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The Problem Of Polysemy In The First Thousand Words Of The General Service List: A Corpus Study Of Secondary Chemistry Texts

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THE PROBLEM OF POLYSEMY IN THE FIRST THOUSAND WORDS
OF THE GENERAL SERVICE LIST:
A CORPUS STUDY OF SECONDARY CHEMISTRY TEXTS

by

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ABSTRACT

Vocabulary in a second language is an indispensable building block of all comprehension (Folse, 2006; Nation, 2006). Teachers in content area classes such as science, math, and social studies frequently teach content specific vocabulary, but are not aware of the obstacles that can occur when students do not know the basic words. Word lists such as the General Service List (GSL) were created to assist students and teachers (West, 1953). The GSL does not adequately take into account the high level of polysemy of many common English words, nor has it been updated by genre to reflect specific content domains encountered by secondary science students in today's high stakes classes such as chemistry. This study examines how many words of the first 1000 words of the GSL occurred in the secondary chemistry textbooks sampled, how often the first 1000 words of the GSL were polysemous, and specifically which multiple meanings occurred. A discussion of results includes word tables that list multiple meanings present, example phrases that illustrate the context surrounding the target words, suggestions for a GSL that is genre specific to secondary chemistry textbooks and that is ranked by meaning as well as type, and implications for both vocabulary materials and classroom instruction for ELLs in secondary chemistry classes. Findings are essential to second language (L2) researchers, materials developers, publishers, and teachers.

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LIST OF ACRONYMS/ABBREVIATIONS

AWL   Academic Word List

ELL   English Language Learner

ESOL   English for Speakers of Other Languages

GSL   General Service List

L1   First Language

L2   Second Language

NCLB   No Child Left Behind

SLA   Second Language Acquisition

WSD   Word Sense Disambiguation

CHAPTER ONE: INTRODUCTION

Vocabulary in a second language is an essential building block of comprehension (Nation, 2006), whether in day to day tasks, or in rigorous academic settings. The student materials of content area science classes like chemistry contain vocabulary resources for students (Dingrando, Tallman, Hainen, & Wistrom, 2006; Wilbraham, Staley, Matta, & Waterman, 2006; Zumdahl & Zumdahl, 2006), but these resources most frequently contain content specific vocabulary. In fact, it is the basic words that are more likely to create obstacles for English Language Learners (ELLs), as basic words make up the majority of the language. Another difficulty for ELLs is the high level of multiple meanings, or polysemy, of many common English words. In order to see the obstacles that vocabulary presents for ELLs, consider the following scenario.

My classroom was abuzz with the noise of boisterous students entering. It was the beginning of an eleventh grade ESOL class, and one of my Spanish-speaking students, Luis, ran to greet me with an outstretched hand offering me a few small, brown blobs in a piece of plastic wrap. "They're chocolate-covered crickets!" he enthusiastically exclaimed. "I made them for my science class. Our teacher told us to explore alternate food sources. Try one!" he continued. I politely declined, citing my vegetarianism. After trying to convince me that insects were not animals and that I really could try one, I more emphatically refused and suggested that he check with his science teacher regarding the classification of Kingdom Animalia. Happy to have avoided trying a chocolate-covered cricket, I took attendance as the students gathered their materials for the lesson. Out of the corner of my eye, I noticed the chocolate-covered crickets had aroused interest among Luis' fellow classmates. The stir settled, and we began the lesson.

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We had scarcely started before Camila, a Portuguese-speaking female student raised her hand, and with a pitiable look on her face asked to leave the class to get a drink of water. Recognizing a possible connection in my mind, I glared at Luis. "Luis, did you trick her?" I asked him pointedly. "No, I told her they were chocolate-covered crickets!" Luis emphatically replied. I glared at him, hoping the disbelief on my face might trigger a confession. Other classmates in the area confirmed that Camila had in fact been informed that the offerings were chocolate-covered crickets. Then I made another connection. Turning to the girl, I asked, "Camila, did you know the word *cricket*?" She answered, "Yes, we learned about it in P.E. class. It's a team sport they play in England. I thought Luis was offering me some kind of candy named after the sport, like a Baby Ruth candy bar is named after that famous baseball player." I nodded my head and added, "That's true, but the word *cricket* has another meaning, it's also the name for a type of insect." Camila's face registered understanding, and her face turned a few more shades of green before she hastily left the room for the water fountain.

This anecdote, while not intended to characterize all ESOL classrooms, illustrates a problem that frequently happens with ELLs: a word that students think they know has another unknown meaning that prevents comprehension. This leads to a pressing question. Just how often do multiple meanings occur in science classes such as chemistry that require extensive reading? An increased knowledge of which multiple meanings occur in chemistry textbooks has the potential to improve materials and inform teacher practices related to vocabulary for ELLs.

General Background

From 1994-2000, the number of ELLs in the United States increased by nearly one million representing 7% of the total K-12 student population (D. Meyer, Madden, & McGrath, 2007). The U.S. Department of Education reported that the numbers of ELLs continues to increase dramatically. While the K-12 population increased by less than 3% in the 2004-2005 school year, the numbers of ELLs increased by 61%, reaching a nationwide total of over five million ELLs ("U.S. Department of Education", 2007b). In a 2005 speech, Secretary of Education Margaret Spellings predicted that by 2025, one in four K-12 students will be an ELL (Spellings, 2005). As states struggle to meet reading accountability standards for ELLs set forth in the No Child Left Behind Act (NCLB) ("U.S. Department of Education ", 2007), it is essential that current research inform materials and instruction for ELLs.

A large portion of instructional time in U.S. classrooms is centered around the use of textbooks. In science classrooms, textbooks are often used as the primary curricular guide and source of discourse (Eltinge, 1988; Eltinge & Roberts, 1993; Wang, 1998; Yost, 1973). Wang (1998) reported that as much as 50% of weekly instructional time is spent in textbook-related activities. With so much of the learning input in the form of textbook reading, it is essential that the material in textbooks, particularly science textbooks, be as comprehensible as possible to ELLs. Especially if we believe in the importance of comprehensible input in second language acquisition (Krashen, 2003), making this content more comprehensible certainly involves many factors, and chief among them is the difficulty of vocabulary in the texts.

Statement of the Problem

Vocabulary in a second language is an indispensable building block of all comprehension (Folse, 2006), whether in authentic tasks such as deciding what to eat, or in academic tasks such as reading, which is in turn essential for the academic success of ELLs. Teachers in content area classes such as science, math, and social studies frequently teach content specific vocabulary, but are not aware of the obstacles that can occur when students do not know the more basic words surrounding the content specific vocabulary. Word lists such as the General Service List (GSL) were created over 50 years ago to assist students and teachers, but several problems exist with such lists. The corpus that was examined was a collection of general texts from the 1950s. Little has been done to update the list for timeliness or in regards to specific content domains encountered by secondary students in high stakes science classes such as chemistry. The GSL does not take into account the high level of polysemy of many common English words. If teachers and materials writers have more knowledge of which common words, and specifically which meanings of those words, are more likely to appear in student chemistry textbooks, they will be better positioned to help ELLs acquire the vocabulary needed for successful comprehension of written materials.

Theoretical Framework

The Information Processing learning theory (Driscoll, 2000; Schunk, 2004) and Krashen's (1989) comprehensible input theory of Second Language Acquisition (SLA) provide a framework through which to discuss the problem of multiple meanings in commonly occurring vocabulary words in secondary chemistry texts.

Research Questions

The current study addresses the following research questions:

1) How many words of the first 1000 words of the GSL occur /do not occur in the secondary chemistry textbooks sampled, and is this figure consistent with past research?

2) How often are the first 1000 words of the GSL polysemous, and specifically which multiple meanings occur in the samples of the genre of secondary chemistry textbooks?

Definitions

Concordance – words that tend to occur immediately before of after a target words, sometimes referred to as collocation (Biber, Conrad, & Reppen, 1994; Celce-Murcia & Larsen-Freeman, 1999)

Context – words or phrases that occur before and after a target word, may also be used to describe the general topic being discussed (Biber, Conrad, & Reppen, 1998; Geeraerts, 2006; Miller & Leacock, 2000)

Corpus Linguistics – a field of linguistics that uses the methodology that samples and analyses an actual body of language as it exists in speech and writing rather than creating examples to illustrate a linguistic phenomenon (Biber, Conrad, & Reppen, 1994; C. F. Meyer, 2002; Murphy, 1996)

Family – a group of related words, e.g., *teach*, *teaches*, and *teaching* would be considered one word family (Cobb, 2007b)

Lexicon – a collection of words; adjective form: lexical (Ooi, 1998)

Genre – variety of written language due to the communicative purposes of the language (Celce-

      Murcia & Larsen-Freeman, 1999; Paltridge, 1995; Swales, 1985)

Gloss – an interpretation or definition of a word, often listed with a text (Riemer, 2005)

Polysemy – the state of a word having more than one meaning, e.g., the word *bat* is polysemous

      meaning a wooden stick used for baseball and a nocturnal animal with wings; adjective form:

      polysemous (Goddard, 2000; Ravin & Leacock, 2000; Riemer, 2005; Stevenson, 2003;

      Taylor, 1989)

Register –varieties of language that occurs in different situations (Biber, Conrad, & Reppen, 1998)

Token – each occurrence of a type, e.g., if the word *teach* appeared four times in the text, this would

      representing four tokens of the same type (Cobb, 2007b)

Type – a single representation within a word family, e.g., *teach*, *teaches*, and *teaching* would be

      considered three types within one word family (Cobb, 2007b)

Assumptions

It is assumed that many students, including ELLs, will be required to read the chemistry

texts that are listed on the Orange County, Florida adoption list as a part of the chemistry

curriculum for grades 9-12.

It is assumed that content area teachers frequently teach the content specific vocabulary that

is listed in teacher's guides and marginal glosses but rarely address the multiple meanings of

commons words that obstruct comprehension for ELLs.

Study Design

The study is a corpus study to analyze secondary chemistry texts for multiple meanings of commonly occurring words. The study will analyze a corpus of 42,000 words, fourteen randomly selected 1000-word samples from each of three student versions of secondary chemistry textbooks on the official Orange County, Florida textbook adoption list for 2006. The resulting data will be analyzed using descriptive statistical procedures in order to provide answers to the research questions.

Significance

The current study is significant for several reasons. This study builds on and contributes to corpus research of chemistry education vocabulary. Although earlier studies have examined vocabulary in science textbooks, none has examined the adequacy of the GSL, and more specifically, the effect of polysemy in the genre of secondary chemistry textbooks. This study will fill a critical gap in research related to the multiple meanings of basic words that occur specifically in the chemistry class, an area where student learning depends heavily on textbooks. The findings of this study will inform chemistry textbook writers and classroom teachers and equip them with essential knowledge to help ELLs acquire the vocabulary necessary to achieve academic success.

Limitations

One limitation of the current study is the inherent subjectivity of defining the meaning of polysemous words (Lehrer, 2003; Levickij, Drebet, & Kiiko, 1999; Nerlich & Clarke, 2003; Riemer, 2005; Stevenson, 2003). For the purposes of this study, only generally accepted semantic categories

and word meanings will be reported as listed in a popular electronic resource that searches dictionaries from many sources (*Dictionary.com*, 2007). Minor distinctions such as the difference between the word *newspaper* in the following sentences from Pustejovsky's 2001 work will be noted only if there is a corresponding distinction within the dictionary used for the study: "Eno the cat is sitting on yesterday's *newspaper*. Yesterday's *newspaper* really got me upset." (Pustejovsky, 2001, p. 54), with the former occurrence of newspaper referring to a paper object, and the latter occurrence referring to the ideas contained in the written text, respectively.

Another limitation of the current study is the sample size. The sample of three textbooks and 42,000 total words was deemed feasible given the time and resources of the current study. Though research supports that relatively small corpus size is often sufficient (Biber, 1990; C. F. Meyer, 2002), larger sample size either of words or of textbooks could strengthen findings or yield more detailed results than those reported in the current study.

Components of word families were not included in the study. For example, occurrences of the type *be* were included in the study, but not other word forms within the same family, such as *being, been, am, is,* and *are.*

Additionally, the current study is limited to the genre of secondary chemistry textbooks. Limiting the study to chemistry textbooks is an important factor to help inform materials and vocabulary instruction specifically in chemistry classes. However, conducting similar studies using different genres such as social studies and math would offer a wealth of information. Research using different levels of textbooks representing elementary and middle grades would also help inform knowledge in the area of vocabulary studies.

Organization

This dissertation is organized into five chapters. Chapter One provides an overview of the problem of polysemy in secondary science textbooks. Chapter Two reviews relevant literature that offers a theoretical foundation, clarifies the problem, and examines related research. Chapter Three reviews the methodology of the study, including a detailed explanation of the sample, instrumentation, reliability, validity, data collection and analysis. Findings of the study are discussed in Chapter Four, and Chapter Five provides a critical discussion of the implication of the findings and offers suggestions for future research.

Summary

Current trends in the growth of the ELL population in the United States and the increases of reading accountability spurred by the NCLB legislation necessitate current vocabulary research to inform materials creation and classroom instruction for ELLs. This corpus study fills a critical gap in vocabulary research within the genre of secondary chemistry textbooks.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter reviews several areas of research related to the polysemy of common words in secondary chemistry textbooks. Although studies in textbook content analysis have examined a variety of curricular and social constructs, these studies have not analyzed the polysemy of the words in those textbooks. As such, this literature review provides additional insight into the vocabulary difficulties that may be experienced by ELLs in secondary chemistry courses. Using Information Processing theory (Driscoll, 2000; Gagne, 1975; Miller, 1956; Schunk, 2004) and the Input Hypothesis (Krashen, 1989, 2003), this review highlights the failure of earlier research to recognize the impact of multiple meanings on student learning. In addition, although numerous studies in corpus linguistics have investigated vocabulary frequency, little analytic attention has been paid to polysemy within specific school subjects. I address this issue by arguing that vocabulary word lists must take word meaning into consideration and new lists may have to be generated for specific school subjects.

This chapter discusses several areas that inform the current study. In a discussion of Information Processing theory, I argue that researchers have ignored the impact of polysemy on input that is intended to lead to learning. Next, I bring to light inconsistencies in the Input Hypothesis related to vocabulary learning. Textbook content analyses have thus far failed to examine the role of polysemy in obstructing student comprehension, and while linguists acknowledge that language varies by genre, little research has addressed polysemy by genre, and no study encountered in a thorough review of literature has addressed polysemy within secondary chemistry textbooks. A

section on the educational applications of corpus linguistics with several considerations related to the selection of a corpus follows. Lastly, I discuss the complexities of defining polysemy and the difficulties of identifying multiple meanings.

<center>Practical Significance</center>

Unfortunately, common practices for helping ELL students to read more effectively are grounded in faulty assumptions. For example, knowledge of vocabulary is essential for reading comprehension, and many studies have suggested teaching specific word lists to aid reading comprehension (Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Nation, 1993). While difficult subject area vocabulary is often included in science textbooks, these words are not necessarily the words that cause problems for ELLs. In the sentence that begins "Scientists must come up with more theories related to..." textbook materials and teachers may explain the word *theories*, but the real problem for low proficiency level ELLs is the phrasal verb *come up with*.

Another common practice is to provide a multilingual glossary in the textbook to aid student comprehension. Many scientific words have Latin roots and are likely to be easily understood by students who are already educated in a Romance language. In the *Glencoe Chemistry* bilingual English-Spanish textbook glossary, 413 of the 477, or 87%, of the words listed are cognates in English and Spanish (e.g., catabolism-catabolismo, osmosis-osmósis, oxidation-oxidación, triglyceride-triglicérido) (Dingrando, Tallman, Hainen, & Wistrom, 2006, pp. 968-907). Spanish is the most common first language (L1) of ELLs in the U.S., representing 79% of the total ELL population ("U.S. Department of Education", 2007a). However, these students may have problems

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understanding words that native speakers easily understand, such as idioms and common words with multiple meanings.

These two examples suggest the key problem that initiated this study. How does an analysis of polysemy help us to better understand the challenges that ELLs may face when reading chemistry textbooks? Content developers and teachers do not yet appreciate the importance of polysemy and do not know how multiple word meanings affect student learning. We know precious little about the frequency and nature of each multiple meaning, especially within materials of specific subject area that are very text dependent, such as chemistry. Such research may lead to better curriculum materials and instructional practices.

Information Processing Learning Theory

The Information Processing learning theory is a collection of related theories that seeks to explain learning by the internal, mental processes that occur between stimuli and responses. Miller (1956) began to examine a process he called chunking, a way in which information was stored in short-term memory. In the 1970s, Information Processing theory became more popular as learning theorists witnessed the integration of computers in the industrialized world. Theorists began to draw a parallel between how computers processed information and how humans learned (Driscoll, 2000; Schunk, 2004).

Robert Gagne was a theorist who sought to organize instruction through the information processing theory of learning and instruction. In his book *Essentials of Learning for Instruction* (1975), Gagne outlined his idea for a systematic set of nine events of instruction that should always occur in order. First the teacher should gain student attention, inform learners of the objectives, and help

learners recall prior knowledge. The teacher should give instruction, followed by a chance for guided practice and independent practice of the concept. The instructor should then offer feedback to students and follow with assessment of learning objectives. Finally, the teacher should finish with a review that would help students transfer their new knowledge to other areas.

In Information Processing theory, an individual actively pays attention to stimuli in the environment. The stimuli are regarded as the input that spurs learning. If the learner attends to the input, the information is temporarily housed in a short-term, or working memory. If the information is judged as meaningful, a learner may use strategies such as rehearsal to help the information move to long-term memory. Once in long-term memory, a learner may use various cognitive strategies to retrieve, or remember the information (Driscoll, 2000; Schunk, 2004). The Information Processing theory is often represented with a diagram such as the one adapted from Schunk (2004, p. 138).
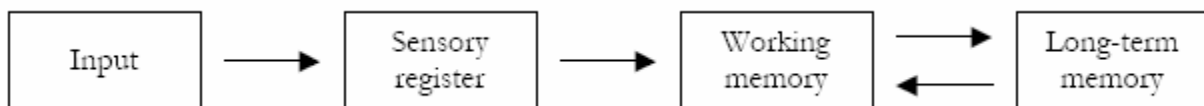
Figure 1 Information Processing Learning Theory

In the process of reading, the words in the textbook form the stimuli for the reader. Through attention to the text and pattern recognition (e.g., patterns of letters or sentence structure), a learner creates meaning from words and phrases. The information that the student read would be processed within short-term memory using cognitive skills such as rehearsal and chunking pieces of related information. Some of the information deemed interesting or important would be encoded

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and transferred to long-term memory. Once in long-term memory, concepts that were not properly encoded might be forgotten, but if the student used strategies to retain the concepts in memory, the information might be recalled at a later time for specific purposes, such as practical or academic tasks.

Unlike previous learning theories that dealt primarily with behavior, one strength of the Information Processing theory is that it seeks to explain and operationalize the mental process of learning. The theory has a logical tone that remains appealing in a twenty-first century brimming with increasing technological advancements. However, the overt analogy between humans and computers has drawn criticism. It is unlikely that the process by which a computer uses a binary code to process information can explain the intricacies of the human body, emotions, and mental processes that converge to create any given learning experience. The Information Processing theory may fall short of explaining all the nuances of learning, but it offers an effective working model through which to facilitate understanding of learning (Schunk, 2004).

An additional criticism to be added to the Information Processing theory is that there is an underlying assumption that the stimuli that serves as the catalyst for the entire learning process is indeed understood by the student. In the case of ELLs encountering the stimuli of unknown vocabulary while reading, the assumption that the input, or the words, is understood is a faulty assumption. Under these circumstances, learning can begin to break down from the first step in the process. The stimuli, or the words, may be decoded and even pronounced well, but if they are not understood, it becomes difficult to make sense of the concepts in order to create meaning and to encode the information for storage. The unknown words, and the concepts related to them, will not proceed to long-term memory, but instead be lost, never to be successfully retrieved. With the

addition a few unknown but key vocabulary words, a learning activity like academic reading can very easily come to a grinding halt for ELLs. An original representation of this learning breakdown can be seen in Figure 2.
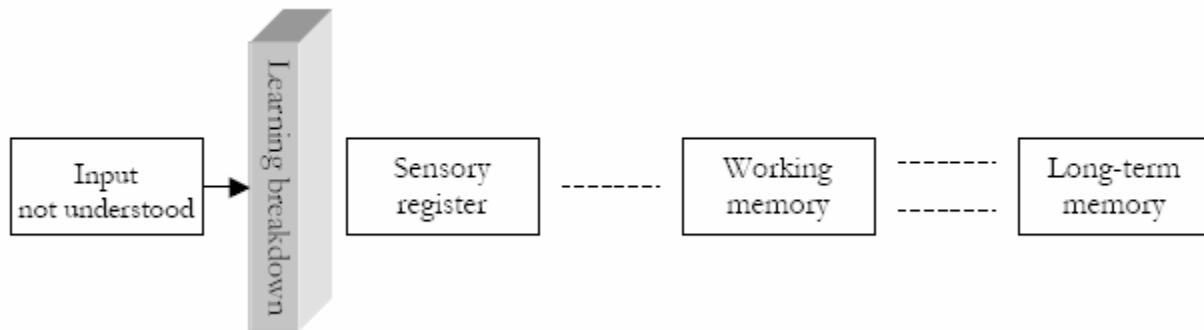
Figure 2 Learning Breakdown When Input Is Not Understood

Another critical, but often overlooked, breakdown in learning occurs for ELLs in the case of words that have multiple meanings. For example, if a student reads the phrase, "She held a bat in her hand and prepared to hit the ball," the student needs to retrieve the meaning of all the words in the sentence from long-term memory. If the student had previously encoded the meaning of the word *bat* to mean a small, furry nocturnal animal with wings, the student would retrieve that meaning. The sense of the sentence would begin to break down, as the student sought to make sense of how hitting a ball was related to holding a small animal. Further connections would be complicated, and meaning would break down to a point that encoding to long-term memory and connecting to the next concept in the reading would be impossible.

The Input Hypothesis

Like the Information Processing theory, the theory of second language acquisition (SLA) known as the Krashen's Input Hypothesis also relates attention and input to learning (Krashen, 1989, 2003). Krashen stipulated that for language acquisition to proceed successfully, the input that a student receives in the form of spoken language or written text must be at a level the student can understand, i.e., "comprehensible" (Krashen, 2003). Critical to Krashen's theory of SLA is the idea that "mere input is not enough; it must be understood" (Krashen, 2003, p. 4). This idea fills a significant gap present in Information Processing theory.

An integral part of the Input Hypothesis is the Natural Order Hypothesis. Krashen suggested that students acquire language in a linear order with one rule after another: 1, 2, 3… If i represents the last rule that a student acquired, or the current state of an individual's learning, Krashen sought to answer how students proceeded to the next rule, a concept he represented as $i+1$, also referred to as Comprehensible Input. According to Krashen, for learning to occur in the Natural Order Hypothesis, it is essential that input be comprehensible, or not too far above a student's individual learning level (Krashen, 2003).

One criticism of the Input Hypothesis is that Krashen assumes that second language (L2) acquisition proceeds in the same manner as L1 acquisition. For Krashen, ELLs that are given just the right level of input will learn their L2 as effortlessly as a child learning an L1. For Krashen, L1 and L2 language acquisition in theory "involves no energy, no work. All an acquirer has to do is understand messages" (Krashen, 2003, p. 4). Thus, students should learn grammar and vocabulary implicitly, or unintentionally, if teachers "give students comprehensible messages that they will pay attention to" (Krashen, 2003, p. 4).

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While the idea that making instruction comprehensible for students is intuitively appealing, the acceptance of Krashen's theory of L2 acquisition has unfortunately contributed to a stigmatization of direct teaching of grammar and vocabulary. This is largely due to the fact that Krashen has positioned Comprehensible Input as incongruent with studying grammar and vocabulary, which he referred to as Skill Building (Krashen, 2003). Krashen advised against direct teaching of vocabulary through deliberate study such as learning words individually, analyzing prefixes and roots, and assigning vocabulary exercises. For vocabulary, Krashen suggested that extensive reading by students, especially sustained silent reading, would suffice (Krashen, 2004b). Students would simply acquire the words incidentally, or without intention or instruction, over time (Krashen, 1989, 2003, 2004b).

An additional criticism of Krashen's Input/Comprehension Hypothesis is that Krashen used L1 or L2 research interchangeably; whichever was most convenient to support his hypothesis. Krashen based his idea that vocabulary should not be directly taught primarily on various L1 research studies, e.g., children and adults who did better on vocabulary tests reported that they did more voluntary reading than individuals who did not score as well (Krashen, 1989, 2004a, 2004b). Certainly reading plays an important role in vocabulary growth, but Krashen ignored the possibility that other factors, such as looking up unknown words in a dictionary or asking another person, could contribute to learning. He further presumed that L1 and L2 acquisition are identical processes, as he used research from one to hypothesize about the other.

Krashen (1989)explained that an instructional method consistent with the Input Hypothesis, specifically sustained silent reading, was the best and most efficient way to learn vocabulary. Direct instruction of vocabulary, therefore, might facilitate minimal learning gains, but might also be

detrimental to natural language acquisition. Though he stated that learners must learn all the nuances of vocabulary, he reported that vocabulary teaching methods are "boring," "painful," and "not efficient" (Krashen, 1989, p. 450), and that "language is too complex to be learned one rule or one word at time" (Krashen, 2004b, p. 19).

While Krashen positioned his L2 acquisition theory as incongruent with direct vocabulary instruction, I suggest that Krashen's Input Hypothesis is not incompatible with, but instead can be extended to include explicit, or intentional, teaching of words with multiple meanings. In fact, if students already know one meaning of a word, that understanding is their current knowledge as represented by i. It logically follows that encountering new polysemous word meanings of a word already known would represent $i+1$ for ELLs.

With his idea that L2 acquisition occurs naturally without explicit teaching of grammar and vocabulary, Krashen largely ignored metacognitive processes that occur with older students. Many students actively seek to create meanings of their L2 by learning grammar rules, by comparing the L2 to their L1, and by memorizing vocabulary lists. Older students are aware that words are the primary units of a language that hold meanings. In fact, Folse (2004a) found that the vast majority of questions asked by ELLs in the classroom are related to vocabulary.

<center>Textbook Content Analyses</center>

A large portion of classroom time in U.S. classrooms is centered around the use of textbooks. In science classrooms, textbooks are often used as the primary curricular guide and source of discourse (Eltinge, 1988; Eltinge & Roberts, 1993; Garcia, 1985; Wang, 1998; Yost, 1973). A large portion of classroom time, as much as 50% of weekly instructional time, is spent in

textbook-related activities (Wang, 1998). Activities that involve textbooks are cognitively demanding and require students to create meaning based on linguistic features (Cummins, 1994). With so much learning input in the form of textbook reading, it is essential that the material in textbooks be as comprehensible as possible to student readers. It stands to reason that a fair amount of inquiry should therefore be devoted to the analysis of textbooks.

Content analysis is a type of research that allows a researcher to generalize about certain features or constructs of a text after systematic, and often quantitative, analysis of the text (Eltinge, 1988). According to Eltinge and Roberts (1993), content analyses generally employ one of the following techniques: either the researchers apply a subjective classification scheme to the text in order to make conclusions about the construct to be studied, or the researchers use computers to classify words and phrases within the text.

Computers have greatly facilitated content analysis of corpora. In fact, textbook analysis in the last thirty years has spanned such a broad range of goals and methods that it is difficult to generalize about the research. Many textbook content analyses have used subjective classification to investigate social constructs in the texts, such as evidence of intercultural communication (Turunen, 1997), sexism (Zumbuhl, 1981), propaganda (Wade, 1993), and the role of women (Cairns & Inglis, 1989). Methods have ranged from a review of all the content in several books to a random or purposeful selections of parts of textbooks, and have included elementary and secondary materials (Cairns & Inglis, 1989; Reck, 1986; Wade, 1993). Analyses of science texts have also spanned a broad range of topics, though investigations appear to focus less on social constructs than on curricular constructs such as the use of science as inquiry (Eltinge, 1988; Eltinge & Roberts, 1993; Wang, 1998), behavioral objectives (Yost, 1973), and cognitive demand (Khoja & Ventura, 1997).

Linguistic Features

Some textbook analyses in the last thirty years have focused on linguistic features to inform the study of a construct, such as looking at words that might indicate the presence of sexism (Zumbuhl, 1981) or the cognitive domain of objectives within a text (Khoja & Ventura, 1997). Some textbook analyses have also included an analysis of language features in order to better understand the linguistic underpinnings of a certain instructional objective (Amayreh, 1984; Russell, 1980; Tiedt, 1972). Eltinge and Roberts (1993) used linguistic content analysis to analyze key words and relationships among words when investigating science as inquiry in textbooks. Several studies compared linguistic features such as sentence structure and vocabulary in authentic, unaltered texts, and simplified texts that have been altered with ELLs in mind, finding that the texts differed significantly, but not necessarily in the manner expected (Crossley, 2006; Crossley, Louwerse, McCarthy, & McNamara, 2007).

Recent research on vocabulary in textbook content analyses is scarce. Beck, McKeown, Sinatra, and Loxterman (1991) examined problematic vocabulary that was likely to cause decreased reading comprehension in a text. Amayreh (1984) compared verbs lists in a textbook to a well-accepted standard list, and Tiedt (1972) examined the vocabulary terms that were used to explain parts of speech in seventeen elementary English texts.

Researchers who conducted science textbook content analyses that included an investigation of vocabulary were likely to explore words as a means to understand larger constructs, such as the use of inquiry, and were not the primary focus of the study (Wang, 1998). In specific science fields such as chemistry in which the reliance on textbooks in the classroom is high, there is a strong need to better understand the linguistic feature of the text which may affect the comprehension of all

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students, specifically struggling readers and ELLs. This study fills a gap in textbook content analysis research by analyzing vocabulary in secondary chemistry text samples against the well-accepted General Service List (GSL).

Genre

The discourse level of language varies based on a range of aspects related to purpose and context. Some variation is attributed to register, or the formality of language with regard to social aspects, the role of those communicating, and the method of communication. A large aspect of language variation at the discourse level is attributed to genre, the variation of language due to the purpose of communication and the participants (Ayers, 2008; Celce-Murcia & Larsen-Freeman, 1999; Hyland, 2003, 2007; Johns et al., 2006; Paltridge, 1995; Swales, 1985). Genre theorists refer to a prototypical structure distinction that categorizes language into broad areas that members of the discourse community recognize, e.g., a thank-you note to a family member, a research report in a medical journal, or a newspaper article. Smaller distinctions among language functions within a text, e.g., captions, headings, directions, practice exercises, and body text, are referred to as macrostructure within a genre (Paltridge, 1995; Swales, 1985). Genre theorists acknowledge the difficulty of defining genres because a sample may be more or less typical of a given genre (Johns et al., 2006) and "genres are continually evolving" (Swales, 1985, p. 10). For the purposes of this study, genre will be used to describe the overall language present within the student versions of secondary chemistry textbooks.

Biber, Conrad, and Reppen (1994) stated, "there are important and systematic differences among text varieties at all linguistic levels, and that any global characterizations of 'General English'

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should be regarded with caution" (p. 179). Genre pedagogies have emerged from genre studies, with proponents who recognize the valuable application of genre analyses to language teaching and learning (Hyland, 2003, 2007; Johns et al., 2006; Perez-Llantada, 2004). While many genre pedagogies have included students in an analysis of genre texts to focus students on conventions necessary for successful writing within a given genre (Hyland, 2003, 2007; Johns et al., 2006; Paltridge, 1995; Perez-Llantada, 2004), few have examined the impact of genre on reading (Tardy, 2006). This study examines an inadequately researched aspect of how genre studies can be used to enhance vocabulary instruction for ELLs in secondary chemistry classes.

Corpus Linguistics

Corpus Linguistics is a broad field that studies a representative body, or corpus, of language as it exists in authentic speech or text, rather than examples of language that are invented for the purposes of illustrating a certain linguistic construct or theory (Biber, Conrad, & Reppen, 1994, 1998; C. F. Meyer, 2002; Murphy, 1996). Meyer (2002) defined a corpus as a "collection of texts or parts of texts upon which some general linguistic analysis can be conducted" (C. F. Meyer, 2002, p. xi). Meyer (2002) referred to corpus linguistics as more than a linguistic field, but also methodology that presupposes it is "important to base one's analysis of language on real data – actual instances of speech or writing – rather than on data that are contrived or 'made-up' " (C. F. Meyer, 2002, p. xiii). Other characteristics of corpus studies include the use of computers for quantitative analysis as well as the use of qualitative techniques by researchers. Corpus studies can be used to study a wide range of language phenomena, including historical and stylistic conventions, discourse patterns, language acquisition, grammatical constructions, and vocabulary (Biber, Conrad, & Reppen, 1994, 1998).

Though corpus studies have existed for some time, the Brown Corpus (Kucera & Francis, 1967) marked a modern turning point as the first computerized corpus (C. F. Meyer, 2002; Nation & Hwang, 1995; Sinclair, Jones, & Daley, 2004). The Brown Corpus contains one million words of written American English taken from 2000-word samples representing different genres of text, such as fiction, government documents, and news articles (Kucera & Francis, 1967). From that time, advances in technology make it possible to perform computerized analyses of large corpora from a variety of different sources (Murphy, 1996; Ooi, 1998). Today, corpus linguistics is a widely practiced linguistic methodology (C. F. Meyer, 2002).

Researchers have long employed corpus linguistics as a methodology to examine literature, historical changes in language, and different linguistic conventions such as the occurrence and usage of target lexical items and grammatical forms (Biber, Conrad, & Reppen, 1998; C. F. Meyer, 2002). Corpus linguistics is a method well-suited to studying the uses of words, and it forms the foundations of well-established materials based on lexicography, such as dictionaries (Biber, Conrad, & Reppen, 1998; C. F. Meyer, 2002; Murphy, 1996; Ooi, 1998; Sinclair, Jones, & Daley, 2004).

Corpus linguistics is an excellent method for studying first and second language acquisition. The Child Language Data Exchange System (CHILDES) contains language samples of children learning first and second languages (Biber, Conrad, & Reppen, 1998; C. F. Meyer, 2002). The International Corpus of Learner English (ICLE) is a large corpus containing more than two million words (C. F. Meyer, 2002), and the Arizona Corpus of Elementary Student Writing includes writing samples from ELLs of varying backgrounds (Biber, Conrad, & Reppen, 1998). Use of corpora of language learners provides important information about specific stages of language acquisition and

the nature of errors of a particular group of learners and also helps inform classroom practice (Biber, Conrad, & Reppen, 1998; Granger, Hung, & Petch-Tyson, 2002; Horst & Collins, 2006).

A search for literature regarding the corpus analyses of lexical items in scientific texts produced few results, and no research was found on the polysemy of lexical items specifically in chemistry texts, thus highlighting the need for linguistic investigation in this area. Sinclair, Jones, and Daley (2004) reported the results of a 12,000-word corpus general interest study of articles published in a general interest scientific journal. In corpora analyses, each distinct form within a family is referred to as a *type* (e.g., *effect* and *effects* would be considered two types within one family). The actual number of times that each type occurred in the text is referred to as a *token* (e.g., *effects* occurred twice within the sample, representing two tokens). The results of the study indicated a lower type/token ratio than that found in the more general Brown Corpus, demonstrating that high frequency words represented a higher percentage of the text (Sinclair, Jones, & Daley, 2004). One criticism of the Brown Corpus and the study of scientific text is that the research was conducted over thirty years ago. Because language changes over time, it is imperative to examine more current texts.

A strength of corpus studies is that they allow researchers to analyze which meanings of words occur in natural texts and how particular meanings are distributed in context (Biber, Conrad, & Reppen, 1994, 1998; Conrad, 1999). On the other hand, data from corpus studies are only as good as the computer programs that researchers employ to perform the bulk of analysis techniques. Some computer programs, such as the RANGE (Heatley & Nation, 1994) and the VocabProfiler program (Cobb, 2007b), count words forms and match them to predetermined lists, but they do not distinguish word meanings, or count multi-word units such as idioms. Much study is related to

improving the accuracy of computer programs that distinguish meaning based on the relationship of the target word to other words that appear nearby, or concordance (Biber, Conrad, & Reppen, 1994), yet research continues to rely on human judgment in many cases (Stevenson, 2003).

Educational Applications

In addition to informing researchers and teachers, corpus linguistics has valuable classroom applications for language pedagogy (Biber, Conrad, & Reppen, 1998; Conrad, 1999; C. F. Meyer, 2002; Murphy, 1996). West (1953) suggested that teaching English vocabulary randomly would be considered wasteful, and vocabulary instruction should be based on corpus analyses that demonstrate which words and which meanings of those words occur most frequently. Biber, Conrad, and Reppen (1998) stated that corpus analyses, including register analyses, are "helpful in designing effective materials and activities for classroom and workplace training, allowing us to help students with the language that is actually used in different target settings" (p. 12).

Swales (1985) and Biber, Conrad, and Reppen (1998) reported that materials designed for ELLs often do not provide reliable information about how language is used. They noted that there is often a disconnect between the order of presentation and amount of explanation of grammatical and lexical items and the actual ways that these items are used in real language (1994). Biber, Conrad, and Reppen (1998) argued that materials for ELLs should correctly represent what occurs in language in general and in specific genres. They declared "the findings of corpus-based investigations can be used to inform the presentations in textbooks for ESL [English as a Second Language] students" (Biber, Conrad, & Reppen, 1998, p. 80). They go on to say that students who have more knowledge

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of the way language actually occurs in different contexts will be better prepared to understand and produce language.

Murphy (1996) suggested that constructivist learning involving corpus analysis would engage students in an active, almost scientific learning activity. Murphy recommended that students could analyze a corpus for various language conventions such as grammar, spelling, or the lexical relations among words, which would engage students in discovery learning (Murphy, 1996). Biber, Conrad, and Reppen (1998) suggested that students could analyze a corpus of their own writing to discover the usages of words and grammatical convention. While this view contrasts with SLA theories that focus on unconscious whole language acquisition (Krashen, 1989, 2003, 2004a), Murphy noted that the use of corpora study in the classroom is not at odds with communicative language learning approaches. Instead, corpora are a record of authentic written and spoken language. What is implicit in this statement is that language learning materials and pedagogy often reflect intuitive, rather than research-based standards. Corpus studies inform theory and pedagogy as they "combine flexibility and power as a resource for vocabulary study, and present the possibility of arriving at robust systems of description that can be applied to language teaching contexts generally" (Murphy, 1996, p. 57).

Vocabulary Word Lists

The word is one of the most basic units of spoken and written language; in fact, the collection of words of a language, or its lexicon, can even be seen as the "central repository of linguistic knowledge" (Ooi, 1998, p. 2). Therefore, a thorough understanding of vocabulary, even at its most basic level, is essential for creating meaning. Over the past half century, there has been

some effort through corpus linguistics to identify which words occur more frequently in various forms of speech and text (Biber, Conrad, & Reppen, 1998; Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Coxhead, 2000; Granger, Hung, & Petch-Tyson, 2002; C. F. Meyer, 2002; Sinclair, Jones, & Daley, 2004; West, 1953). The results of these efforts have led to the creation of several word lists, such as the General Service List (GSL) (West, 1953) and the Academic Word List (AWL) (Coxhead, 2000) that are used to inform instructional materials creation and classroom instruction (Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Folse, 2004b; Nation, 1993; Nation & Hwang, 1995).

The General Service List

The most well-known of the word lists, the General Service List (GSL) was originally created by West in the 1930s, then revised in the 1950s, and was named for being of general service to learners of English as a foreign language (West, 1953). The words contained in the GSL are the most high frequency words in common uses of English (Folse, 2004b; Nation & Hwang, 1995; West, 1953). Nation and Hwang (1995) refer to the words of the GSL as the "essential common core" of the English language (p. 35). The GSL is divided into two sections, the first 1000 words and the second 1000 words that occur based on frequency of occurrence (West, 1953). The coverage for the first 1000 words is high, generally from 74% to 90% of written text, while the second 1000 words of the GSL only cover an additional 4-7% of most texts (Ming-Tzu & Nation, 2004; Nation, 1993; Nation & Hwang, 1995).

As the GSL was created to be of general service to learners, the list has been used to create materials such as graded readers (textbooks designed with simplified vocabulary suitable for ELLs at various stages of language acquisition) and to drive instruction of first and second language learners

(Nation, 1993; Nation & Hwang, 1995; West, 1953). The GSL has also been used to drive vocabulary instruction for ELLs (Harlech-Jones, 1983; West, 1953). Harlech-Jones (1983) found that 80% of lexical errors of ELLs were words contained in the GSL, and so concluded that the GSL is an essential tool for systematic vocabulary instruction.

A common criticism of the GSL questions whether a list first created in the 1930s, and then revised in the 1950s, can adequately describe current language usage (Folse, 2004b; Nation, 1993; Nation & Hwang, 1995). Despite its age, however, recent studies demonstrated that the first 1000 words of the GSL do provide coverage of the majority of the words from of a wide variety of texts (Ming-Tzu & Nation, 2004; Nation, 1993).

A critique of the validity of word lists is that an item on a word list is sometimes not one word, but rather an entire word family (Harlech-Jones, 1983; Ming-Tzu & Nation, 2004; Nation, 2006). Ming-Tzu and Nation recognized that simply counting word forms did not represent the actual learning burden. The researchers offered the example of the word *row* from the GSL, which contains one entry but is polysemous and could mean a line, a quarrel, or the act of rowing (Ming-Tzu & Nation, 2004, p. 294).

One frequently overlooked obstacle related to the usefulness of word lists is the polysemy of words contained in the list. Indeed, knowledge of multiple meanings is an important indicator of a student's vocabulary depth (Qian, 1999). The Brown Corpus includes no discussion of multiple meanings of the targeted words (Kucera & Francis, 1967). Ming-Tzu and Nation (2004) studied the Academic Word List (AWL), to determine if multiple meanings had resulted in the inclusion of words that would not be on the list if individual multiple meanings had been singled out. The results indicated that ten percent of the word families contained words that were spelled the same

(homographs), but were actually unrelated words. Because words that occur more frequently are more likely to have multiple meanings (Stevenson, 2003; Zipf, 1949), words from the GSL are more likely to have multiple meanings than words from the AWL, yet little research has examined this topic thus far.

The GSL includes a discussion of polysemy, but the multiple meanings are only ranked within that entry (West, 1953). That is to say, if each *meaning* of each token were ranked independently, it is highly likely the GSL might need to be restructured to indicate that a particular meaning of a given token has occurred more frequently than another token whose many multiple meanings added together have ranked it higher (Harlech-Jones, 1983). Consider the following simplified example. Word A is currently ranked above Word B because Word A occurred ten times total with five different meanings: Meaning 1 occurred twice, Meaning 2 occurred twice, Meaning 3 occurred twice, Meaning 4 occurred twice, and Meaning 5 occurred twice. Word B occurred five times total with two different meanings: Meaning 1 occurred four times, and Meaning 2 occurred once. It would therefore be more accurate to rank Meaning 1 of Word B higher because it occurred four times than all the meanings of Word A that only occurred twice each.

Another shortcoming of current literature in the area of word lists is that studies did not examine the multiple meanings of words that exist within specific genres of texts. Kucera and Francis (1967) and Harlech-Jones (1983) noted that genre had a strong effect on the relative frequency of a target word. Biber, Conrad, and Reppen (1994) observed that words and word meanings have markedly different distributions across genres. A study by Ming-Tzu and Nation (2004) reexamined the AWL for multiple meanings within the original sample corpus that had been

used to create the list, but did not examine the words of the AWL within the 28 distinct genre samples separately.

According to the Input Hypothesis, teaching vocabulary lists is inefficient, and learners should instead use their time reading (Krashen, 2004b). Yet how should students understand what they are reading if they do not understand the words? Language that cannot be understood is neither comprehensible nor input (Folse, 2004b). Krashen's Comprehensible Input hypothesis relies on the presupposition that context would be enough (Krashen, 2003), but research has shown that context does not always help second language learners understand unknown words (Schatz & Baldwin, 1995).

One of Krashen's main oppositions to teaching word lists is that traditional instruction offers only superficial meanings of words, but does not adequately address the many grammatical usages and multiple meanings a word can have (Krashen, 2004b). It is precisely this gap in vocabulary materials and teaching that the current study serves to fill. When educational researchers have more information about which multiple meanings occur within a given genre, vocabulary instruction can be more closely aligned with the language that the learner is likely to encounter. Researchers concluded that varied vocabulary instruction, including learning from lists, is beneficial to students (Folse, 2004b; Gardner, 2004; Horst, 2005; Horst & Collins, 2006; Hulstijn, Hollander, & Greidanus, 1996).

<center>Polysemy</center>

Polysemy, or the multiple meanings of words, has been studied and recorded in dictionaries for over two hundred years (Nerlich, 2003; Nerlich & Clarke, 2003; Ravin & Leacock, 2000).

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Polysemy is considered a frequently occurring language universal, and has become an increasingly researched topic in the field of quantitative, or computational linguistics (Levickij, Drebet, & Kiiko, 1999; Nerlich & Clarke, 2003; Pustejovsky, 2001; Riemer, 2005). Pustejovsky (2001) declared that polysemy is "central to language" (p. 53) and its study cannot be ignored. Riemer (2005) suggested that the identification of polysemy in a language is one of the major requirements of a semantic theory, and Nerlich and Clarke (2003) stated that polysemy is not only "intractable" within linguistic theory (p. 4), polysemy is a part of how we think and speak, that is an "ordinary language and ordinary life phenomenon" (p. 13). Intentionally exploiting multiple meanings of words can help develop conversational complexity and prestige, and can lead to bonding through laughter, such as the case with puns, which depend on multiple meanings, such as the exchange "I spent two months in the south of France finishing my novel. I'm a very slow reader" (Nerlich & Clarke, 2003, p. 13).

Over the years, linguists have sought to understand why polysemy occurs. It has been suggested that multiple meanings do not occur by chance (Nerlich & Clarke, 2003). Nerlich and Clarke (2003) theorized that polysemy is caused by a human need to structure experience, knowledge, and language, stating that "polysemy is a dynamic byproduct of this operation of conceptual integration" (p. 7). Zipf (1949) noted a connection between the frequency of occurrence of some words and their likelihood of having multiple meanings. Zipf hypothesized that frequency and polysemy were connected due to a principle of economy. The lexicon of a language can be kept small, which is assumed to be preferable, if the same set of words can be used to express many new meanings (Zipf, 1949). Blank (2003) suggested that polysemy occurs because the lexicon is limited, but human imagination is unlimited, so the same words are reused to represent varied meanings. Other researchers have reported that in some cases there was a dependency between some

morphemes (the smallest components of words) and the polysemy of the words that contained them (Krott, 1999; Lehrer, 2003). One limitation of the Krott (1999) study in the context of the current study is that Krott's research focused on morpheme polysemy in German, instead of English. Lehrer's (2003) work, however focuses only on the relation of morphemes and polysemy in English.

Definitions

Linguists make fine distinctions in identifying polysemy in a word, though these apparently distinct categories sometimes overlap. Riemer (2005) defined a gloss to be any number of "different initial semantic descriptions" of a given word (p. 118). According to Riemer (2005) and Stevenson (2003), a word's meaning can be either interpreted by a single gloss, referred to as monosemous, or by multiple glosses, referred to as polysemous. Though a complete historical review of polysemy is outside the realm of the current study, it is worthwhile to note that definitions of polysemy have changed over time (Nerlich, 2003). Some modern linguists use the term polysemy to refer specifically to multiple meanings of words in which the meanings are related, while others refer to this concept as complementary polysemy (e.g., the noun *sun* and the verb *to sun,* or the adjective *bright* used as well-lit and intelligent). Homonyms are defined as words that have the same form but unrelated meanings (e.g, *bank* of a river and a *bank* where money is kept) (Ming-Tzu & Nation, 2004; Nerlich, 2003; Rakova, 2003; Ravin & Leacock, 2000; Riemer, 2005; Stevenson, 2003), but the situation in which a word has similar but unrelated meanings can also be referred to as complementary polysemy (Nerlich & Clarke, 2003). Cases in which meanings of the same word are drastically different is also sometimes referred to as contrastive polysemy (Nerlich & Clarke, 2003). Homographs are words with different meanings that are spelled the same. They may be pronounced

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the same (e.g., *bank* of a river and a *bank* where money is kept) or pronounced differently (e.g., a *dove* is a bird and *dove* is the past tense of *dive*) (Celce-Murcia & Larsen-Freeman, 1999; Stevenson, 2003).

Working within these definitions, homographs might include polysemes or homonyms. The term ambiguous has also been used to describe words that are either polysemous or homonymous, or both (Nerlich & Clarke, 2003; Riemer, 2005). Raukko (2003) reported that in addition to the term polysemy, the additional terms ambiguity, vagueness, and fuzziness have been used by linguists seeking to distinguish different categories of multiple meanings.

Researchers have argued that all multiple word meanings exist along a continuum, that there are grades of connectedness among words (Ming-Tzu & Nation, 2004; Nerlich, Todd, & Clarke, 2003; Ravin & Leacock, 2000). Instead of a dichotomy between monosemous and polysemous, word meanings can be best understood as a gradient of related meanings that can be conceptualized as a web of meanings, with the prototypes representing the most basic of meanings, and subnetworks of meanings related to those words (Nerlich & Clarke, 2003).

The distinction among words that have different meanings can become so nuanced that linguistic theorists have recognized that it is difficult to categorize all the grades of word meanings. While some linguists have agreed to a distinction among polysemes and homonyms, others have conceded that the differences among polysemy, homonymy, ambiguity, and vagueness are, ironically, difficult to distinguish (Blank, 2003; Geeraerts, 2006; Ming-Tzu & Nation, 2004; Nerlich & Clarke, 2003; Taylor, 1989).

For the purpose of this study, the term polysemous will be refer to a word that has more that one meaning regardless of whether those meanings are perceived to be related or unrelated (Goddard, 2000; Ravin & Leacock, 2000; Riemer, 2005; Stevenson, 2003; Taylor, 1989). The

perception of relation between words and word forms is tied to culture and language, and while

certain word forms may seem related to native English speakers, this study focuses on the obstacles

of polysemy for ELLs.

Tests for Polysemy

Another question that spurs much discussion related to polysemy is the way to determine if

words have multiple meanings (Geeraerts, 2006; Ravin & Leacock, 2000; Taylor, 1989), which is

referred to as "word sense disambiguation" (WSD) (Stevenson, 2003; Stevenson & Wilks, 2000).

Riemer (2005) has suggested that one of the most important conditions for determining polysemy of

words or morphemes is an accurate and well-defined test. Geeraerts (2006), Riemer (2005), and

Stevenson (2003), and Taylor (1989) proposed a series of tests for determining if a word was

polysemous.

The logical test indicates whether a word has multiple meanings, but does not distinguish

how many or which meanings (Geeraerts, 2006; Ravin & Leacock, 2000; Riemer, 2005). According

to Riemer (2005), a logical test uses the same word in a sentence twice. If the word can be used non-

redundantly, polysemy is present. An example from Riemer's 2005 work follows: Bread is a *staple*

(basic foodstuff), not a *staple* (stationery item) (p. 135). Riemer (2005)suggested, however, that the

logical test was sometimes inaccurate due to individual differences in interpretation of the prototype

of the word with the same meaning, such as in the following case of a logical test said of a non-

openable window: "It's a window (transparent glass fitting), but it's not a *window* (openable,

transparent glass fitting)"(Riemer, 2005, p. 136). Some speakers may express that a window that does

not open does not fit with their prototype image of a window, while other speakers may find no

incongruency with their mental image of a typical window.

Another type of test to determine polysemy is a linguistic test using an anaphora, or a

repetition of the same word before a phrase or a clause, either explicitly or implicitly (Riemer, 2005;

Stevenson, 2003). If the sentence appears awkward, or zeugmatic, then it is often assumed that the

word in question is polysemous. Consider the following example of an anaphoric tests with the verb

play from Riemer's 2005 book: The orchestra are playing (a symphony) and so are Réal Madrid (a

sport) (p. 140). One of the criticisms of the anaphoric test for polysemy is that it may be difficult to

make the exact judgments necessary to distinguish different meanings from a single anaphora

(Riemer, 2005). Another criticism lies in the fact that the anaphoric test is only as strong as the

sentence that has been created, and some degree of subjectivity is always present (Riemer, 2005;

Stevenson, 2003).

A linguistic test such as the syntactic tests for polysemy use evidence of different possibilities

for syntax for a word as an indicator of polysemy (Geeraerts, 2006; Ravin & Leacock, 2000; Riemer,

2005). For example: I *do not play* when I go to *a play*, where the first occurrence of the word *play* used

the syntax of a negative verb, and the second occurrence of the *play* used the syntax of a noun being

introduced by a determiner. Riemer's (2005) criticism of the syntactic test lies in the fact that not all

polysemous words can be used in different syntactic structures. For example, a word may only be

used as a noun, but may nonetheless have different meanings, such as the case with the word

secretary, which can indicate an person who helps with administrative tasks, a group or government

official, and a piece of furniture.

Riemer (2005) devoted less time to a discussion of the formal test, a test in which a word is considered polysemous if it has different possible glosses as evidenced by its use, or the inability to use it in different linguistic contexts. Riemer (2005) noted the informal contraction *gonna* for *going to* can be used in the following sentence: "I'm *gonna* get married, but not I'm *gonna* the chapel" (p. 146). A criticism of this test, as noted by Riemer (2005) is that this test only indicates whether polysemy exists but does not help distinguish among differences.

Researchers have also presented the definitional test for polysemy as a well accepted test (Geeraerts, 2006; Ravin & Leacock, 2000; Riemer, 2005; Stevenson & Wilks, 2000). The definitional test stipulates that polysemous meanings of a word can be distinguished by the number of definitions needed to accurately define the word. A word would be considered to be polysemous if one definition could not express its complete meaning. One of the limitations of the definitional test for polysemy is that this test assumes that the chosen definition will not itself have multiple meanings (Riemer, 2005).

Researchers concur that problems arise with any type of test for polysemy. Riemer (2005), Stevenson (2003), and Taylor (1989) stated that one of the limitations of tests for polysemy is that test sentences must be well formed. An even larger concern, however, is that some level of subjectivity is necessary for many of the tests (Lehrer, 2003; Levickij, Drebet, & Kiiko, 1999; Nerlich & Clarke, 2003; Riemer, 2005; Stevenson, 2003; Taylor, 1989). Riemer (2005) conceded that semantics is "subjective and interpretive" (p. 417), and that some degree of intuition is present even in well-designed tests, as the reader or listener must make a final judgment as to whether ambiguity exists. Lehrer (2003) noted that "ambiguity tests are indeterminate" (p. 229), and Taylor (2003) also agreed that one of the challenges facing the study of polysemy is that any definition of polysemy

"presupposes that we have procedures in place for reliably identifying , characterizing, and enumerating the meanings of linguistic units" (p. 32). Geeraerts (2006) concluded that operationalizing polysemy remains a challenge because the process is by nature constructivist, that "lexical meanings are not to be thought of as prepackaged chunks of information, but as moving searchlights that may variously highlight subdomains of the range of the application of the lexical item in question" (p. 141). Nerlich and Clarke (2003) suggested that distinguishing between various types of polysemy "will always be fraught with difficulties" (p. 10).

Nonetheless, Stevenson (2003) acknowledged that although distinguishing detailed discriminations between word senses remains subjective, "there is some broad agreement over the levels of ambiguity a term may exhibit: homography, polysemy, and vagueness" (p. 31). Lehrer (2003) noted that, in general, "traditional tests for ambiguity will give clear results" (p. 228). The use of a reasonable combination of generally accepted tests for polysemy, even with their limitations, can help inform our understanding of which multiple meanings occur in contexts where students must depend heavily on texts, such as secondary science courses (Eltinge, 1988; Wang, 1998; Yost, 1973).

The Difficulty of Polysemy in Reading

Polysemy presents problems for ELLs for a variety of reasons. One of the reasons is that ELLs may learn one meaning of a word in the initial stages of language learning and feel that they "know" the word, even when there are possibly many more meanings associated with a given word form. As many of the most common words in English are polysemous, this scenario is likely to occur. An additional challenge may be that words in a student's first language may share some, but

not all, polysemous meanings in English. Celce-Murcia and Larson-Freeman (1999) noted the case of a Spanish speaker who learns the English word *fingers* (*dedos* in Spanish), and then uses the word to refer to appendages on the feet (also *dedos* in Spanish), though this is a different lexical item in English (*toes*).

One of the criticisms regarding linguistic theories related to polysemy is that linguists have spent more time debating how to categorize and name the distinctions between multiple meanings than focusing on the overwhelming frequency of polysemy (Raukko, 2003). It should also be noted that when making the leap from theory to practice, little research has dealt with the difficulties that readers face when encountering new words with polysemous meanings while reading. Regardless of the distinction linguists make among polysemes, homonyms, and homographs, readers encountering words within a text must create meaning from the words they encounter. While readers must create meaning in aural tasks such as listening to conversations and teacher lectures, written text forms the basis of many learning activities for students, such as classroom and homework assignments, teacher-made class tests, and high-stakes state and national exams. Linguistic theory with regards to polysemy focuses on how to objectively determine if a word had multiple meanings, and if so which multiple meanings are present (Riemer, 2005).

For the purposes of this study, the term polysemous will be refer to a word that has more that one meaning, with the prefix "poly" denoting more than one (Folse, 2004b; Ravin & Leacock, 2000; Riemer, 2005; Stevenson, 2003; Taylor, 1989).

Summary

Vocabulary knowledge is an essential component of reading comprehension for all students, and ELLs have an even more immediate need to learn as many vocabulary words as quickly as possible (Folse, 2004a; Nation, 1993). Science classes are high stakes for students. Basic science classes are required for graduation and higher level science classes such as chemistry are expected for students to be competitive for college admissions. State exams such as the Florida Comprehensive Assessment Test now include science ("Florida Department of Education", 2007), and nationally recognized exams like the ACT also include a science section ("The American College Test", 2007). There is an enormous amount of reading required of students in science classes, and much instruction is based on textbooks (Eltinge, 1988; Eltinge & Roberts, 1993; Wang, 1998; Yost, 1973). Science teachers have an increasing number of ELLs in their classes, but little specialized training in L2 acquisition. More knowledge about the polysemy of common words in the textbooks of specific science fields such as chemistry will help inform materials and instruction. In an extensive review of the literature, no article has been found that addresses this problem. As such, this study is a relevant and necessary contribution to vocabulary studies in corpus linguistics and second language acquisition.

CHAPTER THREE: METHODOLOGY

Introduction

Vocabulary in a second language is an essential building block of all comprehension, whether in authentic tasks such as deciding what to eat, or in academic reading, which is in turn essential for the academic success of ELLs. Teachers in content area classes such as science, math, and social studies frequently teach content specific vocabulary, but are not aware of the obstacles that can occur when students do not know the basic words.

Statement of the Problem

Word lists such as the General Service List (GSL) were created to assist students and teachers (West, 1953). Several problems exist with such lists. For example, the corpus that West examined was a collection of general texts from the 1950s. Little has been done to update the list to meet current needs, or in regards to specific content domains encountered by secondary students in high stakes science classes such as chemistry. More importantly, the GSL does not adequately take into account the high level of multiple meanings, or polysemy, of many common English words in the list. If teachers and materials writers had more knowledge of which common words, and specifically which meanings, are more likely to appear, they would be better positioned to help ELLs acquire the exact vocabulary building blocks for successful comprehension of written materials.

Sample

The University of Central Florida's Institutional Review Board (IRB) evaluated the plan for the current corpus study and determined that IRB review was not necessary because the project did not involve human subjects research (Appendix A).

One concern when collecting any corpus is the size of the sample. Meyer (2002) suggested that a very large corpus is necessary when preparing a dictionary or studying rare words or grammatical constructions. A corpus that is not sufficiently large or varied may not represent rare words or usages (C. F. Meyer, 2002), though a much smaller corpus may be used to study commonly occurring words (Biber, Conrad, & Reppen, 1998; Conrad, 1999). When studying frequently occurring linguistic items, such as the most commonly occurring prepositions, research has suggested that after a 1000-word sample, the law of diminishing returns is reached. Chujo and Utiyama (2005) noted that text coverage was more stable when a larger number of shorter samples were used rather than a fewer number of longer samples. Research has also indicated that humanities texts are more likely than technical prose to add new vocabulary as the sample size increases (C. F. Meyer, 2002), further indicating that relatively smaller samples are required of science texts.

Many large collections of corpora are publicly available for study ("Linguistic Data Consortium", 2007), and one consideration in collecting samples for a large, balanced corpus is that the data be representative of many different genres so that is may be used for many types of post-hoc analyses of the language in general. For example, the researchers who created the Brown Corpus sought to systematically include text representative of many genres (Kucera & Francis, 1967). A

broad corpus thus serves as strength if a future researcher seeks to study a linguistic feature across the language in general.

It must be noted, however, that a consistent finding of corpus studies is the variation of language dependent on genre, or register (Biber, Conrad, & Reppen, 1998; Conrad, 1999; Kucera & Francis, 1967). The results of Biber, Conrad, and Reppen's (1998) corpus research have shown that "there really is no such thing as 'general language'; each register has its own patterns of use" (p. 248). Thus, a corpus that includes a vast array of genres can be a limitation when researching a linguistic feature in a particular environment. Investigation of different group of texts informs understanding of the language of specific areas (Biber, Conrad, & Reppen, 1998). If research is related to a particular language environment, or "genre variation," it is necessary to intentionally design a study that is genre-focused (C. F. Meyer, 2002). For example, the Corpus of London Teenage English (COLT) only contains the speech of London teenagers (C. F. Meyer, 2002). Corpus linguistics can offer "significant insights into the structure of different written and spoken genres of English" (C. F. Meyer, 2002, p. 19).

Meyer (2002) advised that a corpus study must be designed with specific goals in mind. In order to investigate the polysemy of basic words in secondary chemistry texts, three secondary chemistry textbooks on the 2005 approved adoption list for Orange County Public Schools, currently the eleventh largest school district in the United States, will be used for this study ("Orange County Public Schools Facts", 2007). Chemistry books were chosen because the abstract nature of the material does not lend itself to expressing concepts as easily with pictures as biology or physics, and is therefore more likely to be more text dependent for students. The following three student versions of chemistry textbooks were analyzed for this study: *Chemistry: Matter and Change,* Glencoe

(Dingrando, Tallman, Hainen, & Wistrom, 2006); *Chemistry,* Prentice Hall (Wilbraham, Staley, Matta, & Waterman, 2006); and *Chemistry*, Houghton Mifflin (Zumdahl & Zumdahl, 2006). The textbooks were named Textbook 1, 2, and 3 respectively. Permission was obtained from the respective publishers to use the textbooks for the study (Appendix B).

Ooi (1998) suggested that representativeness and size must be considered when attempting to make conclusions about the lexicon from a given corpus. In a review of previous methods of science textbook content analysis, Wang (1998) noted that while some researchers analyzed an entire textbook looking for predetermined themes, researchers often randomly selected samples from an entire textbook. When the method of randomly selecting text samples was used, Wang (1998) noted a trend toward sampling 5% of the text, and Garcia (1985) concluded that a sample of 5% of text in science books was sufficient.

<center>Procedure</center>

The number of words on a randomly selected page with little text and many illustrations and the number of words on a randomly selected page with all text and no illustrations were averaged to determine each page of the three chemistry textbooks contained approximately 350 words. Each of the three chemistry books contained approximately 800 pages, bringing the average number of words per text to 280,000. Five percent of this total indicates a need to sample 14,000 words from each text. A research randomizer tool was used to randomly select 14 pages from each textbook (Urbaniak & Plous, 2007). The pages selected were pages 72, 74, 127, 168, 201, 241, 486, 511, 550, 634, 732, 786, and 813. A sample of one 1000 consecutive words was recorded beginning with each randomly selected page, for a total of 42,000 words. The 1000-word samples were named as follows:

fourteen 1000-word samples from Textbook 1 were named consecutively Samples 1A-1N, fourteen 1000-word samples from Textbook 2 were named consecutively Samples 2A-2N, and fourteen 1000-word samples from Textbook 3 were named consecutively Samples 3A-3N.

The fourteen randomly selected samples were scanned electronically using optical character recognition software and converted into documents that could be edited and entered into the text analysis programs. The word samples were proofread for errors in which the optical character recognition software did not recognize a character accurately, and any necessary corrections were made to restore accuracy.

Data were entered into the online text analysis tool VocabProfiler (Cobb, 2007b) based on previous work by Heatley and Nation (1994). The program analyzed the sample text by breaking the input words into four separate frequency categories: first 1000 word level (from the GSL), second 1000 word level (from the GSL), academic words (from the AWL), and words not contained in the aforementioned categories. Words from the first 1000 word level of the GSL were analyzed for this study. To verify that each of the samples contributed proportionately to the entire 42,000-word sample, all samples were analyzed individually, grouped by textbook, and then combined. The Vocabprofiler program omitted all punctuation, capitalization, and non-alphabet symbols, and converted all numerals to the word *number*. VocabProfiler included the British spellings of certain words instead of the standard spellings of the United States, e.g., *colour* instead of *color*, and *centre* instead of *center*.

Word count was operationalized by dividing words into the following categories: *family, type,* and *token*. The term *family* was used to represent a group of words that share a common root (e.g., *effect* and *effects* would be considered one family). Each distinct form within a family was referred to as

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a *type* (e.g., *effect* and *effects* would be considered two types within one family). The actual number of times that each type occurred in the text was referred to as a *token* (e.g., *effects* occurred twice within the sample, representing two tokens). VocabProfiler analyzed text for types and tokens within the same family, e.g., the token *walk* is a head word of the first 1000 words of the GSL, and VocabProfiler analyzed for *walk, walks, walked,* and *walking.* In this study, type and token were analyzed.

Riemer (2005) has suggested that one of the most important conditions for determining polysemy is an accurate and well-defined measure. Words senses were disambiguated taking into account context, semantic tagging, and the definitional test.

Context is considered essential for determining the meaning of a word (Biber, Conrad, & Reppen, 1998; Conrad, 1999; Geeraerts, 2006; Miller & Leacock, 2000), so each occurrence of a type that appeared more than once across the total sample of all three chemistry textbooks was examined in the context that it originally appeared. Ravin and Leacock (2000) suggested that researchers should examine local context immediately adjacent to the word, as well as topical context related to the larger topic being discussed. Linguistically, the context around a word is often referred to as concordance. All forty-two 1000-word samples (Samples 1A-3N) were entered into the concordancer computer program Text-Based Concordances (Cobb, 2007a), a program that identified and listed each word along with the approximately ten words that occurred immediately before and after the target word in the text. Types that occurred only once were omitted from the study, as multiple meanings could not occur if the word did not occur more than once. Each type from the first 1000 words of the GSL that occurred more than once was examined in the context of its occurrence.

Biber, Conrad, and Reppen (1998) noted that semantic tagging, or identifying parts of speech, is one of the most common labels added to a corpus, and that semantic tagging can be problematic in certain circumstances in which a noun is used much like an adjective to modify another noun, such as the case in the phrase *animal groups* (Biber, Conrad, & Reppen, 1998, p. 66). With these and other problematic cases, Biber, Conrad, and Reppen (1998) suggested that there is no clear "right" answer, but it is important for researcher to make a decision and remain consistent in counting throughout the study.

For this study, the following commonly accepted parts of speech were used to label each of the target tokens (Celce-Murcia & Larsen-Freeman, 1999):

Adjective (adj): modifies a noun

Adverb (adv): modifies an action verb, adverb, or adjective

Article (art): can be used as a determiner before nouns depending on context

Auxiliary verb (aux v): verb used with a main verb to form a verb tense

Conjunction (conj): connects words, ideas, phrases, or sentences

Idiom (id): group of words in which a fixed phrase functions as a unit to denote a meaning

      beyond what can be expressed in the individual components of a word (Sinclair,

      Jones, & Daley, 2004)

Interjection (int): expresses emotion

Noun (n): person, place, thing, or idea

Phrasal verb (phr v): verb and preposition commonly used together

Preposition (prep): indicates a particular relationship between nouns

Pronoun (pro): substitutes for a noun

Verb with object (v obj): verb that can be used with an object

Verb without object (v wo obj): verb that cannot be used with an object

After semantic tagging, the researcher used the definitional linguistic test (Geeraerts, 2006; Riemer, 2005) to determine the meaning of each of the types of the first 1000 words of the GSL that occurred more than once. The process of assigning definitions was facilitated using the online resource Dictionary.com (*Dictionary.com*, 2007) because the program performed a multi-search of many popular dictionaries and idiom dictionaries. Four tokens that had only one possible definition could not be analyzed for polysemy, and were therefore excluded from the study.

Analyzing 18,532 total tokens for meaning required the creation of a system of identification for all meanings present in the sampled text. Distinct definitions within a given type were identified using the following numbering system (Figure 3, Appendix C).

Identifier of General Service List (GSL) First 1000

Identifier of 480 words included in study

Definition number

Total definitions possible for word

Sequence in number of definitions
occurring in study

Total number of definitions
occurring in study

001.001.001.001.001.001
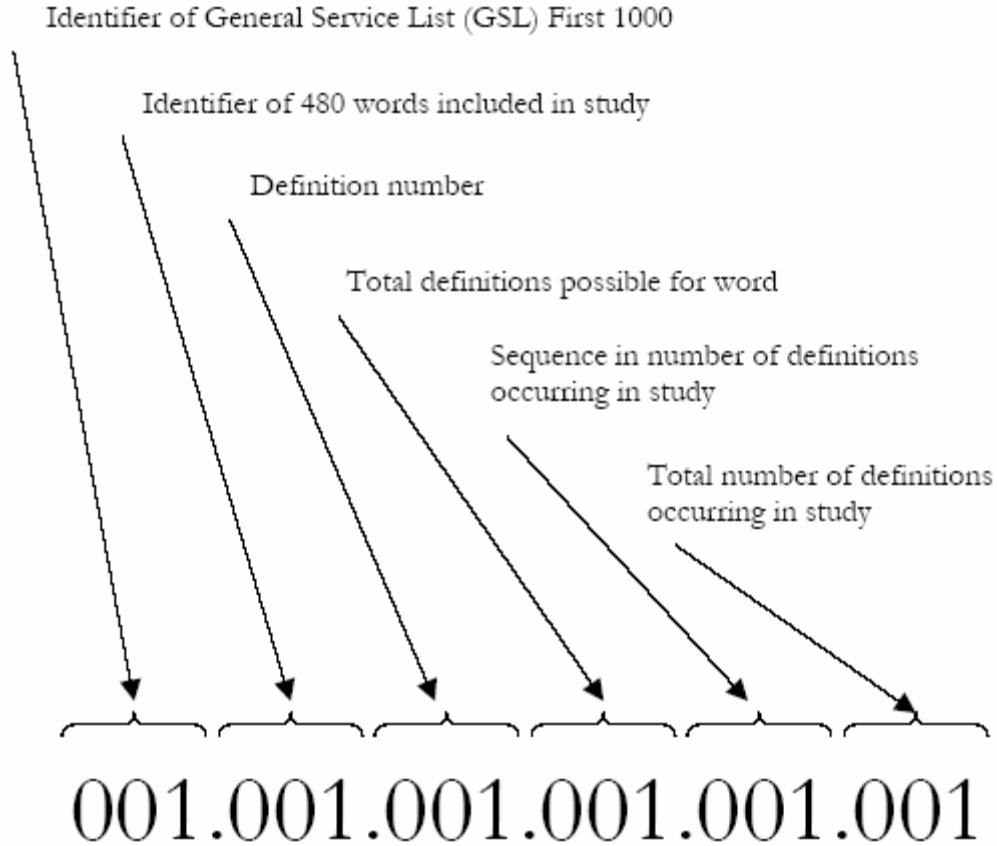
Figure 3 Study Identifier Numbering System

Intrarater reliability was determined using a technique adapted from the science textbook analysis of Eltinge and Roberts (1993). Five types that occurred more than once were randomly selected from each of the three textbooks to be classified twice. The fifteen total types were disambiguated for polysemy once in the middle of the study, and again at the end of the study, to indicate that the researcher was consistently assigning semantic tags and definitions to target tokens.

Component of word families were not included in the study. For example, occurrences of the type *walk* were included in the study, but not other word forms within the same family, such as *walks, walked,,* and *walking.* The resulting data were analyzed using descriptive statistics in response to the study research questions.

Summary

In order to assess the polysemy of the first 1000 words of the GSL that occur in the genre of secondary chemistry textbooks, fourteen 1000-word samples were selected from three secondary chemistry textbooks. The samples were analyzed to identify which types from the first 1000 words of the GSL were present. Each type from the first 1000 words of the GSL that appeared more that once and that had more than one definition possible was analyzed for polysemy by examining surrounding context of each token to determine part of speech, definition, and whether the token was used in a set phrase such as a phrasal verb or idiom. Resulting data were analyzed in response to the two research questions that guide the study:

1) How many words of the first 1000 words of the GSL occur /do not occur in the secondary chemistry textbooks sampled, and is this figure consistent with past research?

2) How often are the first 1000 words of the GSL polysemous, and specifically which multiple meanings occur in the samples of the genre of secondary chemistry textbooks?

CHAPTER FOUR: FINDINGS

Introduction

The sampled text was analyzed with regards to the two research questions that guided the study. The findings from the analyses are reported below.

Research Question 1

How many words of the first 1000 words of the GSL occurred in the secondary chemistry textbooks sampled, and is this consistent with past research?

Text on the randomly selected pages was entered into the text analysis program VocabProfiler (Cobb, 2006). Based on Laufer and Nation's Lexical Frequency Profiler (Laufer & Nation, 1995) the VocabProfiler program analyzed sample text by breaking the words into four separate frequency categories: first 1000 word level (from the GSL), second 1000 word level (from the GSL), academic words (from the AWL), and words not contained in the aforementioned categories.

The focus of the current study was the first 1000 word level of the GSL (actually 965 total head words). Only 604 words from the target list occurred once or more (representing 18,532 total tokens), and 361 words did not occur at all (Figure 4).
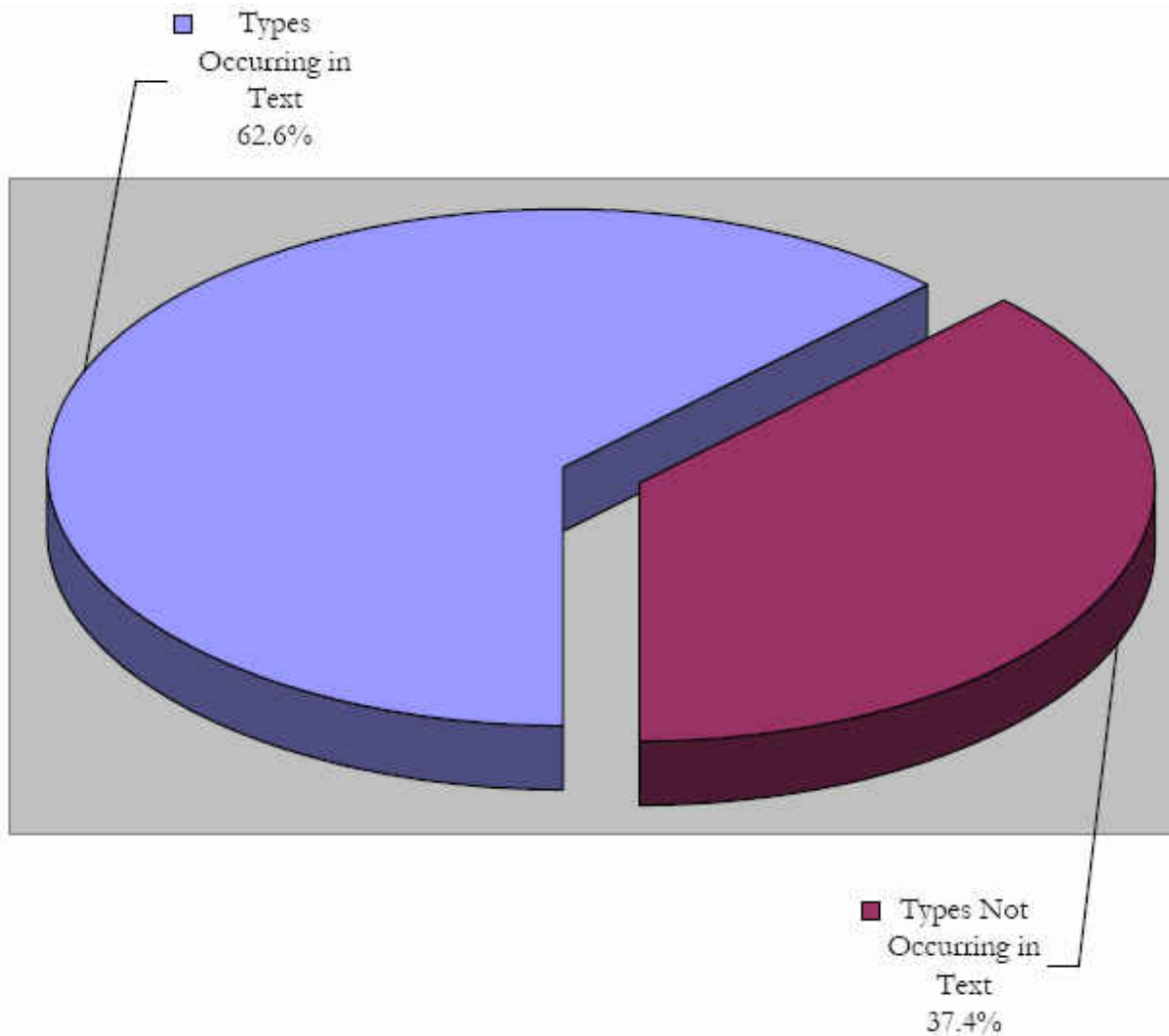
Figure 4 Percentage of Types of GSL First 1000 Occurring in Sampled Text

It should be noted that the list of head words of the first 1000 words of the GSL is

approximate, representing 965, not 1000. VocabProfiler analyzed all tokens in a family, not only the

tokens of the types in this study. The occurrence of the first 1000 words of the GSL was expected to

range from 74% to 90% (Ming-Tzu & Nation, 2004; Nation, 1993; Nation & Hwang, 1995). Table 1

shows the percentage of the first 1000 words of the GSL of all samples in the current study ranged

from 63% to 78%, which is slightly lower than figures reported from previous studies (Ming-Tzu &

Nation, 2004; Nation, 1993; Nation & Hwang, 1995).

Table 1 Percentage of GSL First 1000 in Sampled Text

Sample	% GSL First 1000	Sample	% GSL First 1000	Sample	% GSL First 1000
1A	74	2A	77	3A	69
1B	71	2B	75	3B	77
1C	75	2C	69	3C	71
1D	65	2D	71	3D	68
1E	69	2E	68	3E	72
1F	70	2F	70	3F	75
1G	65	2G	64	3G	72
1H	70	2H	71	3H	71
1I	76	2I	73	3I	65
1J	68	2J	69	3J	72
1K	65	2K	67	3K	75
1L	70	2L	65	3L	72
1M	63	2M	63	3M	78
1N	64	2N	68	3N	77
1A-1N	69	2A-2N	69	3A-3N	72
				1A-3N	70

Note. Percentages have been rounded to the nearest whole number. Percentages
include all tokens in a family, not only target head types of the current study.

Despite the diversity of topics discussed in each sample, none of the samples provided a

vastly different amount of text coverage. Interestingly, the sample on saponification (Sample 1M)

had the fewest tokens (63%) while the sample on entropy (Sample 3M) had the highest number of tokens (77%).

Results included an analysis which types of the GSL first 1000 that occurred at least once in each of the three textbooks individually. Of the 429 total tokens of the first 1000 of the GSL that occurred in the combined 42,000-word sample at least three times, only 282 occurred at least once in each of the three texts sampled, representing only 29% of the 965 total words possible. See Appendix D for a complete listing of the 282 types.

<center>Research Question 2</center>

How often are the first 1000 words of the GSL polysemous, and specifically which multiple meanings occur in the samples of the genre of secondary chemistry textbooks?

Of the 604 types of the first 1000 of the GSL that occurred, 110 types that occurred only once could not be evaluated for polysemy and were thus were excluded from the study. Four additional types were excluded from the study because they only had one definition possible and could not be polysemous. Three types were excluded because the only occurrences were another item that was not the target type, e.g., *OH* did not represent the word *oh* from the GSL but the abbreviation for oxygen and hydrogen. Two types were excluded because all tokens occurring were proper nouns or adjectives, e.g., *Spirit* referred only to the Mars rover. Five types were excluded by the data analysis program because the program recognized British spellings of words such as *colour*, while the textbook was written using the spelling *color*, standard in the United States. This process left 480 target types (18,532 tokens) for analysis of polysemy.

Polysemy was determined using the following established tests for disambiguation: semantic disambiguation (i.e., part of speech distinction) and sense disambiguation (i.e., definition) (Stevenson, 2003). Each sense of a token was examined within its context and then tagged to indicate semantic category and definition. It was determined that 249 types had only one meaning in the sampled text (51.9%), and 231 types were polysemous (48.2%). Of the polysemous types, 138 had two definitions (28.8%), 48 had three definitions (10%), 25 had four definitions (5.2%), six had five definitions (1.3%), seven had six definitions (1.5%), six had seven definitions (1.3%), and one type had eight definitions present (0.2%)(Figure 5).
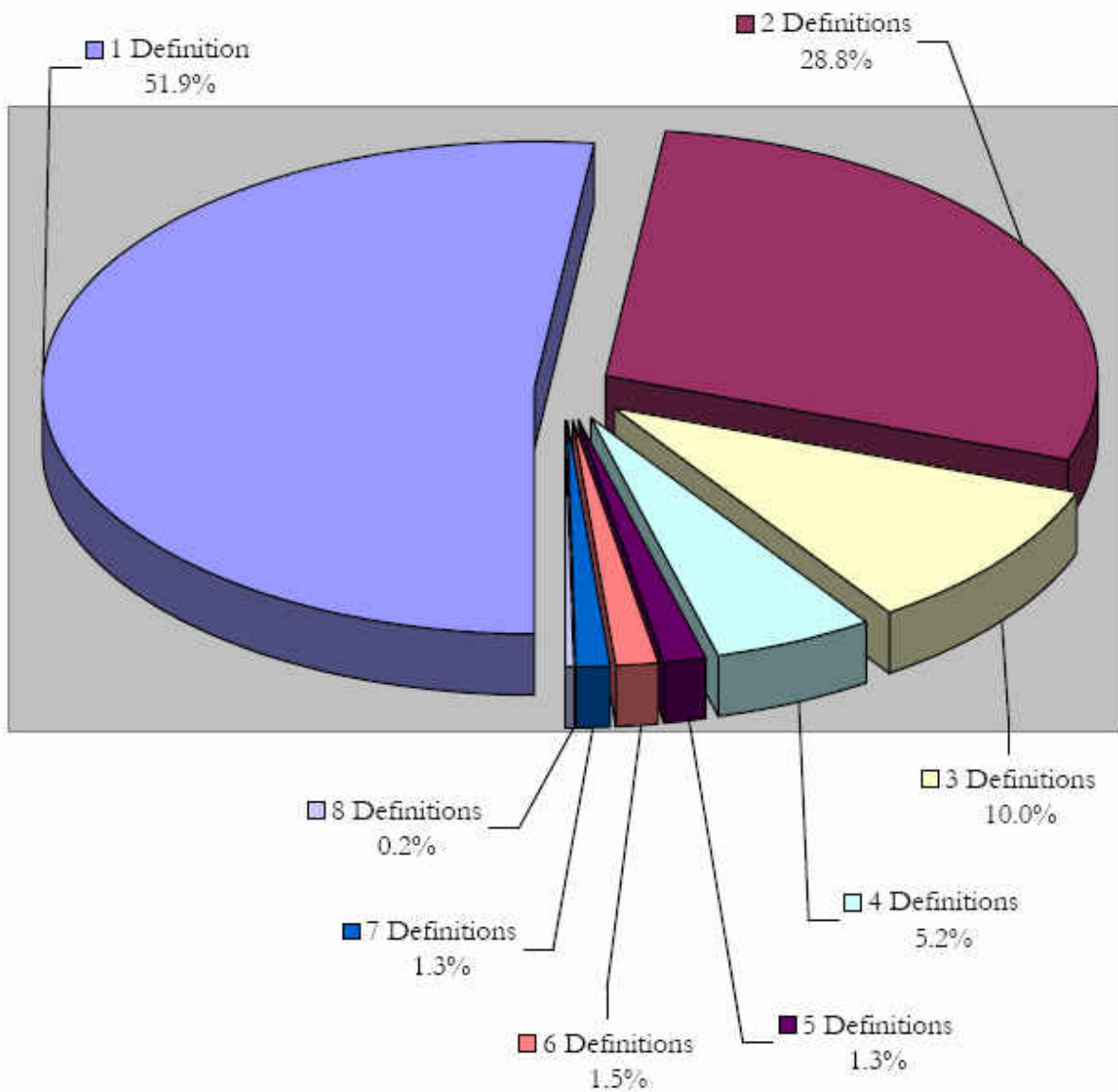
Figure 5 Percentage of Types by Number of Definitions

The total number of individual meanings of target types was 866 (Figure 6). See Appendix E

for a complete listing and count of types that occurred separated by individual meaning.

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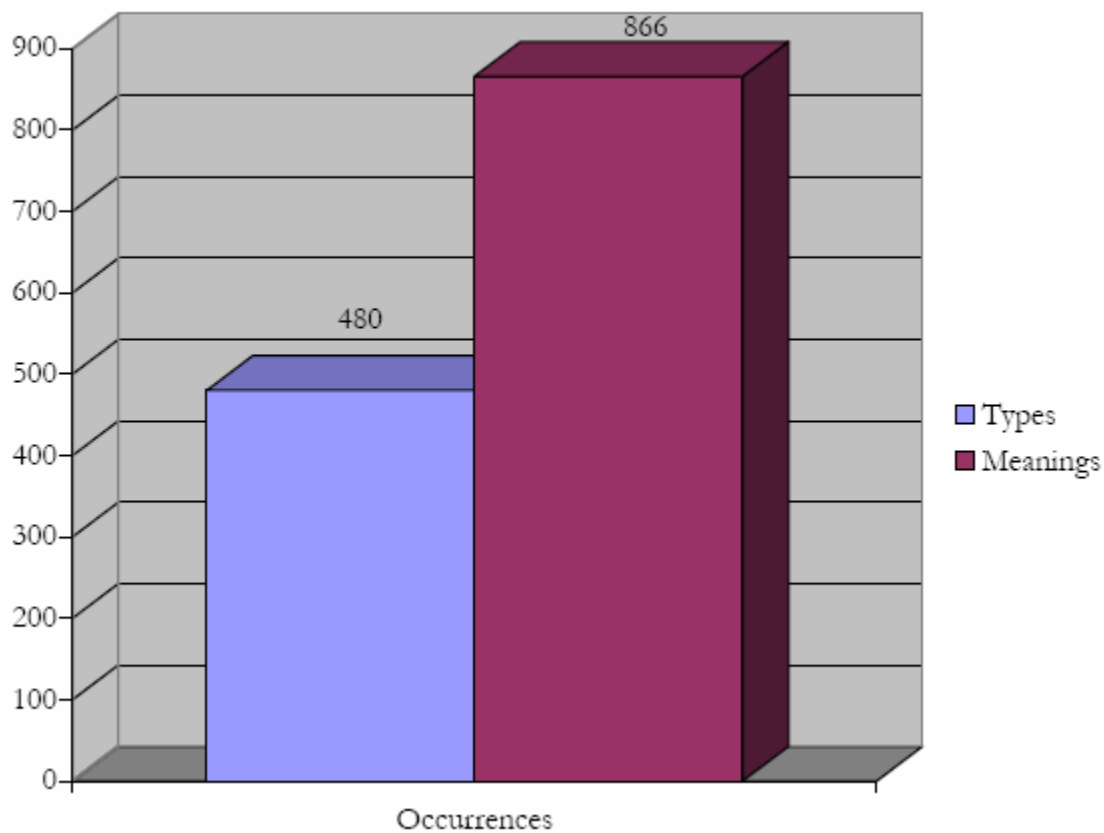
Figure 6 Types and Meanings Present of First 1000 of GSL

Summary

The first 1000 words of the GSL represented 70% of the sampled secondary chemistry textbooks (Table 1). Of the 604 types of the first 1000 of the GSL present (Figure 4), only 282 of these types occurred in all three of the textbooks (Appendix D). Nearly half (48.1%) of the types of

the first 1000 words of the GSL were polysemous (Figure 5). The 480 types of the first 1000 words

of the GSL represented 866 definitions when meanings were considered as separate units (Figure 6).

CHAPTER FIVE: CONCLUSION

Introduction

This study makes a major contribution to corpus studies of lexical items by genre. It is the first study to examine the polysemy of the first 1000 words of the GSL within the genre of secondary chemistry textbooks. A high percentage of words (70%) within the sampled text represented the first 1000 words of the GSL (Table 1). The target words also exhibited a high level of polysemy; 48.1% of target words were polysemous (Figure 5). A discussion containing individual examples is included, followed by implications for materials development, second language instruction, teacher education, and suggestions for future research.

Adequacy of GSL in Secondary Chemistry Textbooks

The findings from this study indicated that the GSL remained a consistent predictor of a high percentage of words in a given text, from 63% to 78% for individual 1000-word samples, and 70% for the entire 42,000-word sample (Table 1). These findings should, however, be viewed with caution for several reasons.

First, the fact that percentages are somewhat lower than previous research may be due to the genre of secondary chemistry textbooks, and only 604 of the first 1000 words of the GSL occurred once or more across the total 42,000-word sample (Figure 4). It is possible that a high percentage of content specific vocabulary displaced some of the common vocabulary that would otherwise occur in a more general text. This finding underscores the need for genre-specific studies of common vocabulary.

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Second, when the samples were analyzed to see which of the first 1000 words of the GSL appeared in all three textbooks, only 282 of the words occurred at least once in each of the three textbooks (Appendix D). The 282 head words present in all three textbooks at least once represented less than a third (29%) of the total 965 words possible, further undermining the notion that teaching students the first 1000 words of the GSL will lead to immediate reading comprehension.

Polysemy of GSL in Secondary Chemistry Textbooks

The likelihood of a word having more definitions generally decreased as the number of definitions increased (Figure 5). Specifically, types that occurred more than once were far more likely to have two meanings (28.8%), than three (10%), four (5.2%), five (1.3%), six (1.5%), seven (1.3%), or eight meanings (0.2%). This is a promising trend that, if it were found in future studies, would indicate less burden for learners.

As predicted, determining meaning was sometimes difficult due to subjectivity and some definitions being so close in meaning. Prepositions were particularly problematic because they had so many meanings, some only subtly different, and they often formed part of an idiom of another main word. For example, 16 of the 23 occurrences of *out* were parts of phrasal verbs or idioms of other words, a situation that would present a significant obstacle to a student searching through the 76 possible definitions of *out*, when some meanings could only be found in the entry of another word. The type *up* presented a similar situation. *Up* occurred a total of 34 times, yet analysis revealed that the meanings of 26 of the 34 tokens were components of phrasal verbs or idioms of other words. Of the remaining eight tokens present, the adverb meaning a more elevated position,

traditionally taught first to beginning ELLs, as in "a person can climb *up* or down the ladder," was present only four times. The other four tokens were a part of the idiom "*up* to," as in the phrase "alcohols of *up* to four carbons," which was definition 92 of 93 possible.

It was noted that some semantic forms in the text did not represent large changes in meaning. For example, the verb *escape* used with an object once and without an object three times were considered to be distinct definitions, but the meanings were not very different, as in the phrases "that allows the beetle to *escape* predators" and "molecules that have enough kinetic energy to *escape*." The type *red* was used twice as a noun and 11 times as an adjective, though this is unlikely to present a major obstacle to reading comprehension for ELLs.

One considerable problem remained that some definitions of polysemous words were vastly different. Two very distinct meanings of *right* occurred, e.g., correct as in "the *right* amount of energy" and opposite of left as in "the resulting small shift to the *right*." The three definitions of *set* that occurred were very different, e.g., adjust as in "*set* the balance;" a unified group as in "the entire *set*;" and the idiom "set *up*" meaning prepare as in "*set* up an experiment to test your hypothesis." Consider the differences of the type *sign* that occurred in the study, e.g., a notice, as in "walk up to a *sign* or poster," and a plus or minus indication in math, as in "reversing a reaction changes the *sign*." The meanings of *store* in the phrase "visit a grocery *store*" and the phrase "areas that *store* and process spatial maps" were very dissimilar. These great differences in meanings would likely present difficulties for beginning and intermediate ELLs. It is essential that more research be conducted in this area to inform secondary chemistry vocabulary materials writers and instructors.

Sometimes a definition that the researcher considered to be unusual was the only occurring definition, e.g., *die* was only used to indicate a piece of machinery that cuts a predetermined shape

such as "metal can be forced through a narrow opening in a *die* to produce wire," and *heavy* only occurred in the context of "*heavy* water." In other cases, a less common definition was not the only, but was the most commonly occurring meaning, e.g., *hard* occurred 14 times in the phrase "*hard* water," and only twice representing the meaning of difficult, as in "*hard* to separate." *Sea* was used more frequently to mean copious than a large body of salt water, as in the phrase "a *sea* of electrons." The type *stock* was only used to mean common as in "a *stock* solution of acid," and *strong* was more frequently used to indicate that a substance contained more of an active ingredient, such as in the phrase "a *strong* solution." The results of this study supported Biber, Conrad, and Reppen's (1994) assertion that corpus studies by genre are essential because "our intuitions about a word often do not match the actual patterns of use" (p. 174). Further research in the area may indicate that the previous meanings are more common in the genre of secondary chemistry textbooks.

For some types, the definition that occurred exclusively or more frequently had been noted in the dictionary resource as being either the math or science definition. *Agent* meant a substance that causes a reaction 38 of 41 times, and *lead* was used to describe the metallic element of the periodic table seven of 11 times. *Noble* was only used in the context of a "*noble* gas" and *problem* was only used to name a mathematical exercise. *Test* was used 40 of 50 times in the term "*test* tube," *value* was only used in terms of "numerical *value*," and *whole* occurred nine of 12 times in the phrase "*whole* number." These observations suggest a critical need to train teachers to instruct students to look for indications of genre-specific definitions when looking up words in the dictionary.

In some cases one definition was used exclusively or far more than others. For example, *visit* was used seven of eight times in the contemporary usage meaning to access a website, as in the phrase "*visit* the chemistry website." *Air* was used 18 of 23 times as the mixture of gases of the

earth's atmosphere as in "a sealed glass container filled with *air.*" In other cases, the researcher noted that several definitions were represented more or less equally. The type *get* occurred a total of 11 times, but each of the seven meanings were represented only once or twice. These findings support several conclusions. Certain word meanings are more likely to occur by genre, and corpus studies should be conducted to learn more about this linguistic phenomenon. Findings from such studies should be used to inform second language pedagogy and classroom instruction of ELLs. For example, meanings of words that are used far more frequently than others should be prioritized in vocabulary materials and classroom teaching.

In the sample text, 39 different idioms occurred a total of 159 times, and 17 verb phrases occurred 40 times. This indicates multiword units such as idioms and phrasal verb are a necessary part of vocabulary programs. Types sometimes occurred only within an idiom, e.g., *detail* as "in *detail*," and *due* as "*due* to," or more frequently in an idiom form, e.g., *less* in "*less* than" and *hand* in "on the other *hand.*" In some cases, an analysis of prepositions indicated that the preposition was in fact a part of a preceding word as an idiom such as *out* and *up.* This indicates a clear need for vocabulary materials and classroom instruction to include multiword units such as idioms and phrasal verbs.

Polysemy is a considerable factor when dealing with the most basic words in English. In the text sampled, 48% of types from the first 1000 words of the GSL had multiple meanings (Figure 5). Polysemy of common vocabulary remains a large component of what ELLs must confront when reading. The 480 types of the first 1000 words of the GSL really amounted to 866 when meanings were considered as separate units, a staggering 80% increase (Figure 6). This increase in meanings points to the necessity of considering polysemy in vocabulary studies.

It has been suggested that words that occur more frequently are more likely to have multiple meanings (Stevenson, 2003; Zipf, 1949). The researcher expected that types that occurred the most would represent the highest number of multiple meanings simply because the possibility increased with more tokens present, yet the findings of the study indicated that this was not always the case (Appendix E). Words that occurred frequently did not necessarily have more than one meaning, e.g., *mass* had 191 tokens, but all represented the same definition, as was the case with the 197 tokens of *water*. Furthermore, words did not need to occur many times to be polysemous, e.g., c*lear* occurred three times with three separate meanings, *drop* occurred seven times with four different meanings, and *leave* occurred four times with four different meanings. As there is no simple indicator as to which words are more likely to be polysemous, this finding further highlights the need for more corpus studies to precisely inform vocabulary instruction.

As expected, the first 1000 words of the GSL in the genre of secondary chemistry textbooks were transformed into a very different order when polysemy was taken into effect and each individual meaning was treated independently. When each individual meaning was counted separately, the original alphabetical list was scrambled, and words that were not otherwise at the front of the list moved to the front. When looking at the list ordered by individual meanings (Appendix G), it is especially important to consider the meanings that are used more than once. It is vital that materials writers, publishers, and teachers take into account these particular meanings that are likely to appear in secondary chemistry textbooks and align instruction accordingly.

Development of Instructional Materials

The findings from this study make several essential indications for the development of instructional materials for ELLs. It is vital that educational researchers investigate by genre the multiple meanings of common English words that form the most basic building blocks of the language. Further corpus studies will equip materials writers and teachers with critical knowledge required to create effective vocabulary instructional materials for ELLs.

The fact that 62.6% of the types of the first 1000 words of the GSL occurred in the text sampled (Figure 4) indicates a need for vocabulary instruction for beginning and intermediate ELLs in secondary chemistry classes to address several distinct areas. Because of the high percentage of words of the first 1000 words of the GSL present, future instructional materials must address these common words in vocabulary lists. However, as 62.6% is a somewhat smaller percentage than previous research has suggested, this indicates a need to continue emphasis on content specific vocabulary instruction in secondary chemistry classrooms. Nearly half (48.1%) of the types of the first 1000 words of the GSL appearing in the text sampled were polysemous (Figure 5). The findings from this study point toward the necessity of being more informed about the polysemy of basic words in secondary chemistry classrooms.

The high number of words of the first 1000 of the GSL that did not occur in the text sampled clearly indicates a need to revise the GSL for the genre of secondary chemistry textbooks. A list much smaller than 1000 may serve to indicate the words that are most likely to fappear. Upon analysis, it may also become evident that words that have been considered content specific, such as *atom*, *molecule*, and *compound*, may actually occur with such high frequency that they become a necessary part of a general vocabulary list within the genre of secondary chemistry. As Biber,

Conrad, and Reppen (1994) stated, "there are important and systematic differences among text varieties at all linguistic levels, and that any global characterizations of 'General English' should be regarded with caution" (p. 179). Upon further analysis of vocabulary present, it may be necessary to create a "General Service List for Secondary Chemistry" that covers the particular meanings of basic words and the most commonly occurring content specific words.

Supplementary vocabulary materials should be designed for students and for teachers that present the most commonly occurring words taking genre and polysemy into account. Within the sampled text, 52% of all types of the first 1000 of the GSL had only one meaning, and in some cases of polysemy, one definition appeared far more often than another. These findings indicate a need to create vocabulary materials that teach specific meanings likely to predominate within a certain genre. Vocabulary lists such as the GSL should be revised to take into account polysemy of specific genres. Rather than simply listing words alphabetically, types should be further categorized by meanings and frequency of those individual meanings. Lists should then be ranked by frequency of occurrence of a single meaning much like that in Appendix G.

<div align="center">Teachers and Teacher Education</div>

Researchers in second language pedagogy should carefully examine language across genres through corpus analysis rather than relying on assumptions of linguistic theories. Moreover, a return to teaching basic vocabulary for beginning and intermediate ELLs is crucial, but teachers must prioritize vocabulary instruction based on findings from corpus studies. Teachers need to include direct instruction of basic vocabulary with an awareness of multiple meanings, as well as instruction in content area vocabulary, into their lessons. By becoming active researchers in their own subject

areas, teachers should examine the language of their own subject areas with an eye toward vocabulary frequency and polysemy.

One immediate change that teachers can make in their own classrooms is to develop an awareness of the problem of polysemy for ELLs. This awareness necessitates an adjustment with regards to answering student vocabulary questions. Instead of answering a student's question of "What does this … mean?" with an immediate response, a teacher should reply with, "It depends," followed by these three exploratory questions:

"Where were you when you heard/saw the word?"

"What was the immediate topic in the discussion/reading?"

"What was the sentence the word was in?"

Asking these questions will help the teacher discern among polysemous meanings and be better able to inform the student correctly. This response will also develop student awareness that word meaning is highly dependent on context at all levels.

Teacher preparation programs must take into account that by 2025, one in four K-12 students will be an ELL (Spellings, 2005), and vocabulary in a second language is an indispensable building block of all comprehension (Folse, 2006). Teachers in all subject areas at all levels must be adequately prepared in effective vocabulary instruction for ELLs. Teachers need an awareness of the potential obstacles that polysemy of common words plays in beginning and intermediate ELLs' comprehension. Training at the school and district level, as well as university teacher training programs should apply findings from corpus studies to help inform effective vocabulary programs for all grade levels and subject areas.

Suggestions for Future Research

More studies within academic genres will indicate how much the GSL needs to be revised for modern usage and by genre. Future studies should include textbooks of different levels such as elementary and middle grades, as well as different academic genres such as history, math, and social studies.

Moreover, future research should include investigations of polysemy of other word lists by genre such as the second 1000 words and the GSL or the Academic Word List (AWL). Further analysis will likely indicate the necessity of creating new vocabulary lists that are more specific to genre.

The data show that 143 of the 480 types in the study (29.8%) had over 25 definitions, with some exceeding 100. In some cases, the definition representing the meaning in context was near the end, or even the last definition of the list, e.g., one of the definitions of *set* that occurred was 115 of a list of 119 possible definitions. Future studies should investigate the phenomenon of definition sequence related to student look-up behavior. How often do students persist in looking through numerous definitions to find the appropriate one?

Components of word families were not included in the current study. The type *condition* occurred only twice, but the type *conditions* occurred 14 times. Future studies could be expanded to include entire word families for a more comprehensive view of basic vocabulary in context.

The researcher noted that meanings that occurred exclusively or most frequently were not always the definitions that are generally taught first to beginning ELLs. For example, the interrogative pronouns of *who, what, when, where, why, which,* and *how* are among the first vocabulary items taught to beginning ELLs. Findings from this study, however, indicated that beginning ELLs

reading a secondary chemistry textbook would be more likely to encounter other meanings of those words. The word *when* occurred strictly as a conjunction, e.g., "the energy released *when* gasoline is burned," and was not used interrogatively at all. The word *where* occurred more frequently as a conjunction, e.g., "the transport of nutrients to cells *where* they are required," and did not occur as an interrogative pronoun. The word *which* also occurred most frequently as a relative pronoun, e.g., "all matter is composed of such particles, *which* are called atoms," than as an interrogative pronoun. It is understandable that second language materials are designed to teach general language in a systematic order from simple to more complex structures. The findings from this study, however, supported earlier claims (Biber, Conrad, & Reppen, 1998; Swales, 1985) that materials designed for ELLs often do not provide reliable information about how language is used, and that there is a disconnect between the order of presentation and amount of explanation of lexical items and the actual ways that these items are used in real language. This divide indicates that the development of supplementary vocabulary materials specific to genre are essential for students who have limited time to meet high-stakes testing goals. More research comparing order of instruction of lexical items and actual language use is called for.

Summary

Findings from the study indicate a need for more corpus studies to examine chemistry and other genre specific vocabulary for polysemy. This conclusion necessitates a return to direct vocabulary instruction for ELLs and the creation of research based vocabulary materials for teachers and students. It is crucial that educational researchers examine corpora for polysemy, and treat each polysemous word as a separate entity, thus revising and re-ordering basic word lists accordingly.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD EXEMPTION

University of
**Central
Florida**

Office of Research & Commercialization

May 24, 2007

Karina Clemmons

Dear Ms. Clemmons:

After reviewing the materials that you submitted, the UCF Institutional Review Board has determined that your project, "The Problem of Polysemy in the First Thousand Words of the General Service List: A Corpus Study of Secondary Science Texts," is not human subjects research. Your research does not fit the following federal regulations definition of research: "A systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge." Therefore, IRB review is not needed. Thank you for your time in resolving this issue.

Sincerely,

Tracy Dietz
UCF IRB Chair

cc: IRB file
    Stephen Sivo, Ph.D.
    David Boote, Ph.D.

APPENDIX B: PERMISSION LETTERS FROM PUBLISHERS

Mc
Graw **Glencoe**   Glencoe/McGraw-Hill   21600 Oxnard Street
Hill   Suite 500
                                                                         Woodland Hills, CA 91367-4809
                                                                         818 615 2600 Tel
                                                                         818 615 2699 Fax

June 1, 2007

Karina Clemmons

University of Central Florida

Dear Ms. Clemmons:

You have our permission to include 14 1000-word samples from
Chemistry: Matter and Change in your research study and resulting
dissertation, *The Problem of Polysemy in the First Thousand Words
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Sincerely,

Mark Schaefer
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                    (fax)
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APPENDIX C: STUDY IDENTIFIER NUMBERING SYSTEM

Identifier of General Service List (GSL) First 1000

Identifier of 480 words included in study

Definition number

Total definitions possible for word

Sequence in number of definitions
occurring in study

Total number of definitions
occurring in study

001.001.001.001.001.001
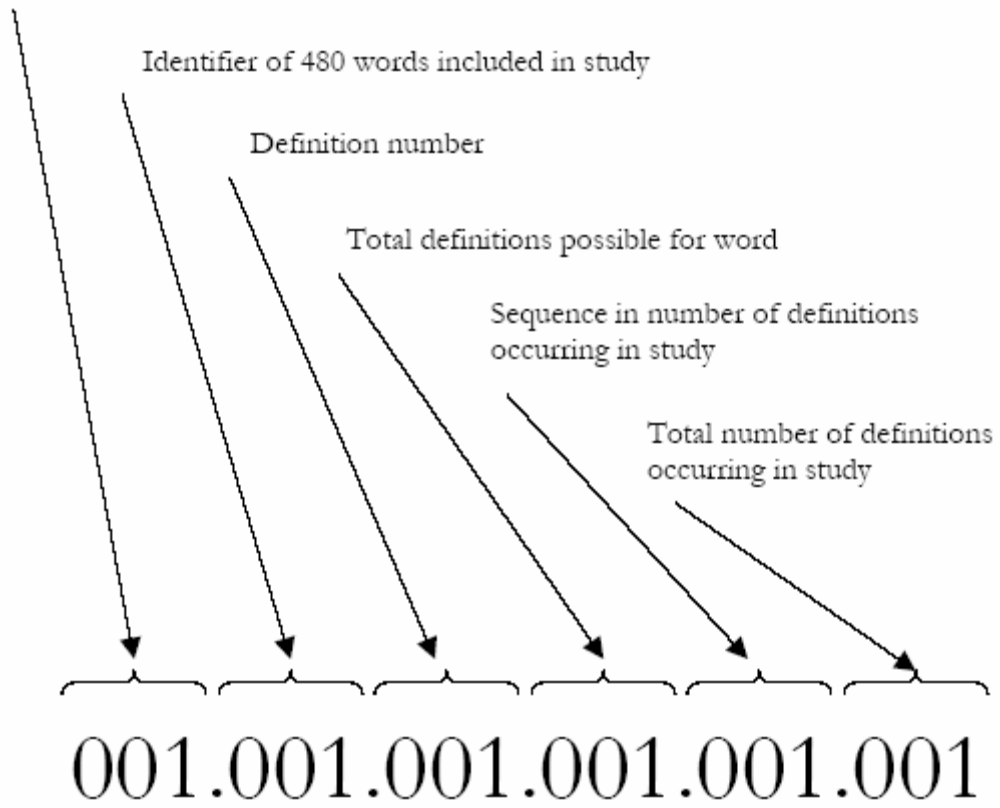
APPENDIX D: TARGET WORDS OCCURRING IN ALL THREE TEXTS

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
ABLE	5	3	2
ABOUT	29	38	7
ABOVE	1	3	5
ACCOUNT	4		4
ACROSS	2	3	
ACTUAL	1	2	2
ADD	8	2	
AFTER	4	9	10
AGAIN	2	1	4
AGENT	2	20	19
AIR	11	3	9
ALL	26	17	24
ALLOW	4		2
ALMOST	1	2	2
ALONG		3	1
ALREADY		6	2
ALSO	19	19	8
ALTHOUGH	9	7	10
ALWAYS	8	6	6
AMONG	8	9	4
AMOUNT	4	14	16
AND	330	251	274
ANOTHER	12	30	10
ANSWER	9	1	11
ANY	8	6	7
APPEAR	3		
APPLY	3	2	2
AROUND	3	11	
AS	83	98	78
AT	34	55	74
AVERAGE	8	1	1
AWAY	2	2	
BACK	2	2	3
BALL		1	6
BASE	2	1	18
BE	54	52	116

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
BECAUSE	23	33	26
BECOME	6	5	1
BEFORE	6	5	8
BEGIN	4	1	3
BELIEVE		2	1
BELOW	10	5	3
BEST			3
BETWEEN	18	36	9
BLOOD	1		2
BLUE		4	2
BODY	2	11	
BOOK		1	3
BOTH	10	11	14
BREAD		4	
BREAK	3	3	2
BUT	9	16	11
BY	68	81	84
CALL			3
CAPITAL			3
CAR		1	2
CARRY	2		3
CASE	2	2	9
CAUSE		7	1
CERTAIN	8	3	2
CHANCE	1		5
CHANGE	21	15	30
CHARGE	2	9	17
CHOOSE	1		2
CLASS	1		3
CLEAR	1	1	1
CLOSE	2	12	5
COAL			3
COIN		4	
COLD	2	1	
COME	1	4	
COMMON	8	9	14

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
COMPLETE	8	9	3
CONSIDER	5	1	12
CONTAIN	2	7	2
CONTENT	1	3	1
CONTINUE	1	2	
CONTROL	2		2
COULD	1	10	4
COURSE	1	1	2
CURRENT	1	3	13
DAY	1	3	1
DEAL		1	3
DECIDE		2	2
DEGREE	1	2	
DEPEND		2	1
DESCRIBE	8	5	3
DETAIL	2		1
DETERMINE	15	5	13
DIFFERENCE	5	4	2
DIFFICULT	2		1
DISTANCE	1	8	
DIVIDE	2		1
DO	33	17	18
DOWN	7	6	6
DRAW	19		1
DRIVE		3	1
DROP	4	2	1
DUE			4
EACH	56	26	45
EARLY		4	2
EARTH	1	9	5
EASY		2	1
EAT	2	1	1
EFFECT	6	4	3
EIGHT	4	1	2
EITHER		3	1
END	10	2	2

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
ENOUGH		4	2
EQUAL	4	15	7
ESCAPE	2	2	
EVEN	5	4	2
EVERY	1	5	3
EXAMPLE	21	18	23
EXCEPT	1	1	1
EXERCISE			24
EXIST	4	1	
EXPECT	1		2
EXPERIMENT	4	1	5
EXPLAIN	31	19	10
EXPRESS		5	
EYE	2	6	1
FACE	1	7	
FACT	2	5	5
FAMILIAR	2	2	1
FAR	2	3	3
FEW	1	8	1
FIGURE	46	67	13
FILL	1	2	1
FIND	8	3	7
FIRST	15	7	9
FIVE	3	2	1
FLOOR		5	
FLOW		7	4
FOOD	2	7	1
FOR	109	80	146
FORCE	4	8	2
FORM	22	22	21
FOUR	9	4	13
FREE	1	4	12
FROM	83	75	62
FULL	6	1	
FURNISH			3
GAIN	5	6	5

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
GAS	18	4	68
GENERAL	9	6	
GET	7	2	2
GIVE	6	3	10
GLASS	2		2
GO	2	3	1
GOLD		5	
GOOD	1	7	1
GREAT	1	1	2
GREEN	1	2	
GROUND	4	3	
GROUP	17	10	
HALF	1	5	3
HAND	1	1	6
HARD	16		
HAVE	34	31	41
HE	5	5	7
HEAT	12	41	10
HEAVY		3	
HELP	3	4	1
HERE	2	1	2
HIGH	17	8	3
HILL			5
HISTORY	3		1
HOLD	2	1	
HOT	5	1	1
HOW	63	59	20
HOWEVER	9	19	15
HUMAN	2		1
IDEA	3	1	1
IF	18	17	30
IMPORTANT	13	13	15
IN	301	327	322
INCLUDE	4	5	2
INCREASE	4	4	14
INDEPENDENT	1		4

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
INSTEAD	1	4	
INTO	36	14	16
IRON	16	19	15
IT	47	60	54
JUST	2	5	3
KIND		3	
KNOW	5	3	5
LARGE	4	10	11
LAST		2	
LAW	19		17
LEAD	3	2	6
LEARN	6	13	
LEAVE	2	1	
LEFT	9	6	16
LENGTH	2	13	
LESS	2	6	4
LET	4	2	2
LETTER			3
LEVEL	9	15	1
LIE		2	1
LIFE	3	4	2
LIGHT	20	2	
LIKE	9	8	1
LIKELY	3	1	1
LINE	4	2	4
LITTLE	2	3	4
LONG	2	2	
LOOK	6	9	
LOSE	5	2	
LOSS	2	5	4
LOW	2	2	4
MAIN	2	2	4
MAKE	10	18	3
MANY	17	23	17
MASS	96	31	64
MATTER	4	6	

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
MEASURE	4	13	2
METAL		24	6
MIGHT	3	6	1
MILK		1	3
MILLION		3	1
MODERN	4	1	2
MOON	1		2
MORE	17	26	21
MOST	15	14	7
MOTOR		4	6
MOVE	11	12	2
MUCH	5	14	11
MUST	13	9	31
NAME	19	1	26
NEAR	1	1	2
NECESSARY	2	2	3
NEITHER	2		3
NEW	9	9	3
NEXT	3	3	
NO	2	9	15
NOBLE	9	3	
NOR	2		3
NOT	32	37	29
NOTE	12	4	20
NOTICE	1	2	4
NOW	5	1	7
OBJECT	1	5	3
OBSERVE	5	2	
OF	628	649	651
OFF	3	4	
OFTEN	7	13	6
OIL	8	4	3
ON	51	66	62
ONCE	2	3	1
ONE	50	52	43
ONLY	19	12	22

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
OR	50	83	38
ORDER	3	4	4
ORDINARY	1	5	
OTHER	36	22	15
OUT	11	5	7
OVER	2	4	3
OWN	1	2	
PAGE	6	4	1
PAINT		5	
PAPER	4	1	2
PART	4	3	2
PARTICULAR		1	7
PAST		2	1
PEOPLE			8
PER	4	4	7
PERSON		5	1
PIECE	3	3	1
PLACE	18	2	7
PLANT	2	1	2
POINT	10	11	58
POOR		6	
POSITION	1	9	9
POSSIBLE	2	4	10
POWER	2	4	2
PREPARE	3	2	1
PRESENT	2	6	18
PRESSURE	7	24	44
PREVENT	1	2	
PROBLEM	15	6	15
PRODUCE	12	12	6
PRODUCT	8	4	7
PROPER	3		
PROPERTY	2	5	2
PROPOSE		2	1
PROVIDE	4	3	2
QUANTITY	2	3	3

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Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
QUESTION	4		3
QUITE	1	1	2
RATE	10	9	1
RATHER	3	4	2
REACH	1		6
READ	5	14	3
REAL	1	1	3
REASON		3	
RECORD	11	2	
RED	5	8	
REDUCE	1	1	2
RELATIVE	5	2	11
REMAIN	1	2	1
REMEMBER		3	3
REPORT	1	2	
REPRESENT	2	2	7
RESULT	9	5	2
RETURN	2		1
RIGHT	7	7	9
RING	3		1
ROOM	1	4	4
RULE	9		3
RUN			3
SALT	6	2	2
SAME	15	17	19
SAY		3	2
SCIENCE	1	4	1
SEA	2	4	
SECOND	5	2	2
SEE	10	7	20
SENSE			4
SEPARATE	5	1	
SET	3	5	2
SEVEN	3	3	2
SEVERAL	7	3	8
SHAPE		3	

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
SHARE	5		
SHOULD		4	14
SHOW	2	3	
SIDE	6	6	4
SIGN	3	1	2
SILVER	1	10	2
SIMPLE	1	5	6
SINCE	1		33
SINGLE	12	4	1
SITUATION	1	1	4
SIX	1	2	3
SIZE	1	22	1
SMALL	8	14	16
SO	9	11	17
SOCIETY	2	2	3
SOFT	6	1	
SOME	14	20	14
SPACE	1	5	
SPEED	2	1	1
SPREAD	1	1	1
STANDARD	16	4	4
START	3	1	
STATE	13	5	49
STEEL	6	3	3
STEP	6	1	6
STILL	3	7	3
STOP	3		
STRENGTH	3		
STRONG	2	8	16
STUDENT	1	1	2
STUDY	1	3	2
SUBSTANCE	13	8	4
SUCH	22	32	11
SUN	3	3	
SUPPOSE	3	1	3
SURE	4	1	1

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Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
SURFACE	5	9	3
SYSTEM	4	13	20
TABLE	44	10	24
TAKE	7	4	3
TELL	1		2
TEN	2	1	2
TERM	2	3	1
TEST	44	6	
THAN	19	35	25
THE	1035	950	1026
THEN	9	13	19
THERE	5	10	23
THEREFORE	8	4	3
THEY	24	30	7
THINK	2	6	2
THIS	73	61	125
THREE	14	11	9
THROUGH	9	4	9
THUS	8	12	27
TIME	7	7	5
TO	263	314	244
TODAY	1	3	1
TOGETHER	2	8	1
TOO	1		3
TOP	1	2	
TOTAL	9	2	16
TOWARD	1	3	5
TWO	36	25	27
TYPE	12	1	19
UNDER	1	2	3
UNDERSTAND		1	3
UNTIL	4	2	3
UP	14	14	6
UPON	1	3	2
USE	42	23	14
VALUE	6	16	19

Type	Occurrences Book 1	Occurrences Book 2	Occurrences Book 3
VARIETY	1	1	2
VARIOUS	2		8
VERY	9	18	19
VIEW	1		2
VISIT	4	4	
WANT	2	2	4
WATER	60	77	61
WAVE	2	1	
WAY	2	5	9
WE	1		114
WEAR	5		
WELL	2	3	2
WHAT	53	55	38
WHEN	38	38	32
WHERE	3	5	15
WHETHER	4	3	4
WHICH	48	33	38
WHILE	4	3	4
WHITE	1	3	
WHOLE	1	1	10
WHY	24	14	9
WILL	45	13	54
WITH	74	43	79
WITHIN	6	7	
WOOD	1	7	1
WORD	5	10	
WORK	1	4	24
WORLD	3	8	2
WOULD	3	10	26
WRITE	17	2	3
YIELD			12
YOU	106	94	27
YOUNG	2	1	

APPENDIX E: TARGET WORDS IN ALPHABETICAL ORDER

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
001.001.001.005.001.001	ABLE	1	adj	10	10
002.002.001.021.001.003	ABOUT	3	prep	36	74
002.002.003.021.002.003	ABOUT	3	prep	36	74
002.002.004.021.003.003	ABOUT	3	prep	2	74
003.003.001.023.001.003	ABOVE	3	adv	4	8
003.003.002.023.002.003	ABOVE	3	adv	3	8
003.003.004.023.003.003	ABOVE	3	adv	1	8
004.004.001.014.001.001	ACCEPT	1	v obj	2	2
006.005.012.026.001.002	ACCOUNT	2	v wo obj	7	8
006.005.025.026.002.002	ACCOUNT	2	id	1	8
008.006.001.010.001.001	ACROSS	1	prep	5	5
013.007.001.003.001.001	ACTUAL	1	adj	5	5
014.008.001.009.001.001	ADD	1	v obj	10	10
022.009.001.018.001.007	AFTER	7	prep	2	24
022.009.002.018.002.007	AFTER	7	prep	8	24
022.009.003.018.003.007	AFTER	7	prep	8	24
022.009.008.018.004.007	AFTER	7	prep	2	24
022.009.013.018.005.007	AFTER	7	adv	2	24
022.009.016.018.006.007	AFTER	7	conj	1	24
022.009.018.018.007.007	AFTER	7	id	1	24
023.010.001.007.001.001	AGAIN	1	adv	7	7
026.011.011.016.001.003	AGENT	3	n	38	41
026.011.012.016.002.003	AGENT	3	n	2	41
026.011.013.016.003.003	AGENT	3	n	1	41
027.012.001.002.001.001	AGO	1	adj	2	2
029.001.013.031.001.004	AIR	4	n	18	23
029.013.002.031.002.004	AIR	4	n	1	23
029.013.003.031.003.004	AIR	4	n	1	23
029.013.020.031.003.004	AIR	4	adj	3	23
030.014.002.039.001.003	ALL	3	adj	56	67
030.014.009.039.002.003	ALL	3	pro	6	67
030.014.014.039.003.003	ALL	3	adv	5	67

adjective (adj), adverb (adv), article (art), auxiliary verb (aux v), conjunction(conj), idiom (id), noun (n), phrasal verb (phr v), preposition (prep), pronoun (pro), verb with object (v obj), verb without obj (v wo obj)

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
031.015.001.009.001.002	ALLOW	2	v obj	1	6
031.015.003.009.002.002	ALLOW	2	v obj	5	6
034.016.001.015.001.003	ALONG	3	prep	1	4
034.016.004.015.002.003	ALONG	3	adv	2	4
034.016.007.015.003.003	ALONG	3	adv	1	4
035.017.001.003.001.001	ALREADY	1	adv	8	8
036.018.001.003.001.002	ALSO	2	adv	13	45
036.018.002.003.002.002	ALSO	2	adv	32	45
038.019.001.004.001.001	ALWAYS	1	adv	20	20
039.020.001.008.001.001	AMONG	1	prep	21	21
040.021.003.007.001.001	AMOUNT	1	n	38	38
041.022.002.009.001.001	ANCIENT	1	adj	2	2
042.023.001.017.001.001	AND	1	conj	854	854
044.024.001.007.001.002	ANOTHER	2	adj	31	54
044.024.005.007.002.002	ANOTHER	2	pro	23	54
045.025.002.023.001.003	ANSWER	3	n	7	20
045.025.005.023.002.003	ANSWER	3	n	8	20
045.025.015.023.003.003	ANSWER	3	v obj	5	20
046.026.001.009.001.004	ANY	4	adj	14	22
046.026.005.009.002.004	ANY	4	adj	5	22
046.026.007.009.002.004	ANY	4	pro	1	22
046.026.009.009.004.004	ANY	4	adv	2	22
047.027.002.008.001.001	APPEAR	1	v wo obj	3	3
048.028.001.014.001.002	APPLY	2	v obj	5	7
048.028.011.014.002.002	APPLY	2	v wo obj	2	7
053.029.010.033.001.003	AROUND	3	adv	2	13
053.029.017.033.002.003	AROUND	3	prep	9	13
053.029.023.033.003.003	AROUND	3	prep	2	13
055.030.002.016.001.001	ART	1	n	2	2
057.031.001.031.001.005	AS	5	adv	64	265
057.031.004.031.002.005	AS	5	adv	22	265
057.031.005.031.003.005	AS	5	conj	6	265
057.031.016.031.004.005	AS	5	prep	156	265
057.031.017.031.005.005	AS	5	id	17	265

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
060.032.001.012.001.008	AT	8	prep	13	167
060.032.002.012.002.008	AT	8	prep	76	154
060.032.003.012.003.008	AT	8	prep	13	154
060.032.004.012.004.008	AT	8	prep	43	154
060.032.005.012.005.008	AT	8	prep	10	154
060.032.006.012.006.008	AT	8	prep	2	154
060.032.007.012.007.008	AT	8	prep	6	154
060.032.009.012.008.008	AT	8	prep	4	154
063.033.001.015.001.004	AVERAGE	4	n	1	10
063.033.006.015.002.004	AVERAGE	4	adj	7	10
063.033.007.015.003.004	AVERAGE	4	adj	1	10
063.033.015.015.004.004	AVERAGE	4	id	1	10
064.034.001.016.001.002	AWAY	2	adv	3	4
064.034.005.016.002.002	AWAY	2	adv	1	4
065.035.006.067.001.004	BACK	4	n	1	7
065.035.060.067.002.004	BACK	4	adv	1	7
065.035.061.067.003.004	BACK	4	adv	4	7
065.035.066.067.004.004	BACK	4	id	1	7
067.036.001.027.001.001	BALL	1	n	7	7
070.037.006.036.001.003	BASE	3	n	1	21
070.037.017.036.002.003	BASE	3	n	19	21
070.037.028.036.003.003	BASE	3	adj	1	21
072.038.001.011.001.005	BE	5	v wo obj	38	222
072.038.003.011.002.005	BE	5	v wo obj	1	222
072.038.006.011.003.005	BE	5	v wo obj	32	222
072.038.008.011.004.005	BE	5	aux v	3	222
072.038.010.011.005.005	BE	5	aux v	148	222
075.039.001.002.001.002	BECAUSE	2	conj	70	79
075.039.002.002.002.002	BECAUSE	2	id	9	79
076.040.001.005.001.001	BECOME	1	v wo obj	12	12
078.041.001.017.001.002	BEFORE	2	prep	14	19
078.041.017.017.002.002	BEFORE	2	conj	5	19
079.042.001.005.001.001	BEGIN	1	v wo obj	4	4
081.043.002.007.001.002	BELIEVE	2	v wo obj	2	3
081.043.006.007.002.002	BELIEVE	2	phr v	1	3
083.044.006.014.001.001	BELOW	1	adv	18	18

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
086.045.001.020.001.002	BEST	2	adj	2	3
086.045.002.020.002.002	BEST	2	adv	1	3
087.046.001.018.001.004	BETWEEN	4	prep	38	63
087.046.002.018.002.004	BETWEEN	4	prep	1	63
087.046.003.018.003.004	BETWEEN	4	prep	13	63
087.046.007.018.004.004	BETWEEN	4	prep	11	63
092.047.020.033.001.001	BLACK	1	n	2	2
093.048.001.024.001.001	BLOOD	1	n	3	3
095.049.003.024.001.002	BLUE	2	n	3	6
095.049.011.024.002.002	BLUE	2	adj	3	6
098.050.010.028.001.002	BODY	2	n	8	13
098.050.010.028.002.002	BODY	2	n	5	13
099.051.004.050.001.001	BOOK	1	n	4	4
100.052.001.003.001.003	BOTH	3	adj	19	35
100.052.002.003.002.003	BOTH	3	pro	2	35
100.052.003.003.003.003	BOTH	3	conj	14	35
104.053.001.009.001.001	BREAD	1	n	4	4
105.054.001.122.001.004	BREAK	4	v obj	1	11
105.054.034.122.002.004	BREAK	4	v wo obj	3	11
105.054.078.122.003.004	BREAK	4	n	3	11
105.054.105.122.004.004	BREAK	4	phr v	4	11
114.055.001.014.001.001	BUT	1	conj	36	36
116.056.006.035.001.007	BY	7	prep	1	233
116.056.009.035.002.007	BY	7	prep	3	233
116.056.011.035.003.007	BY	7	prep	4	233
116.056.012.035.004.007	BY	7	prep	3	233
116.056.013.035.005.007	BY	7	prep	220	233
116.056.017.035.006.007	BY	7	prep	1	233
116.056.019.035.007.007	BY	7	prep	1	233
119.058.014.017.001.001	CAPITAL	1	adj	2	2
121.059.001.006.001.001	CAR	1	n	3	3
123.060.019.052.001.002	CARRY	2	n	3	8
123.060.044.052.002.002	CARRY	2	phr v	5	8

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
124.061.001.019.001.003	CASE	3	n	11	13
124.061.002.019.002.003	CASE	3	n	1	13
124.061.003.019.003.003	CASE	3	n	1	13
127.062.001.010.001.002	CAUSE	2	n	2	8
127.062.009.010.002.002	CAUSE	2	v obj	6	8
129.063.005.011.001.002	CERTAIN	2	adj	7	13
129.063.005.011.002.002	CERTAIN	2	adj	6	13
130.064.003.017.001.002	CHANCE	2	n	4	6
130.064.004.017.002.002	CHANCE	2	n	2	6
131.065.001.038.001.004	CHANGE	4	v obj	2	66
131.065.002.038.002.004	CHANGE	4	v obj	1	66
131.065.009.038.003.004	CHANGE	4	v wo obj	4	66
131.065.019.038.004.004	CHANGE	4	n	59	66
133.066.041.049.001.002	CHARGE	2	n	27	28
133.066.049.049.001.002	CHARGE	2	id	1	28
136.067.001.009.001.001	CHOOSE	1	v obj	3	3
138.068.003.023.001.001	CIRCLE	1	n	2	2
139.069.001.008.001.001	CITY	1	n	2	2
140.057.018.069.001.001	CALL	1	v obj	3	3
141.070.001.029.001.002	CLASS	2	n	1	4
141.070.002.029.002.002	CLASS	2	n	1	4
142.002.071.074.001.003	CLEAR	3	adj	1	3
142.071.009.074.002.003	CLEAR	3	adj	1	3
142.071.034.074.003.003	CLEAR	3	v obj	1	3
143.072.027.075.001.004	CLOSE	4	adj	4	19
143.072.035.075.002.004	CLOSE	4	adj	1	19
143.072.056.075.003.004	CLOSE	4	adv	10	19
143.072.057.075.004.004	CLOSE	4	adv	4	19
144.073.002.018.001.001	CLOUD	1	n	2	2
145.074.001.008.001.001	COAL	1	n	3	3
147.075.001.014.001.001	COIN	1	n	4	4
148.076.001.031.001.001	COLD	1	adj	3	3

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
152.077.006.062.001.002	COME	2	v wo obj	4	5
152.077.026.062.002.002	COME	2	phr v	1	5
155.078.001.022.001.002	COMMON	2	adj	3	31
155.078.004.022.002.002	COMMON	2	adj	28	31
157.079.001.015.001.002	COMPLETE	2	adj	17	20
157.079.011.015.002.002	COMPLETE	2	v obj	3	20
159.080.002.025.001.002	CONDITION	2	n	1	2
159.080.007.025.002.002	CONDITION	2	n	1	2
160.081.001.011.001.001	CONSIDER	1	v obj	18	18
161.082.003.008.001.001	CONTAIN	1	v obj	11	11
162.083.008.011.001.001	CONTENT	1	n	5	5
163.084.001.011.001.001	CONTINUE	1	v wo obj	3	3
164.085.001.018.001.001	CONTROL	1	v obj	4	4
168.086.003.006.001.001	COULD	1	aux v	15	15
172.087.004.032.001.002	COURSE	2	n	2	4
172.087.032.032.002.002	COURSE	2	id	2	4
179.088.013.014.001.001	CURRENT	1	adj	17	17
180.089.002.089.001.001	CUT	1	v obj	2	2
185.090.001.015.001.001	DAY	1	n	6	6
187.091.004.026.001.002	DEAL	2	v wo obj	1	4
187.091.019.026.002.002	DEAL	2	n	3	4
189.092.001.005.001.001	DECIDE	1	v obj	4	4
191.093.001.041.001.001	DEEP	1	adj	2	2
193.094.003.018.001.001	DEGREE	1	n	3	3
196.095.001.006.001.001	DEPEND	1	v wo obj	3	3
197.096.001.005.001.001	DESCRIBE	1	v obj	16	16
201.097.013.013.001.001	DETAIL	1	id	3	3
202.098.002.011.001.001	DETERMINE	1	v obj	33	33
204.099.021.026.001.001	DIE	1	n	2	2
205.100.001.013.001.002	DIFFERENCE	2	n	10	11
205.100.009.013.002.002	DIFFERENCE	2	n	1	11
206.101.001.007.001.001	DIFFICULT	1	adj	3	3
208.102.001.002.001.001	DISCOVER	1	v obj	2	2
209.103.001.021.001.001	DISTANCE	1	n	9	9
212.104.007.017.001.001	DIVIDE	1	v obj	3	3

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
213.105.002.057.001.004	DO	4	v obj	13	66
213.105.031.057.002.004	DO	4	v wo obj	1	66
213.105.032.057.003.004	DO	4	aux v	51	66
213.105.034.057.004.004	DO	4	aux v	1	66
219.106.001.051.001.003	DOWN	3	adv	12	15
219.106.011.051.002.003	DOWN	3	adv	2	15
219.106.021.051.003.003	DOWN	3	adj	1	15
220.107.002.071.001.003	DRAW	3	v obj	5	20
220.107.004.071.002.003	DRAW	3	v obj	14	20
220.107.011.071.003.003	DRAW	3	v obj	1	20
224.108.001.039.001.002	DRIVE	2	v obj	3	4
224.108.003.039.002.002	DRIVE	2	v obj	1	4
225.109.001.074.001.004	DROP	4	n	3	7
225.109.010.074.002.004	DROP	4	n	1	7
225.109.033.074.003.004	DROP	4	v wo obj	2	7
225.109.035.074.004.004	DROP	4	v wo obj	1	7
226.110.001.034.001.003	DRY	3	adj	1	3
226.110.028.034.002.003	DRY	3	v obj	1	3
226.110.032.034.003.003	DRY	3	phr v	1	3
227.111.011.013.001.001	DUE	1	id	4	4
229.112.001.003.001.002	EACH	2	adj	97	127
229.112.002.003.002.002	EACH	2	pro	30	127
232.114.001.015.001.003	EARTH	3	n	13	15
232.114.008.015.002.003	EARTH	3	n	1	15
232.114.009.015.003.003	EARTH	3	n	1	15
233.113.001.011.001.002	EARLY	2	adv	1	6
233.113.007.011.002.002	EARLY	2	adj	5	6
234.115.001.017.001.001	EASY	1	adj	3	3
235.116.001.025.001.001	EAT	1	v obj	4	4
236.117.001.012.001.001	EFFECT	1	n	13	13
240.118.006.006.001.001	EIGHT	1	adj	7	7
241.119.004.005.001.001	EITHER	1	conj	4	4
247.120.001.044.001.002	END	2	n	12	14
247.120.006.044.002.002	END	2	n	2	14
249.121.001.013.001.002	ENGLISH	2	adj	1	2
249.121.002.013.002.002	ENGLISH	2	adj	1	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
251.122.001.005.001.002	ENOUGH	2	adj	4	6
251.122.003.005.002.002	ENOUGH	2	adv	2	6
252.123.001.017.001.001	ENTER	1	v wo obj	2	2
253.124.001.014.001.002	EQUAL	2	adj	11	25
253.124.002.014.002.002	EQUAL	2	adj	14	25
254.125.001.020.001.002	ESCAPE	2	v wo obj	3	4
254.125.007.020.002.002	ESCAPE	2	v obj	1	4
255.126.015.026.001.001	EVEN	1	adv	11	11
258.127.003.007.001.001	EVER	1	adv	2	2
259.128.001.006.001.001	EVERY	1	adj	9	9
260.129.001.007.001.001	EXAMPLE	1	n	62	62
261.130.001.005.001.002	EXCEPT	2	prep	2	3
261.130.005.005.002.002	EXCEPT	2	id	1	3
263.131.004.014.001.001	EXERCISE	1	n	24	24
264.132.001.005.001.001	EXIST	1	v wo obj	5	5
265.133.002.005.001.002	EXPECT	2	v obj	1	3
265.133.003.005.002.002	EXPECT	2	v obj	2	3
268.134.001.004.001.001	EXPERIMENT	1	n	14	14
269.135.001.006.001.002	EXPLAIN	2	v obj	55	60
269.135.003.006.002.002	EXPLAIN	2	v obj	5	60
270.136.004.020.001.001	EXPRESS	1	v obj	5	5
272.137.001.054.001.002	EYE	2	n	3	9
272.137.012.054.002.002	EYE	2	n	6	9
273.138.017.055.001.002	FACE	2	n	7	8
273.138.037.055.002.002	FACE	2	v wo obj	1	8
274.139.001.008.001.002	FACT	2	n	5	12
274.139.008.008.002.002	FACT	2	id	7	12
279.140.019.072.001.002	FALL	2	v wo obj	1	2
279.140.072.002.001.002	FALL	2	n	1	2
280.141.001.010.001.001	FAMILIAR	1	adj	5	5
281.143.001.006.001.002	FEW	2	adj	9	10
281.143.004.006.002.002	FEW	2	pro	1	10

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
283.142.001.022.001.004	FAR	4	adv	3	8
283.142.005.022.002.004	FAR	4	adj	2	8
283.142.019.022.003.004	FAR	4	id	2	8
283.142.022.022.004.004	FAR	4	id	1	8
285.145.028.038.001.002	FIGURE	2	n	125	126
285.145.036.038.002.002	FIGURE	2	id	1	126
292.144.004.040.001.002	FIELD	2	n	1	2
292.144.030.040.002.002	FIELD	2	adj	1	2
295.146.001.032.001.002	FILL	2	v obj	3	4
295.146.028.032.001.002	FILL	2	id	1	4
296.147.002.020.001.006	FIND	6	v obj	4	18
296.147.004.020.002.006	FIND	6	v obj	5	18
296.147.006.020.003.006	FIND	6	v obj	2	18
296.147.008.020.004.006	FIND	6	v obj	1	18
296.147.009.020.005.006	FIND	6	v obj	3	18
296.147.018.020.006.006	FIND	6	phr v	3	18
297.148.003.029.001.001	FINE	1	adj	2	2
299.149.001.057.001.001	FIRE	1	n	2	2
300.150.001.021.001.003	FIRST	3	adj	14	31
300.150.005.021.002.003	FIRST	3	adv	14	31
300.150.010.021.001.003	FIRST	3	n	3	31
301.151.001.026.001.001	FISH	1	n	2	2
303.152.006.007.001.001	FIVE	1	adj	6	6
305.153.001.021.001.002	FLOOR	2	n	1	5
305.153.002.021.002.002	FLOOR	2	n	4	5
306.154.003.023.001.002	FLOW	2	v wo obj	3	11
306.154.023.023.002.002	FLOW	2	n	8	11
309.155.001.026.001.002	FOLLOW	2	v wo obj	1	2
309.155.004.026.002.002	FOLLOW	2	v wo obj	4	2
310.156.001.005.001.001	FOOD	1	n	10	10

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
311.157.001.034.001.007	FOR	7	prep	19	335
311.157.002.034.002.007	FOR	7	prep	203	335
311.157.003.034.003.007	FOR	7	prep	22	335
311.157.009.034.004.007	FOR	7	prep	18	335
311.157.011.034.005.007	FOR	7	prep	56	335
311.157.025.034.006.007	FOR	7	prep	3	335
311.157.026.034.007.007	FOR	7	prep	14	335
316.158.012.036.001.002	FORCE	2	n	13	14
316.158.035.036.002.002	FORCE	2	id	1	14
316.159.006.044.001.003	FORM	3	n	15	64
316.159.032.044.002.003	FORM	3	v obj	44	64
316.159.043.044.003.003	FORM	3	v wo obj	5	64
321.160.001.008.001.002	FOUR	2	n	5	26
321.160.007.008.002.002	FOUR	2	adj	21	26
323.161.008.049.001.003	FREE	3	adj	1	17
323.161.026.049.002.003	FREE	3	adj	15	17
323.161.034.049.003.003	FREE	3	adj	1	17
325.162.001.007.001.003	FROM	3	prep	7	214
325.162.002.007.002.003	FROM	3	prep	11	214
325.162.005.007.003.003	FROM	3	prep	196	214
327.163.001.021.001.003	FULL	3	adj	2	7
327.163.002.021.002.003	FULL	3	adj	1	7
327.163.003.021.003.003	FULL	3	adj	4	7
328.164.002.003.001.001	FURNISH	1	v obj	3	3
329.165.001.008.001.001	FUTURE	1	n	2	2
330.166.002.019.001.002	GAIN	2	v obj	5	16
330.166.013.019.002.002	GAIN	2	n	11	16
333.167.001.018.001.003	GAS	3	n	83	90
333.167.003.018.002.003	GAS	3	n	6	90
333.167.004.018.003.003	GAS	3	n	1	90
336.168.004.012.001.002	GENERAL	2	adj	12	15
336.168.012.012.002.002	GENERAL	2	id	5	15

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
338.169.002.063.001.007	GET	7	v obj	2	11
338.169.004.063.002.007	GET	7	v obj	2	11
338.169.020.063.003.007	GET	7	v wo obj	2	11
338.169.022.063.004.007	GET	7	v wo obj	1	11
338.169.028.063.005.007	GET	7	v wo obj	2	11
338.169.038.063.006.007	GET	7	phr v	1	11
338.169.062.063.007.007	GET	7	id	2	11
341.170.008.056.001.004	GIVE	4	v obj	7	21
341.170.013.056.002.004	GIVE	4	v obj	9	21
341.170.047.056.003.004	GIVE	4	phr v	4	21
341.170.050.056.004.004	GIVE	4	phr v	1	21
343.171.001.017.001.002	GLASS	2	n	3	4
343.171.009.017.002.002	GLASS	2	n	1	4
344.172.001.098.001.002	GO	2	v wo obj	5	6
344.172.057.098.002.002	GO	2	phr v	1	6
346.173.001.014.001.001	GOLD	1	n	5	5
347.174.011.058.001.002	GOOD	2	adj	1	9
347.174.012.058.002.002	GOOD	2	adj	8	9
348.175.001.023.001.002	GREAT	2	adj	3	4
348.175.006.023.002.002	GREAT	2	adj	1	4
349.176.018.033.001.001	GREEN	1	n	3	3
350.177.001.055.001.003	GROUND	3	n	2	7
350.177.005.055.002.003	GROUND	3	n	4	7
350.177.007.055.003.003	GROUND	3	n	1	7
351.178.002.014.001.001	GROUP	1	n	27	27
356.181.001.007.001.001	HAPPEN	1	v wo obj	2	2
358.182.003.058.001.002	HARD	2	adj	2	16
358.182.030.058.002.002	HARD	2	adj	14	16
360.183.001.038.001.006	HAVE	6	v obj	42	106
360.183.004.038.002.006	HAVE	6	v obj	3	106
360.183.009.038.003.006	HAVE	6	v obj	13	106
360.183.025.038.004.006	HAVE	6	aux v	44	106
360.183.026.038.005.006	HAVE	6	aux v	3	106
360.183.037.038.006.006	HAVE	6	id	1	106
361.184.001.004.001.001	HE	1	pro	17	17
362.185.007.084.001.001	HEAD	1	n	2	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
365.186.003.025.001.002	HEAT	2	n	62	63
365.186.021.025.002.002	HEAT	2	v obj	1	63
366.179.001.020.001.002	HALF	2	n	7	9
366.179.009.020.002.002	HALF	2	adj	2	9
367.187.026.034.001.001	HEAVY	1	adj	3	3
368.180.004.092.001.002	HAND	2	n	1	8
368.180.076.092.002.002	HAND	2	id	7	8
368.188.003.023.001.003	HELP	3	v obj	5	8
368.188.012.023.002.003	HELP	3	n	1	8
368.188.013.023.003.003	HELP	3	n	2	8
369.189.001.018.001.002	HERE	2	adv	3	5
369.189.010.018.002.002	HERE	2	adj	2	5
370.190.004.045.001.001	HIGH	1	adj	28	28
371.191.002.011.001.001	HILL	1	n	5	5
372.192.004.008.001.001	HISTORY	1	n	4	4
373.193.004.058.001.002	HOLD	2	v obj	2	3
373.193.033.058.002.002	HOLD	2	n	1	3
378.194.001.037.001.001	HOT	1	adj	7	7
381.195.001.022.001.002	HOW	2	adv	81	142
381.195.012.022.002.002	HOW	2	conj	61	142
382.196.001.005.001.001	HOWEVER	1	adv	43	43
386.198.001.009.001.001	IDEA	1	n	5	5
387.199.001.008.001.001	IF	1	conj	65	65
389.200.001.007.001.002	IMPORTANT	2	adj	33	41
389.200.002.007.002.002	IMPORTANT	2	adj	8	41
390.201.001.034.001.007	IN	7	prep	337	950
390.201.003.034.002.007	IN	7	prep	330	950
390.201.005.034.003.007	IN	7	prep	7	950
390.201.006.034.004.007	IN	7	prep	13	950
390.201.007.034.005.007	IN	7	prep	174	950
390.201.009.034.006.007	IN	7	adv	78	950
390.201.033.034.007.007	IN	7	id	11	950
392.202.001.003.001.001	INCLUDE	1	v obj	11	11

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
393.203.001.011.001.003	INCREASE	3	v obj	2	22
393.203.002.011.002.003	INCREASE	3	v obj	5	22
393.203.009.011.003.003	INCREASE	3	n	15	22
395.204.001.023.001.002	INDEPENDENT	2	adj	3	5
395.204.004.023.002.002	INDEPENDENT	2	adj	2	5
396.205.001.008.001.001	INDUSTRY	1	n	2	2
398.197.001.005.001.001	HUMAN	1	adj	3	3
398.206.001.003.001.002	INSTEAD	2	adv	3	5
398.206.003.003.002.002	INSTEAD	2	id	5	5
400.207.001.012.001.003	INTO	3	prep	18	66
400.207.004.012.002.003	INTO	3	prep	3	66
400.207.006.012.003.003	INTO	3	prep	45	66
402.208.001.030.001.001	IRON	1	n	50	50
403.209.001.017.001.001	IT	1	pro	161	161
409.210.005.013.002.003	JUST	3	adv	5	10
409.210.009.013.001.003	JUST	3	adv	2	10
409.210.012.013.003.003	JUST	3	adv	3	10
413.211.006.013.001.001	KIND	1	n	3	3
415.212.001.012.001.001	KNOW	1	v obj	13	13
421.213.001.014.001.001	LARGE	1	adj	25	25
422.214.002.019.001.002	LAST	2	adj	1	2
422.214.004.019.002.002	LAST	2	adj	1	2
423.215.008.013.001.001	LATE	1	adj	2	2
427.216.015.027.001.001	LAW	1	n	36	36
429.217.020.072.001.002	LEAD	2	v wo obj	4	11
429.217.057.072.002.002	LEAD	2	n	7	11
430.218.001.008.001.001	LEARN	1	v obj	19	19
431.219.001.024.001.004	LEAVE	4	v obj	1	4
431.219.004.024.002.004	LEAVE	4	v obj	1	4
431.219.005.024.003.004	LEAVE	4	v obj	1	4
431.219.018.024.004.004	LEAVE	4	phr v	1	4
432.220.001.011.001.004	LEFT	4	adj	13	31
432.220.004.011.002.004	LEFT	4	n	7	31
432.220.010.011.003.004	LEFT	4	adv	3	31
432.220.011.011.004.004	LEFT	4	v obj	8	31
433.221.001.017.001.001	LENGTH	1	n	15	15

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
434.222.001.010.001.004	LESS	4	adv	2	12
434.222.004.010.002.004	LESS	4	adj	2	12
434.222.006.010.003.004	LESS	4	adj	1	12
434.222.010.010.004.004	LESS	4	id	7	12
435.223.006.019.001.001	LET	1	v obj	8	8
436.224.002.012.001.001	LETTER	1	n	3	3
437.225.002.037.001.004	LEVEL	4	adj	1	25
437.225.014.037.002.004	LEVEL	4	n	1	25
437.225.015.037.003.004	LEVEL	4	n	22	25
437.225.016.037.004.004	LEVEL	4	n	1	25
439.226.013.027.001.002	LIE	2	v wo obj	1	3
439.226.017.027.002.002	LIE	2	v wo obj	2	3
440.227.001.036.001.001	LIFE	1	n	9	9
442.228.002.045.001.002	LIGHT	2	n	21	22
442.228.027.045.002.002	LIGHT	2	v obj	1	22
443.229.001.029.001.003	LIKE	3	adj	5	18
443.229.006.029.002.003	LIKE	3	prep	7	18
443.229.019.029.003.003	LIKE	3	conj	6	18
444.230.001.005.001.001	LIKELY	1	adj	5	5
446.231.001.082.001.004	LINE	4	n	6	10
446.231.003.082.002.004	LINE	4	n	1	10
446.231.005.082.003.004	LINE	4	n	2	10
446.231.057.082.004.004	LINE	4	v obj	1	10
450.232.001.024.001.003	LITTLE	3	adj	3	8
450.232.003.024.002.003	LITTLE	3	adj	3	8
450.232.004.024.003.003	LITTLE	3	adj	2	8
453.233.001.039.001.001	LONG	2	adj	2	4
453.233.003.039.001.002	LONG	2	adj	2	4
454.234.001.036.001.004	LOOK	4	v wo obj	7	15
454.234.012.036.002.004	LOOK	4	v obj	2	15
454.234.016.036.003.004	LOOK	4	n	2	15
454.234.031.036.004.004	LOOK	4	phr v	3	15
456.235.008.028.001.001	LOSE	1	v obj	7	7
457.236.003.015.001.001	LOSS	1	n	11	11
459.237.011.051.001.001	LOW	1	adj	8	8
461.238.001.014.001.001	MAIN	1	adj	8	8

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
462.239.001.084.001.006	MAKE	6	v obj	7	31
462.239.002.084.002.006	MAKE	6	v obj	15	31
462.239.008.084.003.006	MAKE	6	v obj	3	31
462.239.039.084.004.006	MAKE	6	v wo obj	2	31
462.239.057.084.005.006	MAKE	6	phr v	1	31
462.239.063.084.006.006	MAKE	6	phr v	9	31
464.240.001.013.001.001	MANNER	1	n	2	2
466.241.001.005.001.002	MANY	2	adj	51	57
466.241.005.005.002.002	MANY	2	pro	6	57
470.242.008.017.001.001	MASS	1	n	191	191
473.243.001.024.001.001	MATTER	1	n	10	10
476.244.001.040.001.002	MEASURE	2	n	4	19
476.244.023.040.002.002	MEASURE	2	v obj	15	19
482.245.001.011.001.001	METAL	1	n	30	30
484.246.002.008.001.001	MIGHT	1	aux v	10	10
486.247.001.010.001.001	MILK	1	n	4	4
487.248.001.008.001.001	MILLION	1	n	4	4
494.249.001.009.001.001	MODERN	1	adj	7	7
499.250.001.016.001.002	MOON	2	n	2	3
499.250.004.016.002.002	MOON	2	n	1	3
501.251.001.011.001.004	MORE	4	adj	24	64
501.251.003.011.002.004	MORE	4	n	3	64
501.251.004.011.003.004	MORE	4	n	9	64
501.251.007.011.004.004	MORE	4	adv	28	64
504.252.001.014.001.003	MOST	3	adj	8	36
504.252.004.014.002.003	MOST	3	n	7	36
504.252.009.014.003.003	MOST	3	adv	21	36
506.253.001.013.001.001	MOTOR	1	n	10	10
509.254.001.036.001.002	MOVE	2	v wo obj	23	25
509.254.012.036.002.002	MOVE	2	v obj	2	25
511.255.001.007.001.003	MUCH	3	adj	16	30
511.255.002.007.002.003	MUCH	3	n	2	30
511.255.004.007.003.003	MUCH	3	adv	11	30
513.256.001.013.001.001	MUST	1	aux v	53	53

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
516.257.001.028.001.002	NAME	2	n	44	46
516.257.015.028.002.002	NAME	2	v obj	2	46
518.258.001.023.001.001	NEAR	1	adv	4	4
519.259.001.004.001.001	NECESSARY	1	adj	7	7
521.260.001.012.001.003	NEED	3	n	1	2
521.260.008.012.002.003	NEED	3	v obj	2	2
521.260.009.012.003.003	NEED	3	v wo obj	10	2
523.261.001.004.001.001	NEITHER	1	conj	5	5
525.262.001.015.001.001	NEW	1	adj	20	20
528.263.001.009.001.002	NEXT	2	adj	5	6
528.263.009.009.002.002	NEXT	2	id	1	6
530.264.007.008.001.001	NINE	1	adj	2	2
531.265.001.011.001.001	NO	1	adv	22	22
532.266.009.013.001.001	NOBLE	1	adj	12	12
534.267.001.006.001.001	NOR	1	conj	5	5
535.271.001.014.001.001	OBJECT	1	n	9	9
537.268.001.032.001.002	NOTE	2	n	1	36
537.268.028.032.002.002	NOTE	2	v obj	35	36
538.269.009.013.001.001	NOTICE	1	v obj	7	7
539.270.001.013.001.001	NOW	1	adv	13	13
544.272.003.012.001.001	OBSERVE	1	v obj	7	7
546.273.001.017.001.004	OF	4	prep	106	1928
546.273.004.017.002.004	OF	4	prep	959	1928
546.273.008.017.003.004	OF	4	prep	471	1928
546.273.008.017.004.004	OF	4	prep	392	1928
547.274.001.056.001.001	OFF	1	adv	2	2
551.275.002.002.001.001	OFTEN	1	adv	26	26
553.276.001.018.001.003	OIL	3	n	11	15
553.276.003.018.002.003	OIL	3	n	3	15
553.276.015.018.003.003	OIL	3	adj	1	15
554.277.006.028.001.001	OLD	1	adj	2	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
555.278.001.049.001.006	ON	6	prep	46	179
555.278.002.049.002.006	ON	6	prep	14	179
555.278.004.049.003.006	ON	6	prep	108	179
555.278.005.049.004.006	ON	6	prep	4	179
555.278.006.049.005.006	ON	6	prep	4	179
555.278.026.049.006.006	ON	6	prep	3	179
556.279.001.015.001.001	ONCE	1	adv	6	6
557.280.001.027.001.005	ONE	5	adj	87	145
557.280.010.027.002.005	ONE	5	n	16	145
557.280.012.027.003.005	ONE	5	n	8	145
557.280.016.027.004.005	ONE	5	pro	32	145
557.280.018.027.005.005	ONE	5	pro	2	145
558.281.001.010.001.001	ONLY	1	adv	53	53
559.282.005.088.001.002	OPEN	2	adj	1	2
559.282.011.088.002.002	OPEN	2	adj	1	2
563.283.001.006.001.002	OR	2	conj	170	171
563.283.002.006.002.002	OR	2	conj	1	171
564.284.004.056.001.003	ORDER	3	n	5	10
564.284.051.056.002.003	ORDER	3	id	4	10
564.284.055.056.003.003	ORDER	3	id	1	10
565.285.001.017.001.001	ORDINARY	1	adj	6	6
567.286.001.012.001.004	OTHER	4	adj	47	73
567.286.004.012.002.004	OTHER	4	adj	10	73
567.286.008.012.003.004	OTHER	4	n	12	73
567.286.011.012.004.004	OTHER	4	adv	4	73
570.287.001.076.001.001	OUT	1	adv	7	7
571.288.001.061.001.005	OVER	5	prep	1	9
571.288.016.061.002.005	OVER	5	prep	2	9
571.288.018.061.003.005	OVER	5	prep	4	9
571.288.023.061.004.005	OVER	5	adv	1	9
571.288.034.061.005.005	OVER	5	adv	1	9
573.289.001.011.001.001	OWN	1	adj	3	3
574.290.001.016.001.001	PAGE	1	n	11	11
575.291.001.016.001.001	PAINT	1	n	5	5
576.292.001.035.001.001	PAPER	1	n	7	7

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
577.293.001.039.001.001	PART	1	n	9	9
578.294.001.013.001.001	PARTICULAR	1	adj	8	8
581.295.002.018.001.002	PAST	2	adj	2	3
581.295.013.018.002.002	PAST	2	adv	1	3
584.296.002.013.001.002	PEOPLE	2	n	7	8
584.296.004.013.002.002	PEOPLE	2	n	1	8
585.297.001.004.001.001	PER	1	prep	15	15
588.298.001.015.001.001	PERSON	1	n	6	6
589.299.001.016.001.001	PICTURE	1	n	2	2
590.300.001.033.001.001	PIECE	1	n	7	7
591.301.001.050.001.005	PLACE	5	n	1	27
591.301.003.050.002.005	PLACE	5	n	3	27
591.301.025.050.003.005	PLACE	5	n	1	27
591.301.030.050.004.005	PLACE	5	v obj	11	27
591.301.050.050.005.005	PLACE	5	id	11	27
594.302.001.029.001.002	PLANT	2	n	3	5
594.302.004.029.002.002	PLANT	2	n	2	5
595.303.024.093.001.002	PLAY	2	v obj	1	2
595.303.045.093.002.002	PLAY	2	v wo obj	1	2
597.304.009.050.001.005	POINT	5	n	1	79
597.304.011.050.002.005	POINT	5	n	67	79
597.304.014.050.003.005	POINT	5	n	8	79
597.304.017.050.004.005	POINT	5	n	2	79
597.304.046.050.005.005	POINT	5	v wo obj	1	79
599.305.006.017.001.001	POOR	1	adj	6	6
602.306.001.018.001.001	POSITION	1	n	19	19
604.307.001.002.001.001	POSSIBLE	1	adj	16	16
608.308.017.032.001.003	POWER	3	n	3	7
608.308.019.032.002.003	POWER	3	n	2	7
608.308.021.032.003.003	POWER	3	v obj	2	7
609.309.001.005.001.001	PREPARE	1	v obj	6	6
610.310.006.016.001.001	PRESENT	1	adj	26	26
613.311.002.011.001.002	PRESSURE	2	n	74	75
613.311.005.011.001.002	PRESSURE	2	n	1	75
615.312.001.006.001.001	PREVENT	1	v obj	3	3

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
618.313.003.006.001.001	PROBLEM	1	n	36	36
619.314.001.014.001.001	PRODUCE	1	v obj	30	30
620.315.004.005.001.001	PRODUCT	1	n	19	19
625.316.001.018.001.002	PROPER	2	adj	1	3
625.316.009.018.002.002	PROPER	2	adj	2	3
626.317.006.010.001.001	PROPERTY	1	n	9	9
627.318.001.009.001.001	PROPOSE	1	v obj	3	3
630.319.001.008.001.001	PROVIDE	1	v obj	9	9
634.320.001.011.001.001	PURPOSE	1	n	2	2
637.321.001.009.001.001	QUANTITY	1	n	6	6
640.322.002.020.001.002	QUESTION	2	n	6	7
640.322.019.020.002.002	QUESTION	2	id	1	7
641.323.001.003.001.001	QUITE	1	adv	4	4
645.324.002.027.001.001	RATE	1	n	20	20
646.325.001.009.001.002	RATHER	2	adv	2	9
646.325.007.009.002.002	RATHER	2	adv	7	9
647.326.002.029.001.001	REACH	1	v obj	6	6
648.327.001.047.001.002	READ	2	v obj	19	22
648.327.015.047.002.002	READ	2	v obj	3	22
650.328.002.016.001.001	REAL	1	adj	5	5
653.329.001.004.001.001	REALLY	1	adv	2	2
653.330.001.019.001.001	REASON	1	n	3	3
658.331.001.027.001.001	RECORD	1	v obj	13	13
659.332.001.015.001.002	RED	2	n	2	13
659.332.007.015.002.002	RED	2	adj	11	13
660.333.001.021.001.001	REDUCE	1	v obj	4	4
664.334.005.011.001.001	RELATIVE	1	adj	18	18
666.335.001.007.001.001	REMAIN	1	v wo obj	4	4
668.336.001.010.001.001	REMEMBER	1	v obj	6	6
670.337.001.025.001.002	REPORT	2	n	1	3
670.337.012.025.002.002	REPORT	2	v obj	2	3
671.338.002.016.001.001	REPRESENT	1	v obj	11	11
675.339.038.043.001.002	REST	2	id	1	2
675.339.040.043.002.002	REST	2	n	1	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
676.340.001.006.001.002	RESULT	2	v wo obj	1	16
676.340.003.006.002.002	RESULT	2	n	15	16
677.341.005.045.001.001	RETURN	1	v obj	3	3
679.356.024.025.001.002	SENSE	2	id	1	4
679.356.025.025.002.002	SENSE	2	id	3	4
680.342.003.062.001.003	RIGHT	3	adj	3	23
680.342.028.062.002.003	RIGHT	3	n	10	23
680.342.046.062.003.003	RIGHT	3	adv	10	23
681.343.001.064.001.002	RING	2	n	1	4
681.343.017.064.002.002	RING	2	n	3	4
682.344.007.055.001.001	RISE	1	v wo obj	2	2
687.345.001.009.001.001	ROOM	1	n	9	9
691.346.001.024.001.001	RULE	1	n	12	12
692.347.001.179.001.003	RUN	3	v wo obj	1	3
692.347.039.179.002.003	RUN	3	v wo obj	1	3
692.347.073.179.003.003	RUN	3	v obj	1	3
696.348.001.024.001.003	SALT	3	n	7	10
696.348.003.024.002.003	SALT	3	n	2	10
696.348.018.024.003.003	SALT	3	adj	1	10
697.349.003.010.001.002	SAME	2	adj	39	51
697.349.006.010.002.002	SAME	2	pro	12	51
700.350.001.017.001.001	SAY	1	v obj	5	5
704.351.001.007.001.001	SCIENCE	1	n	7	7
705.352.001.016.001.002	SEA	2	n	2	6
705.352.008.016.002.002	SEA	2	n	4	6
708.353.001.034.001.002	SECOND	2	adj	8	9
708.353.030.034.002.002	SECOND	2	adv	1	9
711.354.001.034.001.002	SEE	2	v obj	24	37
711.354.005.034.002.002	SEE	2	v obj	13	37
712.355.001.005.001.001	SEEM	1	v wo obj	2	2
717.357.001.022.001.002	SEPARATE	2	v obj	4	6
717.357.013.022.002.002	SEPARATE	2	adj	2	6
721.058.020.119.001.003	SET	3	v obj	1	10
721.058.068.119.002.003	SET	3	n	7	10
721.058.115.119.003.003	SET	3	id	2	10
723.359.006.006.001.001	SEVEN	1	adj	8	8

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
724.360.001.006.001.002	SEVERAL	2	adj	17	18
724.360.005.006.002.002	SEVERAL	2	n	1	18
726.361.008.046.001.001	SHAKE	1	v obj	2	2
728.362.001.023.001.001	SHAPE	1	n	3	3
729.363.004.008.001.001	SHARE	1	v obj	5	5
736.364.003.004.001.001	SHOULD	1	aux v	18	18
738.365.007.041.001.001	SHOW	1	v obj	5	5
739.366.004.029.002.002	SIDE	2	n	14	16
739.366.027.029.002.002	SIDE	2	id	2	16
741.367.005.030.001.002	SIGN	2	n	1	6
741.367.014.030.002.002	SIGN	2	n	5	6
743.368.001.021.001.001	SILVER	1	n	13	13
744.369.001.027.001.002	SIMPLE	2	adj	7	12
744.369.017.027.002.002	SIMPLE	2	adj	5	12
745.370.008.008.001.001	SINCE	1	conj	34	34
747.371.001.030.001.001	SINGLE	1	adj	17	17
751.372.001.007.001.001	SITUATION	1	n	7	7
752.373.001.009.001.001	SIX	1	adj	6	6
753.374.001.016.001.002	SIZE	2	n	24	25
753.374.012.016.002.002	SIZE	2	phr v	1	25
756.375.001.026.001.002	SMALL	2	adj	21	38
756.375.005.026.002.002	SMALL	2	adj	17	38
759.376.001.031.001.004	SO	4	adv	9	37
759.376.002.031.002.004	SO	4	adv	16	37
759.376.004.031.003.004	SO	4	adv	10	37
759.376.019.031.004.004	SO	4	conj	2	37
761.377.001.013.001.001	SOCIETY	1	n	7	7
762.378.001.038.001.002	SOFT	2	adj	2	7
762.378.019.038.002.002	SOFT	2	adj	5	7
764.397.002.010.001.003	SOME	3	adj	34	48
764.397.003.010.002.003	SOME	3	adj	2	48
764.397.006.010.003.003	SOME	3	pro	12	48

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
771.380.002.024.001.003	SPACE	3	n	4	6
771.380.003.024.002.003	SPACE	3	n	1	6
771.380.023.024.003.003	SPACE	3	adj	1	6
773.381.001.013.001.001	SPECIAL	1	adj	2	2
774.382.001.022.001.002	SPEED	2	n	3	5
774.382.011.022.002.002	SPEED	2	v obj	2	5
779.383.005.041.001.002	SPREAD	2	v obj	2	3
779.383.018.041.002.002	SPREAD	2	v wo obj	1	3
783.384.001.066.001.002	STAND	2	v wo obj	1	2
783.384.015.066.001.002	STAND	2	v wo obj	1	2
784.385.001.028.001.002	STANDARD	2	n	3	24
784.385.023.028.002.002	STANDARD	2	adj	21	24
786.386.008.030.001.002	START	2	v obj	3	4
786.386.017.030.002.002	START	2	n	1	4
787.387.002.024.001.001	STATE	1	n	66	66
790.388.001.012.001.001	STEEL	1	n	12	12
791.389.010.045.001.001	STEP	1	n	13	13
792.390.010.023.001.001	STILL	1	adv	13	13
793.391.043.061.001.001	STOCK	1	adj	2	2
795.392.016.046.001.001	STOP	1	v wo obj	3	3
796.393.002.016.001.002	STORE	2	n	1	2
796.393.009.016.002.002	STORE	2	v obj	1	2
798.394.002.005.001.001	STRANGE	1	adj	2	2
801.395.009.013.001.001	STRENGTH	1	n	3	3
803.396.002.030.001.002	STRONG	2	adj	8	26
803.396.020.030.002.002	STRONG	2	adj	18	26
805.397.001.002.001.001	STUDENT	1	n	4	4
806.398.005.026.001.002	STUDY	2	n	2	6
806.398.020.026.002.002	STUDY	2	v obj	4	6
808.399.001.014.001.001	SUBSTANCE	1	n	24	24
810.400.001.012.001.003	SUCH	3	adj	33	65
810.400.008.012.002.003	SUCH	3	adv	1	65
810.400.013.012.003.003	SUCH	3	id	31	65

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
812.401.001.005.001.002	SUGGEST	2	v obj	1	2
812.401.005.005.002.002	SUGGEST	2	v obj	1	2
814.402.001.017.001.001	SUN	1	n	6	6
817.403.004.019.001.002	SUPPORT	2	v obj	1	2
817.403.010.019.002.002	SUPPORT	2	n	1	2
818.404.001.007.001.001	SUPPOSE	1	v obj	7	7
819.405.014.016.001.002	SURE	2	adj	3	6
819.405.016.016.002.002	SURE	2	id	3	6
820.406.001.015.001.002	SURFACE	2	n	13	18
820.406.008.015.002.002	SURFACE	2	adj	5	18
825.407.001.016.001.002	SYSTEM	2	n	29	37
825.407.006.016.002.002	SYSTEM	2	n	8	37
826.408.009.026.001.002	TABLE	2	n	71	78
826.408.022.026.002.002	TABLE	2	adj	7	78
827.409.001.126.001.006	TAKE	6	v obj	1	14
827.409.003.126.002.006	TAKE	6	v obj	3	14
827.409.018.126.003.006	TAKE	6	v obj	1	14
827.409.032.126.004.006	TAKE	6	v obj	1	14
827.409.048.126.005.006	TAKE	6	v obj	2	14
827.409.051.126.006.006	TAKE	6	v obj	6	14
832.410.002.023.001.001	TELL	1	v obj	3	3
834.411.001.008.001.002	TEN	2	n	4	5
834.411.007.008.002.002	TEN	2	adj	1	5
835.412.001.018.001.002	TERM	2	n	4	6
835.412.008.018.002.002	TERM	2	n	2	6
836.413.004.016.001.004	TEST	4	n	3	50
836.413.006.016.002.004	TEST	4	n	40	50
836.413.009.016.003.004	TEST	4	v obj	4	50
836.413.010.016.004.004	TEST	4	v obj	2	50
837.414.001.006.001.003	THAN	3	conj	74	78
837.414.003.006.002.003	THAN	3	conj	3	78
837.414.004.006.003.003	THAN	3	conj	1	78
838.415.001.014.001.001	THE	1	art	3011	3011

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
839.416.001.012.001.006	THEN	6	adv	1	41
839.416.002.012.002.006	THEN	6	adv	4	41
839.416.003.012.003.006	THEN	6	adv	27	41
839.416.005.012.004.006	THEN	6	adv	2	41
839.416.007.012.005.006	THEN	6	adv	5	41
839.416.008.012.006.006	THEN	6	adv	2	41
840.417.007.012.001.001	THERE	1	pro	38	38
842.418.002.003.001.001	THEY	1	pro	61	61
844.419.002.027.001.001	THINK	1	v wo obj	10	10
845.420.001.004.001.001	THIRTEEN	1	n	2	2
847.421.001.010.001.003	THIS	3	pro	39	252
847.421.005.010.002.003	THIS	3	adj	212	252
847.421.009.010.003.003	THIS	3	adv	1	252
848.422.001.004.001.001	THOUGH	1	conj	2	2
850.423.001.006.001.003	THREE	3	n	1	34
850.423.003.006.002.003	THREE	3	n	2	34
850.423.005.006.003.003	THREE	3	adj	31	34
851.424.001.024.001.004	THROUGH	4	prep	9	22
851.424.004.024.002.004	THROUGH	4	prep	4	22
851.424.007.024.003.004	THROUGH	4	prep	4	22
851.424.008.024.004.004	THROUGH	4	prep	5	22
854.425.002.005.001.001	THUS	1	adv	47	47
856.426.001.064.001.003	TIME	3	n	2	19
856.426.004.064.002.003	TIME	3	n	16	19
856.426.014.064.003.003	TIME	3	n	1	19
857.427.001.027.001.007	TO	7	prep	80	821
857.427.002.027.002.007	TO	7	prep	227	821
857.427.004.027.003.007	TO	7	prep	117	821
857.427.008.027.004.007	TO	7	prep	304	821
857.427.012.027.005.007	TO	7	prep	59	821
857.427.020.027.006.007	TO	7	prep	11	821
857.427.022.027.007.007	TO	7	prep	23	821
858.428.002.005.001.001	TODAY	1	n	5	5
859.429.001.010.001.001	TOGETHER	1	adv	11	11

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
861.430.005.006.001.001	TOO	1	adv	4	4
862.431.001.050.001.001	TOP	1	n	3	3
863.432.001.010.001.002	TOTAL	2	adj	20	27
863.432.005.010.002.002	TOTAL	2	n	7	27
865.433.001.011.001.001	TOWARD	1	prep	9	9
874.434.001.017.001.001	TRY	1	v obj	2	2
876.435.106.122.001.002	TURN	2	phr v	1	2
876.435.114.122.002.002	TURN	2	id	1	2
877.436.005.005.001.001	TWELVE	1	adj	2	2
879.437.003.007.001.002	TWO	2	n	9	88
879.437.005.007.002.002	TWO	2	adj	79	88
880.438.002.020.001.001	TYPE	1	n	32	32
881.439.016.030.001.001	UNDER	1	prep	6	6
882.440.001.013.001.001	UNDERSTAND	1	v obj	4	4
887.441.001.005.001.001	UNTIL	1	conj	9	9
888.442.001.093.001.002	UP	2	adv	4	8
888.442.092.093.002.002	UP	2	id	4	8
889.443.006.006.001.001	UPON	1	prep	6	6
890.444.001.027.001.003	USE	3	v obj	66	79
890.444.012.027.002.003	USE	3	n	12	79
890.444.023.027.002.003	USE	3	phr v	1	79
893.445.007.018.001.001	VALUE	1	n	41	41
894.446.001.010.001.001	VARIETY	1	n	4	4
895.447.001.009.001.001	VARIOUS	1	adj	10	10
896.448.001.009.001.001	VERY	1	adv	46	46
899.449.006.022.001.001	VIEW	1	n	3	3
902.450.001.018.001.002	VISIT	2	v obj	1	8
902.450.008.018.002.002	VISIT	2	v obj	7	8
909.451.002.017.001.001	WANT	1	v obj	8	8
912.452.001.043.001.001	WATER	1	n	197	197
913.453.002.027.001.001	WAVE	1	n	3	3
914.454.001.043.001.001	WAY	1	n	16	16
915.455.003.009.001.001	WE	1	pro	115	115
917.456.001.027.001.001	WEAR	1	v obj	5	5

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
921.457.001.030.001.003	WELL	3	adv	5	7
921.457.002.030.002.003	WELL	3	adv	1	7
921.457.019.030.003.003	WELL	3	id	1	7
924.458.001.032.001.002	WHAT	2	pro	126	146
924.458.008.032.002.002	WHAT	2	pro	20	146
925.459.004.010.001.002	WHEN	2	conj	11	108
925.459.005.010.002.002	WHEN	2	conj	97	108
926.460.001.015.001.002	WHERE	2	adv	2	23
926.460.007.015.002.002	WHERE	2	conj	21	23
927.461.001.005.001.002	WHETHER	2	conj	8	11
927.461.002.005.002.002	WHETHER	2	conj	3	11
928.462.001.011.001.004	WHICH	4	pro	9	119
928.462.003.011.002.004	WHICH	4	pro	56	119
928.462.005.011.003.004	WHICH	4	pro	30	119
928.462.009.011.004.004	WHICH	4	adj	24	119
929.463.006.010.001.001	WHILE	1	conj	11	11
930.464.001.042.001.002	WHITE	2	adj	1	4
930.464.019.042.002.002	WHITE	2	n	3	4
932.465.001.013.001.002	WHOLE	2	adj	3	12
932.465.004.013.002.002	WHOLE	2	adj	9	12
933.466.001.007.001.002	WHY	2	adv	25	47
933.466.002.007.002.002	WHY	2	conj	22	47
934.467.001.018.001.001	WIDE	1	adj	2	2
937.468.001.025.001.002	WILL	2	aux v	108	112
937.468.008.025.002.002	WILL	2	aux v	2	112
944.469.003.021.001.001	WITH	1	prep	196	196
945.470.006.014.001.001	WITHIN	1	prep	13	13
946.471.001.011.001.001	WITHOUT	1	prep	2	2
949.472.001.017.001.002	WOOD	2	n	7	9
949.472.009.017.002.002	WOOD	2	adj	2	9
950.473.001.028.001.001	WORD	1	n	15	15

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
951.474.001.054.001.006	WORK	6	n	3	30
951.474.004.054.002.006	WORK	6	n	2	30
951.474.012.054.003.006	WORK	6	n	18	30
951.474.016.054.004.006	WORK	6	v obj	2	30
951.474.019.054.005.006	WORK	6	v obj	4	30
951.474.044.054.006.006	WORK	6	phr v	1	30
952.475.001.024.001.003	WORLD	3	n	1	13
952.475.004.024.002.003	WORLD	3	n	2	13
952.475.008.024.003.003	WORLD	3	n	10	13
954.476.001.011.001.001	WOULD	1	aux v	39	39
956.477.001.022.001.002	WRITE	2	v obj	20	22
956.477.021.022.002.002	WRITE	2	phr v	2	22
962.478.002.018.001.002	YIELD	2	v obj	2	12
962.478.016.018.002.002	YIELD	2	n	10	12
963.479.002.007.001.001	YOU	1	pro	227	227
964.480.001.011.001.001	YOUNG	1	adj	3	3

APPENDIX F: TARGET WORDS SORTED BY NUMBER OF MEANINGS

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
060.032.001.012.001.008	AT	8	prep	13	167
060.032.002.012.002.008	AT	8	prep	76	154
060.032.003.012.003.008	AT	8	prep	13	154
060.032.004.012.004.008	AT	8	prep	43	154
060.032.005.012.005.008	AT	8	prep	10	154
060.032.006.012.006.008	AT	8	prep	2	154
060.032.007.012.007.008	AT	8	prep	6	154
060.032.009.012.008.008	AT	8	prep	4	154
022.009.001.018.001.007	AFTER	7	prep	2	24
022.009.002.018.002.007	AFTER	7	prep	8	24
022.009.003.018.003.007	AFTER	7	prep	8	24
022.009.008.018.004.007	AFTER	7	prep	2	24
022.009.013.018.005.007	AFTER	7	adv	2	24
022.009.016.018.006.007	AFTER	7	conj	1	24
022.009.018.018.007.007	AFTER	7	id	1	24
116.056.006.035.001.007	BY	7	prep	1	233
116.056.009.035.002.007	BY	7	prep	3	233
116.056.011.035.003.007	BY	7	prep	4	233
116.056.012.035.004.007	BY	7	prep	3	233
116.056.013.035.005.007	BY	7	prep	220	233
116.056.017.035.006.007	BY	7	prep	1	233
116.056.019.035.007.007	BY	7	prep	1	233
311.157.001.034.001.007	FOR	7	prep	19	335
311.157.002.034.002.007	FOR	7	prep	203	335
311.157.003.034.003.007	FOR	7	prep	22	335
311.157.009.034.004.007	FOR	7	prep	18	335
311.157.011.034.005.007	FOR	7	prep	56	335
311.157.025.034.006.007	FOR	7	prep	3	335
311.157.026.034.007.007	FOR	7	prep	14	335
338.169.002.063.001.007	GET	7	v obj	2	11
338.169.004.063.002.007	GET	7	v obj	2	11
338.169.020.063.003.007	GET	7	v wo obj	2	11
338.169.022.063.004.007	GET	7	v wo obj	1	11
338.169.028.063.005.007	GET	7	v wo obj	2	11
338.169.038.063.006.007	GET	7	phr v	1	11
338.169.062.063.007.007	GET	7	id	2	11

adjective (adj), adverb (adv), article (art), auxiliary verb (aux v), conjunction(conj), idiom (id), noun (n), phrasal verb (phr v), preposition (prep), pronoun (pro), verb with object (v obj), verb without obj (v wo obj)

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
390.201.001.034.001.007	IN	7	prep	337	950
390.201.003.034.002.007	IN	7	prep	330	950
390.201.005.034.003.007	IN	7	prep	7	950
390.201.006.034.004.007	IN	7	prep	13	950
390.201.007.034.005.007	IN	7	prep	174	950
390.201.009.034.006.007	IN	7	adv	78	950
390.201.033.034.007.007	IN	7	id	11	950
857.427.001.027.001.007	TO	7	prep	80	821
857.427.002.027.002.007	TO	7	prep	227	821
857.427.004.027.003.007	TO	7	prep	117	821
857.427.008.027.004.007	TO	7	prep	304	821
857.427.012.027.005.007	TO	7	prep	59	821
857.427.020.027.006.007	TO	7	prep	11	821
857.427.022.027.007.007	TO	7	prep	23	821
296.147.002.020.001.006	FIND	6	v obj	4	18
296.147.004.020.002.006	FIND	6	v obj	5	18
296.147.006.020.003.006	FIND	6	v obj	2	18
296.147.008.020.004.006	FIND	6	v obj	1	18
296.147.009.020.005.006	FIND	6	v obj	3	18
296.147.018.020.006.006	FIND	6	phr v	3	18
360.183.001.038.001.006	HAVE	6	v obj	42	106
360.183.004.038.002.006	HAVE	6	v obj	3	106
360.183.009.038.003.006	HAVE	6	v obj	13	106
360.183.025.038.004.006	HAVE	6	aux v	44	106
360.183.026.038.005.006	HAVE	6	aux v	3	106
360.183.037.038.006.006	HAVE	6	id	1	106
462.239.001.084.001.006	MAKE	6	v obj	7	31
462.239.002.084.002.006	MAKE	6	v obj	15	31
462.239.008.084.003.006	MAKE	6	v obj	3	31
462.239.039.084.004.006	MAKE	6	v wo obj	2	31
462.239.057.084.005.006	MAKE	6	phr v	1	31
462.239.063.084.006.006	MAKE	6	phr v	9	31

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
555.278.001.049.001.006	ON	6	prep	46	179
555.278.002.049.002.006	ON	6	prep	14	179
555.278.004.049.003.006	ON	6	prep	108	179
555.278.005.049.004.006	ON	6	prep	4	179
555.278.006.049.005.006	ON	6	prep	4	179
555.278.026.049.006.006	ON	6	prep	3	179
827.409.001.126.001.006	TAKE	6	v obj	1	14
827.409.003.126.002.006	TAKE	6	v obj	3	14
827.409.018.126.003.006	TAKE	6	v obj	1	14
827.409.032.126.004.006	TAKE	6	v obj	1	14
827.409.048.126.005.006	TAKE	6	v obj	2	14
827.409.051.126.006.006	TAKE	6	v obj	6	14
839.416.001.012.001.006	THEN	6	adv	1	41
839.416.002.012.002.006	THEN	6	adv	4	41
839.416.003.012.003.006	THEN	6	adv	27	41
839.416.005.012.004.006	THEN	6	adv	2	41
839.416.007.012.005.006	THEN	6	adv	5	41
839.416.008.012.006.006	THEN	6	adv	2	41
951.474.001.054.001.006	WORK	6	n	3	30
951.474.004.054.002.006	WORK	6	n	2	30
951.474.012.054.003.006	WORK	6	n	18	30
951.474.016.054.004.006	WORK	6	v obj	2	30
951.474.019.054.005.006	WORK	6	v obj	4	30
951.474.044.054.006.006	WORK	6	phr v	1	30
057.031.001.031.001.005	AS	5	adv	64	265
057.031.004.031.002.005	AS	5	adv	22	265
057.031.005.031.003.005	AS	5	conj	6	265
057.031.016.031.004.005	AS	5	prep	156	265
057.031.017.031.005.005	AS	5	id	17	265
072.038.001.011.001.005	BE	5	v wo obj	38	222
072.038.003.011.002.005	BE	5	v wo obj	1	222
072.038.006.011.003.005	BE	5	v wo obj	32	222
072.038.008.011.004.005	BE	5	aux v	3	222
072.038.010.011.005.005	BE	5	aux v	148	222

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
557.280.001.027.001.005	ONE	5	adj	87	145
557.280.010.027.002.005	ONE	5	n	16	145
557.280.012.027.003.005	ONE	5	n	8	145
557.280.016.027.004.005	ONE	5	pro	32	145
557.280.018.027.005.005	ONE	5	pro	2	145
571.288.001.061.001.005	OVER	5	prep	1	9
571.288.016.061.002.005	OVER	5	prep	2	9
571.288.018.061.003.005	OVER	5	prep	4	9
571.288.023.061.004.005	OVER	5	adv	1	9
571.288.034.061.005.005	OVER	5	adv	1	9
591.301.001.050.001.005	PLACE	5	n	1	27
591.301.003.050.002.005	PLACE	5	n	3	27
591.301.025.050.003.005	PLACE	5	n	1	27
591.301.030.050.004.005	PLACE	5	v obj	11	27
591.301.050.050.005.005	PLACE	5	id	11	27
597.304.009.050.001.005	POINT	5	n	1	79
597.304.011.050.002.005	POINT	5	n	67	79
597.304.014.050.003.005	POINT	5	n	8	79
597.304.017.050.004.005	POINT	5	n	2	79
597.304.046.050.005.005	POINT	5	v wo obj	1	79
029.001.013.031.001.004	AIR	4	n	18	23
029.013.002.031.002.004	AIR	4	n	1	23
029.013.003.031.003.004	AIR	4	n	1	23
029.013.020.031.003.004	AIR	4	adj	3	23
046.026.001.009.001.004	ANY	4	adj	14	22
046.026.005.009.002.004	ANY	4	adj	5	22
046.026.007.009.002.004	ANY	4	pro	1	22
046.026.009.009.004.004	ANY	4	adv	2	22
063.033.001.015.001.004	AVERAGE	4	n	1	10
063.033.006.015.002.004	AVERAGE	4	adj	7	10
063.033.007.015.003.004	AVERAGE	4	adj	1	10
063.033.015.015.004.004	AVERAGE	4	id	1	10

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
065.035.006.067.001.004	BACK	4	n	1	7
065.035.060.067.002.004	BACK	4	adv	1	7
065.035.061.067.003.004	BACK	4	adv	4	7
065.035.066.067.004.004	BACK	4	id	1	7
087.046.001.018.001.004	BETWEEN	4	prep	38	63
087.046.002.018.002.004	BETWEEN	4	prep	1	63
087.046.003.018.003.004	BETWEEN	4	prep	13	63
087.046.007.018.004.004	BETWEEN	4	prep	11	63
105.054.001.122.001.004	BREAK	4	v obj	1	11
105.054.034.122.002.004	BREAK	4	v wo obj	3	11
105.054.078.122.003.004	BREAK	4	n	3	11
105.054.105.122.004.004	BREAK	4	phr v	4	11
131.065.001.038.001.004	CHANGE	4	v obj	2	66
131.065.002.038.002.004	CHANGE	4	v obj	1	66
131.065.009.038.003.004	CHANGE	4	v wo obj	4	66
131.065.019.038.004.004	CHANGE	4	n	59	66
143.072.027.075.001.004	CLOSE	4	adj	4	19
143.072.035.075.002.004	CLOSE	4	adj	1	19
143.072.056.075.003.004	CLOSE	4	adv	10	19
143.072.057.075.004.004	CLOSE	4	adv	4	19
213.105.002.057.001.004	DO	4	v obj	13	66
213.105.031.057.002.004	DO	4	v wo obj	1	66
213.105.032.057.003.004	DO	4	aux v	51	66
213.105.034.057.004.004	DO	4	aux v	1	66
225.109.001.074.001.004	DROP	4	n	3	7
225.109.010.074.002.004	DROP	4	n	1	7
225.109.033.074.003.004	DROP	4	v wo obj	2	7
225.109.035.074.004.004	DROP	4	v wo obj	1	7
283.142.001.022.001.004	FAR	4	adv	3	8
283.142.005.022.002.004	FAR	4	adj	2	8
283.142.019.022.003.004	FAR	4	id	2	8
283.142.022.022.004.004	FAR	4	id	1	8

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
341.170.008.056.001.004	GIVE	4	v obj	7	21
341.170.013.056.002.004	GIVE	4	v obj	9	21
341.170.047.056.003.004	GIVE	4	phr v	4	21
341.170.050.056.004.004	GIVE	4	phr v	1	21
431.219.001.024.001.004	LEAVE	4	v obj	1	4
431.219.004.024.002.004	LEAVE	4	v obj	1	4
431.219.005.024.003.004	LEAVE	4	v obj	1	4
431.219.018.024.004.004	LEAVE	4	phr v	1	4
432.220.001.011.001.004	LEFT	4	adj	13	31
432.220.004.011.002.004	LEFT	4	n	7	31
432.220.010.011.003.004	LEFT	4	adv	3	31
432.220.011.011.004.004	LEFT	4	v obj	8	31
434.222.001.010.001.004	LESS	4	adv	2	12
434.222.004.010.002.004	LESS	4	adj	2	12
434.222.006.010.003.004	LESS	4	adj	1	12
434.222.010.010.004.004	LESS	4	id	7	12
437.225.002.037.001.004	LEVEL	4	adj	1	25
437.225.014.037.002.004	LEVEL	4	n	1	25
437.225.015.037.003.004	LEVEL	4	n	22	25
437.225.016.037.004.004	LEVEL	4	n	1	25
446.231.001.082.001.004	LINE	4	n	6	10
446.231.003.082.002.004	LINE	4	n	1	10
446.231.005.082.003.004	LINE	4	n	2	10
446.231.057.082.004.004	LINE	4	v obj	1	10
454.234.001.036.001.004	LOOK	4	v wo obj	7	15
454.234.012.036.002.004	LOOK	4	v obj	2	15
454.234.016.036.003.004	LOOK	4	n	2	15
454.234.031.036.004.004	LOOK	4	phr v	3	15
501.251.001.011.001.004	MORE	4	adj	24	64
501.251.003.011.002.004	MORE	4	n	3	64
501.251.004.011.003.004	MORE	4	n	9	64
501.251.007.011.004.004	MORE	4	adv	28	64
546.273.001.017.001.004	OF	4	prep	106	1928
546.273.004.017.002.004	OF	4	prep	959	1928
546.273.008.017.003.004	OF	4	prep	471	1928
546.273.008.017.004.004	OF	4	prep	392	1928

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
567.286.001.012.001.004	OTHER	4	adj	47	73
567.286.004.012.002.004	OTHER	4	adj	10	73
567.286.008.012.003.004	OTHER	4	n	12	73
567.286.011.012.004.004	OTHER	4	adv	4	73
759.376.001.031.001.004	SO	4	adv	9	37
759.376.002.031.002.004	SO	4	adv	16	37
759.376.004.031.003.004	SO	4	adv	10	37
759.376.019.031.004.004	SO	4	conj	2	37
836.413.004.016.001.004	TEST	4	n	3	50
836.413.006.016.002.004	TEST	4	n	40	50
836.413.009.016.003.004	TEST	4	v obj	4	50
836.413.010.016.004.004	TEST	4	v obj	2	50
851.424.001.024.001.004	THROUGH	4	prep	9	22
851.424.004.024.002.004	THROUGH	4	prep	4	22
851.424.007.024.003.004	THROUGH	4	prep	4	22
851.424.008.024.004.004	THROUGH	4	prep	5	22
928.462.001.011.001.004	WHICH	4	pro	9	119
928.462.003.011.002.004	WHICH	4	pro	56	119
928.462.005.011.003.004	WHICH	4	pro	30	119
928.462.009.011.004.004	WHICH	4	adj	24	119
002.002.001.021.001.003	ABOUT	3	prep	36	74
002.002.003.021.002.003	ABOUT	3	prep	36	74
002.002.004.021.003.003	ABOUT	3	prep	2	74
003.003.001.023.001.003	ABOVE	3	adv	4	8
003.003.002.023.002.003	ABOVE	3	adv	3	8
003.003.004.023.003.003	ABOVE	3	adv	1	8
026.011.011.016.001.003	AGENT	3	n	38	41
026.011.012.016.002.003	AGENT	3	n	2	41
026.011.013.016.003.003	AGENT	3	n	1	41
030.014.002.039.001.003	ALL	3	adj	56	67
030.014.009.039.002.003	ALL	3	pro	6	67
030.014.014.039.003.003	ALL	3	adv	5	67
034.016.001.015.001.003	ALONG	3	prep	1	4
034.016.004.015.002.003	ALONG	3	adv	2	4
034.016.007.015.003.003	ALONG	3	adv	1	4

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
045.025.002.023.001.003	ANSWER	3	n	7	20
045.025.005.023.002.003	ANSWER	3	n	8	20
045.025.015.023.003.003	ANSWER	3	v obj	5	20
053.029.010.033.001.003	AROUND	3	adv	2	13
053.029.017.033.002.003	AROUND	3	prep	9	13
053.029.023.033.003.003	AROUND	3	prep	2	13
070.037.006.036.001.003	BASE	3	n	1	21
070.037.017.036.002.003	BASE	3	n	19	21
070.037.028.036.003.003	BASE	3	adj	1	21
100.052.001.003.001.003	BOTH	3	adj	19	35
100.052.002.003.002.003	BOTH	3	pro	2	35
100.052.003.003.003.003	BOTH	3	conj	14	35
124.061.001.019.001.003	CASE	3	n	11	13
124.061.002.019.002.003	CASE	3	n	1	13
124.061.003.019.003.003	CASE	3	n	1	13
142.002.071.074.001.003	CLEAR	3	adj	1	3
142.071.009.074.002.003	CLEAR	3	adj	1	3
142.071.034.074.003.003	CLEAR	3	v obj	1	3
219.106.001.051.001.003	DOWN	3	adv	12	15
219.106.011.051.002.003	DOWN	3	adv	2	15
219.106.021.051.003.003	DOWN	3	adj	1	15
220.107.002.071.001.003	DRAW	3	v obj	5	20
220.107.004.071.002.003	DRAW	3	v obj	14	20
220.107.011.071.003.003	DRAW	3	v obj	1	20
226.110.001.034.001.003	DRY	3	adj	1	3
226.110.028.034.002.003	DRY	3	v obj	1	3
226.110.032.034.003.003	DRY	3	phr v	1	3
232.114.001.015.001.003	EARTH	3	n	13	15
232.114.008.015.002.003	EARTH	3	n	1	15
232.114.009.015.003.003	EARTH	3	n	1	15
300.150.001.021.001.003	FIRST	3	adj	14	31
300.150.005.021.002.003	FIRST	3	adv	14	31
300.150.010.021.001.003	FIRST	3	n	3	31
316.159.006.044.001.003	FORM	3	n	15	64
316.159.032.044.002.003	FORM	3	v obj	44	64
316.159.043.044.003.003	FORM	3	v wo obj	5	64

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
323.161.008.049.001.003	FREE	3	adj	1	17
323.161.026.049.002.003	FREE	3	adj	15	17
323.161.034.049.003.003	FREE	3	adj	1	17
325.162.001.007.001.003	FROM	3	prep	7	214
325.162.002.007.002.003	FROM	3	prep	11	214
325.162.005.007.003.003	FROM	3	prep	196	214
327.163.001.021.001.003	FULL	3	adj	2	7
327.163.002.021.002.003	FULL	3	adj	1	7
327.163.003.021.003.003	FULL	3	adj	4	7
333.167.001.018.001.003	GAS	3	n	83	90
333.167.003.018.002.003	GAS	3	n	6	90
333.167.004.018.003.003	GAS	3	n	1	90
350.177.001.055.001.003	GROUND	3	n	2	7
350.177.005.055.002.003	GROUND	3	n	4	7
350.177.007.055.003.003	GROUND	3	n	1	7
368.188.003.023.001.003	HELP	3	v obj	5	8
368.188.012.023.002.003	HELP	3	n	1	8
368.188.013.023.003.003	HELP	3	n	2	8
393.203.001.011.001.003	INCREASE	3	v obj	2	22
393.203.002.011.002.003	INCREASE	3	v obj	5	22
393.203.009.011.003.003	INCREASE	3	n	15	22
400.207.001.012.001.003	INTO	3	prep	18	66
400.207.004.012.002.003	INTO	3	prep	3	66
400.207.006.012.003.003	INTO	3	prep	45	66
409.210.005.013.002.003	JUST	3	adv	5	10
409.210.009.013.001.003	JUST	3	adv	2	10
409.210.012.013.003.003	JUST	3	adv	3	10
443.229.001.029.001.003	LIKE	3	adj	5	18
443.229.006.029.002.003	LIKE	3	prep	7	18
443.229.019.029.003.003	LIKE	3	conj	6	18
450.232.001.024.001.003	LITTLE	3	adj	3	8
450.232.003.024.002.003	LITTLE	3	adj	3	8
450.232.004.024.003.003	LITTLE	3	adj	2	8

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
504.252.001.014.001.003	MOST	3	adj	8	36
504.252.004.014.002.003	MOST	3	n	7	36
504.252.009.014.003.003	MOST	3	adv	21	36
511.255.001.007.001.003	MUCH	3	adj	16	30
511.255.002.007.002.003	MUCH	3	n	2	30
511.255.004.007.003.003	MUCH	3	adv	11	30
521.260.001.012.001.003	NEED	3	n	1	2
521.260.008.012.002.003	NEED	3	v obj	2	2
521.260.009.012.003.003	NEED	3	v wo obj	10	2
553.276.001.018.001.003	OIL	3	n	11	15
553.276.003.018.002.003	OIL	3	n	3	15
553.276.015.018.003.003	OIL	3	adj	1	15
564.284.004.056.001.003	ORDER	3	n	5	10
564.284.051.056.002.003	ORDER	3	id	4	10
564.284.055.056.003.003	ORDER	3	id	1	10
608.308.017.032.001.003	POWER	3	n	3	7
608.308.019.032.002.003	POWER	3	n	2	7
608.308.021.032.003.003	POWER	3	v obj	2	7
680.342.003.062.001.003	RIGHT	3	adj	3	23
680.342.028.062.002.003	RIGHT	3	n	10	23
680.342.046.062.003.003	RIGHT	3	adv	10	23
692.347.001.179.001.003	RUN	3	v wo obj	1	3
692.347.039.179.002.003	RUN	3	v wo obj	1	3
692.347.073.179.003.003	RUN	3	v obj	1	3
696.348.001.024.001.003	SALT	3	n	7	10
696.348.003.024.002.003	SALT	3	n	2	10
696.348.018.024.003.003	SALT	3	adj	1	10
721.058.020.119.001.003	SET	3	v obj	1	10
721.058.068.119.002.003	SET	3	n	7	10
721.058.115.119.003.003	SET	3	id	2	10
764.397.002.010.001.003	SOME	3	adj	34	48
764.397.003.010.002.003	SOME	3	adj	2	48
764.397.006.010.003.003	SOME	3	pro	12	48
771.380.002.024.001.003	SPACE	3	n	4	6
771.380.003.024.002.003	SPACE	3	n	1	6
771.380.023.024.003.003	SPACE	3	adj	1	6

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
810.400.001.012.001.003	SUCH	3	adj	33	65
810.400.008.012.002.003	SUCH	3	adv	1	65
810.400.013.012.003.003	SUCH	3	id	31	65
837.414.001.006.001.003	THAN	3	conj	74	78
837.414.003.006.002.003	THAN	3	conj	3	78
837.414.004.006.003.003	THAN	3	conj	1	78
847.421.001.010.001.003	THIS	3	pro	39	252
847.421.005.010.002.003	THIS	3	adj	212	252
847.421.009.010.003.003	THIS	3	adv	1	252
850.423.001.006.001.003	THREE	3	n	1	34
850.423.003.006.002.003	THREE	3	n	2	34
850.423.005.006.003.003	THREE	3	adj	31	34
856.426.001.064.001.003	TIME	3	n	2	19
856.426.004.064.002.003	TIME	3	n	16	19
856.426.014.064.003.003	TIME	3	n	1	19
890.444.001.027.001.003	USE	3	v obj	66	79
890.444.012.027.002.003	USE	3	n	12	79
890.444.023.027.002.003	USE	3	phr v	1	79
921.457.001.030.001.003	WELL	3	adv	5	7
921.457.002.030.002.003	WELL	3	adv	1	7
921.457.019.030.003.003	WELL	3	id	1	7
952.475.001.024.001.003	WORLD	3	n	1	13
952.475.004.024.002.003	WORLD	3	n	2	13
952.475.008.024.003.003	WORLD	3	n	10	13
006.005.012.026.001.002	ACCOUNT	2	v wo obj	7	8
006.005.025.026.002.002	ACCOUNT	2	id	1	8
031.015.001.009.001.002	ALLOW	2	v obj	1	6
031.015.003.009.002.002	ALLOW	2	v obj	5	6
036.018.001.003.001.002	ALSO	2	adv	13	45
036.018.002.003.002.002	ALSO	2	adv	32	45
044.024.001.007.001.002	ANOTHER	2	adj	31	54
044.024.005.007.002.002	ANOTHER	2	pro	23	54
048.028.001.014.001.002	APPLY	2	v obj	5	7
048.028.011.014.002.002	APPLY	2	v wo obj	2	7
064.034.001.016.001.002	AWAY	2	adv	3	4
064.034.005.016.002.002	AWAY	2	adv	1	4

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
075.039.001.002.001.002	BECAUSE	2	conj	70	79
075.039.002.002.002.002	BECAUSE	2	id	9	79
078.041.001.017.001.002	BEFORE	2	prep	14	19
078.041.017.017.002.002	BEFORE	2	conj	5	19
081.043.002.007.001.002	BELIEVE	2	v wo obj	2	3
081.043.006.007.002.002	BELIEVE	2	phr v	1	3
086.045.001.020.001.002	BEST	2	adj	2	3
086.045.002.020.002.002	BEST	2	adv	1	3
095.049.003.024.001.002	BLUE	2	n	3	6
095.049.011.024.002.002	BLUE	2	adj	3	6
098.050.010.028.001.002	BODY	2	n	8	13
098.050.010.028.002.002	BODY	2	n	5	13
123.060.019.052.001.002	CARRY	2	n	3	8
123.060.044.052.002.002	CARRY	2	phr v	5	8
127.062.001.010.001.002	CAUSE	2	n	2	8
127.062.009.010.002.002	CAUSE	2	v obj	6	8
129.063.005.011.001.002	CERTAIN	2	adj	7	13
129.063.005.011.002.002	CERTAIN	2	adj	6	13
130.064.003.017.001.002	CHANCE	2	n	4	6
130.064.004.017.002.002	CHANCE	2	n	2	6
133.066.041.049.001.002	CHARGE	2	n	27	28
133.066.049.049.001.002	CHARGE	2	id	1	28
141.070.001.029.001.002	CLASS	2	n	1	4
141.070.002.029.002.002	CLASS	2	n	1	4
152.077.006.062.001.002	COME	2	v wo obj	4	5
152.077.026.062.002.002	COME	2	phr v	1	5
155.078.001.022.001.002	COMMON	2	adj	3	31
155.078.004.022.002.002	COMMON	2	adj	28	31
157.079.001.015.001.002	COMPLETE	2	adj	17	20
157.079.011.015.002.002	COMPLETE	2	v obj	3	20
159.080.002.025.001.002	CONDITION	2	n	1	2
159.080.007.025.002.002	CONDITION	2	n	1	2
172.087.004.032.001.002	COURSE	2	n	2	4
172.087.032.032.002.002	COURSE	2	id	2	4

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
187.091.004.026.001.002	DEAL	2	v wo obj	1	4
187.091.019.026.002.002	DEAL	2	n	3	4
205.100.001.013.001.002	DIFFERENCE	2	n	10	11
205.100.009.013.002.002	DIFFERENCE	2	n	1	11
224.108.001.039.001.002	DRIVE	2	v obj	3	4
224.108.003.039.002.002	DRIVE	2	v obj	1	4
229.112.001.003.001.002	EACH	2	adj	97	127
229.112.002.003.002.002	EACH	2	pro	30	127
233.113.001.011.001.002	EARLY	2	adv	1	6
233.113.007.011.002.002	EARLY	2	adj	5	6
247.120.001.044.001.002	END	2	n	12	14
247.120.006.044.002.002	END	2	n	2	14
249.121.001.013.001.002	ENGLISH	2	adj	1	2
249.121.002.013.002.002	ENGLISH	2	adj	1	2
251.122.001.005.001.002	ENOUGH	2	adj	4	6
251.122.003.005.002.002	ENOUGH	2	adv	2	6
253.124.001.014.001.002	EQUAL	2	adj	11	25
253.124.002.014.002.002	EQUAL	2	adj	14	25
254.125.001.020.001.002	ESCAPE	2	v wo obj	3	4
254.125.007.020.002.002	ESCAPE	2	v obj	1	4
261.130.001.005.001.002	EXCEPT	2	prep	2	3
261.130.005.005.002.002	EXCEPT	2	id	1	3
265.133.002.005.001.002	EXPECT	2	v obj	1	3
265.133.003.005.002.002	EXPECT	2	v obj	2	3
269.135.001.006.001.002	EXPLAIN	2	v obj	55	60
269.135.003.006.002.002	EXPLAIN	2	v obj	5	60
272.137.001.054.001.002	EYE	2	n	3	9
272.137.012.054.002.002	EYE	2	n	6	9
273.138.017.055.001.002	FACE	2	n	7	8
273.138.037.055.002.002	FACE	2	v wo obj	1	8
274.139.001.008.001.002	FACT	2	n	5	12
274.139.008.008.002.002	FACT	2	id	7	12
279.140.019.072.001.002	FALL	2	v wo obj	1	2
279.140.072.002.001.002	FALL	2	n	1	2

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
281.143.001.006.001.002	FEW	2	adj	9	10
281.143.004.006.002.002	FEW	2	pro	1	10
285.145.028.038.001.002	FIGURE	2	n	125	126
285.145.036.038.002.002	FIGURE	2	id	1	126
292.144.004.040.001.002	FIELD	2	n	1	2
292.144.030.040.002.002	FIELD	2	adj	1	2
295.146.001.032.001.002	FILL	2	v obj	3	4
295.146.028.032.001.002	FILL	2	id	1	4
305.153.001.021.001.002	FLOOR	2	n	1	5
305.153.002.021.002.002	FLOOR	2	n	4	5
306.154.003.023.001.002	FLOW	2	v wo obj	3	11
306.154.023.023.002.002	FLOW	2	n	8	11
309.155.001.026.001.002	FOLLOW	2	v wo obj	1	2
309.155.004.026.002.002	FOLLOW	2	v wo obj	4	2
316.158.012.036.001.002	FORCE	2	n	13	14
316.158.035.036.002.002	FORCE	2	id	1	14
321.160.001.008.001.002	FOUR	2	n	5	26
321.160.007.008.002.002	FOUR	2	adj	21	26
330.166.002.019.001.002	GAIN	2	v obj	5	16
330.166.013.019.002.002	GAIN	2	n	11	16
336.168.004.012.001.002	GENERAL	2	adj	12	15
336.168.012.012.002.002	GENERAL	2	id	5	15
343.171.001.017.001.002	GLASS	2	n	3	4
343.171.009.017.002.002	GLASS	2	n	1	4
344.172.001.098.001.002	GO	2	v wo obj	5	6
344.172.057.098.002.002	GO	2	phr v	1	6
347.174.011.058.001.002	GOOD	2	adj	1	9
347.174.012.058.002.002	GOOD	2	adj	8	9
348.175.001.023.001.002	GREAT	2	adj	3	4
348.175.006.023.002.002	GREAT	2	adj	1	4
358.182.003.058.001.002	HARD	2	adj	2	16
358.182.030.058.002.002	HARD	2	adj	14	16
365.186.003.025.001.002	HEAT	2	n	62	63
365.186.021.025.002.002	HEAT	2	v obj	1	63
366.179.001.020.001.002	HALF	2	n	7	9
366.179.009.020.002.002	HALF	2	adj	2	9

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
368.180.004.092.001.002	HAND	2	n	1	8
368.180.076.092.002.002	HAND	2	id	7	8
369.189.001.018.001.002	HERE	2	adv	3	5
369.189.010.018.002.002	HERE	2	adj	2	5
373.193.004.058.001.002	HOLD	2	v obj	2	3
373.193.033.058.002.002	HOLD	2	n	1	3
381.195.001.022.001.002	HOW	2	adv	81	142
381.195.012.022.002.002	HOW	2	conj	61	142
389.200.001.007.001.002	IMPORTANT	2	adj	33	41
389.200.002.007.002.002	IMPORTANT	2	adj	8	41
395.204.001.023.001.002	INDEPENDENT	2	adj	3	5
395.204.004.023.002.002	INDEPENDENT	2	adj	2	5
398.206.001.003.001.002	INSTEAD	2	adv	3	5
398.206.003.003.002.002	INSTEAD	2	id	5	5
422.214.002.019.001.002	LAST	2	adj	1	2
422.214.004.019.002.002	LAST	2	adj	1	2
429.217.020.072.001.002	LEAD	2	v wo obj	4	11
429.217.057.072.002.002	LEAD	2	n	7	11
439.226.013.027.001.002	LIE	2	v wo obj	1	3
439.226.017.027.002.002	LIE	2	v wo obj	2	3
442.228.002.045.001.002	LIGHT	2	n	21	22
442.228.027.045.002.002	LIGHT	2	v obj	1	22
453.233.001.039.001.001	LONG	2	adj	2	4
453.233.003.039.001.002	LONG	2	adj	2	4
466.241.001.005.001.002	MANY	2	adj	51	57
466.241.005.005.002.002	MANY	2	pro	6	57
476.244.001.040.001.002	MEASURE	2	n	4	19
476.244.023.040.002.002	MEASURE	2	v obj	15	19
499.250.001.016.001.002	MOON	2	n	2	3
499.250.004.016.002.002	MOON	2	n	1	3
509.254.001.036.001.002	MOVE	2	v wo obj	23	25
509.254.012.036.002.002	MOVE	2	v obj	2	25
516.257.001.028.001.002	NAME	2	n	44	46
516.257.015.028.002.002	NAME	2	v obj	2	46

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
528.263.001.009.001.002	NEXT	2	adj	5	6
528.263.009.009.002.002	NEXT	2	id	1	6
537.268.001.032.001.002	NOTE	2	n	1	36
537.268.028.032.002.002	NOTE	2	v obj	35	36
559.282.005.088.001.002	OPEN	2	adj	1	2
559.282.011.088.002.002	OPEN	2	adj	1	2
563.283.001.006.001.002	OR	2	conj	170	171
563.283.002.006.002.002	OR	2	conj	1	171
581.295.002.018.001.002	PAST	2	adj	2	3
581.295.013.018.002.002	PAST	2	adv	1	3
584.296.002.013.001.002	PEOPLE	2	n	7	8
584.296.004.013.002.002	PEOPLE	2	n	1	8
594.302.001.029.001.002	PLANT	2	n	3	5
594.302.004.029.002.002	PLANT	2	n	2	5
595.303.024.093.001.002	PLAY	2	v obj	1	2
595.303.045.093.002.002	PLAY	2	v wo obj	1	2
613.311.002.011.001.002	PRESSURE	2	n	74	75
613.311.005.011.001.002	PRESSURE	2	n	1	75
625.316.001.018.001.002	PROPER	2	adj	1	3
625.316.009.018.002.002	PROPER	2	adj	2	3
640.322.002.020.001.002	QUESTION	2	n	6	7
640.322.019.020.002.002	QUESTION	2	id	1	7
646.325.001.009.001.002	RATHER	2	adv	2	9
646.325.007.009.002.002	RATHER	2	adv	7	9
648.327.001.047.001.002	READ	2	v obj	19	22
648.327.015.047.002.002	READ	2	v obj	3	22
659.332.001.015.001.002	RED	2	n	2	13
659.332.007.015.002.002	RED	2	adj	11	13
670.337.001.025.001.002	REPORT	2	n	1	3
670.337.012.025.002.002	REPORT	2	v obj	2	3
675.339.038.043.001.002	REST	2	id	1	2
675.339.040.043.002.002	REST	2	n	1	2
676.340.001.006.001.002	RESULT	2	v wo obj	1	16
676.340.003.006.002.002	RESULT	2	n	15	16
679.356.024.025.001.002	SENSE	2	id	1	4
679.356.025.025.002.002	SENSE	2	id	3	4

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
681.343.001.064.001.002	RING	2	n	1	4
681.343.017.064.002.002	RING	2	n	3	4
697.349.003.010.001.002	SAME	2	adj	39	51
697.349.006.010.002.002	SAME	2	pro	12	51
705.352.001.016.001.002	SEA	2	n	2	6
705.352.008.016.002.002	SEA	2	n	4	6
708.353.001.034.001.002	SECOND	2	adj	8	9
708.353.030.034.002.002	SECOND	2	adv	1	9
711.354.001.034.001.002	SEE	2	v obj	24	37
711.354.005.034.002.002	SEE	2	v obj	13	37
717.357.001.022.001.002	SEPARATE	2	v obj	4	6
717.357.013.022.002.002	SEPARATE	2	adj	2	6
724.360.001.006.001.002	SEVERAL	2	adj	17	18
724.360.005.006.002.002	SEVERAL	2	n	1	18
739.366.004.029.002.002	SIDE	2	n	14	16
739.366.027.029.002.002	SIDE	2	id	2	16
741.367.005.030.001.002	SIGN	2	n	1	6
741.367.014.030.002.002	SIGN	2	n	5	6
744.369.001.027.001.002	SIMPLE	2	adj	7	12
744.369.017.027.002.002	SIMPLE	2	adj	5	12
753.374.001.016.001.002	SIZE	2	n	24	25
753.374.012.016.002.002	SIZE	2	phr v	1	25
756.375.001.026.001.002	SMALL	2	adj	21	38
756.375.005.026.002.002	SMALL	2	adj	17	38
762.378.001.038.001.002	SOFT	2	adj	2	7
762.378.019.038.002.002	SOFT	2	adj	5	7
774.382.001.022.001.002	SPEED	2	n	3	5
774.382.011.022.002.002	SPEED	2	v obj	2	5
779.383.005.041.001.002	SPREAD	2	v obj	2	3
779.383.018.041.002.002	SPREAD	2	v wo obj	1	3
783.384.001.066.001.002	STAND	2	v wo obj	1	2
783.384.015.066.001.002	STAND	2	v wo obj	1	2
784.385.001.028.001.002	STANDARD	2	n	3	24
784.385.023.028.002.002	STANDARD	2	adj	21	24

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
786.386.008.030.001.002	START	2	v obj	3	4
786.386.017.030.002.002	START	2	n	1	4
796.393.002.016.001.002	STORE	2	n	1	2
796.393.009.016.002.002	STORE	2	v obj	1	2
803.396.002.030.001.002	STRONG	2	adj	8	26
803.396.020.030.002.002	STRONG	2	adj	18	26
806.398.005.026.001.002	STUDY	2	n	2	6
806.398.020.026.002.002	STUDY	2	v obj	4	6
812.401.001.005.001.002	SUGGEST	2	v obj	1	2
812.401.005.005.002.002	SUGGEST	2	v obj	1	2
817.403.004.019.001.002	SUPPORT	2	v obj	1	2
817.403.010.019.002.002	SUPPORT	2	n	1	2
819.405.014.016.001.002	SURE	2	adj	3	6
819.405.016.016.002.002	SURE	2	id	3	6
820.406.001.015.001.002	SURFACE	2	n	13	18
820.406.008.015.002.002	SURFACE	2	adj	5	18
825.407.001.016.001.002	SYSTEM	2	n	29	37
825.407.006.016.002.002	SYSTEM	2	n	8	37
826.408.009.026.001.002	TABLE	2	n	71	78
826.408.022.026.002.002	TABLE	2	adj	7	78
834.411.001.008.001.002	TEN	2	n	4	5
834.411.007.008.002.002	TEN	2	adj	1	5
835.412.001.018.001.002	TERM	2	n	4	6
835.412.008.018.002.002	TERM	2	n	2	6
863.432.001.010.001.002	TOTAL	2	adj	20	27
863.432.005.010.002.002	TOTAL	2	n	7	27
876.435.106.122.001.002	TURN	2	phr v	1	2
876.435.114.122.002.002	TURN	2	id	1	2
879.437.003.007.001.002	TWO	2	n	9	88
879.437.005.007.002.002	TWO	2	adj	79	88
888.442.001.093.001.002	UP	2	adv	4	8
888.442.092.093.002.002	UP	2	id	4	8
902.450.001.018.001.002	VISIT	2	v obj	1	8
902.450.008.018.002.002	VISIT	2	v obj	7	8
924.458.001.032.001.002	WHAT	2	pro	126	146
924.458.008.032.002.002	WHAT	2	pro	20	146

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
925.459.004.010.001.002	WHEN	2	conj	11	108
925.459.005.010.002.002	WHEN	2	conj	97	108
926.460.001.015.001.002	WHERE	2	adv	2	23
926.460.007.015.002.002	WHERE	2	conj	21	23
927.461.001.005.001.002	WHETHER	2	conj	8	11
927.461.002.005.002.002	WHETHER	2	conj	3	11
930.464.001.042.001.002	WHITE	2	adj	1	4
930.464.019.042.002.002	WHITE	2	n	3	4
932.465.001.013.001.002	WHOLE	2	adj	3	12
932.465.004.013.002.002	WHOLE	2	adj	9	12
933.466.001.007.001.002	WHY	2	adv	25	47
933.466.002.007.002.002	WHY	2	conj	22	47
937.468.001.025.001.002	WILL	2	aux v	108	112
937.468.008.025.002.002	WILL	2	aux v	2	112
949.472.001.017.001.002	WOOD	2	n	7	9
949.472.009.017.002.002	WOOD	2	adj	2	9
956.477.001.022.001.002	WRITE	2	v obj	20	22
956.477.021.022.002.002	WRITE	2	phr v	2	22
962.478.002.018.001.002	YIELD	2	v obj	2	12
962.478.016.018.002.002	YIELD	2	n	10	12
001.001.001.005.001.001	ABLE	1	adj	10	10
004.004.001.014.001.001	ACCEPT	1	v obj	2	2
008.006.001.010.001.001	ACROSS	1	prep	5	5
013.007.001.003.001.001	ACTUAL	1	adj	5	5
014.008.001.009.001.001	ADD	1	v obj	10	10
023.010.001.007.001.001	AGAIN	1	adv	7	7
027.012.001.002.001.001	AGO	1	adj	2	2
035.017.001.003.001.001	ALREADY	1	adv	8	8
038.019.001.004.001.001	ALWAYS	1	adv	20	20
039.020.001.008.001.001	AMONG	1	prep	21	21
040.021.003.007.001.001	AMOUNT	1	n	38	38
041.022.002.009.001.001	ANCIENT	1	adj	2	2
042.023.001.017.001.001	AND	1	conj	854	854
047.027.002.008.001.001	APPEAR	1	v wo obj	3	3
055.030.002.016.001.001	ART	1	n	2	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
067.036.001.027.001.001	BALL	1	n	7	7
076.040.001.005.001.001	BECOME	1	v wo obj	12	12
079.042.001.005.001.001	BEGIN	1	v wo obj	4	4
083.044.006.014.001.001	BELOW	1	adv	18	18
092.047.020.033.001.001	BLACK	1	n	2	2
093.048.001.024.001.001	BLOOD	1	n	3	3
099.051.004.050.001.001	BOOK	1	n	4	4
104.053.001.009.001.001	BREAD	1	n	4	4
114.055.001.014.001.001	BUT	1	conj	36	36
119.058.014.017.001.001	CAPITAL	1	adj	2	2
121.059.001.006.001.001	CAR	1	n	3	3
136.067.001.009.001.001	CHOOSE	1	v obj	3	3
138.068.003.023.001.001	CIRCLE	1	n	2	2
139.069.001.008.001.001	CITY	1	n	2	2
140.057.018.069.001.001	CALL	1	v obj	3	3
144.073.002.018.001.001	CLOUD	1	n	2	2
145.074.001.008.001.001	COAL	1	n	3	3
147.075.001.014.001.001	COIN	1	n	4	4
148.076.001.031.001.001	COLD	1	adj	3	3
160.081.001.011.001.001	CONSIDER	1	v obj	18	18
161.082.003.008.001.001	CONTAIN	1	v obj	11	11
162.083.008.011.001.001	CONTENT	1	n	5	5
163.084.001.011.001.001	CONTINUE	1	v wo obj	3	3
164.085.001.018.001.001	CONTROL	1	v obj	4	4
168.086.003.006.001.001	COULD	1	aux v	15	15
179.088.013.014.001.001	CURRENT	1	adj	17	17
180.089.002.089.001.001	CUT	1	v obj	2	2
185.090.001.015.001.001	DAY	1	n	6	6
189.092.001.005.001.001	DECIDE	1	v obj	4	4
191.093.001.041.001.001	DEEP	1	adj	2	2
193.094.003.018.001.001	DEGREE	1	n	3	3
196.095.001.006.001.001	DEPEND	1	v wo obj	3	3
197.096.001.005.001.001	DESCRIBE	1	v obj	16	16
201.097.013.013.001.001	DETAIL	1	id	3	3
202.098.002.011.001.001	DETERMINE	1	v obj	33	33

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
204.099.021.026.001.001	DIE	1	n	2	2
206.101.001.007.001.001	DIFFICULT	1	adj	3	3
208.102.001.002.001.001	DISCOVER	1	v obj	2	2
209.103.001.021.001.001	DISTANCE	1	n	9	9
212.104.007.017.001.001	DIVIDE	1	v obj	3	3
227.111.011.013.001.001	DUE	1	id	4	4
234.115.001.017.001.001	EASY	1	adj	3	3
235.116.001.025.001.001	EAT	1	v obj	4	4
236.117.001.012.001.001	EFFECT	1	n	13	13
240.118.006.006.001.001	EIGHT	1	adj	7	7
241.119.004.005.001.001	EITHER	1	conj	4	4
252.123.001.017.001.001	ENTER	1	v wo obj	2	2
255.126.015.026.001.001	EVEN	1	adv	11	11
258.127.003.007.001.001	EVER	1	adv	2	2
259.128.001.006.001.001	EVERY	1	adj	9	9
260.129.001.007.001.001	EXAMPLE	1	n	62	62
263.131.004.014.001.001	EXERCISE	1	n	24	24
264.132.001.005.001.001	EXIST	1	v wo obj	5	5
268.134.001.004.001.001	EXPERIMENT	1	n	14	14
270.136.004.020.001.001	EXPRESS	1	v obj	5	5
280.141.001.010.001.001	FAMILIAR	1	adj	5	5
297.148.003.029.001.001	FINE	1	adj	2	2
299.149.001.057.001.001	FIRE	1	n	2	2
301.151.001.026.001.001	FISH	1	n	2	2
303.152.006.007.001.001	FIVE	1	adj	6	6
310.156.001.005.001.001	FOOD	1	n	10	10
328.164.002.003.001.001	FURNISH	1	v obj	3	3
329.165.001.008.001.001	FUTURE	1	n	2	2
346.173.001.014.001.001	GOLD	1	n	5	5
349.176.018.033.001.001	GREEN	1	n	3	3
351.178.002.014.001.001	GROUP	1	n	27	27
356.181.001.007.001.001	HAPPEN	1	v wo obj	2	2
361.184.001.004.001.001	HE	1	pro	17	17
362.185.007.084.001.001	HEAD	1	n	2	2
367.187.026.034.001.001	HEAVY	1	adj	3	3

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
370.190.004.045.001.001	HIGH	1	adj	28	28
371.191.002.011.001.001	HILL	1	n	5	5
372.192.004.008.001.001	HISTORY	1	n	4	4
378.194.001.037.001.001	HOT	1	adj	7	7
382.196.001.005.001.001	HOWEVER	1	adv	43	43
386.198.001.009.001.001	IDEA	1	n	5	5
387.199.001.008.001.001	IF	1	conj	65	65
392.202.001.003.001.001	INCLUDE	1	v obj	11	11
396.205.001.008.001.001	INDUSTRY	1	n	2	2
398.197.001.005.001.001	HUMAN	1	adj	3	3
402.208.001.030.001.001	IRON	1	n	50	50
403.209.001.017.001.001	IT	1	pro	161	161
413.211.006.013.001.001	KIND	1	n	3	3
415.212.001.012.001.001	KNOW	1	v obj	13	13
421.213.001.014.001.001	LARGE	1	adj	25	25
423.215.008.013.001.001	LATE	1	adj	2	2
427.216.015.027.001.001	LAW	1	n	36	36
430.218.001.008.001.001	LEARN	1	v obj	19	19
433.221.001.017.001.001	LENGTH	1	n	15	15
435.223.006.019.001.001	LET	1	v obj	8	8
436.224.002.012.001.001	LETTER	1	n	3	3
440.227.001.036.001.001	LIFE	1	n	9	9
444.230.001.005.001.001	LIKELY	1	adj	5	5
456.235.008.028.001.001	LOSE	1	v obj	7	7
457.236.003.015.001.001	LOSS	1	n	11	11
459.237.011.051.001.001	LOW	1	adj	8	8
461.238.001.014.001.001	MAIN	1	adj	8	8
464.240.001.013.001.001	MANNER	1	n	2	2
470.242.008.017.001.001	MASS	1	n	191	191
473.243.001.024.001.001	MATTER	1	n	10	10
482.245.001.011.001.001	METAL	1	n	30	30
484.246.002.008.001.001	MIGHT	1	aux v	10	10
486.247.001.010.001.001	MILK	1	n	4	4
487.248.001.008.001.001	MILLION	1	n	4	4
494.249.001.009.001.001	MODERN	1	adj	7	7

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
506.253.001.013.001.001	MOTOR	1	n	10	10
513.256.001.013.001.001	MUST	1	aux v	53	53
518.258.001.023.001.001	NEAR	1	adv	4	4
519.259.001.004.001.001	NECESSARY	1	adj	7	7
523.261.001.004.001.001	NEITHER	1	conj	5	5
525.262.001.015.001.001	NEW	1	adj	20	20
530.264.007.008.001.001	NINE	1	adj	2	2
531.265.001.011.001.001	NO	1	adv	22	22
532.266.009.013.001.001	NOBLE	1	adj	12	12
534.267.001.006.001.001	NOR	1	conj	5	5
535.271.001.014.001.001	OBJECT	1	n	9	9
538.269.009.013.001.001	NOTICE	1	v obj	7	7
539.270.001.013.001.001	NOW	1	adv	13	13
544.272.003.012.001.001	OBSERVE	1	v obj	7	7
547.274.001.056.001.001	OFF	1	adv	2	2
551.275.002.002.001.001	OFTEN	1	adv	26	26
554.277.006.028.001.001	OLD	1	adj	2	2
556.279.001.015.001.001	ONCE	1	adv	6	6
558.281.001.010.001.001	ONLY	1	adv	53	53
565.285.001.017.001.001	ORDINARY	1	adj	6	6
570.287.001.076.001.001	OUT	1	adv	7	7
573.289.001.011.001.001	OWN	1	adj	3	3
574.290.001.016.001.001	PAGE	1	n	11	11
575.291.001.016.001.001	PAINT	1	n	5	5
576.292.001.035.001.001	PAPER	1	n	7	7
577.293.001.039.001.001	PART	1	n	9	9
578.294.001.013.001.001	PARTICULAR	1	adj	8	8
585.297.001.004.001.001	PER	1	prep	15	15
588.298.001.015.001.001	PERSON	1	n	6	6
589.299.001.016.001.001	PICTURE	1	n	2	2
590.300.001.033.001.001	PIECE	1	n	7	7
599.305.006.017.001.001	POOR	1	adj	6	6
602.306.001.018.001.001	POSITION	1	n	19	19
604.307.001.002.001.001	POSSIBLE	1	adj	16	16
609.309.001.005.001.001	PREPARE	1	v obj	6	6

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
610.310.006.016.001.001	PRESENT	1	adj	26	26
615.312.001.006.001.001	PREVENT	1	v obj	3	3
618.313.003.006.001.001	PROBLEM	1	n	36	36
619.314.001.014.001.001	PRODUCE	1	v obj	30	30
620.315.004.005.001.001	PRODUCT	1	n	19	19
626.317.006.010.001.001	PROPERTY	1	n	9	9
627.318.001.009.001.001	PROPOSE	1	v obj	3	3
630.319.001.008.001.001	PROVIDE	1	v obj	9	9
634.320.001.011.001.001	PURPOSE	1	n	2	2
637.321.001.009.001.001	QUANTITY	1	n	6	6
641.323.001.003.001.001	QUITE	1	adv	4	4
645.324.002.027.001.001	RATE	1	n	20	20
647.326.002.029.001.001	REACH	1	v obj	6	6
650.328.002.016.001.001	REAL	1	adj	5	5
653.329.001.004.001.001	REALLY	1	adv	2	2
653.330.001.019.001.001	REASON	1	n	3	3
658.331.001.027.001.001	RECORD	1	v obj	13	13
660.333.001.021.001.001	REDUCE	1	v obj	4	4
664.334.005.011.001.001	RELATIVE	1	adj	18	18
666.335.001.007.001.001	REMAIN	1	v wo obj	4	4
668.336.001.010.001.001	REMEMBER	1	v obj	6	6
671.338.002.016.001.001	REPRESENT	1	v obj	11	11
677.341.005.045.001.001	RETURN	1	v obj	3	3
682.344.007.055.001.001	RISE	1	v wo obj	2	2
687.345.001.009.001.001	ROOM	1	n	9	9
691.346.001.024.001.001	RULE	1	n	12	12
700.350.001.017.001.001	SAY	1	v obj	5	5
704.351.001.007.001.001	SCIENCE	1	n	7	7
712.355.001.005.001.001	SEEM	1	v wo obj	2	2
723.359.006.006.001.001	SEVEN	1	adj	8	8
726.361.008.046.001.001	SHAKE	1	v obj	2	2
728.362.001.023.001.001	SHAPE	1	n	3	3
729.363.004.008.001.001	SHARE	1	v obj	5	5
736.364.003.004.001.001	SHOULD	1	aux v	18	18
738.365.007.041.001.001	SHOW	1	v obj	5	5

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
743.368.001.021.001.001	SILVER	1	n	13	13
745.370.008.008.001.001	SINCE	1	conj	34	34
747.371.001.030.001.001	SINGLE	1	adj	17	17
751.372.001.007.001.001	SITUATION	1	n	7	7
752.373.001.009.001.001	SIX	1	adj	6	6
761.377.001.013.001.001	SOCIETY	1	n	7	7
773.381.001.013.001.001	SPECIAL	1	adj	2	2
787.387.002.024.001.001	STATE	1	n	66	66
790.388.001.012.001.001	STEEL	1	n	12	12
791.389.010.045.001.001	STEP	1	n	13	13
792.390.010.023.001.001	STILL	1	adv	13	13
793.391.043.061.001.001	STOCK	1	adj	2	2
795.392.016.046.001.001	STOP	1	v wo obj	3	3
798.394.002.005.001.001	STRANGE	1	adj	2	2
801.395.009.013.001.001	STRENGTH	1	n	3	3
805.397.001.002.001.001	STUDENT	1	n	4	4
808.399.001.014.001.001	SUBSTANCE	1	n	24	24
814.402.001.017.001.001	SUN	1	n	6	6
818.404.001.007.001.001	SUPPOSE	1	v obj	7	7
832.410.002.023.001.001	TELL	1	v obj	3	3
838.415.001.014.001.001	THE	1	art	3011	3011
840.417.007.012.001.001	THERE	1	pro	38	38
842.418.002.003.001.001	THEY	1	pro	61	61
844.419.002.027.001.001	THINK	1	v wo obj	10	10
845.420.001.004.001.001	THIRTEEN	1	n	2	2
848.422.001.004.001.001	THOUGH	1	conj	2	2
854.425.002.005.001.001	THUS	1	adv	47	47
858.428.002.005.001.001	TODAY	1	n	5	5
859.429.001.010.001.001	TOGETHER	1	adv	11	11
861.430.005.006.001.001	TOO	1	adv	4	4
862.431.001.050.001.001	TOP	1	n	3	3
865.433.001.011.001.001	TOWARD	1	prep	9	9
874.434.001.017.001.001	TRY	1	v obj	2	2
877.436.005.005.001.001	TWELVE	1	adj	2	2
880.438.002.020.001.001	TYPE	1	n	32	32

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
881.439.016.030.001.001	UNDER	1	prep	6	6
882.440.001.013.001.001	UNDERSTAND	1	v obj	4	4
887.441.001.005.001.001	UNTIL	1	conj	9	9
889.443.006.006.001.001	UPON	1	prep	6	6
893.445.007.018.001.001	VALUE	1	n	41	41
894.446.001.010.001.001	VARIETY	1	n	4	4
895.447.001.009.001.001	VARIOUS	1	adj	10	10
896.448.001.009.001.001	VERY	1	adv	46	46
899.449.006.022.001.001	VIEW	1	n	3	3
909.451.002.017.001.001	WANT	1	v obj	8	8
912.452.001.043.001.001	WATER	1	n	197	197
913.453.002.027.001.001	WAVE	1	n	3	3
914.454.001.043.001.001	WAY	1	n	16	16
915.455.003.009.001.001	WE	1	pro	115	115
917.456.001.027.001.001	WEAR	1	v obj	5	5
929.463.006.010.001.001	WHILE	1	conj	11	11
934.467.001.018.001.001	WIDE	1	adj	2	2
944.469.003.021.001.001	WITH	1	prep	196	196
945.470.006.014.001.001	WITHIN	1	prep	13	13
946.471.001.011.001.001	WITHOUT	1	prep	2	2
950.473.001.028.001.001	WORD	1	n	15	15
954.476.001.011.001.001	WOULD	1	aux v	39	39
963.479.002.007.001.001	YOU	1	pro	227	227
964.480.001.011.001.001	YOUNG	1	adj	3	3

APPENDIX G: TARGET WORDS SORTED BY INDIVIDUAL DEFINITIONS

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
838.415.001.014.001.001	THE		1 art	3011	3011
546.273.004.017.002.004	OF		4 prep	959	1928
042.023.001.017.001.001	AND		1 conj	854	854
546.273.008.017.003.004	OF		4 prep	471	1928
546.273.008.017.004.004	OF		4 prep	392	1928
390.201.001.034.001.007	IN		7 prep	337	950
390.201.003.034.002.007	IN		7 prep	330	950
857.427.008.027.004.007	TO		7 prep	304	821
857.427.002.027.002.007	TO		7 prep	227	821
963.479.002.007.001.001	YOU		1 pro	227	227
116.056.013.035.005.007	BY		7 prep	220	233
847.421.005.010.002.003	THIS		3 adj	212	252
311.157.002.034.002.007	FOR		7 prep	203	335
912.452.001.043.001.001	WATER		1 n	197	197
325.162.005.007.003.003	FROM		3 prep	196	214
944.469.003.021.001.001	WITH		1 prep	196	196
470.242.008.017.001.001	MASS		1 n	191	191
390.201.007.034.005.007	IN		7 prep	174	950
563.283.001.006.001.002	OR		2 conj	170	171
403.209.001.017.001.001	IT		1 pro	161	161
057.031.016.031.004.005	AS		5 prep	156	265
072.038.010.011.005.005	BE		5 aux v	148	222
924.458.001.032.001.002	WHAT		2 pro	126	146
285.145.028.038.001.002	FIGURE		2 n	125	126
857.427.004.027.003.007	TO		7 prep	117	821
915.455.003.009.001.001	WE		1 pro	115	115
555.278.004.049.003.006	ON		6 prep	108	179
937.468.001.025.001.002	WILL		2 aux v	108	112
546.273.001.017.001.004	OF		4 prep	106	1928
229.112.001.003.001.002	EACH		2 adj	97	127
925.459.005.010.002.002	WHEN		2 conj	97	108
557.280.001.027.001.005	ONE		5 adj	87	145
333.167.001.018.001.003	GAS		3 n	83	90
381.195.001.022.001.002	HOW		2 adv	81	142

adjective (adj), adverb (adv), article (art), auxiliary verb (aux v), conjunction(conj), idiom (id), noun (n), phrasal verb (phr v), preposition (prep), pronoun (pro), verb with object (v obj), verb without obj (v wo obj)

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
857.427.001.027.001.007	TO	7	prep	80	821
879.437.005.007.002.002	TWO	2	adj	79	88
390.201.009.034.006.007	IN	7	adv	78	950
060.032.002.012.002.008	AT	8	prep	76	154
613.311.002.011.001.002	PRESSURE	2	n	74	75
837.414.001.006.001.003	THAN	3	conj	74	78
826.408.009.026.001.002	TABLE	2	n	71	78
075.039.001.002.001.002	BECAUSE	2	conj	70	79
597.304.011.050.002.005	POINT	5	n	67	79
787.387.002.024.001.001	STATE	1	n	66	66
890.444.001.027.001.003	USE	3	v obj	66	79
387.199.001.008.001.001	IF	1	conj	65	65
057.031.001.031.001.005	AS	5	adv	64	265
260.129.001.007.001.001	EXAMPLE	1	n	62	62
365.186.003.025.001.002	HEAT	2	n	62	63
381.195.012.022.002.002	HOW	2	conj	61	142
842.418.002.003.001.001	THEY	1	pro	61	61
131.065.019.038.004.004	CHANGE	4	n	59	66
857.427.012.027.005.007	TO	7	prep	59	821
030.014.002.039.001.003	ALL	3	adj	56	67
311.157.011.034.005.007	FOR	7	prep	56	335
928.462.003.011.002.004	WHICH	4	pro	56	119
269.135.001.006.001.002	EXPLAIN	2	v obj	55	60
513.256.001.013.001.001	MUST	1	aux v	53	53
558.281.001.010.001.001	ONLY	1	adv	53	53
213.105.032.057.003.004	DO	4	aux v	51	66
466.241.001.005.001.002	MANY	2	adj	51	57
402.208.001.030.001.001	IRON	1	n	50	50
567.286.001.012.001.004	OTHER	4	adj	47	73
854.425.002.005.001.001	THUS	1	adv	47	47
555.278.001.049.001.006	ON	6	prep	46	179
896.448.001.009.001.001	VERY	1	adv	46	46
400.207.006.012.003.003	INTO	3	prep	45	66
316.159.032.044.002.003	FORM	3	v obj	44	64

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
360.183.025.038.004.006	HAVE	6	aux v	44	106
516.257.001.028.001.002	NAME	2	n	44	46
060.032.004.012.004.008	AT	8	prep	43	154
382.196.001.005.001.001	HOWEVER	1	adv	43	43
360.183.001.038.001.006	HAVE	6	v obj	42	106
893.445.007.018.001.001	VALUE	1	n	41	41
836.413.006.016.002.004	TEST	4	n	40	50
697.349.003.010.001.002	SAME	2	adj	39	51
847.421.001.010.001.003	THIS	3	pro	39	252
954.476.001.011.001.001	WOULD	1	aux v	39	39
026.011.011.016.001.003	AGENT	3	n	38	41
040.021.003.007.001.001	AMOUNT	1	n	38	38
072.038.001.011.001.005	BE	5	v wo obj	38	222
087.046.001.018.001.004	BETWEEN	4	prep	38	63
840.417.007.012.001.001	THERE	1	pro	38	38
002.002.001.021.001.003	ABOUT	3	prep	36	74
002.002.003.021.002.003	ABOUT	3	prep	36	74
114.055.001.014.001.001	BUT	1	conj	36	36
427.216.015.027.001.001	LAW	1	n	36	36
618.313.003.006.001.001	PROBLEM	1	n	36	36
537.268.028.032.002.002	NOTE	2	v obj	35	36
745.370.008.008.001.001	SINCE	1	conj	34	34
764.397.002.010.001.003	SOME	3	adj	34	48
202.098.002.011.001.001	DETERMINE	1	v obj	33	33
389.200.001.007.001.002	IMPORTANT	2	adj	33	41
810.400.001.012.001.003	SUCH	3	adj	33	65
036.018.002.003.002.002	ALSO	2	adv	32	45
072.038.006.011.003.005	BE	5	v wo obj	32	222
557.280.016.027.004.005	ONE	5	pro	32	145
880.438.002.020.001.001	TYPE	1	n	32	32
044.024.001.007.001.002	ANOTHER	2	adj	31	54
810.400.013.012.003.003	SUCH	3	id	31	65
850.423.005.006.003.003	THREE	3	adj	31	34
229.112.002.003.002.002	EACH	2	pro	30	127
482.245.001.011.001.001	METAL	1	n	30	30

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
619.314.001.014.001.001	PRODUCE	1	v obj	30	30
928.462.005.011.003.004	WHICH	4	pro	30	119
825.407.001.016.001.002	SYSTEM	2	n	29	37
155.078.004.022.002.002	COMMON	2	adj	28	31
370.190.004.045.001.001	HIGH	1	adj	28	28
501.251.007.011.004.004	MORE	4	adv	28	64
133.066.041.049.001.002	CHARGE	2	n	27	28
351.178.002.014.001.001	GROUP	1	n	27	27
839.416.003.012.003.006	THEN	6	adv	27	41
551.275.002.002.001.001	OFTEN	1	adv	26	26
610.310.006.016.001.001	PRESENT	1	adj	26	26
421.213.001.014.001.001	LARGE	1	adj	25	25
933.466.001.007.001.002	WHY	2	adv	25	47
263.131.004.014.001.001	EXERCISE	1	n	24	24
501.251.001.011.001.004	MORE	4	adj	24	64
711.354.001.034.001.002	SEE	2	v obj	24	37
753.374.001.016.001.002	SIZE	2	n	24	25
808.399.001.014.001.001	SUBSTANCE	1	n	24	24
928.462.009.011.004.004	WHICH	4	adj	24	119
044.024.005.007.002.002	ANOTHER	2	pro	23	54
509.254.001.036.001.002	MOVE	2	v wo obj	23	25
857.427.022.027.007.007	TO	7	prep	23	821
057.031.004.031.002.005	AS	5	adv	22	265
311.157.003.034.003.007	FOR	7	prep	22	335
437.225.015.037.003.004	LEVEL	4	n	22	25
531.265.001.011.001.001	NO	1	adv	22	22
933.466.002.007.002.002	WHY	2	conj	22	47
039.020.001.008.001.001	AMONG	1	prep	21	21
321.160.007.008.002.002	FOUR	2	adj	21	26
442.228.002.045.001.002	LIGHT	2	n	21	22
504.252.009.014.003.003	MOST	3	adv	21	36
756.375.001.026.001.002	SMALL	2	adj	21	38
784.385.023.028.002.002	STANDARD	2	adj	21	24
926.460.007.015.002.002	WHERE	2	conj	21	23
038.019.001.004.001.001	ALWAYS	1	adv	20	20

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
525.262.001.015.001.001	NEW	1	adj	20	20
645.324.002.027.001.001	RATE	1	n	20	20
863.432.001.010.001.002	TOTAL	2	adj	20	27
924.458.008.032.002.002	WHAT	2	pro	20	146
956.477.001.022.001.002	WRITE	2	v obj	20	22
070.037.017.036.002.003	BASE	3	n	19	21
100.052.001.003.001.003	BOTH	3	adj	19	35
311.157.001.034.001.007	FOR	7	prep	19	335
430.218.001.008.001.001	LEARN	1	v obj	19	19
602.306.001.018.001.001	POSITION	1	n	19	19
620.315.004.005.001.001	PRODUCT	1	n	19	19
648.327.001.047.001.002	READ	2	v obj	19	22
029.001.013.031.001.004	AIR	4	n	18	23
083.044.006.014.001.001	BELOW	1	adv	18	18
160.081.001.011.001.001	CONSIDER	1	v obj	18	18
311.157.009.034.004.007	FOR	7	prep	18	335
400.207.001.012.001.003	INTO	3	prep	18	66
664.334.005.011.001.001	RELATIVE	1	adj	18	18
736.364.003.004.001.001	SHOULD	1	aux v	18	18
803.396.020.030.002.002	STRONG	2	adj	18	26
951.474.012.054.003.006	WORK	6	n	18	30
057.031.017.031.005.005	AS	5	id	17	265
157.079.001.015.001.002	COMPLETE	2	adj	17	20
179.088.013.014.001.001	CURRENT	1	adj	17	17
361.184.001.004.001.001	HE	1	pro	17	17
724.360.001.006.001.002	SEVERAL	2	adj	17	18
747.371.001.030.001.001	SINGLE	1	adj	17	17
756.375.005.026.002.002	SMALL	2	adj	17	38
197.096.001.005.001.001	DESCRIBE	1	v obj	16	16
511.255.001.007.001.003	MUCH	3	adj	16	30
557.280.010.027.002.005	ONE	5	n	16	145
604.307.001.002.001.001	POSSIBLE	1	adj	16	16
759.376.002.031.002.004	SO	4	adv	16	37
856.426.004.064.002.003	TIME	3	n	16	19
914.454.001.043.001.001	WAY	1	n	16	16

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
168.086.003.006.001.001	COULD	1	aux v	15	15
316.159.006.044.001.003	FORM	3	n	15	64
323.161.026.049.002.003	FREE	3	adj	15	17
393.203.009.011.003.003	INCREASE	3	n	15	22
433.221.001.017.001.001	LENGTH	1	n	15	15
462.239.002.084.002.006	MAKE	6	v obj	15	31
476.244.023.040.002.002	MEASURE	2	v obj	15	19
585.297.001.004.001.001	PER	1	prep	15	15
676.340.003.006.002.002	RESULT	2	n	15	16
950.473.001.028.001.001	WORD	1	n	15	15
046.026.001.009.001.004	ANY	4	adj	14	22
078.041.001.017.001.002	BEFORE	2	prep	14	19
100.052.003.003.003.003	BOTH	3	conj	14	35
220.107.004.071.002.003	DRAW	3	v obj	14	20
253.124.002.014.002.002	EQUAL	2	adj	14	25
268.134.001.004.001.001	EXPERIMENT	1	n	14	14
300.150.001.021.001.003	FIRST	3	adj	14	31
300.150.005.021.002.003	FIRST	3	adv	14	31
311.157.026.034.007.007	FOR	7	prep	14	335
358.182.030.058.002.002	HARD	2	adj	14	16
555.278.002.049.002.006	ON	6	prep	14	179
739.366.004.029.002.002	SIDE	2	n	14	16
036.018.001.003.001.002	ALSO	2	adv	13	45
060.032.001.012.001.008	AT	8	prep	13	167
060.032.003.012.003.008	AT	8	prep	13	154
087.046.003.018.003.004	BETWEEN	4	prep	13	63
213.105.002.057.001.004	DO	4	v obj	13	66
232.114.001.015.001.003	EARTH	3	n	13	15
236.117.001.012.001.001	EFFECT	1	n	13	13
316.158.012.036.001.002	FORCE	2	n	13	14
360.183.009.038.003.006	HAVE	6	v obj	13	106
390.201.006.034.004.007	IN	7	prep	13	950
415.212.001.012.001.001	KNOW	1	v obj	13	13
432.220.001.011.001.004	LEFT	4	adj	13	31
539.270.001.013.001.001	NOW	1	adv	13	13

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
658.331.001.027.001.001	RECORD		1 v obj	13	13
711.354.005.034.002.002	SEE		2 v obj	13	37
743.368.001.021.001.001	SILVER		1 n	13	13
791.389.010.045.001.001	STEP		1 n	13	13
792.390.010.023.001.001	STILL		1 adv	13	13
820.406.001.015.001.002	SURFACE		2 n	13	18
945.470.006.014.001.001	WITHIN		1 prep	13	13
076.040.001.005.001.001	BECOME		1 v wo obj	12	12
219.106.001.051.001.003	DOWN		3 adv	12	15
247.120.001.044.001.002	END		2 n	12	14
336.168.004.012.001.002	GENERAL		2 adj	12	15
532.266.009.013.001.001	NOBLE		1 adj	12	12
567.286.008.012.003.004	OTHER		4 n	12	73
691.346.001.024.001.001	RULE		1 n	12	12
697.349.006.010.002.002	SAME		2 pro	12	51
764.397.006.010.003.003	SOME		3 pro	12	48
790.388.001.012.001.001	STEEL		1 n	12	12
890.444.012.027.002.003	USE		3 n	12	79
087.046.007.018.004.004	BETWEEN		4 prep	11	63
124.061.001.019.001.003	CASE		3 n	11	13
161.082.003.008.001.001	CONTAIN		1 v obj	11	11
253.124.001.014.001.002	EQUAL		2 adj	11	25
255.126.015.026.001.001	EVEN		1 adv	11	11
325.162.002.007.002.003	FROM		3 prep	11	214
330.166.013.019.002.002	GAIN		2 n	11	16
390.201.033.034.007.007	IN		7 id	11	950
392.202.001.003.001.001	INCLUDE		1 v obj	11	11
457.236.003.015.001.001	LOSS		1 n	11	11
511.255.004.007.003.003	MUCH		3 adv	11	30
553.276.001.018.001.003	OIL		3 n	11	15
574.290.001.016.001.001	PAGE		1 n	11	11
591.301.030.050.004.005	PLACE		5 v obj	11	27
591.301.050.050.005.005	PLACE		5 id	11	27
659.332.007.015.002.002	RED		2 adj	11	13
671.338.002.016.001.001	REPRESENT		1 v obj	11	11

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
857.427.020.027.006.007	TO	7	prep	11	821
859.429.001.010.001.001	TOGETHER	1	adv	11	11
925.459.004.010.001.002	WHEN	2	conj	11	108
929.463.006.010.001.001	WHILE	1	conj	11	11
001.001.001.005.001.001	ABLE	1	adj	10	10
014.008.001.009.001.001	ADD	1	v obj	10	10
060.032.005.012.005.008	AT	8	prep	10	154
143.072.056.075.003.004	CLOSE	4	adv	10	19
205.100.001.013.001.002	DIFFERENCE	2	n	10	11
310.156.001.005.001.001	FOOD	1	n	10	10
473.243.001.024.001.001	MATTER	1	n	10	10
484.246.002.008.001.001	MIGHT	1	aux v	10	10
506.253.001.013.001.001	MOTOR	1	n	10	10
521.260.009.012.003.003	NEED	3	v wo obj	10	2
567.286.004.012.002.004	OTHER	4	adj	10	73
680.342.028.062.002.003	RIGHT	3	n	10	23
680.342.046.062.003.003	RIGHT	3	adv	10	23
759.376.004.031.003.004	SO	4	adv	10	37
844.419.002.027.001.001	THINK	1	v wo obj	10	10
895.447.001.009.001.001	VARIOUS	1	adj	10	10
952.475.008.024.003.003	WORLD	3	n	10	13
962.478.016.018.002.002	YIELD	2	n	10	12
053.029.017.033.002.003	AROUND	3	prep	9	13
075.039.002.002.002.002	BECAUSE	2	id	9	79
209.103.001.021.001.001	DISTANCE	1	n	9	9
259.128.001.006.001.001	EVERY	1	adj	9	9
281.143.001.006.001.002	FEW	2	adj	9	10
341.170.013.056.002.004	GIVE	4	v obj	9	21
440.227.001.036.001.001	LIFE	1	n	9	9
462.239.063.084.006.006	MAKE	6	phr v	9	31
501.251.004.011.003.004	MORE	4	n	9	64
535.271.001.014.001.001	OBJECT	1	n	9	9
577.293.001.039.001.001	PART	1	n	9	9
626.317.006.010.001.001	PROPERTY	1	n	9	9
630.319.001.008.001.001	PROVIDE	1	v obj	9	9

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
687.345.001.009.001.001	ROOM	1	n	9	9
759.376.001.031.001.004	SO	4	adv	9	37
851.424.001.024.001.004	THROUGH	4	prep	9	22
865.433.001.011.001.001	TOWARD	1	prep	9	9
879.437.003.007.001.002	TWO	2	n	9	88
887.441.001.005.001.001	UNTIL	1	conj	9	9
928.462.001.011.001.004	WHICH	4	pro	9	119
932.465.004.013.002.002	WHOLE	2	adj	9	12
022.009.002.018.002.007	AFTER	7	prep	8	24
022.009.003.018.003.007	AFTER	7	prep	8	24
035.017.001.003.001.001	ALREADY	1	adv	8	8
045.025.005.023.002.003	ANSWER	3	n	8	20
098.050.010.028.001.002	BODY	2	n	8	13
306.154.023.023.002.002	FLOW	2	n	8	11
347.174.012.058.002.002	GOOD	2	adj	8	9
389.200.002.007.002.002	IMPORTANT	2	adj	8	41
432.220.011.011.004.004	LEFT	4	v obj	8	31
435.223.006.019.001.001	LET	1	v obj	8	8
459.237.011.051.001.001	LOW	1	adj	8	8
461.238.001.014.001.001	MAIN	1	adj	8	8
504.252.001.014.001.003	MOST	3	adj	8	36
557.280.012.027.003.005	ONE	5	n	8	145
578.294.001.013.001.001	PARTICULAR	1	adj	8	8
597.304.014.050.003.005	POINT	5	n	8	79
708.353.001.034.001.002	SECOND	2	adj	8	9
723.359.006.006.001.001	SEVEN	1	adj	8	8
803.396.002.030.001.002	STRONG	2	adj	8	26
825.407.006.016.002.002	SYSTEM	2	n	8	37
909.451.002.017.001.001	WANT	1	v obj	8	8
927.461.001.005.001.002	WHETHER	2	conj	8	11
006.005.012.026.001.002	ACCOUNT	2	v wo obj	7	8
023.010.001.007.001.001	AGAIN	1	adv	7	7
067.036.001.027.001.001	BALL	1	n	7	7
045.025.002.023.001.003	ANSWER	3	n	7	20
063.033.006.015.002.004	AVERAGE	4	adj	7	10

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
129.063.005.011.001.002	CERTAIN	2	adj	7	13
240.118.006.006.001.001	EIGHT	1	adj	7	7
273.138.017.055.001.002	FACE	2	n	7	8
274.139.008.008.002.002	FACT	2	id	7	12
325.162.001.007.001.003	FROM	3	prep	7	214
341.170.008.056.001.004	GIVE	4	v obj	7	21
366.179.001.020.001.002	HALF	2	n	7	9
368.180.076.092.002.002	HAND	2	id	7	8
378.194.001.037.001.001	HOT	1	adj	7	7
390.201.005.034.003.007	IN	7	prep	7	950
429.217.057.072.002.002	LEAD	2	n	7	11
432.220.004.011.002.004	LEFT	4	n	7	31
434.222.010.010.004.004	LESS	4	id	7	12
443.229.006.029.002.003	LIKE	3	prep	7	18
454.234.001.036.001.004	LOOK	4	v wo obj	7	15
456.235.008.028.001.001	LOSE	1	v obj	7	7
462.239.001.084.001.006	MAKE	6	v obj	7	31
494.249.001.009.001.001	MODERN	1	adj	7	7
504.252.004.014.002.003	MOST	3	n	7	36
519.259.001.004.001.001	NECESSARY	1	adj	7	7
538.269.009.013.001.001	NOTICE	1	v obj	7	7
544.272.003.012.001.001	OBSERVE	1	v obj	7	7
570.287.001.076.001.001	OUT	1	adv	7	7
576.292.001.035.001.001	PAPER	1	n	7	7
584.296.002.013.001.002	PEOPLE	2	n	7	8
590.300.001.033.001.001	PIECE	1	n	7	7
646.325.007.009.002.002	RATHER	2	adv	7	9
696.348.001.024.001.003	SALT	3	n	7	10
704.351.001.007.001.001	SCIENCE	1	n	7	7
721.058.068.119.002.003	SET	3	n	7	10
744.369.001.027.001.002	SIMPLE	2	adj	7	12
751.372.001.007.001.001	SITUATION	1	n	7	7
761.377.001.013.001.001	SOCIETY	1	n	7	7
818.404.001.007.001.001	SUPPOSE	1	v obj	7	7
826.408.022.026.002.002	TABLE	2	adj	7	78

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
863.432.005.010.002.002	TOTAL	2	n	7	27
902.450.008.018.002.002	VISIT	2	v obj	7	8
949.472.001.017.001.002	WOOD	2	n	7	9
030.014.009.039.002.003	ALL	3	pro	6	67
057.031.005.031.003.005	AS	5	conj	6	265
060.032.007.012.007.008	AT	8	prep	6	154
127.062.009.010.002.002	CAUSE	2	v obj	6	8
129.063.005.011.002.002	CERTAIN	2	adj	6	13
185.090.001.015.001.001	DAY	1	n	6	6
272.137.012.054.002.002	EYE	2	n	6	9
303.152.006.007.001.001	FIVE	1	adj	6	6
333.167.003.018.002.003	GAS	3	n	6	90
443.229.019.029.003.003	LIKE	3	conj	6	18
446.231.001.082.001.004	LINE	4	n	6	10
466.241.005.005.002.002	MANY	2	pro	6	57
556.279.001.015.001.001	ONCE	1	adv	6	6
565.285.001.017.001.001	ORDINARY	1	adj	6	6
588.298.001.015.001.001	PERSON	1	n	6	6
599.305.006.017.001.001	POOR	1	adj	6	6
609.309.001.005.001.001	PREPARE	1	v obj	6	6
637.321.001.009.001.001	QUANTITY	1	n	6	6
640.322.002.020.001.002	QUESTION	2	n	6	7
647.326.002.029.001.001	REACH	1	v obj	6	6
668.336.001.010.001.001	REMEMBER	1	v obj	6	6
752.373.001.009.001.001	SIX	1	adj	6	6
814.402.001.017.001.001	SUN	1	n	6	6
827.409.051.126.006.006	TAKE	6	v obj	6	14
881.439.016.030.001.001	UNDER	1	prep	6	6
889.443.006.006.001.001	UPON	1	prep	6	6
008.006.001.010.001.001	ACROSS	1	prep	5	5
013.007.001.003.001.001	ACTUAL	1	adj	5	5
030.014.014.039.003.003	ALL	3	adv	5	67
031.015.003.009.002.002	ALLOW	2	v obj	5	6
045.025.015.023.003.003	ANSWER	3	v obj	5	20
046.026.005.009.002.004	ANY	4	adj	5	22

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
048.028.001.014.001.002	APPLY	2	v obj	5	7
078.041.017.017.002.002	BEFORE	2	conj	5	19
098.050.010.028.002.002	BODY	2	n	5	13
123.060.044.052.002.002	CARRY	2	phr v	5	8
162.083.008.011.001.001	CONTENT	1	n	5	5
220.107.002.071.001.003	DRAW	3	v obj	5	20
233.113.007.011.002.002	EARLY	2	adj	5	6
264.132.001.005.001.001	EXIST	1	v wo obj	5	5
269.135.003.006.002.002	EXPLAIN	2	v obj	5	60
270.136.004.020.001.001	EXPRESS	1	v obj	5	5
274.139.001.008.001.002	FACT	2	n	5	12
280.141.001.010.001.001	FAMILIAR	1	adj	5	5
296.147.004.020.002.006	FIND	6	v obj	5	18
316.159.043.044.003.003	FORM	3	v wo obj	5	64
321.160.001.008.001.002	FOUR	2	n	5	26
330.166.002.019.001.002	GAIN	2	v obj	5	16
336.168.012.012.002.002	GENERAL	2	id	5	15
344.172.001.098.001.002	GO	2	v wo obj	5	6
346.173.001.014.001.001	GOLD	1	n	5	5
368.188.003.023.001.003	HELP	3	v obj	5	8
371.191.002.011.001.001	HILL	1	n	5	5
386.198.001.009.001.001	IDEA	1	n	5	5
393.203.002.011.002.003	INCREASE	3	v obj	5	22
398.206.003.003.002.002	INSTEAD	2	id	5	5
409.210.005.013.002.003	JUST	3	adv	5	10
443.229.001.029.001.003	LIKE	3	adj	5	18
444.230.001.005.001.001	LIKELY	1	adj	5	5
523.261.001.004.001.001	NEITHER	1	conj	5	5
528.263.001.009.001.002	NEXT	2	adj	5	6
534.267.001.006.001.001	NOR	1	conj	5	5
564.284.004.056.001.003	ORDER	3	n	5	10
575.291.001.016.001.001	PAINT	1	n	5	5
650.328.002.016.001.001	REAL	1	adj	5	5
700.350.001.017.001.001	SAY	1	v obj	5	5
729.363.004.008.001.001	SHARE	1	v obj	5	5

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
738.365.007.041.001.001	SHOW	1	v obj	5	5
741.367.014.030.002.002	SIGN	2	n	5	6
744.369.017.027.002.002	SIMPLE	2	adj	5	12
762.378.019.038.002.002	SOFT	2	adj	5	7
820.406.008.015.002.002	SURFACE	2	adj	5	18
839.416.007.012.005.006	THEN	6	adv	5	41
851.424.008.024.004.004	THROUGH	4	prep	5	22
858.428.002.005.001.001	TODAY	1	n	5	5
917.456.001.027.001.001	WEAR	1	v obj	5	5
921.457.001.030.001.003	WELL	3	adv	5	7
003.003.001.023.001.003	ABOVE	3	adv	4	8
035.065.061.067.003.004	BACK	4	adv	4	7
060.032.009.012.008.008	AT	8	prep	4	154
079.042.001.005.001.001	BEGIN	1	v wo obj	4	4
099.051.004.050.001.001	BOOK	1	n	4	4
104.053.001.009.001.001	BREAD	1	n	4	4
105.054.105.122.004.004	BREAK	4	phr v	4	11
130.064.003.017.001.002	CHANCE	2	n	4	6
131.065.009.038.003.004	CHANGE	4	v wo obj	4	66
116.056.011.035.003.007	BY	7	prep	4	233
143.072.027.075.001.004	CLOSE	4	adj	4	19
143.072.057.075.004.004	CLOSE	4	adv	4	19
147.075.001.014.001.001	COIN	1	n	4	4
152.077.006.062.001.002	COME	2	v wo obj	4	5
164.085.001.018.001.001	CONTROL	1	v obj	4	4
189.092.001.005.001.001	DECIDE	1	v obj	4	4
227.111.011.013.001.001	DUE	1	id	4	4
235.116.001.025.001.001	EAT	1	v obj	4	4
241.119.004.005.001.001	EITHER	1	conj	4	4
251.122.001.005.001.002	ENOUGH	2	adj	4	6
296.147.002.020.001.006	FIND	6	v obj	4	18
305.153.002.021.002.002	FLOOR	2	n	4	5
309.155.004.026.002.002	FOLLOW	2	v wo obj	4	2
327.163.003.021.003.003	FULL	3	adj	4	7
341.170.047.056.003.004	GIVE	4	phr v	4	21

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
350.177.005.055.002.003	GROUND	3 n		4	7
372.192.004.008.001.001	HISTORY	1 n		4	4
429.217.020.072.001.002	LEAD	2 v wo obj		4	11
476.244.001.040.001.002	MEASURE	2 n		4	19
486.247.001.010.001.001	MILK	1 n		4	4
487.248.001.008.001.001	MILLION	1 n		4	4
518.258.001.023.001.001	NEAR	1 adv		4	4
555.278.005.049.004.006	ON	6 prep		4	179
555.278.006.049.005.006	ON	6 prep		4	179
564.284.051.056.002.003	ORDER	3 id		4	10
567.286.011.012.004.004	OTHER	4 adv		4	73
571.288.018.061.003.005	OVER	5 prep		4	9
641.323.001.003.001.001	QUITE	1 adv		4	4
660.333.001.021.001.001	REDUCE	1 v obj		4	4
666.335.001.007.001.001	REMAIN	1 v wo obj		4	4
705.352.008.016.002.002	SEA	2 n		4	6
717.357.001.022.001.002	SEPARATE	2 v obj		4	6
771.380.002.024.001.003	SPACE	3 n		4	6
805.397.001.002.001.001	STUDENT	1 n		4	4
806.398.020.026.002.002	STUDY	2 v obj		4	6
834.411.001.008.001.002	TEN	2 n		4	5
835.412.001.018.001.002	TERM	2 n		4	6
836.413.009.016.003.004	TEST	4 v obj		4	50
839.416.002.012.002.006	THEN	6 adv		4	41
851.424.004.024.002.004	THROUGH	4 prep		4	22
851.424.007.024.003.004	THROUGH	4 prep		4	22
861.430.005.006.001.001	TOO	1 adv		4	4
882.440.001.013.001.001	UNDERSTAND	1 v obj		4	4
888.442.001.093.001.002	UP	2 adv		4	8
888.442.092.093.002.002	UP	2 id		4	8
894.446.001.010.001.001	VARIETY	1 n		4	4
951.474.019.054.005.006	WORK	6 v obj		4	30
003.003.002.023.002.003	ABOVE	3 adv		3	8
029.013.020.031.003.004	AIR	4 adj		3	23
047.027.002.008.001.001	APPEAR	1 v wo obj		3	3

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
064.034.001.016.001.002	AWAY	2	adv	3	4
072.038.008.011.004.005	BE	5	aux v	3	222
093.048.001.024.001.001	BLOOD	1	n	3	3
095.049.003.024.001.002	BLUE	2	n	3	6
095.049.011.024.002.002	BLUE	2	adj	3	6
105.054.034.122.002.004	BREAK	4	v wo obj	3	11
105.054.078.122.003.004	BREAK	4	n	3	11
121.059.001.006.001.001	CAR	1	n	3	3
123.060.019.052.001.002	CARRY	2	n	3	8
116.056.009.035.002.007	BY	7	prep	3	233
116.056.012.035.004.007	BY	7	prep	3	233
136.067.001.009.001.001	CHOOSE	1	v obj	3	3
140.057.018.069.001.001	CALL	1	v obj	3	3
145.074.001.008.001.001	COAL	1	n	3	3
148.076.001.031.001.001	COLD	1	adj	3	3
155.078.001.022.001.002	COMMON	2	adj	3	31
157.079.011.015.002.002	COMPLETE	2	v obj	3	20
163.084.001.011.001.001	CONTINUE	1	v wo obj	3	3
187.091.019.026.002.002	DEAL	2	n	3	4
193.094.003.018.001.001	DEGREE	1	n	3	3
196.095.001.006.001.001	DEPEND	1	v wo obj	3	3
201.097.013.013.001.001	DETAIL	1	id	3	3
206.101.001.007.001.001	DIFFICULT	1	adj	3	3
212.104.007.017.001.001	DIVIDE	1	v obj	3	3
224.108.001.039.001.002	DRIVE	2	v obj	3	4
225.109.001.074.001.004	DROP	4	n	3	7
234.115.001.017.001.001	EASY	1	adj	3	3
254.125.001.020.001.002	ESCAPE	2	v wo obj	3	4
272.137.001.054.001.002	EYE	2	n	3	9
283.142.001.022.001.004	FAR	4	adv	3	8
295.146.001.032.001.002	FILL	2	v obj	3	4
296.147.009.020.005.006	FIND	6	v obj	3	18
296.147.018.020.006.006	FIND	6	phr v	3	18
300.150.010.021.001.003	FIRST	3	n	3	31
306.154.003.023.001.002	FLOW	2	v wo obj	3	11

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
311.157.025.034.006.007	FOR	7	prep	3	335
328.164.002.003.001.001	FURNISH	1	v obj	3	3
343.171.001.017.001.002	GLASS	2	n	3	4
348.175.001.023.001.002	GREAT	2	adj	3	4
349.176.018.033.001.001	GREEN	1	n	3	3
360.183.004.038.002.006	HAVE	6	v obj	3	106
360.183.026.038.005.006	HAVE	6	aux v	3	106
367.187.026.034.001.001	HEAVY	1	adj	3	3
369.189.001.018.001.002	HERE	2	adv	3	5
395.204.001.023.001.002	INDEPENDENT	2	adj	3	5
398.197.001.005.001.001	HUMAN	1	adj	3	3
398.206.001.003.001.002	INSTEAD	2	adv	3	5
400.207.004.012.002.003	INTO	3	prep	3	66
409.210.012.013.003.003	JUST	3	adv	3	10
413.211.006.013.001.001	KIND	1	n	3	3
432.220.010.011.003.004	LEFT	4	adv	3	31
436.224.002.012.001.001	LETTER	1	n	3	3
450.232.001.024.001.003	LITTLE	3	adj	3	8
450.232.003.024.002.003	LITTLE	3	adj	3	8
454.234.031.036.004.004	LOOK	4	phr v	3	15
462.239.008.084.003.006	MAKE	6	v obj	3	31
501.251.003.011.002.004	MORE	4	n	3	64
553.276.003.018.002.003	OIL	3	n	3	15
555.278.026.049.006.006	ON	6	prep	3	179
573.289.001.011.001.001	OWN	1	adj	3	3
591.301.003.050.002.005	PLACE	5	n	3	27
594.302.001.029.001.002	PLANT	2	n	3	5
608.308.017.032.001.003	POWER	3	n	3	7
615.312.001.006.001.001	PREVENT	1	v obj	3	3
627.318.001.009.001.001	PROPOSE	1	v obj	3	3
648.327.015.047.002.002	READ	2	v obj	3	22
653.330.001.019.001.001	REASON	1	n	3	3
677.341.005.045.001.001	RETURN	1	v obj	3	3
679.356.025.025.002.002	SENSE	2	id	3	4
680.342.003.062.001.003	RIGHT	3	adj	3	23

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
681.343.017.064.002.002	RING	2	n	3	4
728.362.001.023.001.001	SHAPE	1	n	3	3
774.382.001.022.001.002	SPEED	2	n	3	5
784.385.001.028.001.002	STANDARD	2	n	3	24
786.386.008.030.001.002	START	2	v obj	3	4
795.392.016.046.001.001	STOP	1	v wo obj	3	3
801.395.009.013.001.001	STRENGTH	1	n	3	3
819.405.014.016.001.002	SURE	2	adj	3	6
819.405.016.016.002.002	SURE	2	id	3	6
827.409.003.126.002.006	TAKE	6	v obj	3	14
832.410.002.023.001.001	TELL	1	v obj	3	3
836.413.004.016.001.004	TEST	4	n	3	50
837.414.003.006.002.003	THAN	3	conj	3	78
862.431.001.050.001.001	TOP	1	n	3	3
899.449.006.022.001.001	VIEW	1	n	3	3
913.453.002.027.001.001	WAVE	1	n	3	3
927.461.002.005.002.002	WHETHER	2	conj	3	11
930.464.019.042.002.002	WHITE	2	n	3	4
932.465.001.013.001.002	WHOLE	2	adj	3	12
951.474.001.054.001.006	WORK	6	n	3	30
964.480.001.011.001.001	YOUNG	1	adj	3	3
002.002.004.021.003.003	ABOUT	3	prep	2	74
004.004.001.014.001.001	ACCEPT	1	v obj	2	2
022.009.001.018.001.007	AFTER	7	prep	2	24
022.009.008.018.004.007	AFTER	7	prep	2	24
022.009.013.018.005.007	AFTER	7	adv	2	24
026.011.012.016.002.003	AGENT	3	n	2	41
027.012.001.002.001.001	AGO	1	adj	2	2
034.016.004.015.002.003	ALONG	3	adv	2	4
041.022.002.009.001.001	ANCIENT	1	adj	2	2
046.026.009.009.004.004	ANY	4	adv	2	22
048.028.011.014.002.002	APPLY	2	v wo obj	2	7
053.029.010.033.001.003	AROUND	3	adv	2	13
053.029.023.033.003.003	AROUND	3	prep	2	13
055.030.002.016.001.001	ART	1	n	2	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
060.032.006.012.006.008	AT		8 prep	2	154
081.043.002.007.001.002	BELIEVE		2 v wo obj	2	3
086.045.001.020.001.002	BEST		2 adj	2	3
092.047.020.033.001.001	BLACK		1 n	2	2
100.052.002.003.002.003	BOTH		3 pro	2	35
119.058.014.017.001.001	CAPITAL		1 adj	2	2
127.062.001.010.001.002	CAUSE		2 n	2	8
130.064.004.017.002.002	CHANCE		2 n	2	6
131.065.001.038.001.004	CHANGE		4 v obj	2	66
138.068.003.023.001.001	CIRCLE		1 n	2	2
139.069.001.008.001.001	CITY		1 n	2	2
144.073.002.018.001.001	CLOUD		1 n	2	2
172.087.004.032.001.002	COURSE		2 n	2	4
172.087.032.032.002.002	COURSE		2 id	2	4
180.089.002.089.001.001	CUT		1 v obj	2	2
191.093.001.041.001.001	DEEP		1 adj	2	2
204.099.021.026.001.001	DIE		1 n	2	2
208.102.001.002.001.001	DISCOVER		1 v obj	2	2
219.106.011.051.002.003	DOWN		3 adv	2	15
225.109.033.074.003.004	DROP		4 v wo obj	2	7
247.120.006.044.002.002	END		2 n	2	14
251.122.003.005.002.002	ENOUGH		2 adv	2	6
252.123.001.017.001.001	ENTER		1 v wo obj	2	2
258.127.003.007.001.001	EVER		1 adv	2	2
261.130.001.005.001.002	EXCEPT		2 prep	2	3
265.133.003.005.002.002	EXPECT		2 v obj	2	3
283.142.005.022.002.004	FAR		4 adj	2	8
283.142.019.022.003.004	FAR		4 id	2	8
296.147.006.020.003.006	FIND		6 v obj	2	18
297.148.003.029.001.001	FINE		1 adj	2	2
299.149.001.057.001.001	FIRE		1 n	2	2
301.151.001.026.001.001	FISH		1 n	2	2
327.163.001.021.001.003	FULL		3 adj	2	7
329.165.001.008.001.001	FUTURE		1 n	2	2

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
338.169.002.063.001.007	GET	7	v obj	2	11
338.169.004.063.002.007	GET	7	v obj	2	11
338.169.020.063.003.007	GET	7	v wo obj	2	11
338.169.028.063.005.007	GET	7	v wo obj	2	11
338.169.062.063.007.007	GET	7	id	2	11
350.177.001.055.001.003	GROUND	3	n	2	7
356.181.001.007.001.001	HAPPEN	1	v wo obj	2	2
358.182.003.058.001.002	HARD	2	adj	2	16
362.185.007.084.001.001	HEAD	1	n	2	2
366.179.009.020.002.002	HALF	2	adj	2	9
368.188.013.023.003.003	HELP	3	n	2	8
369.189.010.018.002.002	HERE	2	adj	2	5
373.193.004.058.001.002	HOLD	2	v obj	2	3
393.203.001.011.001.003	INCREASE	3	v obj	2	22
395.204.004.023.002.002	INDEPENDENT	2	adj	2	5
396.205.001.008.001.001	INDUSTRY	1	n	2	2
409.210.009.013.001.003	JUST	3	adv	2	10
423.215.008.013.001.001	LATE	1	adj	2	2
434.222.001.010.001.004	LESS	4	adv	2	12
434.222.004.010.002.004	LESS	4	adj	2	12
439.226.017.027.002.002	LIE	2	v wo obj	2	3
446.231.005.082.003.004	LINE	4	n	2	10
450.232.004.024.003.003	LITTLE	3	adj	2	8
453.233.001.039.001.001	LONG	2	adj	2	4
453.233.003.039.001.002	LONG	2	adj	2	4
454.234.012.036.002.004	LOOK	4	v obj	2	15
454.234.016.036.003.004	LOOK	4	n	2	15
462.239.039.084.004.006	MAKE	6	v wo obj	2	31
464.240.001.013.001.001	MANNER	1	n	2	2
499.250.001.016.001.002	MOON	2	n	2	3
509.254.012.036.002.002	MOVE	2	v obj	2	25
511.255.002.007.002.003	MUCH	3	n	2	30
516.257.015.028.002.002	NAME	2	v obj	2	46
521.260.008.012.002.003	NEED	3	v obj	2	2
530.264.007.008.001.001	NINE	1	adj	2	2
547.274.001.056.001.001	OFF	1	adv	2	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
554.277.006.028.001.001	OLD	1	adj	2	2
557.280.018.027.005.005	ONE	5	pro	2	145
571.288.016.061.002.005	OVER	5	prep	2	9
581.295.002.018.001.002	PAST	2	adj	2	3
589.299.001.016.001.001	PICTURE	1	n	2	2
594.302.004.029.002.002	PLANT	2	n	2	5
597.304.017.050.004.005	POINT	5	n	2	79
608.308.019.032.002.003	POWER	3	n	2	7
608.308.021.032.003.003	POWER	3	v obj	2	7
625.316.009.018.002.002	PROPER	2	adj	2	3
634.320.001.011.001.001	PURPOSE	1	n	2	2
646.325.001.009.001.002	RATHER	2	adv	2	9
653.329.001.004.001.001	REALLY	1	adv	2	2
659.332.001.015.001.002	RED	2	n	2	13
670.337.012.025.002.002	REPORT	2	v obj	2	3
682.344.007.055.001.001	RISE	1	v wo obj	2	2
696.348.003.024.002.003	SALT	3	n	2	10
705.352.001.016.001.002	SEA	2	n	2	6
712.355.001.005.001.001	SEEM	1	v wo obj	2	2
717.357.013.022.002.002	SEPARATE	2	adj	2	6
721.058.115.119.003.003	SET	3	id	2	10
726.361.008.046.001.001	SHAKE	1	v obj	2	2
739.366.027.029.002.002	SIDE	2	id	2	16
759.376.019.031.004.004	SO	4	conj	2	37
762.378.001.038.001.002	SOFT	2	adj	2	7
764.397.003.010.002.003	SOME	3	adj	2	48
773.381.001.013.001.001	SPECIAL	1	adj	2	2
774.382.011.022.002.002	SPEED	2	v obj	2	5
779.383.005.041.001.002	SPREAD	2	v obj	2	3
793.391.043.061.001.001	STOCK	1	adj	2	2
798.394.002.005.001.001	STRANGE	1	adj	2	2
806.398.005.026.001.002	STUDY	2	n	2	6
827.409.048.126.005.006	TAKE	6	v obj	2	14
835.412.008.018.002.002	TERM	2	n	2	6
836.413.010.016.004.004	TEST	4	v obj	2	50

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
839.416.005.012.004.006	THEN		6 adv	2	41
839.416.008.012.006.006	THEN		6 adv	2	41
845.420.001.004.001.001	THIRTEEN		1 n	2	2
848.422.001.004.001.001	THOUGH		1 conj	2	2
850.423.003.006.002.003	THREE		3 n	2	34
856.426.001.064.001.003	TIME		3 n	2	19
874.434.001.017.001.001	TRY		1 v obj	2	2
877.436.005.005.001.001	TWELVE		1 adj	2	2
926.460.001.015.001.002	WHERE		2 adv	2	23
934.467.001.018.001.001	WIDE		1 adj	2	2
937.468.008.025.002.002	WILL		2 aux v	2	112
946.471.001.011.001.001	WITHOUT		1 prep	2	2
949.472.009.017.002.002	WOOD		2 adj	2	9
951.474.004.054.002.006	WORK		6 n	2	30
951.474.016.054.004.006	WORK		6 v obj	2	30
952.475.004.024.002.003	WORLD		3 n	2	13
956.477.021.022.002.002	WRITE		2 phr v	2	22
962.478.002.018.001.002	YIELD		2 v obj	2	12
003.003.004.023.003.003	ABOVE		3 adv	1	8
006.005.025.026.002.002	ACCOUNT		2 id	1	8
022.009.016.018.006.007	AFTER		7 conj	1	24
022.009.018.018.007.007	AFTER		7 id	1	24
026.011.013.016.003.003	AGENT		3 n	1	41
029.013.002.031.002.004	AIR		4 n	1	23
029.013.003.031.003.004	AIR		4 n	1	23
031.015.001.009.001.002	ALLOW		2 v obj	1	6
034.016.001.015.001.003	ALONG		3 prep	1	4
034.016.007.015.003.003	ALONG		3 adv	1	4
035.065.006.067.001.004	BACK		4 n	1	7
035.065.060.067.002.004	BACK		4 adv	1	7
035.065.066.067.004.004	BACK		4 id	1	7
046.026.007.009.002.004	ANY		4 pro	1	22
063.033.001.015.001.004	AVERAGE		4 n	1	10
063.033.007.015.003.004	AVERAGE		4 adj	1	10
063.033.015.015.004.004	AVERAGE		4 id	1	10

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
064.034.005.016.002.002	AWAY		2 adv	1	4
070.037.006.036.001.003	BASE		3 n	1	21
070.037.028.036.003.003	BASE		3 adj	1	21
072.038.003.011.002.005	BE		5 v wo obj	1	222
081.043.006.007.002.002	BELIEVE		2 phr v	1	3
086.045.002.020.002.002	BEST		2 adv	1	3
087.046.002.018.002.004	BETWEEN		4 prep	1	63
105.054.001.122.001.004	BREAK		4 v obj	1	11
124.061.002.019.002.003	CASE		3 n	1	13
124.061.003.019.003.003	CASE		3 n	1	13
131.065.002.038.002.004	CHANGE		4 v obj	1	66
116.056.006.035.001.007	BY		7 prep	1	233
116.056.017.035.006.007	BY		7 prep	1	233
116.056.019.035.007.007	BY		7 prep	1	233
133.066.049.049.001.002	CHARGE		2 id	1	28
141.070.001.029.001.002	CLASS		2 n	1	4
141.070.002.029.002.002	CLASS		2 n	1	4
142.002.071.074.001.003	CLEAR		3 adj	1	3
142.071.009.074.002.003	CLEAR		3 adj	1	3
142.071.034.074.003.003	CLEAR		3 v obj	1	3
143.072.035.075.002.004	CLOSE		4 adj	1	19
152.077.026.062.002.002	COME		2 phr v	1	5
159.080.002.025.001.002	CONDITION		2 n	1	2
159.080.007.025.002.002	CONDITION		2 n	1	2
187.091.004.026.001.002	DEAL		2 v wo obj	1	4
205.100.009.013.002.002	DIFFERENCE		2 n	1	11
213.105.031.057.002.004	DO		4 v wo obj	1	66
213.105.034.057.004.004	DO		4 aux v	1	66
219.106.021.051.003.003	DOWN		3 adj	1	15
220.107.011.071.003.003	DRAW		3 v obj	1	20
224.108.003.039.002.002	DRIVE		2 v obj	1	4
225.109.010.074.002.004	DROP		4 n	1	7
225.109.035.074.004.004	DROP		4 v wo obj	1	7
226.110.001.034.001.003	DRY		3 adj	1	3
226.110.028.034.002.003	DRY		3 v obj	1	3
226.110.032.034.003.003	DRY		3 phr v	1	3

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
232.114.008.015.002.003	EARTH	3	n	1	15
232.114.009.015.003.003	EARTH	3	n	1	15
233.113.001.011.001.002	EARLY	2	adv	1	6
249.121.001.013.001.002	ENGLISH	2	adj	1	2
249.121.002.013.002.002	ENGLISH	2	adj	1	2
254.125.007.020.002.002	ESCAPE	2	v obj	1	4
261.130.005.005.002.002	EXCEPT	2	id	1	3
265.133.002.005.001.002	EXPECT	2	v obj	1	3
273.138.037.055.002.002	FACE	2	v wo obj	1	8
279.140.019.072.001.002	FALL	2	v wo obj	1	2
279.140.072.002.001.002	FALL	2	n	1	2
281.143.004.006.002.002	FEW	2	pro	1	10
283.142.022.022.004.004	FAR	4	id	1	8
285.145.036.038.002.002	FIGURE	2	id	1	126
292.144.004.040.001.002	FIELD	2	n	1	2
292.144.030.040.002.002	FIELD	2	adj	1	2
295.146.028.032.001.002	FILL	2	id	1	4
296.147.008.020.004.006	FIND	6	v obj	1	18
305.153.001.021.001.002	FLOOR	2	n	1	5
309.155.001.026.001.002	FOLLOW	2	v wo obj	1	2
316.158.035.036.002.002	FORCE	2	id	1	14
323.161.008.049.001.003	FREE	3	adj	1	17
323.161.034.049.003.003	FREE	3	adj	1	17
327.163.002.021.002.003	FULL	3	adj	1	7
333.167.004.018.003.003	GAS	3	n	1	90
338.169.022.063.004.007	GET	7	v wo obj	1	11
338.169.038.063.006.007	GET	7	phr v	1	11
341.170.050.056.004.004	GIVE	4	phr v	1	21
343.171.009.017.002.002	GLASS	2	n	1	4
344.172.057.098.002.002	GO	2	phr v	1	6
347.174.011.058.001.002	GOOD	2	adj	1	9
348.175.006.023.002.002	GREAT	2	adj	1	4
350.177.007.055.003.003	GROUND	3	n	1	7
360.183.037.038.006.006	HAVE	6	id	1	106

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
365.186.021.025.002.002	HEAT	2	v obj	1	63
368.180.004.092.001.002	HAND	2	n	1	8
368.188.012.023.002.003	HELP	3	n	1	8
373.193.033.058.002.002	HOLD	2	n	1	3
422.214.002.019.001.002	LAST	2	adj	1	2
422.214.004.019.002.002	LAST	2	adj	1	2
431.219.001.024.001.004	LEAVE	4	v obj	1	4
431.219.004.024.002.004	LEAVE	4	v obj	1	4
431.219.005.024.003.004	LEAVE	4	v obj	1	4
431.219.018.024.004.004	LEAVE	4	phr v	1	4
434.222.006.010.003.004	LESS	4	adj	1	12
437.225.002.037.001.004	LEVEL	4	adj	1	25
437.225.014.037.002.004	LEVEL	4	n	1	25
437.225.016.037.004.004	LEVEL	4	n	1	25
439.226.013.027.001.002	LIE	2	v wo obj	1	3
442.228.027.045.002.002	LIGHT	2	v obj	1	22
446.231.003.082.002.004	LINE	4	n	1	10
446.231.057.082.004.004	LINE	4	v obj	1	10
462.239.057.084.005.006	MAKE	6	phr v	1	31
499.250.004.016.002.002	MOON	2	n	1	3
521.260.001.012.001.003	NEED	3	n	1	2
528.263.009.009.002.002	NEXT	2	id	1	6
537.268.001.032.001.002	NOTE	2	n	1	36
553.276.015.018.003.003	OIL	3	adj	1	15
559.282.005.088.001.002	OPEN	2	adj	1	2
559.282.011.088.002.002	OPEN	2	adj	1	2
563.283.002.006.002.002	OR	2	conj	1	171
564.284.055.056.003.003	ORDER	3	id	1	10
571.288.001.061.001.005	OVER	5	prep	1	9
571.288.023.061.004.005	OVER	5	adv	1	9
571.288.034.061.005.005	OVER	5	adv	1	9
581.295.013.018.002.002	PAST	2	adv	1	3
584.296.004.013.002.002	PEOPLE	2	n	1	8
591.301.001.050.001.005	PLACE	5	n	1	27
591.301.025.050.003.005	PLACE	5	n	1	27

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Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
595.303.024.093.001.002	PLAY		2 v obj	1	2
595.303.045.093.002.002	PLAY		2 v wo obj	1	2
597.304.009.050.001.005	POINT		5 n	1	79
597.304.046.050.005.005	POINT		5 v wo obj	1	79
613.311.005.011.001.002	PRESSURE		2 n	1	75
625.316.001.018.001.002	PROPER		2 adj	1	3
640.322.019.020.002.002	QUESTION		2 id	1	7
670.337.001.025.001.002	REPORT		2 n	1	3
675.339.038.043.001.002	REST		2 id	1	2
675.339.040.043.002.002	REST		2 n	1	2
676.340.001.006.001.002	RESULT		2 v wo obj	1	16
679.356.024.025.001.002	SENSE		2 id	1	4
681.343.001.064.001.002	RING		2 n	1	4
692.347.001.179.001.003	RUN		3 v wo obj	1	3
692.347.039.179.002.003	RUN		3 v wo obj	1	3
692.347.073.179.003.003	RUN		3 v obj	1	3
696.348.018.024.003.003	SALT		3 adj	1	10
708.353.030.034.002.002	SECOND		2 adv	1	9
721.058.020.119.001.003	SET		3 v obj	1	10
724.360.005.006.002.002	SEVERAL		2 n	1	18
741.367.005.030.001.002	SIGN		2 n	1	6
753.374.012.016.002.002	SIZE		2 phr v	1	25
771.380.003.024.002.003	SPACE		3 n	1	6
771.380.023.024.003.003	SPACE		3 adj	1	6
779.383.018.041.002.002	SPREAD		2 v wo obj	1	3
783.384.001.066.001.002	STAND		2 v wo obj	1	2
783.384.015.066.001.002	STAND		2 v wo obj	1	2
786.386.017.030.002.002	START		2 n	1	4
796.393.002.016.001.002	STORE		2 n	1	2
796.393.009.016.002.002	STORE		2 v obj	1	2
810.400.008.012.002.003	SUCH		3 adv	1	65
812.401.001.005.001.002	SUGGEST		2 v obj	1	2
812.401.005.005.002.002	SUGGEST		2 v obj	1	2
817.403.004.019.001.002	SUPPORT		2 v obj	1	2
817.403.010.019.002.002	SUPPORT		2 n	1	2

Study Identifier	Type	Number Definitions Present	Part of Speech	Occurrences of Single Definition	Total Occurrences
827.409.001.126.001.006	TAKE	6	v obj	1	14
827.409.018.126.003.006	TAKE	6	v obj	1	14
827.409.032.126.004.006	TAKE	6	v obj	1	14
834.411.007.008.002.002	TEN	2	adj	1	5
837.414.004.006.003.003	THAN	3	conj	1	78
839.416.001.012.001.006	THEN	6	adv	1	41
847.421.009.010.003.003	THIS	3	adv	1	252
850.423.001.006.001.003	THREE	3	n	1	34
856.426.014.064.003.003	TIME	3	n	1	19
876.435.106.122.001.002	TURN	2	phr v	1	2
876.435.114.122.002.002	TURN	2	id	1	2
890.444.023.027.002.003	USE	3	phr v	1	79
902.450.001.018.001.002	VISIT	2	v obj	1	8
921.457.002.030.002.003	WELL	3	adv	1	7
921.457.019.030.003.003	WELL	3	id	1	7
930.464.001.042.001.002	WHITE	2	adj	1	4
951.474.044.054.006.006	WORK	6	phr v	1	30
952.475.001.024.001.003	WORLD	3	n	1	13

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