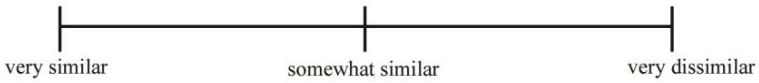
25- Count / Count off



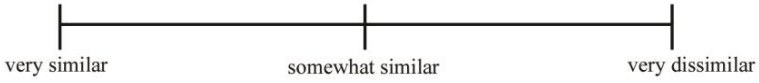
26- Cover / Cover up



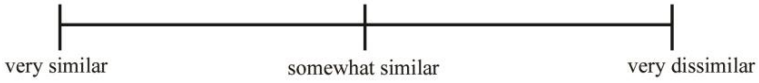
27- Cross / Cross out



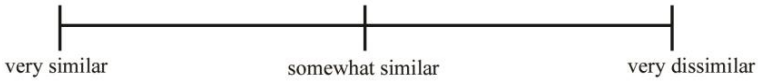
28- Cut / Cut back



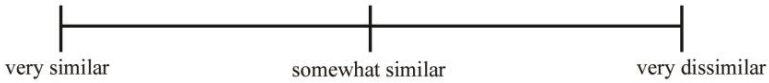
29- Draw / Draw up



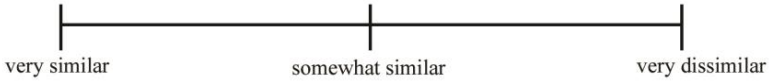
30- Drive / Drive away



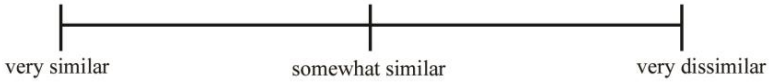
31- Eat / Eat up



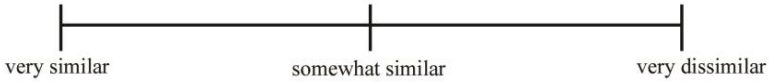
32- Find / Find out



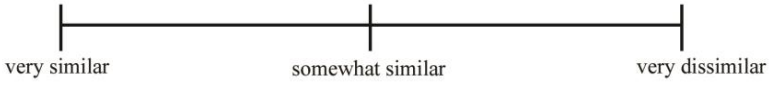
33- Finish / Finish up



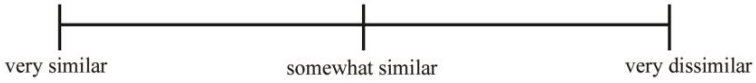
34- Give / Give away



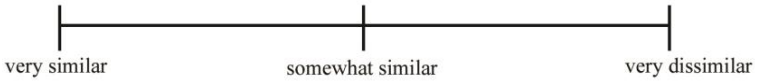
35- Hand / Hand out



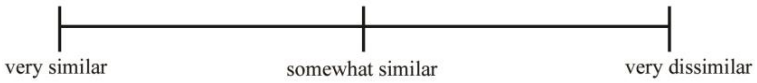
36- Head / Head off



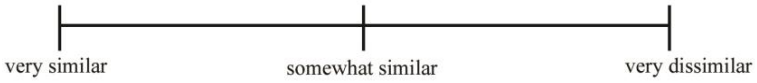
37- Hold / Hold back



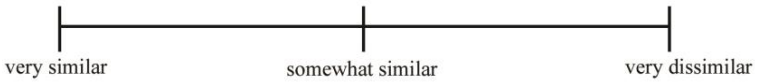
38- Keep / Keep up



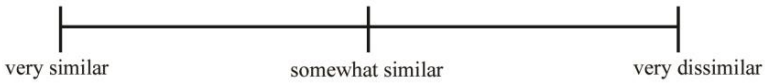
39- Knock / Knock over



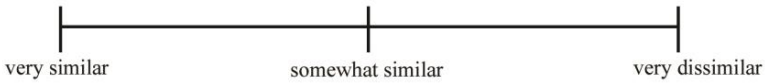
40- Lay / Lay down



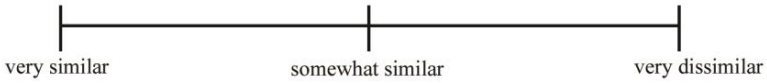
41- Let / Let down



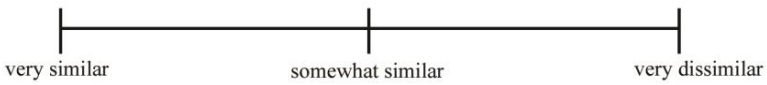
42- Level / Level off



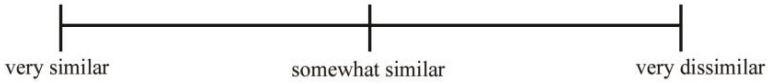
43- Line / Line up



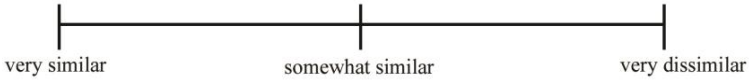
44- Live / Live down



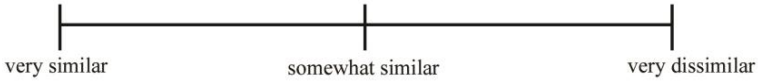
45- Lock / Lock up



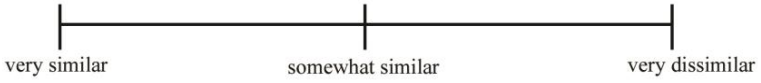
46- Look / Look up



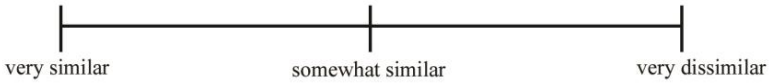
47- Make / Make over



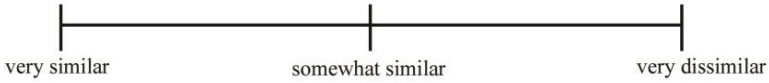
48- Mark / Mark out



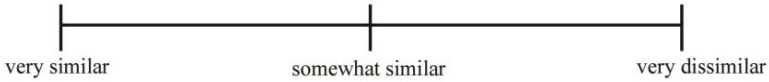
49- Pass / Pass out



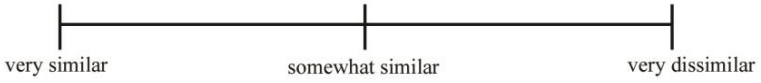
50- Patch / Patch up



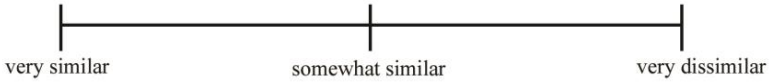
51- Pull / Pull apart



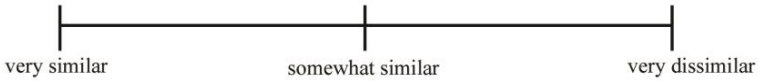
52- Ring / Ring up



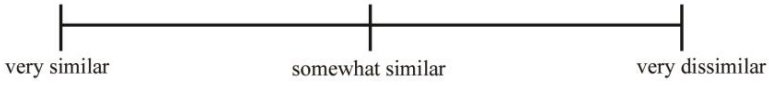
53- Rub / Rub out



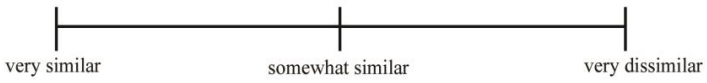
54- Rule / Rule out



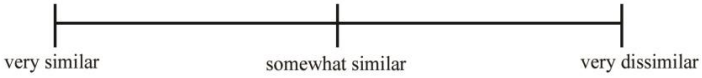
55- Run / Run off



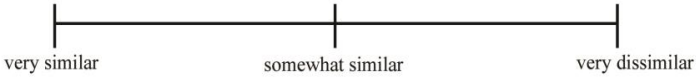
56- Scale / Scale up



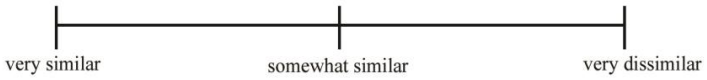
57- Screw / Screw up



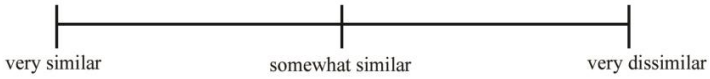
58- Set / Set back



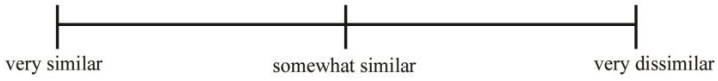
59- Settle / Settle down



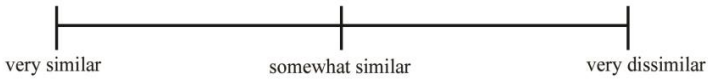
60- Shake / Shake up



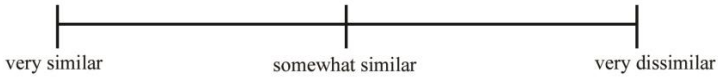
61- Shoot / Shoot up



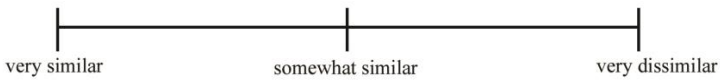
62- Show / Show off



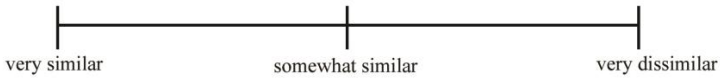
63- Shut / Shut up



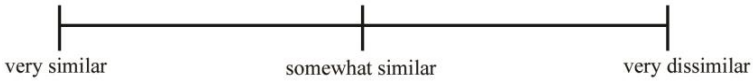
64- Smell / Smell up



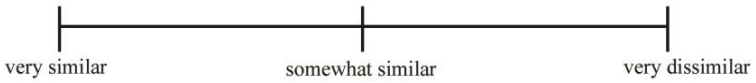
65- Smooth / Smooth over



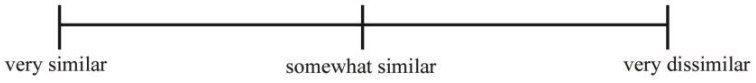
66- Soak / Soak up



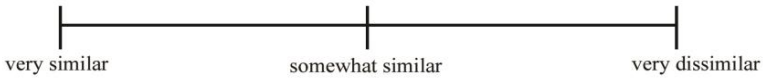
67- Space / Space out



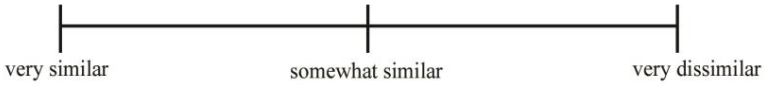
68- Stamp / Stamp out



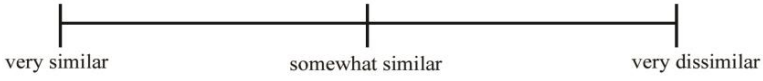
69- Stand / Stand up



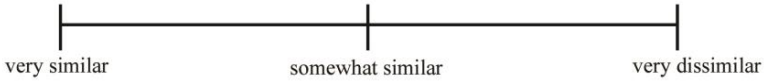
70- Start / Start up



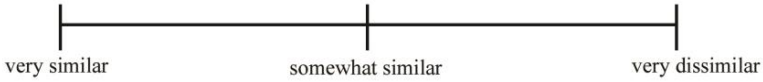
71- Step / Step up



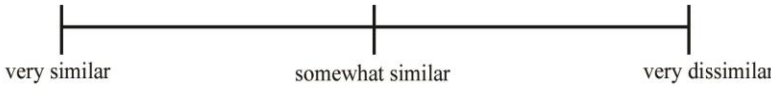
72- Strike / Strike down



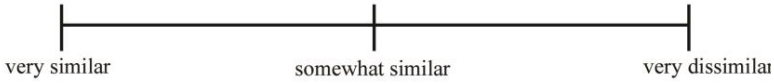
73- String / String along



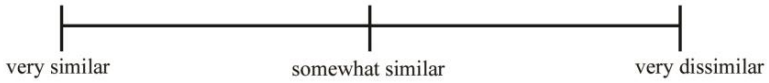
74- Take / Take back



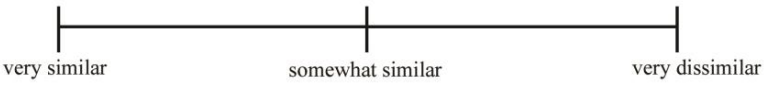
75- Think / Think over



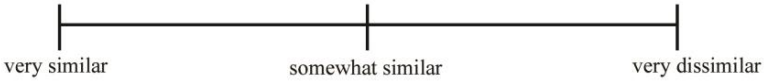
76- Throw / Throw up



77- Tie / Tie in



78- Wring / Wring out



VITA

Graduate School
Southern Illinois University

Fadwi W. Alturki

fodaflower4@yahoo.com

Bachelor of Art, King AbdulAziz University
English Language, July 2008

Thesis Title:
Lexical Knowledge of Verb-Particle by Saudi English Learners

Major Professor: Jeffrey Punske