

**THE MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION
OF THE REPUBLIC OF UZBEKISTAN**

URGENCH STATE UNIVERSITY

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**MORPHOLOGICAL AND SEMANTIC ANALYSIS OF HYPHENATED
WORDS IN ENGLISH**

5A220102 – Linguistics (the English language)

Dissertation

for defending master's degree

Scientific supervisor:

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Urgench – 2014

Content

Introduction	3
Chapter I. The Role of Hyphenation in English Compound Words	8
1.1. Background Researches of Hyphenations.....	8
1.2. Methods of Researching Hyphenated Words.....	15
1.3. The Meanings of Compound Words When Hyphenated.....	19
1.3.1. Hyphenated Adjectives.....	22
1.3.2. Hyphenated Verbs.....	23
1.3.3. Hyphenated Nouns.....	23
Chapter II. Morphological Usage of Hyphenated Words in English	25
2.1. Ways of Separating Usage of Hyphenated Words.....	27
2.1.1. Justification and Line-wrapping.....	28
2.1.2. Prefixes and Suffixes Forming Hyphenated Words.....	29
2.1.3. Syllabification and Spelling of Hyphenated Words	32
2.2. Ways of Joining Usage of Hyphenated Words	33
2.2.1. Hyphenation Modifiers.....	33
2.2.2. Object–verbal Noun Hyphenations.....	35
2.2.3. Suspended hyphens.....	36
2.2.4. Other Hyphenations.....	40
Chapter III. Semantic Analysis of Hyphenated Words in English	41
3.1. Semantic Analysis Nominal hyphenations	43
3.2. Semantic Analysis Verbal hyphenations	58
3.3. Semantic Analysis Adjectival hyphenations	67
Conclusion	77
Used literatures	80
Internet sites	85
Appendix	86
Comments to Used Marks in the Work	89

Introduction

Development of a science as a whole and a linguistic science in particular is connected not only to the decision of actually scientific problems, but also with features internal and foreign policy of the state the maintains of the state educational standards which are to the generators of progress providing social, economical society. It forms the society capable quickly to adapt in the modern world. [1; 1, p. 322]

Conditions of reforming of all education system the question of the world assistance to improvement of quality of scientific-theoretical aspect of education process is a specially actually put. Speaking about the 20th anniversary of National Independence President I.A. Karimov has declared in the program speech “Harmoniously development of generation a busiest of progress of Uzbekistan”, “... all of us realize, that achievement of the great proposes put today before us, noble aspirations it is the necessary for updating a society”. [2; 2, p. 156] The effect and destiny of all reforms carried out in the name of progress and the future, results of our intentions are connected with highly skilled, conscious staff the experts who are meeting the requirements of time.

The actuality of the theme. The subject matter of our research work is to study the hyphenated words mainly; it is about the study of hyphenated words existing in the English language. In order to analyze our research work thoroughly we intended to learn our work in the following turns.

The main value of our dissertation is marked in defining the morphological and semantic analysis of the hyphenated words that existing in the English dictionary, and besides defining their given meanings, commentaries and definitions and also giving own ideas about them, and then in collecting all the hyphenated words out of the dictionary of the English language, newspapers, journals, scientific-public and literary books. In our work we also aimed at defining the particular features of hyphenated words semantically, phonetically, morphologically, ethologically.

The object of the work is compound and hyphenated words of the English language vocabulary.

The subject of the research is to carry out the discoveries on the morphological usage of compound and hyphenated words and defining the differences between their semantic usages.

The aim of the research is to show the ways of usage of hyphenated words in English, to carry out the semantic analysis of them. Relying on the above mentioned aims the following **duties** have been established:

1. To show the ways of separating and joining usage of hyphenated words in English;
2. To observe the meanings of compound words when they are hyphenated;
3. To discover the role of hyphenation in English compound words;
4. To carry out the semantic analysis of hyphenated words and
5. To differentiate nominal hyphenations, verbal hyphenations and adjectival hyphenations.

The main tasks and hypothesis of the work. The main substance of the work has been declared to the scientific public. The assessments are designed to develop students' interest, sensitivity and ability in lexical study. The in-class test is to check students' understanding of basic concepts of semantics and morphology, and their ability to apply the knowledge to the analysis of word structure and word meaning in isolation and in context. The oral presentation provides students a chance to appreciate good use of words in media. It assesses how students can apply lexical knowledge in practice, and demonstrate that they understand words phonologically, morphologically, syntactically and semantically.

Short analysis of literary works. The hyphenated words in the English language were before taught by Adams, V., Bauer, L., Grimshaw, J. B., Jackson H. and E.Z. Amvela, Lieber, R. and others.

Adams, V. mainly tried to clarify an introduction to modern English word formation and Complex Words in English. Bauer, L. learned these linguistic components from the point of view of English word-formation as their similarities

with the compound words because of several features. Besides them Grimshaw, J. B. learned the structure of English words, Jackson H. & E. Z. Amvela worked on words, meaning and vocabulary. And Lieber, R. carried out his research work on the lexical semantics of English compounds

Our dissertation work studies the role of hyphenation in English compound words, morphological usage of hyphenated words and the semantic analysis of them – the meanings in English language. From this point of view our work fully differs from the works above.

The methods of investigation: The methods of description, the method of componential analysis, the method of contextual analysis, distributional method, the method of choosing hyphenated words among the compound words, the classifying method, the method of semantic analysis. Methodological basis of the research is Decrees of the President of the Republic of Uzbekistan about the development of languages, education and science, the national program on a professional training and also basic researches in the field of word formation and lexicology of the English language as Plag, I. 2003. *Word-Formation in English*. Cambridge, Adams, V. 2001. *Complex Words in English*. Harlow: Longman, Allen, M. R. 1978. *Morphological Investigations*. PhD dissertation, University of Connecticut, Bauer, L. 1983. *English Word-Formation*. Cambridge: Cambridge University Press, Bauer, L. 2001. “Compounding”, Berlin, Bauer, L. 2008. “Dvandva”. *Word Structure*, Grimshaw, J. B. 2005. *Words and Structure*, Stanford, CA, Juhasz, B. J., Starr, M. S., Inhoff, A. W., & Placke, L. 2003. The effects of morphology on the processing of compound words: Evidence from naming, lexical decisions and eye fixations. *British Journal of Psychology* 1994, Levi, J. 1978. *The Syntax and Semantics of Complex Nominals*. New York: Academic Press, Lieber, R. 2008. “On the Lexical Semantics of English Compounds”. Talk given at the CompoNet Congress on Compounding 2008, University of Bologna, Marchand, H. 1969. *The Categories and Types of Present-Day English Word-Formation*. Munchen, Adams, V. 1973. *An introduction to modern English word formation*. London.

The scientific and practical importance of the research work. The practical importance of the work is that it enriches the scientific mental outlook of the students on hyphenated words. Students will explore these areas through a particular method:

- Historical development of English vocabulary;
- Morphological study: word formation;
- Semantic study: word meaning and sense relations;
- Word in context
- lexical and morphological change

The scientific-practical importance is that when the work is learned perfectly, the results can be used as the main source for the subject learning linguistics that is taught to the freshmen. Besides relying on this work, scientific methodological manuals can be created several creations have been done on the work. For instance, all the hyphenated words that exist in the English language have been noted to the shoots separately, so that more than thousands of hyphenated words have been written down. In the future all the hyphenated words that have been found out in the Explanatory dictionary, will be compared with theirs synonyms and the results will be noted.

The novelty of our research is to study a specific type of complex word-formation, namely hyphenating, and its relation to the morphology-syntax interface, with the ultimate aim of gaining a better understanding of the phenomenon. Different aspects of hyphenating are explored in this work, of which the main questions addressed in each chapter.

The structure of the work consists of an introduction, three chapters and conclusion at the end of each chapter, bibliography and appendix. Introduction speaks about the brief plot of the dissertation and the structure of the work (actuality, aim, tasks, novelty and so on.) the main part of the work includes three chapters in itself. The first chapter presents the role of hyphenation in English compound words, background researches of hyphenations, methods of researching hyphenated words, the meanings of compound words when hyphenated. The

second chapter starts by morphological Usage of hyphenated words in English – ways of separating and joining usage. The third chapter comprises the semantic analysis of hyphenated words in English and results in nominal hyphenations, Verbal hyphenations and adjectival hyphenations.

Till now, accompanied by scientific teacher and I myself have written more than fifteen scientific articles but more than five of them have been published in the Republic scientific journals and also the results of them have been given to the publication

Chapter One

The Role of Hyphenation in English Compound Words

The present study examines the role of hyphenation in the processing of English compound words. English compound words that appear in the English language as both hyphenated (eg. grown-up) and unspaced (eg. grownup) were chosen as target stimuli. Half of the compound words chosen appeared more frequently in their hyphenated form while the other half of the hyphenations appeared more frequently in their unspaced form. The words were embedded in sentences in both their hyphenated and unspaced forms. Participants were instructed to read a randomly selected set of sentences while their eye movements were recorded.

First fixation duration showed a significant interaction between hyphenation type and spatial layout presentation which indicated a significant processing gain for unspaced compound words shown as hyphenated. However, for compound words more familiar as unspaced, gaze durations significantly increased with the addition of the hyphen. There was no significant main effect for hyphenation type or spatial layout presentation in gaze duration, indicating no significant benefit from the transformation of a hyphenated hyphenation into an unspaced hyphenation. The results indicate that while spatial segmentation benefits initial word processing by facilitating lexical decomposition, it has detrimental affects on later word processing when whole word retrieval occurs.

1.1. Background Researches of Hyphenations

Research on the complex processes involved when a person reads a word or sentence has played a crucial role in revealing the ways in which we process and store word meaning. Investigating this invaluable acquired skill many use to receive information in daily life not only furthers our understanding of word processing and recognition but also on a macro level, skill acquisition itself. [3; 65, p. 317-339]

In turn, information gathered about the processes of this skill can help improve literacy education by potentially increasing reading efficiency for all and

also give educators the knowledge necessary to help those who have difficulty with reading. In reading research, researchers have approached the question “what processes are occurring during reading?” by investigating how words are represented in the mental lexicon and how these representations are retrieved as a person reads a sentence. [4; 53, p. 846-863] Though much research in the past has focused on the processing of mono-morphemic words (words with only one unit of meaning), focus has turned in recent years on compound words as items for study. This shift in focus is largely due to the semantic complexity of compound words.

A compound word by definition is composed of two joined and independent mono-morphemic lexemes (eg. *blueberry*). Each lexeme brings with it its own independent meaning (*blue* and *berry*) in addition to the meaning that is created when the two lexemes are joined together (*blueberry*). Therefore, when a reader is presented with a compound word, there are several meanings that could be retrieved. Sometimes, the lexemes’ independent meanings are relatively the same as the meaning created when they are joined together. For example, transparent compound words tend to have a whole word meaning nearly identical to the meaning of its lexemes (thus *blueberry* means a *berry* that is *blue*). In the case of opaque compound words, when two lexemes are joined together without a space in between, the meaning formed does not match the independent meanings of its lexemes (ie. *deadline* does not mean a *line* that is *dead*). In addition, the insertion or deletion of a space between the lexemes in a compound word can change the meaning of the word entirely as well (*blueprint* vs. *blue print*).

These layers of meaning present in a single hyphenation open a floodgate of possibilities for lexical representation and processing: is the word *blueberry* represented in the mental lexicon as a whole, such that when we read it we directly access that whole representation, or is it broken down into its constituent lexemes *blue* and *berry* first, before the whole word meaning is ultimately accessed? Could the choice of decomposition or whole word access hinge on particular compound word combinations or specific sentence contexts or could both processes be occurring simultaneously? Researchers began manipulating compound word

characteristics in their experiments in response to these questions with hopes of developing a model for word recognition and processing. Over the years, different models have developed, some emphasizing lexical decomposition in word recognition while others emphasizing immediate whole word recognition. [5; 70, p. 156-163] Most recently, researchers have come to a general agreement that both lexical decomposition and whole word retrieval occur simultaneously in what is called a 'dual route' model. Depending on the morphological and orthographic characteristics of a complex word, one route will occur faster than the other. The current controversy is over whether the beginning or ending lexeme of a hyphenation has greater influence in lexical decomposition. [6; 54, p. 223-244]

By manipulating the characteristics of the constituent lexemes in compound words, researchers have been able to determine whether lexical decomposition or whole word retrieval occurs in word recognition. Research on word recognition in both Finnish and English have found a robust connection between word frequency (the frequency a word appears in the English language) and word processing. The higher the frequency of a word, the shorter the fixation duration on the word and therefore, the quicker the recognition process for the reader. [7; 23, p. 615-634] Because word frequency has such a robust effect on reading time, researchers have used this to their benefit by manipulating the lexeme frequency in compound words in order to further understand and distinguish the different levels of word processing that may be occurring.

Researchers have also taken note that when manipulating word frequencies, the age at which a word is acquired (*age-of-acquisition*) [8; 53, p. 846-863] and word length also can influence fixation durations. [9; 23, p. 615-634] Early acquired words tend to have shorter fixations compared to later acquired words, and longer words have longer fixation durations and a greater number of fixations compared to shorter words. Because these characteristics can also greatly influence processing time, they have been either controlled or manipulated in studies that have also manipulated lexeme frequency.

In the effort to understand word processing and representation different methods have been employed in research. Researchers first began compound word research by using two main tasks: lexical decisions and word naming. Lexical decisions involved the participants viewing a series of words and non-words and deciding whether the stimulus presented was a word or non-word. The word naming task involved the participant viewing and reading a series of words aloud as quickly and accurately as possible. Afterwards, reaction times and accuracy were used as basis for analyses.

However researchers have found that such tasks produce inconsistent results because they each individually capture only parts of the word recognition process rather than the process in its entirety. By using lexical decision making, naming and eye movement measurement in a three part study on lexical decomposition, Juhasz was able to confirm that different task demands produced different results; each task produced results that captured only a portion of the word recognition process. Juhasz found that all three tasks produced a strong ending lexeme effect in later processing. Not only do the results demonstrate that decomposition occurs but also, specifically, that the ending lexeme plays an important role in accessing whole word meaning. While they did find a beginning lexeme effect when the ending lexeme was low-frequency for lexical decision tasks, the role that the beginning lexeme played appeared to be small and the effect only occurred in early word processing. The beginning lexeme effect either became marginal or insignificant once experimental method was taken into account. There was no effect after considering lexical naming and eye movement measurements. This study in particular revealed that lexical decision and naming tasks alone often produces results that do not capture later processing effects. Drawing conclusions from such results without eye movement research would therefore produce an inaccurate model of word processing. Before further discussion on eye movement research related to word recognition, it is important to explain the terminology in more detail.

Researchers are able to deduce word processing from eye movements by analyzing the number of *fixations* (when the eyes are still) and the time length of fixations (*fixation duration*) a participant makes on a word. The average fixation duration is 200-250 msec and it increases as the text becomes more difficult. [10; 66, p. 481-492] Researchers often measure *first fixation duration* (the first fixation time on the word of interest) and *gaze duration* (the sum total of all fixation time on a word not counting regressions back). It is typical for readers to also return to words they have already fixated in a sentence (*regression*), however, regressions back also increase as sentences become more difficult. When fixating on a word, we are able to see most clearly in the foveal region, the point on which we are fixating and 1 degree of visual angle to the left and right. Information is also collected from the parafoveal region, the region that extends out 5 degrees to right and left of the point of fixation.

Having found that lexical decision and word naming tasks produce inconsistent findings, researchers have turned to eye movement research as an additional and more precise measurement of word recognition. Lexical decision and word naming tasks place different processing demands on the participant in comparison to normal everyday word processing when reading. [11; 54, p. 223-244]

In eye movement research, the stimuli are presented in a form in which they are usually found, in sentences. As a result, the task given most closely mirrors the kinds of reading tasks people do daily. Additionally, the context in which words are presented can also influence word processing and retrieval. Parafoveal information around the point of fixation can provide information of the word that follows before the eyes fixate onward. These integral parts of the word recognition process measurable by eye movement research are not identified by in research with lexical decisions and word naming. Many researchers have come to use either eye movement tracking in addition to lexical decision and word naming in order to capture the full scope of the word recognition process. In Finnish eye movement studies, researchers manipulated the lexeme frequency of nonspaced compound

words and found that the beginning lexeme is accessed first and then followed by whole hyphenation and ending lexeme retrieval. This finding suggested a dual route model for compound word recognition and processing in Finnish. [12; 64, p. 820-833]

Researchers have confirmed also through lexeme frequency manipulation that decomposition processing exists for nonspaced compound words in the English language as well [13; 15, p. 285-311] but have differed on whether the beginning or ending lexeme had a greater frequency effect.

Juhasz found a significant ending lexeme frequency effect that may indicate that the ending lexeme plays a greater role in compound word processing, speculating that perhaps this is because in English the meaning of a compound word is often close to the meaning of the ending lexeme, particularly in adjective-noun hyphenation combinations. However, Andrews countered these results by manipulating lexeme frequency and finding a significant frequency effect in the beginning lexeme.

This dilemma presents itself not only in Finnish and English but in Spanish and Basque as well. [14; 34, p. 1171-1176] Research done by manipulating lexeme frequency for compound words in Spanish and Basque confirmed the decomposition model as did the studies previously mentioned, but found significant ending lexeme frequency effects for both Spanish and Basque. However, while in Spanish, compound word meaning tends to be determined by the ending lexeme, in Basque, compound word meaning tends to be determined by the beginning lexeme. Thus, regardless of where meaning was centered, an ending lexeme effect prevailed. Dunabeitia suggested that these results indicated that lexical decomposition is perhaps a blind to semantics process. In spite of the controversy over whether the beginning or ending lexeme has a greater role in compound word processing, all of these studies have confirmed through word frequency manipulation that decomposition does in fact occur in word processing. Not only researchers have manipulated frequency in order to further understand the process of lexical decomposition, researchers have also additionally manipulated

the degree of transparency a compound word has as well as the age at which the word was acquired. Manipulating both lexeme frequencies and the transparency of hyphenation Finnish words, researchers found little to no effect of transparency in the processing of compound words. [15; 63, p. 261-290]

However, Juhasz in a similar study conducted with English compound words did find a main effect of transparency. Furthermore, the study revealed that lexical decomposition occurred for both transparent and opaque compound words, suggesting that decomposition in early processing has less to do with semantic processing. [16; 51, p. 373-390] Having found the manipulation of word frequency, age-of-acquisition, word length, and transparency useful in order to determine the pathways of word processing and recognition, researchers have turned to spatial layout in recent years as the next variable of study. As mentioned in a review of literature regarding spatial segmentation for German compound words. [17; 48, p. 121-138] Spatial segmentation in the form of inter word spaces can help early word processing by indicating to reader meaning units visually. However, when spaces are inserted in unspaced compound words, readers have longer gaze durations as a result of making misassumptions about where the meaning unit ends. Spatial unity on the other hand, greatly benefits the later stage of word processing by indicating that the lexemes form one meaning unit. Particularly for the English language, spatial layout is of interest because many English compound words exist in unspaced, spaced and hyphenated forms.

In Finnish, a language in which much word recognition and processing research has been done, most compound words are unspaced. Interested in whether adding or deleting a space in a compound word increases or decreases the speed of word processing, Juhasz manipulated the spacing of spaced and unspaced compound words and found that spatial unification of spaced compound words facilitated reading and did indeed speed up compound word processing. However, it was unclear in the results whether this advantage in word processing was because spatial unification helped the reader gain more parafoveal information

about the second lexeme or because spatial unification was related to how compound words are represented in the mental lexicon.

Though research has been done on spacing in compound word processing, little to no research has been done on the effect of hyphenation and whether it facilitates word processing. A recent move by dictionaries such as the Oxford English Dictionary towards converting many hyphenated words into either spaced or unspaced compound words presents the question of whether or not hyphenation serves an important purpose in word recognition and whether the move to delete them facilitates or impedes word processing. In this study, hyphenation of two groups of compound words was manipulated: those that generally appear hyphenated and those that generally appear unhyphenated. The eye-movements of participants were recorded in order to see if the deletion or insertion of a hyphen increases or decreases word processing speed.

1.2. Methods of Researching Hyphenated Words

Compound words that appear in both hyphenated and unspaced compound word form were selected from the Educator's Word Frequency Guide [18; 75] and matched on first and second lexeme frequency and first and second lexeme length. Table 1 shows average first and second lexeme frequencies and lengths and high and low familiar frequencies for both hyphenations more familiar as hyphenated and hyphenations more familiar as unspaced. Half of the target words selected appeared more frequently in the unspaced form in comparison to the hyphenated form and the other half selected appeared more frequently in the hyphenated form in comparison to the unspaced form.

A 2 x 2 factorial design was used to determine whether spatial layout type interacted with spatial layout familiarity. There were four conditions in this chapter: hyphenated type-familiar spatial layout condition, hyphenated type-unfamiliar spatial layout condition, unspaced type-familiar spatial layout condition and unspaced type-unfamiliar spatial layout condition. The target words were embedded in sentence contexts in both their hyphenated and unspaced forms. Each participant was shown only 10 sentences per condition. These sentences were

presented in a set with filler sentences and sentences of another study being conducted simultaneously to ensure that participants were unaware of the study's purpose.

When analyzing first fixation durations, the most important effect is the significant interaction between hyphenation type and spatial layout presentation. This indicated a significant processing gain for unspaced compound words shown as hyphenated. These findings are similar to previous findings in compound word spacing research. Regardless of correct or incorrect presentation, compound words presented with a space had shorter first fixation durations. [19; 52, p. 291-316] This similarity indicates that in early processing measures, spaces and hyphens both provide spatial segmentation information that is helpful in lexical decomposition. Previous research has indicated that lexical decomposition occurs in early word processing. Thus, spatial segmentation of compound words by hyphens benefits the word parsing that must occur in lexical decomposition. Encompassing all fixations before the eyes fixate past the target region, including refixations, the dependent measure of gaze duration captures the effect of spatial layout on word processing over time. Past spatial layout research has indicated that by including refixations on the target word, gaze durations reveal later word processing. Though spatial segmentation benefits lexical decomposition, an early word processing task, it detracts from whole word recognition, a later word processing task. Spatial unification has previously been found to benefit later whole word recognition. When a compound word is unspaced, the reader is given visual and semantic information that the two lexemes compose a whole meaning unit. Unlike past spatial layout research in compound word spacing, in this study there was no significant main effect for hyphenation type or spatial layout presentation in gaze duration. Past research with spacing has indicated a significant main effect of hyphenation type. [20; 52, p. 291-316] In that particular study, compound words presented as unspaced regardless of correctness had shorter fixation durations. Spatial unification produced eye fixations closer to the center of word, and therefore more information could be collected from fewer fixations. In

the present study, the hyphenated and unspaced word type, regardless of presentation, had very small effects in gaze durations. There were also very small effects in gaze durations between familiar and unfamiliar spatial layout presentations. The absence of significant main effects in gaze duration is unsurprising however in comparison to past research in compound word spacing. Sometimes the insertion or deletion of a space in compound words creates compound words that do not orthographically exist in the English language. However, the hyphenated and unspaced hyphenations in this present study are used in both their hyphenated or unspaced form, differing only with which format are readers generally more familiar.

Furthermore, though the hyphen represents spatial segmentation in some aspects similar to a space, it still functions as a symbolic connector between lexemes both orthographically and semantically. Deleting a space significantly benefited word processing for spaced compound words in Juhasz because it visually unified two related lexemes and thus indicated a unit of meaning to the reader.

Deleting a hyphen was not significantly beneficial in the present study perhaps because a hyphen already signified to the reader the connection between the two lexemes. Furthermore, a hyphenated compound word is more unified than a space compound word. While there was no significant benefit of spatial unification, indicated by neither main effects being significant, this was qualified by a significant interaction between compound word type and spatial layout presentation in gaze duration. Again, there was no significant benefit of spatial unification; readers did not significantly benefit from the deletion of the hyphen for compound words more familiar as hyphenated. However, for compound words more familiar as unspaced, gaze durations significantly increased with the addition of the hyphen. Readers incurred significant processing costs when they were more familiar with hyphenation as more spatially unified (unspaced). As noted in a spatial segmentation literature review [21; 48, p. 121-138] the spatial segmentation in compound words that are more familiar to readers as spatially unified introduces

parsing errors to the word recognition process. Readers must correct misassumptions about where units of meaning end and begin through refixations. Though readers may have benefited from spatial segmentation in first fixation durations during early processing, spatial segmentation hinders the whole word retrieval process.

The measure of initial landing position also indicates that the hyphen functions as a spatial unifier. There were no significant main effects or interactions in landing position. When analyzing the probability of a single fixation, the results do show an interaction between hyphenation type and spatial layout presentation. If a compound word was more familiar as unspaced, there was higher probability of a single fixation when it was presented as unspaced. If a compound word was more familiar as hyphenated, there was a higher probability of a single fixation also when it was presented as unspaced. Only these findings support that spatial unification (the deletion of the hyphen) does benefit word the recognition process. If there is a high probability of a single fixation for a target region, it indicates that the reader was more likely able to correctly collect enough information to retrieve the whole word meaning from one fixation. A low probability would indicate multiple fixations were required in order to retrieve the word meaning.

Though evidence has suggested that spatial unification is beneficial to word processing speed in previous compound word spacing studies, this study reveals that spatial unification by deleting the hyphen, does not significantly benefit word processing speed. The study was able to replicate past findings that spatial segmentation helps facilitate lexical decomposition in early word processing. However, it appears that because hyphens function also as symbolic connections and because the hyphenations used in this study appear in the English language as both hyphenated and unspaced, the deleting the hyphen did not increase reading speed significantly. It should be noted that the insertion of a hyphen in compound words more familiar as unspaced incurred significant processing costs. The findings become particularly important when noting the recent move by the Oxford

English Dictionary in deleting the hyphen in many hyphen words and transforming them into unspaced and spaced words. This study has shown that the transformation of a hyphenated compound word into an unspaced hyphenation posed no threat to word processing, though it also did not have significant improvement upon word processing.

Additional research on the impact replacing a hyphen with a space should be done particularly as past research indicates moving in the direction of further spatial segmentation has proven to decrease word processing speed. If complete hyphenation spatial unification is an unspaced spatial layout and complete hyphenation spatial segmentation is spaced spatial layout, then where does hyphenated spatial layout fall on the continuum of spatial unification to segmentation? The fact that there was no significant processing gain from transforming a hyphenated hyphenation to an unspaced hyphenation seems to indicate that a hyphen can spatially unify two lexemes as efficiently as a space deletion. If past compound word spacing studies have found that word processing is slower when a spatially unified hyphenation is converted to a spatial segmented hyphenation with the addition of a space, then it is likely that inserting a space to replace the hyphen will be detrimental to word processing speed. More interestingly though is the question of whether inserting a space in the place of a hyphen in a hyphenated compound word has as much as an effect on word processing speed as inserting a space in an unspaced compound word. Such a comparison could reveal the degree to which a hyphen functions as a spatial unifier and offer greater insight on the effects of spatial layout on word processing.

1.3. The Meanings of Compound Words When Hyphenated

A compound word is a combination of two or more words that function as a single unit of meaning. There are three types of hyphenations: Those written as single words, with no hyphenation, are called closed hyphenations--the word "flowerpot," for example. Hyphenated hyphenations, such as "merry-go-round" and "well-being," are the second type. Those in the third group, called open

hyphenations, are written as separate words--the nouns "school bus" and "decision making," for example.

We should keep in mind that hyphenations can function as different parts of speech. In such cases, the type of hyphenation can change, too. "Carry over," for example, is an open hyphenation as a verb but a closed hyphenation ("carryover") as a noun and an adjective:

– The money from that line item will *carry over* to next year's budget.

[Verb form]

– The money we used for the trip was part of the *carryover* from last year's budget. [Noun form]

– *Carryover* funds can be used to cover a deficit.

[Adjective form]

When we don't know in which category a particular hyphenation belongs, first we should try to look it up in the dictionary. We will see there that some hyphenation is hyphenated regardless of their function in a sentence. For example, "on-site" is a hyphenated hyphenation when it functions as an adjective or as an adverb: "The team conducted on-site visits" and "The team conducted its review on-site."

The real confusion begins when the hyphenation is not given in the dictionary. That is, it is a hyphenation that is being formed for a very specific situation. In such cases, we have to rely on guidelines provided by the style manual to which we adhere. Our style manual of choice, the *Chicago Manual of Style*, has a lengthy section devoted to compound words--evidence that the rules are not simple.

Unfortunately, on this work even the fairly straightforward rules about hyphens leave some room for a writer's own judgment. Here is what the *Texas Law Review Manual of Style* says about using the hyphen to create a compound word: "When two or more words are combined to form a modifier immediately preceding a noun, join the words by hyphens if doing so will significantly aid the reader in recognizing the hyphenation adjective". [22; 50]

One way to decide if a hyphen is necessary is to see if the phrase might be ambiguous without it. For example, "large-print paper" might be unclear written as "large print paper" because the reader might combine "print" and "paper" as a single idea rather than combining "large" and "print." Another such example is "English-language learners." Without the hyphen, a reader might think we are talking about English people who are learning any language rather than people who are learners of the English language.

On the other hand, no one is going to be confused by the phrase "chocolate chip cookies" or "Saturday morning cartoons." In other words, the open hyphenations (i.e., no hyphen) "chocolate chip" and "Saturday morning" are so well known that there is no room for ambiguity. The open hyphenation "high school" is so common, for another example, that we would not hyphenate the phrase "high school students." We would, however, hyphenate "high-risk" in the phrase "high-risk students."

The other time we must use hyphenation is to join a word to a past participle to create a single adjective preceding the noun it modifies: "a well-intentioned plan," for example, or "a horseshoe-shaped bar." We should be aware, however, that we do not hyphenate these same phrases when they follow the nouns they modify:

- This is a *government-mandated* program.
- The program is *government mandated*.
- She is a *well-respected* student.
- She is *well respected* as a teacher.

Another basic rule is that we never hyphenate hyphenations that are created with "-ly" adverbs, even when they precede the nouns they modify: "a fully developed plan," for example, or "a nationally certified teacher." Here are more examples:

- We sent in heavily fortified troops.
- The troops were heavily fortified.

- All newly employed nurses must be evaluated regularly.
- All the nurses on the eighth floor are newly employed.
- A beautifully designed room can be both relaxing and invigorating.
- The living room is beautifully designed.

We must remember the following two important points:

(1) We have three types of hyphenations: open hyphenations, closed hyphenations, and hyphenated hyphenations.

(2) Many of them are found in the dictionary and are not subject to our interpretation, our judgment, or our whim. Start with your dictionary before applying any other guidelines. [23; 85]

1.3.1. Hyphenated Adjectives

Hyphenation adjectives are made up of a noun + an adjective, a noun + a participle, or an adjective + a participle. Many hyphenation adjectives should be hyphenated. Here are some examples:

noun + adjective	noun + participle	adjective + participle
accident-prone	computer-aided	good-looking
sugar-free	power-driven	quick-thinking
carbon-neutral	user-generated	Bad-tempered
sport-mad	custom-built	Fair-haired
camera-ready	muddle-headed	open-mouthed

With hyphenation adjectives formed from the adverb *well* and a participle (e.g. *well-known*), or from a phrase (e.g. *up-to-date*), you should use a hyphen when the hyphenation comes before the noun:

well-known brands of coffee

an up-to-date account

but not when the hyphenation comes after the noun:

His music was also well known in England.

Their figures are up to date.

It's important to use hyphens in hyphenation adjectives describing ages and lengths of time: leaving them out can make the meaning ambiguous. For example,

250-year-old trees clearly refers to trees that are 250 years old, while *250 year old trees* could equally refer to 250 trees that are all one year old.

1.3.2. Hyphenated Verbs

We use a hyphen when a hyphenation formed from two nouns is made into a verb, for example:

Noun	Verb
an ice skate	to ice-skate
a booby trap	to booby-trap
a spot check	to spot-check
a court martial	to court-martial

Phrasal Verbs

We should not put a hyphen within phrasal verbs – verbs made up of a main verb and an adverb or preposition. For example:

Phrasal verb	Example
build up	You should continue to build up your pension.
break in	They broke in by forcing a lock on the door.
stop off	We stopped off in Hawaii on the way home.

If a phrasal verb is made into a noun, though, we should use a hyphen:

Noun	Example
build-up	There was a build-up of traffic on the ring road.
break-in	The house was unoccupied at the time of the break-in.
stop-off	We knew there would be a stop-off in Singapore for refuelling.

1.3.3. Hyphenated Nouns

A hyphenation noun is one consisting of two component nouns. In principle, such nouns can be written in one of three different ways:

one word	two words	hyphenated
Aircrew	air crew	air-crew
Playgroup	play group	play-group

Chatroom	chat room	chat-room
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In the past, these sorts of hyphenations were usually hyphenated, but the situation is different today. The tendency is now to write them as either one word or two separate words. However, the most important thing to note is that you should choose one style and stick to it within a piece of writing. Don't refer to a *playgroup* in one paragraph and a *play-group* in another.

Chapter Two

Morphological Usage of Hyphenated Words in English

This is a more advanced topic, and something that most good native English writers get wrong. Here's a comprehensive set of rules: [24; 77] Here's the general rule: Words are usually hyphenated when they are "hyphenation" words -- words that act as a unit, possibly to describe another word. Exception: superlatives or comparatives, like "very", "more", "less", etc. Consider two examples:

- "She left an expensive blue purse on the table."
- "She left a half-full glass of water on the table."

We have to compare the marked words in these two examples. Why is the second one hyphenated and not the first? They're practically the same, right? No!

In the first case, you are saying "She left a purse that is expensive and blue on the table." The words "expensive" and "blue" are both describing the purse. In the second case, you're not saying that the "glass" is both "half" and "full". "Half" is actually describing full.

The hyphen there is used to indicate to the reader, "Hey, I'm not using these two words to *separately* describe the noun (glass). They are a unit (half-full) and I'm going to join them together to show that they *as a compound word* describe the noun.

Consider this:

- She left a glass that was half full on the table.

No hyphen. Why? Because there's no confusion. "Half full" is standing by itself, not immediately describing a noun. You don't have to worry about someone thinking that "half" is describing something on its own. **How could this confusion play out? Consider the difference between these sentences:**

- "Please order me a slice of sour-apple pie."
- "Please order me a slice of sour apple pie."

In the first one, you're asking of a slice of pie made from sour apples. Yum!
In the second case, you're asking for slice of apple pie that is sour. Ick!

The hyphen tells the reader that these two words should be treated as *hyphenation* unit, to avoid them from treating them as two separate concepts describing the following noun.

Now, let's look at a longer example.

1. Mary's parents were very upset about Mary's poor grades. >> *No reason to hyphenate here.*
2. Even though Mary had been up late studying, she had continued to fail her most difficult exams. >> *Although "most" does describe "difficult", it's a superlative / comparative. This is an exception. No hyphen.*
3. Her parents even hired a low-budget tutor, but to no avail. >> *"Low-budget" is a compound word, because low is describing budget, not tutor. It needs a hyphen.*
4. Finally, they had some meager success with bribery! >> *Again, "some" describes "meager" but it's a superlative / comparative.*
5. Her parents promised her a slice of wild-strawberry pie for every A she brought home. >> *The strawberry is wild, not the pie. We need a hyphen to link "wild-strawberry" together.*
6. Mary loved that delicious strawberry pie. >> *The pie is, in fact, delicious and strawberry. If we put a hyphen between these words, we'd be saying that the pie was made from delicious strawberries, not that the pie was delicious.*
7. Her parents would pick up from the little yellow shop down the street. >> *The shop is both "little" and "yellow". No hyphen.*
8. They made it fresh from wild strawberries every day. >> *No reason to hyphenate.*
9. It was an expensive bribery plot for her parents, but it was worth it. >> *The words "expensive" and "bribery" both describe "plot." No hyphen.*

10. Mary's grades improved, and pretty soon, she was a first-class student.

>> *"First" describes class, so we need to hyphenate this.*

The hyphenated words are usually used with the punctuation mark (-) and this mark is used to join words and to separate syllables of a single word. The use of hyphens (-) is called **hyphenation**. The hyphen should not be confused with dashes, which are longer and have different uses, or with the minus sign (−), which is also longer.

In terms of an orthographic concept, the hyphen is a single entity. In terms of character encoding and display, that entity is represented by any of several characters and glyphs (including **hard hyphens**, **soft** or **optional hyphens**, and **nonbreaking hyphens**), depending on the context of use (discussed below).

Although, as mentioned above, hyphens are not to be confused with en dashes and minus signs, there are some overlaps in usage (in which either a hyphen or an en dash may be acceptable, depending on user preference; discussed below) and in character encoding (which often uses the same character, called a "hyphen-minus", to represent both the hyphen and minus sign entities; discussed below).

2.1. Ways of Separating Usage of Hyphenated Words

Hyphens are mostly used to break single words into parts, or to join ordinarily separate words into single words. Spaces should not be placed between a hyphen and either of the words it connects except when using a suspended or "hanging" hyphen (e.g. *nineteenth- and twentieth-century writers*).

A definitive collection of hyphenation rules does not exist; rather, different manuals of style prescribe different usage guidelines. The rules of style that apply to dashes and hyphens have evolved to support ease of reading in complex constructions; editors often accept deviations from them that will support, rather than hinder, ease of reading.

The use of the hyphen in English hyphenation nouns and verbs has, in general, been steadily declining. Hyphenations that might once have been hyphenated are increasingly left with spaces or are combined into one word. In 2007, the sixth edition of the *Shorter Oxford English Dictionary* removed the

hyphens from 16000 entries, such as *fig-leaf* (now *fig leaf*), *pot-belly* (now *pot belly*) and *pigeon-hole* (now *pigeonhole*). [25; 67] The advent of the Internet and the increasing prevalence of computer technology have given rise to a subset of common nouns that may have been hyphenated in the past (e.g. "toolbar", "hyperlink", "pastebin").

Despite decreased use, hyphenation remains the norm in certain hyphenation modifier constructions and, amongst some authors, with certain prefixes. Hyphenation is also routinely used to avoid unsightly spacing in justified texts (for example, in newspaper columns).

2.1.1. Justification and Line-wrapping

When flowing text, it is sometimes preferable to break a word in half so that it continues on another line rather than moving the entire word to the next line. The word may be divided at the nearest breakpoint between syllables, and a hyphen inserted to indicate that the letters form a word fragment, rather than a full word. This allows more efficient use of paper, allows more regular appearance of right-side margins without requiring spacing adjustments, reduces the problem of rivers, and avoids the need to erase long words begun near the end of a line that do not fit. This kind of hyphenation is most useful when the width of the column of text is very narrow. For example:

<i>Justified text</i> <i>without hyphenation</i>	<i>Justified text</i> <i>with hyphenation</i>
We, therefore, the representatives of the United States of America...	We, therefore, the represen- tatives of the United States of America...

The details of doing this properly are complex and language-dependent and can interact with other orthographic and typesetting practices. Hyphenation algorithms, when employed in concert with dictionaries, are sufficient for all but the most formal texts.

2.1.2. Prefixes and Suffixes Forming Hyphenated Words

Prefixes (such as *de-*, *pre-*, *re-*, and *non-*) and suffixes (such as *-less*, *-like*, *-ness*, and *-hood*) may or may not be hyphenated. (The unhyphenated style is also called *closed up* or *solid*.) A rule of thumb is that they are not hyphenated unless the lack of a hyphen hurts clarity—specifically, clarity at first glance rather than clarity upon a second look or a moment's pause. The clear/unclear distinction involves some subjectivity, because what is instantly clear to one reader may not be to another (depending on, for example, subject matter familiarity). Nonetheless, consensus among users of a language often reduces that subjectivity for many words. This is explained further below.

Many long-established words, such as *disgusted*, *degrade*, and *refresh*, do not require a hyphen because they are fully fused to the point that their first syllable is barely even thought about as having a prefix function (even though in many such words, if one stops to think about it, one can clearly see it). Many other words, such as *prewashed* or *repainted*, may not be *quite* so fully fused (the prefix function may be slightly more prominent in consciousness), but nonetheless they require no hyphen, because (1) most readers recognize the closed-up word as a familiar one and thus have no trouble parsing the syllables, and (2) if all such words were hyphenated, the many hyphens throughout the text would seem superfluous.

In contrast, for some other words, the closed-up style may not be as clear, and the hyphen can ensure clarity and avoid awkwardness, including "odd appearance" or misguided parsing of syllables. An example of avoiding misguided parsing would be to hyphenate the word *co-worker* (versus *coworker*) to prevent the reader's eye being caught automatically by the letter group *cow* (which might suggest *cow* (/kaʊ/) before backtracking and reparsing occurred). In such cases, styling varies depending on individual preference, regional preference, occupational specialty, or style guide preference, because the definition of "awkwardness" for any given word depends on who is judging it.

Words, for which prefix hyphenation is least subjective, to the point that closed-up style is widely rejected, are of several classes. One such class consists of a few words that require a hyphen to distinguish them from other words that would otherwise be homographs, such as *recreation* (fun or sport) versus *re-creation* (the act of creating again), *retreat* (turn back) versus *re-treat* (give therapy again), and *un-ionized* (not in ion form) versus *unionized* (organized into trade unions). The other classes are those in which the prefix is applied to (1) a proper (capitalized) noun or adjective (*un-American*, *de-Stalinisation*); [26; 47] (2) an acronym (*anti-TNF antibody*, *non-SI units*); or (3) a number (*pre-1949 diplomacy*, *pre-1492 cartography*).

Style guides codify rules to minimize inconsistency, the ultimate goal of which is to have the style unnoticed by the reader (that is, to avoid catching the reader's eye, either with trivial differences or with a lot of superfluous hyphens). The style guide rules allow exceptions to avoid awkwardness. For example, a guide will typically say to follow dictionary X's style for any word entered therein, and for words not entered, to close up by default and thus hyphenate only to avoid awkwardness. Such a rule successfully codifies almost all choices and thus leaves little to discretion except a few rare or neologistic words, which are safely hyphenated. This ensures high intradocument and interdocument consistency. Rules about avoiding doubled vowels or doubled consonants are often mentioned in style guides. These appropriately cascade only downstream, not upstream, of the "follow dictionary X" rule, because most dictionaries close up many well-established doubled-letter pairs. (For example, any style that follows *Merriam-Webster's Collegiate Dictionary* thus closes up *preempt*, *reexamine*, *deemphasize*, *nonnegotiable*, *posttransfusion*, and hundreds of others.) As mentioned earlier, the definition of "awkwardness" for any given word is inherently subjective but nonetheless also subject to consensus. For example, *reexamine* and *deemphasize* are accepted as nonawkward by a broad consensus; to *prefer* the hyphenated styling is a matter of opinion, but to *insist* that the solid styling is awkward would be considered pedantic by many educated readers. However, some doublings

attract smaller majorities than others in such a consensus; with the *co-worker/coworker* example (mentioned earlier) or with *antiinflammatory/anti-inflammatory*, many readers may consider solid styling nonawkward whereas plenty of others don't, and in such cases, dictionary styles may vary (*Dorland's, antiinflammatory; Merriam-Webster's Medical Dictionary, anti-inflammatory*). Triple letters rarely occur, but when they do, the hyphen is considered mandatory (thus *shell-like*, not *shelllike*).

There is a trend that over decades, words that once were hyphenated for clarity lose the hyphen as their familiarity grows. An excellent example is *email/e-mail*; the number of people who find *email* awkward dropped from the 1990s to the 2010s, and thus the hyphen has been dropped increasingly. For some instances, the consensus depends on occupational specialty or subspecialty. Although *proto-oncogene* is still hyphenated by most users (and by both *Dorland's* and *Merriam-Webster's Medical*), the solid styling (*protooncogene*) is gaining popularity, with oncologists and geneticists (for whom the term is most familiar) leading the way.

A hyphen can clarify that two adjacent vowels—whether two of the same letter (e.g., *oo*, *ee*) or two different letters (e.g., *ae*, *ei*)—are pronounced separately rather than being merged in a diphthong. The question is how necessary the clarification is. Thus, hyphenated *de-escalate* and *co-operation* have plenty of support, consensus-wise (plenty of users consider their hyphens as not superfluous), although solid *deescalate* and *cooperation* have plenty of support as well (plenty of users consider the hyphens superfluous). Consensus for styling varies by class, subclass, and even by individual word, with the common theme being that internal punctuation drops out of any combination judged as instantly recognizable enough in its context not to need it. As classes, there are doubling (namely, *aa*, *ee*, *ii*, *oo*, *uu*, *yy*) and nondoubling (for example, *a+e*, *a+i*, *a+o*; *e+e*, *e+i*, *e+o*). Several subclasses exist. There are combinations that are not rare in English as diphthongs and also not rare as nondiphthongs for users willing to style prefixed words solidly (such as *ee* and *ei*); regarding *de+e/re+e/pre+e* and *de+i/re+i/pre+i*, nearly everyone agrees that some fully fused examples (such as

reiterate and *reinforce*) need no hyphen, but other examples have more evenly split pluralities (such as *reexamine/re-examine* or *deemphasize/de-emphasize*). There are combinations that are rare in English as diphthongs (for example, *aa* and *ii*) but not rare in prefixed words for those willing to style them solidly; and thus either they hardly need clarification within prefixed words (the solidification argument; thus *intraarterial* and *antiinflammatory*) or they need a hyphen to avoid looking like rare diphthongs, which are "odd-looking" because rare (the hyphenation argument, thus *intra-arterial* and *anti-inflammatory*).

A diaeresis can also sometimes be used, either to indicate nondiphthong status (as in *coöperation* and *naïve*) or to indicate nonsilent terminal -e (as in *Brontë*), but there are several implicit boundaries on this style's use; it is now rare (its peak of popularity was in the late 19th and early 20th centuries), and it was never applied extensively across the language (only a handful of examples, including *coöperation*, *naïve*, and *Brontë*, are encountered with any appreciable frequency in English; for whatever reason, it never had any popularity in the *de+e/re+e/pre+e* or *de+i/re+i/pre+i* subclasses—thus never **reëxamine*, **reëiterate*, **deëmphasize*, or others, although they might have been useful). Many users (and various dictionaries) consider the diaeresis optional in *naive/naïve* (because not necessary for the reader to recognize the word), and **na-ive* draws attention to itself as a style that is simply never used (although comprehensible). For *deity* and *deify*, only solid styling (no hyphen or diaeresis) is normative.

2.1.3. Syllabification and Spelling of Hyphenated Words

Hyphens are occasionally used to denote syllabification, as in *syl-la-bi-fi-ca-tion*. Most British and North American dictionaries use an interpunct, sometimes called a "middle dot" or "hyphenation point", for this purpose, as in *syl-la-bi-fi-ca-tion*. This allows the hyphen to be reserved only for places where a hard hyphen is intended (for example, *self-con-scious*, *un-self-con-scious*, *long-stand-ing*). Similarly, hyphens may be used to indicate a word is being or should be spelled. For example, W-O-R-D spells "word".

2.2. Ways of Joining Usage of Hyphenated Words

2.2.1. Hyphenation Modifiers

Hyphenation modifiers are groups of two or more words that jointly modify the meaning of another word. When a hyphenation modifier other than an adverb–adjective combination appears *before* a term, the hyphenation modifier is often hyphenated to prevent misunderstanding, such as in *American-football player* or *little-celebrated paintings*. Without the hyphen, there is potential confusion about whether the writer means a "player of American football" or an "American player of football" and whether the writer means paintings that are "little celebrated" or "celebrated paintings" that are little. [27; 35] Hyphenation modifiers can extend to three or more words, as in *ice-cream-flavored candy*, and can be adverbial as well as adjectival (*spine-tinglingly frightening*). However, if the hyphenation is a familiar one, it is usually unhyphenated. For example, at least one style guide prefers the construction *high school students*, to *high-school students*. [28; 24] Although the expression is technically ambiguous ("students of a high school"/"school students that are on drugs"/"students of grand physical stature"/"students elevated to great altitude"), it would normally be formulated differently if other than the first meaning were intended. Noun–noun hyphenation modifiers may also be written without a hyphen when no confusion is likely: *grade point average* and *department store manager*. [29; 76] When the modifier is an adverb ending in *-ly* or when one of the parts is a proper noun or a proper adjective, there is no hyphen (e.g. "a badly written novel" or "a South American actor").

When a hyphenation modifier *follows* the term to which it applies, a hyphen is typically not used if the hyphenation is a temporary hyphenation. For example, "that gentleman is well respected", not "that gentleman is well-respected"; or "a patient-centered approach was used" but "the approach was patient centered". [30; 32] But permanent hyphenations, found as headwords in dictionaries, are treated as invariable, so if they are hyphenated in the cited dictionary, the hyphenation will be used in both attributive and predicative positions. For example, "A cost-

effective method was used" and "The method was cost-effective" (*cost-effective* is a permanent hyphenation that is hyphenated as a headword in various dictionaries).

In the 19th century, it was common to hyphenate adverb–adjective modifiers with the adverb ending in *-ly* (in other words, producing the character string *ly-*). However, this has become rare. For example, *wholly owned subsidiary* and *quickly moving vehicle* are unambiguous, because the adverbs clearly modify the adjectives: "quickly" cannot modify "vehicle". However, if an adverb can also function as an adjective, then a hyphen may be or should be used for clarity, depending on the style guide. [31; 46] For example, the phrase *more-important reasons* ("reasons that are more important") is distinguished from *more important reasons* ("additional important reasons"), where *more* is an adjective. Similarly, *more-beautiful scenery* (with a mass-noun) is distinct from *more beautiful scenery*. (In contrast, the hyphen in "a more-important reason/a more important reason" is not necessary, because the syntax cannot be misinterpreted.) A few words, including *well* and *early*, attract especial attention in this category. The hyphen in "well-[past_participle] noun", such as in "well-differentiated cells", might very reasonably be judged too superfluous to set (the syntax cannot be misinterpreted), and yet plenty of style guides call for it. And because *early* has both adverbial and adjectival senses, its hyphenation can attract attention. Some editors, comparing with *advanced-stage disease* and *adult-onset disease*, like the parallelism of *early-stage disease* and *early-onset disease*. Similarly, the hyphen in *little-celebrated paintings* clarifies that one is not speaking of little paintings.

Hyphens are usually used to connect numbers and words in modifying phrases (such as in dimensional measurements of weight, size, and time) under the rationale that, like other hyphenation modifiers, they take hyphens in attributive position (before the modified noun), [32; 49] although not in predicative position (after the modified noun). This is applied whether numerals or words are used for the numbers. Thus *28-year-old woman* and *twenty-eight-year-old woman* or *32-foot wingspan* and *thirty-two-foot wingspan*, but *the woman is 28 years old* and *a wingspan of 32 feet*. However, with symbols for SI units (such as *m* or *kg*)—as

opposed to the *names* of these units (such as *metre* or *kilogram*)—both the International Bureau of Weights and Measures and the U.S. National Institute of Standards and Technology recommend use without a hyphen: *a 25 kg sphere* (which is why some scientists get annoyed when such hyphens are added to their article when it is edited for a journal using AMA style, whose hyphenation of these symbols bucks SI style). When the units are spelled out, this recommendation does not apply: *a 25-kilogram sphere, a roll of 35-millimeter film*. [33; 37]

In spelled-out fractions, hyphens are usually used when the fraction is used as an adjective but not when it is used as a noun: thus *two-thirds majority* and *one-eighth portion* but *I drank two thirds of the bottle* or *I kept three quarters of it for myself*. However, at least one major style guide hyphenates spelled-out fractions invariably (whether adjective or noun).

In English, an en dash (–) sometimes replaces the hyphen in hyphenated hyphenations if either of its constituent parts is already hyphenated or contains a space (for example, *San Francisco–area residents, hormone receptor–positive cells, cell cycle–related factors, and public-school–private-school rivalries*). [34; 36] A commonly used alternative style is the hyphenated string (*hormone-receptor-positive cells, cell-cycle-related factors*). (For other aspects of en dash–versus–hyphen usage, see *Dash > En dash*.)

2.2.2. Object–verbal Noun Hyphenations

When an object is hyphenated with a verbal noun, such as *egg-beater* (a tool that beats eggs), the result is sometimes hyphenated. Some authors do this consistently, others only for disambiguation; in this case, *egg-beater, egg beater, and eggbeater* are all common.

An example of an ambiguous phrase appears in *they stood near a group of alien lovers*, which without a hyphen implies that they stood near a group of lovers who were aliens; *they stood near a group of alien-lovers* clarifies that they stood near a group of people who loved aliens, as "alien" can be either an adjective or a noun. On the other hand, in the phrase *a hungry pizza-lover*, the hyphen will often

be omitted (a hungry pizza lover), as "pizza" cannot be an adjective and the phrase is therefore unambiguous.

Similarly, *there's a man-eating shark in these waters* is nearly the opposite of *there's a man eating shark at table 6*; the first is a shark, and the second a man. A *government-monitoring program* is a program that monitors the government, whereas a *government monitoring program* is a government program that monitors something else.

2.2.3. Suspended Hyphens

A suspended hyphen (also called a "suspensive hyphen" or "hanging hyphen", or less commonly a "dangling" or "floating" hyphen) may be used when a single base word is used with separate, consecutive, hyphenated words which are connected by "and", "or", or "to". For example, *nineteenth-century and twentieth-century* may be written as *nineteenth- and twentieth-century*. This usage is now common in English and specifically recommended in some style guides. [35; 76] Although less common, suspended hyphens are also used in English when the base word comes first, such as in "investor-owned and -operated". Usages such as "applied and sociolinguistics" (instead of "applied linguistics and sociolinguistics") are frowned on in English; the Indiana University Style Guide uses this example and says "Do not 'take a shortcut' when the first expression is ordinarily open." (i.e., ordinarily two separate words). This is different, however, from instances where prefixes that are normally closed up (styled solidly) are used suspensively. For example, *preoperative and postoperative* becomes *pre- and postoperative* (not *pre- and post-operative*) when suspended. Some editors prefer to avoid suspending such pairs, choosing instead to write out both words in full. [36; 49]

Some strong examples of semantic changes caused by the placement of hyphens:

- *Disease-causing poor nutrition*, meaning poor nutrition that causes disease
- *Disease causing poor nutrition*, meaning a disease that causes poor nutrition
- *A man-eating shark* is a shark that eats humans.
- *A man eating shark* is a man who is eating shark meat.

- *Three-hundred-year-old trees* are an indeter_minate number of trees that are 300 years old.
- *Three hundred-year-old trees* are 3 trees that are 100 years old.
- *Three hundred year-old trees* are 300 trees that are 1 year old.

The first use of the hyphen—and its origination—is often credited to Johannes Gutenberg of Mainz, Germany circa 1455 with the publication of his 42-line Bible. Examination of an original copy on vellum (Hubay index #35) in the U. S. Library of Cong_ress shows that Gutenberg's movable type was set justified in a uniform style, 42 equal lines per page.

The Gutenberg printing press required words made up of individual letters of type to be held in place by a surrounding non-printing rigid frame. Gutenberg solved the problem of making each line the same length to fit the frame by inserting a hyphen as the last element at the right side margin. This interrupted the letters in the last word, requiring the remaining letters be carried over to the start of the line below. His hyphen appears throughout the Bible as a short, double line inclined to the right at a 60-degree angle.

In medieval times and the early days of printing, the predecessor of the comma was a slash. As the hyphen ought not to be confused with this, a double-slash was used, this resembling an equals sign tilted like a slash. Writing forms changed with time, and included the full development of the comma, so the hyphen could become one horizontal stroke.

Those dictionaries based on the second edition of the Merriam-Webster dictionary used one small, slightly tilted slash for a hyphen which they added at the end of a line where they broke the word, but used a double-slash, much like the very old symbol, to indicate a hyphen that was actually a part of the phrase but just happened to fall at the end of the line. This double-slash would be used in hyphenated phrases in the middle of the text as well, so that there would be no confusion.

This character is actually called the hyphen-minus, and it is also used as the minus sign and for dashes. In Unicode, the hyphen-minus is encoded as (-) so that

Unicode remains compatible with ASCII. However, Unicode also encodes the hyphen and separately as (-) and (–) with the em dash (—), en dash (–) and other related characters. The hyphen-minus is a general-purpose character which attempts to fulfill several roles, and wherever optimal typography is desired, the preferred hyphen, minus, or other symbol should be used instead. For example, compare $4+3-2=5$ (minus) and $4+3-2=5$ (hyphen-minus); in most fonts the hyphen-minus will not have the optimal width, thickness, or vertical position, whereas the minus character will.

However, the Unicode hyphen is awkward to enter on most keyboards, so the hyphen-minus character remains very common. They are often used instead of dashes or minus signs in situations where the preferred characters are unavailable (such as ASCII-only text), where the preferred characters take effort to enter (via dialog boxes or multi-key, unmemorable keyboard shortcuts), or when the writer is unaware of the distinction. Some writers use two hyphen-minuses (--) to represent a dash in ASCII text.

The ASCII hyphen-minus character is also often used when specifying command-line options. The character is usually followed by one or more letters that indicate specific actions. Typically it is called a dash or switch in this context. Various implementations of the `get opt ()` function to parse command-line options additionally allow the use of two hyphen-minus characters (--) to specify long option names that are more descriptive than their single-letter equivalents. Another use of hyphens is that employed by programs written with pipelining in mind — a single hyphen may be recognized in lieu of a filename, with the hyphen then serving as an indicator that a standard stream, instead of a file, is to be worked with.

Hard and soft hyphens. Although software (hyphenation algorithms) can often automatically make decisions on when to hyphenate a word at a line break, it is also sometimes useful for the user to be able to insert cues for those decisions (which are dynamic in the online medium, given that text can be reflowed). For this purpose, the concept of a soft hyphen (discretionary hyphen, optional hyphen)

was introduced, allowing such manual specification of a place where a hyphenated break is *allowed* but not *forced*. That is, it does not force a line break in an inconvenient place when the text is later reflowed.

In contrast, a hyphen that is always displayed and printed is called a **hard hyphen**. Soft hyphens are inserted into the text at the positions where hyphenation *may* occur. It can be a tedious task to insert the soft hyphens by hand, and tools using hyphenation algorithms are available that does this automatically. Current modules of the Cascading Style Sheets (CSS) standard provide language-specific hyphenation dictionaries.

The word segmentation rules of most text systems consider a hyphen to be a word boundary and a valid point at which to break a line when flowing text. However, this is not always desirable behavior, especially when it could lead to ambiguity (such as in the examples given before, where *recreation* and *re-creation* would be indistinguishable), or in languages other than English (e.g. a line break at the hyphen in Irish *an t-athair* or Romanian *s-a* would be undesirable). For this purpose, Unicode also encodes a **nonbreaking hyphen (non-breaking hyphen, no-break hyphen)**. This character looks identical to the regular hyphen, but it is treated as a letter by word processors, namely that the hyphenated word will not be divided at the hyphen should this fall at what would be the end of a line of text; instead, the whole hyphenated word either will remain in full at the end of the line or will go in full to the beginning of the next line. The non-breaking space exists for similar reasons.

In parts of Europe, the hyphen is used to delineate parts within a written date. Germans and Slavs also used Roman numerals for the month; *14-VII-1789*, for example, is one way of writing the first Bastille Day, though this usage is rapidly falling out of favor. Plaques on the wall of the Moscow Kremlin are written this way. Use of hyphens, as opposed to the slashes used in the English language, is specified for international standards.

International standard ISO 8601, which was accepted as European Standard EN 28601 and incorporated into various typographic style guides (e.g., DIN 5008

in Germany), brought about a new standard using the hyphen. Now all official European governmental documents use this. These norms prescribe writing dates using hyphens: 1789-07-14 is the new way of writing the first Bastille Day. This is also the typical date format used in large parts of Eastern Europe and Asia, although sometimes with other separators than the hyphen.

This method has gained influence within North America, as most common computer file systems make the use of slashes difficult or impossible. DOS, OS/2 and Windows simultaneously support both \ and / as directory separators, but / is also used to introduce and separate switches to shell commands (unless reconfigured to use the hyphen-minus in DOS). Unix-like systems use / as a directory separator and, while \ is legal in filenames, it is awkward to use as the shell uses it as an escape character. Unix also uses a space followed by a hyphen to introduce switches. Apart from the separator used the non-year form of the date format is also identical to the standard American representation.

The ISO date format sorts correctly using a default collation, which can be useful in many computing situations including for filenames, so many computer systems and IT technicians have switched to this method. The government of the Commonwealth of Massachusetts, for example, has switched to this method.

2.2.4. Other Hyphenations

Connecting hyphens are used in a large number of miscellaneous hyphenations, other than modifiers, such as in *lily-of-the-valley*, *cock-a-hoop*, *clever-clever*, *tittle-tattle* and *orang-utan*. Usage is often dictated by convention rather than fixed rules, and hyphenation styles may vary between authors; for example, *orang-utan* is also written as *orangutan* or *orang utan*, and *lily-of-the-valley* may or may not be hyphenated.

Some married couples compose a new surname (sometimes referred to as a double-barrelled name) for their new family by combining their two surnames with a hyphen. Jane Doe and John Smith might become Jane and John Smith-Doe, or Doe-Smith, for instance. In some countries only the woman hyphenates her birth surname, appending her husband's surname.

Chapter Three

Semantic Analysis of Hyphenated Words in English

Before delving into the English survey of hyphenations, this subsection presents some convenient introductory remarks. First, some sources on which the survey is based are presented. Second, the stress criterion for identifying hyphenations is briefly discussed, which is followed by other tests for distinguishing hyphenations from phrases. Finally, the existence of prepositional hyphenations is questioned. Sources for the survey of English hyphenations include Ackema (1999a, b), A&N (2004), Adams (1973, 2001), Allen (1978), Bauer (1983, 2001, 2003, 2004), Bauer & Renouf (2001), Berg (1998), Booij (2005), Carstairs-McCarthy (2002), Spencer (2000, 2003b), and Walchli (2005). Hyphenations (as opposed to phrases) have traditionally been identified by the presence of stress on the first constituent, which has come to be known as the stress criterion. The literature on stress as applied to hyphenating (especially NN hyphenating) is vast [37; 19, p. 184-221] and the stress criterion has proved to be rather controversial. For example, Bauer (2004) concludes that the function of stress is not to identify a hyphenation but to indicate contrast, lexicalization, and has a naming (vs. descriptive) function. Spencer (2003b) also agrees that stress does not give clear results as to what is hyphenation, and observes that stress may be associated with lexicalization rather than hyphenation hood. In view of the fact that we find hyphenations with hyphenation stress ('blackbird, 'cheese cake) but also hyphenations with phrasal stress (Hyphenation 'Stress, apple 'pie), we conclude that the traditional test which identifies hyphenations by having left-stress and phrases by having right-stress seems rather difficult to maintain, and hence will not be taken into account in what follows. [38; 38, p. 571-591]

There are other criteria which have been used to identify hyphenations (vs. phrases) in English. Neither hyphenating element can be independently modified, i.e. the two elements are inseparable, (e.g. coffee (*big) cup vs. morning hot coffee). Further, neither hyphenating element can be replaced by one (e.g. the tea drinker (*and the coffee one) vs. the city employee and the state one) nor can they

undergo deletion in coordination. The last test has proved to be controversial: it has been suggested that deletion in coordination is neither a test for a lexical process (i.e. hyphenating is a lexical process according to some authors) nor a test for a syntactic process. Rather, a phonological constraint seems to underlie deletion in coordination, according to which the deleted part must at least constitute a phonological word (e.g. clock and watch-maker vs. *kind- and happily). [39; 26, p. 143-160] In short, it seems that the inseparability test and the one-replacement test are the most reliable tests to identify hyphenation hood (vs. phrase hood) and, as a result, will be used in what follows whenever the nature of a sequence of elements needs disambiguation.

As for the types of English hyphenations, the majority of discussions about English hyphenating do not include prepositional hyphenations. Examples like into, onto, upon, without and within which could instantiate prepositional hyphenations are lexicalizations of two prepositions frequently occurring together, which have developed a unitary semantic interpretation with the consequence that they are perceived as one word by speakers. In addition, new formations based on the P+P pattern appear to be impossible: *withby, *upunder. However, forms like outdoors, offstage, overhead, uphill and underfoot, which are the union of a preposition and a noun, could be seen as prepositional hyphenations. This is the position defended, for example, by Boertien (1997) but the speakers consulted do not agree on the productivity of such forms, which explains why we leave them out from the present survey of English hyphenating (but we hope to study them further in future research). In the subsections of nominal and adjectival hyphenations, we will see that these forms can act as nouns and adjectives. Our survey of hyphenations in English starts with nominal hyphenations. Then verbal hyphenations are presented, and finally adjectival hyphenations are discussed.

3.1. Semantic Analysis Nominal hyphenations

[NN]N hyphenations are the most productive type of hyphenations in English but they are not the only nominal hyphenations, although Spencer [40; 69, p. 330] observes that “’true’ hyphenating can only refer to NN collocations”, arguing that [AN]N hyphenations, for example, are lexicalized phrases. We will see below that not all cases of [AN]N hyphenations are lexicalizations of phrases and that there are other types of nominal hyphenations as well, although it is true that they may not be as productive as [NN]N hyphenations.

This subsection includes the different types of nominal hyphenations: first the hyphenations whose second member is a noun are presented (NN, VN, AN, PN), which are followed by those which do not conform to this formal criterion (NA). Then, some discussion about the status of three different types of formations (VV, VP, PV) is provided. Finally, a table summarizes the results of this subsection. [NN]N hyphenations.

This is the most common type of hyphenation. In [NN]N hyphenations, it is generally assumed that the role of the first noun is to make the meaning of the second noun more precise, as in olive oil and paper clip. If this restriction holds, two predictions follow: the first noun cannot denote a superset of the head noun or a necessary part of it. So, hyphenations like food chocolate and leg trouser should be ungrammatical with the intended (uninformative) meaning and they are indeed, which explains the absence of such hyphenations in the examples below.

Of course the hyphenations are grammatical with the non-intended meaning, such as ‘chocolate that I always eat with other food, as opposed to chocolate that I eat on its own’ in the case of food chocolate.

a. animal doctor, arrowhead, bedside, bootleg, bottleneck, brain death, brain surgery, car thief, car mechanic, catgut, cookbook author, crew member, finger surgery, fingertip, horse doctor, masthead, pinhead, probation officer, roads lobby, roadside, sea surface, silk merchant, table leg, and tooth decay.

b. bear-baiting, beer-drinker, bicycle-repairer, bicycle-repairing, brick-layer, brick-laying, church-goer, coffee-maker, dish-washer, globe-trotter, grave-digger,

hay-making, heart-breaker, heart-failure, money-changer, pasta-eater, pasta-eating, potato-picking, sheep-shearing, soccer-playing, souvenir-hunting, story-teller, sun-worshipper, sword-swallower, tax-evasion, time-saver, tongue-twister, truck-driver, whiskey-drinker, window-shopping, and wish-fulfilment.

c. bungee-jumping, coffee-table, garden-party, ice-pack, India-rubber, living-room, spring-cleaning, tea-room, water-skier, water-skiing.

The end centricity of the hyphenations in “a-c” comes from the fact that the second noun is both the semantic and formal head: for example, a clog dance “c” is a type of dance; and dance is also the noun which inflects for plurality. The SUB relation between the two constituents of the hyphenation is evident when the head is a relational noun or a (de)verbal noun: the non-head are understood as the complement of the head, e.g. ‘the leg of the table’ in table leg and ‘the seller of books’ in bookseller.

Concerning the hyphenations in “c”, the non-head is also subordinated to the head although it is not interpreted as the internal argument. Since the head is neither a relational noun nor a deverbal noun which takes an argument as its non-head, we cannot interpret them by means of purely linguistic knowledge. Their interpretation is rather based on the possible links between the two elements, along with the surrounding discourse and our knowledge of the world, which also play a role in getting a more precise meaning (e.g. a clog dance can refer to a dance where dancers have clogs on, a dance where clogs are placed on the stage, a dance where dancers give clogs to the audience, etc.).

Whether the hyphenations listed in “b” are NN hyphenations structurally is not so obvious. There are at least two possible analyses for them. One of them is indeed to treat them as NN hyphenations, as below, and a second analysis is to treat them as NV hyphenations, followed by suffixation:

- a. [[book]N sellerN]N
- b. [[bookN sellV]V er]N

At first sight the structure in “a” seems more appealing, given that the process of NN hyphenating is already available in the language (and book and

seller exist independently in the language) and verbal hyphenations of the NV type “b” are not productive in English (i.e. NV hyphenations in which the noun is the internal argument of the verb appear to be systematically absent). The fact that book is an argument of the verb sell can be explained by assuming that the deverbal noun seller keeps the same argument structure of the base. On the other hand, the non-existence of argumental NV hyphenations, i.e. to booksell, is not a problem if one allows for an overgenerating morphology [41; 14] and, in fact, argumental NV hyphenation is not totally excluded from Germanic languages, as can be seen by looking at Frisian. In addition, idiomatic readings are lost under inheritance, but can be preserved if the noun and verb merge directly. Given that is grammatical and has an idiomatic reading, we can conclude that the noun and verb must merge directly, i.e. to troublemaker, favouring.

- a. John always makes trouble.
- b. John is a maker of trouble.
- c. John is a real troublemaker.

Although we have argued for an NV structure for the hyphenations underlyingly, on the surface they are two nominal word-forms/orthographic words. In view of examining his hypothesis in the following chapter, we will take the superficial view that the hyphenations under study are NN hyphenations, which explains why they are listed in this subsection. The same reasoning applies to the other hyphenation types.

The metonymic extension of the second noun can refer to people (e.g. skinhead), animals (e.g. sabertooth) and objects (e.g. hatchback). For example, head stands for ‘person’ in skinhead so that skinhead refers to a kind of person (with the consequence that head in skinhead is the semantic head). The plural form skinheads also suggest that head is the formal head, given that the plural marker seems to attach to it. However, there are some cases which seem to question the plausibility of treating the second noun as the formal head. Consider sabertooth: the head cannot be tooth because the plural of sabertooth is not saberteeth, as one would expect if tooth were the head, but sabertooths. Recall our suggestion that

sabertooth is probably seen as a simplex word, and consequently sabertooth takes the regular plural marking –s. Another apparent problematic case is butterfingers, which has a plural ending and can indistinguishably refer to one person and to more than one. The problem of identifying fingers as the formal head is as follows: since one person typically has more than one finger, the word will always be in the plural independently of whether it refers to one person or to more than one. When the hyphenation is meant to refer to more than one person, the plural marker signalling the plurality of people will be indistinguishable from the plural marker signalling the plurality of their fingers. The fact that the two plural markers are fused into one has the consequence that they are not visible separately but it does not mean that fingers cannot be taken as the formal head. To recap, the hyphenations are better analyzed as endocentric hyphenations: in blockhead, the head is like a block and metonymically it refers to a type of person (semantic head). The noun head also provides the hyphenation with the nominal category and is marked for plurality (formal head). The hyphenating pattern is regarded as unproductive. [42; 38, p. 3]

Concerning the hyphenations of the second subgroup, they are all endocentric hyphenations and there is no other possible analysis. For example, jar is both the semantic and formal head in bell jar: the hyphenation denotes a type of jar, one that resembles a bell, and the formal features also attach to jar: one bell jar vs. two bell jars.

a. birdbrain, blockhead, bonehead, butterfingers, cauliflower ears, cottontail, eagle-eyes, egghead, hatchback, pronghorn, razorback, sabertooth, skinhead, and spoonbill.

b. bell jar, box kite, bulldog, carrier bag, chain reaction, codfish, crocodile tears, death penalty, demon barber, father-figure, fossil fuel, founder member, football game, handlebar, houseboat, killer virus, mackerel sky, murder charge, prison camp, soldier ant, sponge cake, tenant farmer, and zebra crossing.

The former are endocentric (appositional) hyphenations while the latter are exocentric (coordinative) hyphenations. Notice that Adams [43; 12, p. 821] does

not consider them hyphenations on the grounds that, expressions with “coordinated elements are phrases”.

a. actor-director, author-illustrator, woman-doctor, fighter-bomber, he-cheetah, hero-martyr, jazz-rock, king-emperor, library-guestroom, maid-servant, manservant, owner-occupier, panty-girdle, player-coach, player-manager, poettranslator, producer-director, scientist-explorer, screwdriver-hammer, secretarytreasurer, she-goat, singer-songwriter, sofa-bed, speaker-listener, washer-dryer, and worker-priest.

b. angel-beast division, black-white relations, the Cadbury-Schweppes business, the doctor-patient gap, father-daughter dance, grandmother-grandchild relationship, Harper-Collins, love-hate relationship, the love-pain equation, the mind-body problem, a modifier-head structure, the nature-nurture debate, north-west, parent-child relationship, Urbana-Champaign, and the Wellington-Auckland flight.

Formally, the hyphenations seem to be right-headed structures: plural marking is placed on the second noun, as in There are many poet-translators in this country. [44; 62, p. 147] However, if there is a CRD relation between the two nouns and both of them are interpreted as being hyperonyms of the hyphenation as a whole, plurality must have scope over the two nouns. The conclusion must then be that despite the second noun being formally marked for plurality, the two nouns are formal heads. The nominal status of such hyphenations can come from either element. The coincidence of semantic heads with formal heads thus derives the endocentricity of the hyphenation.

A different view is held by Levi, [45; 57, p. 93-94] who believes that, despite the hyphenating nouns being in a coordinate relation, the resulting hyphenation (or the ‘complex nominal’ in her terms) is exocentric because neither noun is the head semantically. She reaches this conclusion by proposing an underlying relative clause whose head is deleted. For example, she derives speaker-listener from ‘person who is (both) a speaker and a listener’, with person being deleted.

That is the case for the hyphenations whose first element denotes the gender of the noun in second position: he-cheetah, maid-servant, man-servant and she-goat. In these cases, speakers treat the hyphenation as a hyponym of the second noun, which they regard as the semantic and formal head. The first noun, which basically has the function of the adjectives male and female (i.e. a sex-marker) is seen as an attribute.

A relation may also seem odd for other hyphenations. For example, in the case of worker-priest, being a priest implies being a worker. That is, the word worker does not add any new information to the hyphenation, and a relation may seem odd. The same reasoning can be extended to hero-martyr: martyrs are assumed to be heroes. As for the remaining forms, although there is a tendency to treat them as hyphenations (e.g. actor-director, author-illustrator, poet-translator, producer-director, singersongwriter), not all of them are treated as such by native speakers. For example, some speakers treat fighter-bomber, jazz-rock and player-manager as endocentric singleheaded hyphenations with the second noun acting as the semantic head (a hyperonym of the hyphenation), which can also be taken as the formal head (plural marker, nominal category). The first noun acts as a modifier of the head noun giving it some properties.

In short, it seems that the relation is possible when the two hyphenating elements can equally contribute new information to the hyphenation by their being semantically parallel. These requirements are not satisfied by hyphenations where the first element is a gender marker (she-goat) or contains information already present in the second noun (hero-martyr), but seem to be satisfied by hyphenations denoting two job titles (e.g. actor-director) or two types of devices/machines (washer-dryer) although not always (e.g. fighter-bomber). What these results suggest is that two apparently coordinated nouns can indeed be interpreted as coordinate but also as a modifier-modified structure, the final interpretation probably being subject to the speaker's knowledge of the world.

That said, we want to argue that when two nouns have a reading, they do not form hyphenation. We think that the symmetrical relation that is established

between the two nouns is due to asyndetic coordination: an implicit conjunction is understood between the two nouns. Coordination is attested in syntax but it is not clear whether it exists in morphology. We assume that a true coordinate relation (e.g. an entity having properties of both A and B) can only be established in syntax. Accordingly, NN forms with a coordinate relation will not be treated as hyphenations but as cases of syntactic coordination. However, as we have just seen above, NN hyphenations like fighter-bomber and player-manager can be interpreted as endocentric single-headed hyphenations: the second noun is the head formally (plural marker, nominal category) and semantically (a hyperonym of the hyphenation). As a result, the hyphenation has a modification/subordination relation: the hyphenation denotes a subset of the set of entities denoted by the head noun, which is given some properties by the first noun. As defined by native speakers, a player coach is ‘a coach who is also a player on the team’ or ‘a coach that plays with the team.

The two members of the hyphenation characterize an entity outside the hyphenation, with which they stand in a particular relationship, as in the mind-body problem, understood as the problem between the mind and the body. Lieber [46; 58] distinguishes three possible relations between the two constituents of the hyphenation, which she calls relationship (parent-child relationship), collective (father-daughter dance) and disjunctive. The disjunctive relation cannot be exemplified with any of the examples here. In fact, the disjunctive relationship, which Lieber exemplifies with pass-fail, is not necessary. By appealing to pragmatics, we can observe that disjunction can be subsumed under relationship: one necessarily passes or fails. Similarly, Bauer [47; 20, p. 1-20] also distinguishes different subtypes of hyphenations. More specifically, he distinguishes translative hyphenations (the Wellington-Auckland flight) from co-participant hyphenations (parent-child relationship). In the former, the order of the elements makes a difference in meaning since there is a starting point and a finishing point, and in the latter there is some interaction among the participants.

Contrasting with this view, we believe that the forms are not exocentric hyphenations but endocentric hyphenations with a subordination relation between the head and the non-head. As already discussed above for the forms, we treat as phrases NN forms with a coordinate relation. Such phrases cannot then form hyphenations by themselves but can be incorporated in the non-head position of hyphenation. Our proposal is that the forms are hyphenations not by virtue of the relation established between the elements constituting the phrase (as has generally been assumed) but by virtue of the subordination relation established between the phrase in the non-head position (which acts as a simplex word) and the noun in head position. To illustrate the point, in mind-body problem, problem is the head of the hyphenation and mind-body is its non-head, which happens to be a syntactic phrase turned into a word and inserted in the non-head position of the hyphenation. The specific relation between the elements of the hyphenation will be determined by the semantics of the head: e.g. the mind-body problem refers to the problem of how the mind relates to the body, hence SUB hyphenations.

If the hyphenations were exocentric hyphenations, they would be quite different from other hyphenations that are classified as exocentric. These two hyphenations are said to be exocentric because their referent (the 'semantic head') is not determined by fingers and head (unlike my 'metonymy' analysis), but by an entity outside the hyphenation, i.e. a type of person. For example, mind-body does not uniquely refer to a problem (only mind-body problem does). In my analysis, mind-body just means 'mind and/or/... body' and can be combined within endocentric hyphenation with any noun to its right: mind-body question (referring to a type of question), mindbody relationship (referring to a type of relationship), mind-body discussion (referring to a type of discussion), mind-body exhibition (referring to a type of exhibition) and so on. The same can be said of the other phrases occupying the non-head position of the hyphenation: doctor-patient does not uniquely refer to a gap and father-daughter to a dance (nor to a relationship, conversation, bond, conflict, etc.). In contrast, it is impossible to combine hyphenation like redhead with a noun to its right that refers to the semantic head of

redhead (e.g. person), since it would be semantically superfluous (i.e. the word ‘person’ is already implied): *redhead person.

[VN]N hyphenations. VN hyphenations are all SUB hyphenations, which can be divided into two different patterns: the hyphenations are endocentric and those have traditionally been considered exocentric, although the latter will be argued to be endocentric (see below). Both types are very restricted in productivity. When Spencer (2003) refers to the hyphenation types available in English, for instance, he does not mention the exocentric [VN]N hyphenation and he observes that the endocentric [VN]N hyphenation is exceptional. Similarly, when talking about the hyphenations, Lees [48; 56, p. 150-151] observes that “(...) the pattern hardly seems productive at present”. In addition, the majority of these hyphenations are lexicalized and not decomposable synchronically.

a. bake-house, drop-hammer, glow-worm, punch-line, search engine, tow-path watch-tower.

b. catch-fly, heal-all, tear-thumb, tumble-dung.

The hyphenations in “a” are endocentric: they identify a subset of the set denoted by the head noun (in second position) and formal markers attach to the head noun as well. For example,

Being in nonhead position, the verb cannot have its argument structure satisfied, so the noun is not an argument of the verb and the function of the verb is to modify the head noun. As for the exact semantics of this hyphenation type, no common underlying pattern seems to exist. We can only predict a vague meaning of subordination since the subordination of the verb into the noun is different in each hyphenation. Bauer notes that sometimes it is difficult to decide whether the first element is a N or a V, which may be the case for checkpoint, showroom, wash-day, and dance hall.

By contrast, the hyphenations in “b” are generally claimed to be exocentric, a claim which is usually illustrated with paraphrases: a pickpocket is not a kind of pocket, but somebody who picks pockets. The hyphenations can denote people (e.g. pickpocket, killjoy, spendthrift), animals (e.g. wagtail, tumble-dung), plants

(catch-fly, tear-thumb, heal-all) and objects (e.g. rotgut, scarecrow). The hyphenations which denote people have a pejorative connotation, which is absent in the hyphenations denoting animals, plants and objects. Recall the paraphrase of a pickpocket, which is a person who picks pockets. Unlike in Romance, this pattern is very limited in English: most hyphenations are lexicalised and the new ones are limited to non-human denotata, like Xpel-air, which is a kind of fan. Although there is a long tradition treating these hyphenations as exocentric, one could also argue that there is a zero-affix responsible for the nominal category and the semantics of the hyphenation, thus deriving its endocentricity. Concerning the grammatical relation between the V and the N, and between the complex [VN] and the zero-affix, it is of a SUB nature. The noun is interpreted as the internal argument of the verb, and the [VN] is in turn subordinated to the zero-affix, hence the label of SUB hyphenations.

[AN]N hyphenations. The hyphenations with an [AN]N structure are all ATR: the adjective is attributed to the noun. Traditionally, a distinction has been made between endocentric and exocentric hyphenations.

- a. fast-food, hard-stuff, narrow-boat, silly-season, sour-dough, wet-suit.
- b. hard-top, heavy-weight, loud-mouth, pale-face, thick-head and yellow-tail.

The meaning of the hyphenations in “a” is not fully compositional: easy chair is a kind of chair (semantic head), but what kind of chair it is cannot be predicted from the sum of the meanings of the two elements. Plural marking is placed on the noun, which determines the categorial status of the hyphenation (formal head). According to Lieber (1983), AN hyphenations of the type in “a” are productive, but we believe that this type is not as productive as NN hyphenations (e.g. bell jar and in fact its productivity is quite restricted. There are a few lexicalised hyphenations of this type and the range of adjectives that can occur in first position is limited, mainly to monosyllabic adjectives of Germanic origin. If some of them do not conform to this restriction, they may be early Romance loans like double talk. In addition, we find it difficult to draw the line between AN

hyphenations and phrases. In a closely-related language like Dutch, by contrast, it is easier to distinguish them: the adjective is inflected in the phrase but uninflected in the hyphenation. One could try to find out the status of some English AN forms by looking into the status of their Dutch counterparts, a task not undertaken here, though.

Adams [49; 12, p. 81] does not consider AN sequences with a gradable adjective (e.g. complex, long) as hyphenations: e.g. a still outstanding claim, in which the A is modified. She only considers hyphenations those AN sequences in which the A is not gradable (e.g. military, rural, herbal, editorial) and has the same function as modifying nouns: compare military sales vs. arms sales, country pursuits vs. rural pursuits. Note, however, that AN sequences with a relational adjective like herbal and polar cannot be considered hyphenations but phrases. The possibility of applying the one-replacement test shows their syntactic nature. That is, hyphenations do not allow their elements to be picked up anaphorically, but the forms containing relational adjectives in first position do. For instance, panels can be picked up anaphorically, as in we are not using solar panels but lunar ones. In short, after removing these syntactic forms, not many AN hyphenations of this type are left, which makes us question their existence.

Traditionally, the alleged exocentricity of the hyphenations is explained by saying that the semantic head lies outside the hyphenation: a greybeard does not denote a kind of beard but a kind of person who has a grey beard. However, we will maintain that the hyphenations are endocentric and argue that their apparently exocentric interpretation arises from metonymic processes which lie outside the morphological component, in the same way as ATR hyphenations of the [NN]N type, like butterfingers. The noun is the head both formally and semantically: it is the bearer of plural marking and the adjective gives an attribute to the noun (i.e. the beard is grey in greybeard). Note that there are hyphenations like lazybones which are plural on the surface but can refer to either one or more than one person. In these cases, the noun is inherently plural and makes it impossible to know when the hyphenation is being used in singular or plural because when pluralized, the

plural marker of the hyphenation and the plural marker of the noun are realized on the same head and are fused into one –s. According to Carstairs-McCarthy (2002) and Giegerich (2004), this type of hyphenation is not productive, and according to Plag (2003), the hyphenations can refer to human beings (dimwit, greybeard, lazybones, paleface) or higher animals (longlegs, longnose, redbreast, shorthorn), but as the examples show they can also refer to plants (bluebell, whitethorn) and objects (greenback, hardback), although to a smaller extent.

[PN]N hyphenations. [PN]N hyphenations are difficult to accommodate. The following treatment should be taken as provisional (to be further commented upon in the discussion section). [PN]N hyphenations seem to be divided into ATR and SUB, ATR hyphenations being all endocentric. For example, as defined by a native speaker, an under-pass is ‘a road underneath a bridge, or a tunnel through a mountain’, and an outpost is ‘a station (e.g. military or exploratory) remote from the main quarters’, out indicating the remoteness of the post. Plural marking is placed on the noun. As for SUB hyphenations, some are exocentric and some are endocentric. In the case of exocentric hyphenations, the hyphenation refers to an entity outside the hyphenation which is characterized by the hyphenation: an underground refers to a railway system that is under the ground (typically) and an underarm refers to the area under one’s arms, i.e. to the armpit. For such hyphenations, plural marking should be understood on the exocentric head. Concerning endocentric SUB hyphenations, the noun is the head of the hyphenation both formally (i.e. the noun inflects for plurality) and semantically, since the P is subordinated to the head noun: as defined by native speakers, an in-joke is ‘a joke only understood by a select few people who are in the know’, and an out-tray is ‘a tray whose contents are ready to go out of the office’.

- a. down-pipe, off-islander, through-road, under-hair, under-pass.
- b. after-birth, under-arm.
- c. in-joke, and out-tray.

Some hyphenations may seem misplaced: one might argue that hyphenations like aftereffect, afterlife, and afterthought could be interpreted as exocentric SUB

hyphenations like the hyphenations in, and consequently an afterthought would be ‘a thought that comes after the (first) thought’, but as the paraphrase hints at, such a possibility is excluded. While it seems possible to have an exocentric head identical in shape to the one present in the hyphenation (e.g. an afterthought is a type of thought), it seems less plausible that the SUB relation inside the hyphenation can be implemented with material not present in the hyphenation: e.g. first in the paraphrase of afterthought, ‘a thought that comes after the (first) thought’ but crucially what follows after does not need to be a thought, as a native speaker’s paraphrase of afterthought reveals: ‘a thought that occurs to you after you have made a decision/statement’. The upshot is that such hyphenations are best analyzed as endocentric ATR: the hyphenation refers to a type of entity denoted by the noun, which inflects for plural marking, with the P giving an attribute to the noun. For instance, an afterlife is a life after the present life, and an aftereffect is an effect that occurs after an event.

In fact, we want to claim that there are no exocentric hyphenations and treat the hyphenations in as endocentric. Although it is not obvious at first sight, we want to claim that the head on which the plural marker is realized is also responsible for the nominal category of the hyphenation (formal head) and its semantics (semantic head). Such treatment will give uniformity to the hyphenating process. Note that the relation between the two visible elements can be compared to the relation established in P+N forms like outdoors, offstage and uphill presented in subsection.

Some cases of PN hyphenations, such as oversight, underdog and uprising, have become lexicalized and the hyphenation is no longer treated as the union of a P and a N: e.g. an uprising is understood as a rebellion. Also note that some prepositions can be more easily combined than others with nouns to form hyphenations (e.g. after, in, out, over, under) and that cases very similar to the ones presented above have been excluded since they are cases of prefixation rather than hyphenating: prefixed nouns are more evident when the noun can be related to a verb, like overdose, overkill and overtax. In such examples over- has developed a

meaning different from the meaning of its independent counterpart. The bound form seems to quantify over the event implicit in the noun: overdose, overkill and overtax express the underlying verb (dose, kill, tax) in an excessive quantity. In this respect, a speaker's paraphrase of overdose is revealing: 'too much of a medicine/drug, exceeding the recommended dosage'. Similar paraphrases were given for overkill and overtax. That this hypothesis is on the right track seems to be confirmed by the findings in Berg (1998), which show that all cases of [PN]N with a derived deverbal noun come from [PV]V originally, which were later converted to nouns. Other examples of prefixation where over- and under- attach to deverbal nouns are overcompensation, over-planning, over-expansion, under-consumption, under-fulfillment, underfunding, and under-ventilation. [50; 12, p. 75-76] These examples further confirm our hypothesis that the prefixes under and over- act as prefixes: they quantify over the verb underlying the noun and the over-/under-prefixed verbs can be paraphrased as 'to V in an excessive/insufficient way'. Similarly, forms like off-cut and out-take, superficially similar to the hyphenations are also excluded: they are nominalized phrasal verbs, not cases of PN hyphenations.

In short, not all cases of [PN]N combinations are hyphenations. They can be prefixed words when the P has developed a meaning different from the meaning of the P when it is found in isolation, and the P can form a series with the same meaning, as we have seen for over- and under-. [PN]N combinations can also be phrasal verbs which have undergone nominalization and whose constituents have been inverted. PN hyphenations have been divided into SUB and ATR endocentric.

[VV]N or [V[V]N]N formations. Nominal complex forms of the [VV]N or [V[V]N]N type are almost non-existent and they can also have a verbal or adjectival use, in addition to the nominal one. We will maintain that they do not constitute a hyphenation type. Consider the forms make-believe, shrink-wrap, slam-dunk, and strip-search. Make-believe, which can also be used as an adjective and verb, seems to be a nominalization of a verbal syntactic phrase (see verbal hyphenations of the VV type). An example of make-believe used as a noun is as

follows: “A fiction writer's childish willingness to immerse him in make-believe — John Updike”. [51; 85] Speakers prefer shrink-wrap as a verb, but those who accept it as a noun interpret it as a plastic film for wrapping stuff, with shrink not playing any role. Wrap gets the plural marker when the form is pluralized. When slam-dunk and strip-search are used as nouns, the interpretation is that of an endocentric SUB hyphenation. Dunk and search, verbs treated as nouns, get the plural marker, and slam and strip are understood as actions subordinated to the noun. For example, a strip-search is a search of a person who is made to undress. Slam-dunk and strip-search can be seen as conversions of verbal hyphenations. In short, it seems that there is no general hyphenating process of the [VV]N or [V[V]N]N type.

[VP]N formations. Most hyphenated words can be related to phrasal verbs (e.g. His marriage broke down soon after they had a child), but there is no one-to-one correspondence: pray-in and teach-in do not come from phrasal verbs.

call-up, kick-off, lie-in, laugh-in, love-in, play-back, press-down, put-down, put-on, read-through, sell-out, sit-in, sleep-in, take-over, take-off, talk-in, think-in, warm-up, wrap-up, and write-off.

There seems to be a division between those [VP]N formations which come from phrasal verbs which subsequently undergo conversion to nouns (the vast majority of cases) and those [VP]N formations which do not come from phrasal verbs but arise from the union of a verb and a particle such as V+in, which became fashionable in the 1960s and could be considered a case of suffixation. Initially V+in formations denoted ‘group protest’, which was later replaced by a connotation of ‘group activity’. Other particles that seem to function in the same way as V+in, in the sense of being part of formations in a series with a specialised meaning, are blackout, brown-out, dim-out and white-out. [52; 12, p. 77]

Berg (1998) agrees with the general view that behind forms like breakdown there is no regular hyphenating process, but a process of conversion from a phrasal verb into a N, which is evidenced by a change of stress: compare [to break down]V with [a breakdown]N. While acknowledging that forms like breakdown are the

result of conversion, authors like Carstairs-McCarthy (2002) argue that they are real hyphenations although “marginally productive” while other authors like Bauer (1983) do not consider them hyphenations in the strict sense.

The position taken in this work is that [VP]N formations are not hyphenations. Those that come from phrasal verbs are created in the syntax, i.e. they are a syntactic product which is later converted into a noun, and those that involve a particular P which develops a specific meaning can be considered the product of a special kind of affixation. Evidence for the latter type has already been given (the formations in a series) and further evidence for the former type is provided by Adams (2001). She provides sentences where the nominalised phrasal verb is being used as non-count and where “they denote an instance of the verb’s action following have/give/take a”:

- a. We were supposed to keep out of the pilot’s way at blast-off.
- b. Gas will be liberated... during pump-down.
- a. give (something) a rub-down
- b. have a fry-up, a punch-up, a sleep-in

3.2. Semantic Analysis Verbal hyphenations

Marchand [53; 59, p. 100-107] calls verbal hyphenations which are formed by a noun or an adjective and verb pseudo-hyphenations. In the literature, it has often been claimed that verbal hyphenations in general are rare and those existing are mostly derived via conversion or backformation. On a similar note, Spencer (2003) observes that there are only a few exceptional examples of base-generated verbal hyphenations, such as sight sing and sight read of the [NV]V type and drink-drive of the [VV]V type. However, Marchand remarks that verbal hyphenations may be common in specialized jargon. He mentions that, for example, words like stallfeed, smokedry, winterfeed, and winterkill belong to the jargon of farmers. Also, against the general assumption, Bauer & Renouf (2001) observe that, in addition to the [PV]V type (the only type acknowledged by Selkirk 1982), there are other types, which are present in their 1988-1998 corpus of the British newspaper *The Independent*. They mention, as cases of verbal

hyphenations, out-soap and out-Herod, of the [PN]V type (out-soap could also be [PV]V), the form being more productive when the N is a proper name. While these may be argued to be cases of prefixation (as we will indeed argue), Bauer & Renouf provide other hyphenations which conform to the verbal hyphenating pattern, namely [N/V/A+V]V: custom-produce, thumb-strum (NV), dryburn, freeze-dry (VV), slow-bake, hardwire (AV).

As will shortly be seen, our position is that despite the fact that some verbal hyphenations may be the result of backformation, their status in the grammar cannot be any different from cases that arise spontaneously. First, it is unlikely that the process of backformation can result in an acceptable object, namely a verbal hyphenation, if the principles of English morphology do not permit such a type of hyphenation. Second, there are quite a few verbal hyphenations which are recent coinages. Regarding NV hyphenations, Bauer [54; 16, p. 208] notes that “There are plenty of this type of verb being coined in current English, some recent examples being carbon-date, colour-ode, head-hunt, sky-dive”. Since a nominalizing suffix can be added to any verbal hyphenation, one could argue that verbal hyphenations are all derived from the nominal forms by means of backformation. Although unfalsifiable, this position seems to be an easy way out. Finally, there is no way for children learning English to know whether a verbal hyphenation is base-generated or is the result of a backformation unless they are given explicit evidence, which is unlikely, to say the least

This subsection contains three different types of verbal hyphenations, namely [NV]V, [VV]V, and [AV]V hyphenations, which are followed by two different types of constructions, i.e. [PV]V and [PN]V complex forms, which are taken by some authors to be hyphenations but we conclude that they are better analysed as a different construction.

[NV]V hyphenations. As already noted in the introduction to verbal hyphenations, [NV]V hyphenations are often considered exceptional under the general assumption that there is no general process of [NV]V hyphenating in English (which may explain why Selkirk 1982 denies their existence) and that the

attested cases are mostly attributed to backformations from nominal or adjectival hyphenations (e.g. proof-reading or proof-reader > proof-read, talent-spotter > talent-spot, and machine-washable > machine-wash) or the result of a conversion process (litmus-testN I V, handcuffN I V, mountain-bikeN I V). Despite the fact that some [NV]V hyphenations may be derived, we maintain that they have the same status as those that are base-generated, although it is difficult to know which is which since all verbal hyphenations have a nominalized counterpart. Some examples of base-generated forms might be chain-drink, chain-smoke, sight-read, sight-translate. All verbal NV forms will be equally treated as hyphenations. Note, though, that the use of a finite form in a sentence is worse than a non-finite form like a gerund:

Mountain-climbing is good for one's health is better than I mountain-climb every weekend.

Verbal hyphenations of the [NV]V type are divided into endocentric SUB and endocentric ATR hyphenations below respectively. The verb is the head both formally and semantically: it determines the verbal status of the hyphenation and formal marking is placed on it (e.g. the verb inflects for subject-verb agreement, tense). Semantically, the hyphenation denotes a subtype of action denoted by the verb. The endocentricity of the hyphenation is thus derived.

a. air-condition, base-generate, book-keep, breast-feed, carbon-date, cheer-lead, colour-code, computer-generate, gift-wrap, globe-trot, hand-make, hand-wash, head-hunt, litmus-test, machine-wash, mass-produce, moon-light, mountain-bike, parcel-bomb, pressure-clean, proof-read, rugby-tackle, sight-read, sight-translate, sky-dive, spoon-feed, spot-light, stage-manage, steam-clean, talent-spot, tape-record, thumb-strum, volume-expand, and window-shop.

b. chain-drink, chain-smoke, and ghost-write.

Regarding the hyphenations in “a”, the N inside the hyphenation is not argumental, which is clear from examples like computer-generate and steam-clean, where the N can be understood as the instrument with which one performs the action (e.g. to clean by means of steaming). When it looks like the noun performs

the function of the internal object of the verb (e.g. brain-wash, talent-spot), the hyphenation verb can take an external object in syntax (e.g. They babysat John all afternoon), which means that the noun inside the hyphenation cannot be taken as the internal argument. This is in utter contrast with NV hyphenating in Frisian, where the noun is argumental in complex verbs like [[messe]N [slypje]V]V (knife+sharpen), since the simple transitive verb becomes intransitive when complex and no external object is allowed. [55; 33] NV hyphenating in English can also be contrasted with NV hyphenating in Dutch where the N can be argumental when the verb strands the noun under V2 (e.g. coffe+set ‘make coffee’) or non-argumental when the complex verb moves as a whole under V2 (e.g. sleep+walk).

a. In order to computer-generate logic diagrams corresponding to a text, the logical structure must be evident to the device performing the task. (...)

b. Besides training young cyclists, organisers are also trying to talent-spot members to form a national team for the YOG.

As for the endocentric ATR hyphenations, the nouns are mostly understood as involving a comparison. For example, chain-smoke means to smoke cigarettes one after another like a chain. An example of such a type of hyphenation follows:

Sir Sean had most recently commissioned Hunter Davies, the only authorized biographer of the Beatles, to ghost write the book.

The productivity of such hyphenations is more limited than the hyphenations illustrated in. There are very few examples and speakers find it difficult to make up new forms:

e.g. *He king-marched/king-walked down the street.

[VV]V hyphenations. Verbal hyphenations of the [VV]V type are regarded as non-existent by Selkirk (1982), as exceptional by Bauer (1983) and Spencer (2003), or are simply not mentioned. For example, Bauer [56; 16, p. 208] argues that the attested examples (e.g. type-write, test-market) are dubious in that they do not inevitably belong to this group. Like [NV]V hyphenations, [VV]V hyphenations may be related to nominal or adjectival hyphenations by means of a

suffix (e.g. crash-landingN ~ crash-landV, divebomberN ~ dive-bombV, dry-cleanableA ~ dry-cleanV, sleep-walkerN ~ sleep-walkV) or without (e.g. drop-kickN/V, slam-dunkN/V, shrink-wrapN/V, strip-searchN/V), which may lead one to think that there is no [VV]V hyphenating process. Even though one may think that some hyphenations (e.g. freeze-dry, drink-drive, dry-burn and fly-drive) can be regarded as base-generated VV hyphenations, they can all have a nominal or adjectival counterpart as well. As noted above, it is a fact about English morphology that verbs can be related to nominal and adjectival forms by means of suffixes (e.g. the adjectivalizing suffix -able and the nominalizing suffix -ing). From this perspective, one could argue that verbal hyphenations are always the result of backformations (i.e. of derived adjectival and nominal forms). Despite being an unfalsifiable claim, we believe that the grammar is unlikely to result in an acceptable object, namely a [VV]V hyphenation, if the grammatical principles do not allow such a type of object (cf. the introduction to verbal hyphenations in the present subsection). In short, despite the small number of attested forms, we will take VV hyphenations as a hyphenation type available in English. Some examples follow:

- a. crash-land, dive-bomb, drink-drive, drop-kick, dry-burn, fly-drive, freeze-dry, shrink-wrap, slam-dunk, sleep-walk, stir-fry, and strip-search.
- b. trickle-irrigate and type-write.
- c. dare-say, make-do, and make-believe.

Concerning the CRD relation, the conjunction ‘and’ would mediate the relation between the two verbs, of which the action of the first verb is understood as taking place first and that of the second verb coming after for most speakers. For example, dive-bomb involves diving first and bombing second, and in strip-search, first someone strips, and then you search them. One speaker, though, regarded either order possible for stir-fry and strip-search, and another speaker gave a simultaneous interpretation to stir-fry and crash-land. However, most speakers understand the complex words as denoting a subtype of the type of action denoted by the second verb (semantic head): e.g. crash-land expresses a type of landing and

dive-bomb a type of bombing. Formally, either verb could be responsible for the verbal status of the hyphenation but note that speakers only inflect the second verb for past tense, which indicates that the second verb is taken as the formal head. Where there is some indication of the past tense of such hyphenation verbs in dictionaries, the second verb also seems to be the formal head: freeze-dried, shrink-wrapped, which agrees with the speakers' judgments. Although the internet search indicates that past tense marking is possible on the second verb, on the first one and on both, there is a clear preference for attaching the past tense marking on walk, which may indicate that speakers take walk as the main verb semantically and formally. The result is that such hyphenations are endocentric: the second verb is both the semantic and formal head.

As already noted for the expressions we understand complex forms with a coordinate relation not as hyphenations, but as phrases. If the forms in involve a true coordinate relation, they cannot be included in the study of English hyphenating. Although the presence of asyndetic coordination is a real possibility for some forms (e.g. stir-fry), speakers' interpretations show that this is not the only reading available. The forms "a" can also be analyzed as hyphenations with the second verb being the head formally (i.e. inflection attaches to it) and semantically (i.e. the hyphenation denotes a kind of action expressed by the second verb), and the first verb being a kind of manner/temporal modifier. Accordingly, to dive-bomb is expected to mean 'to bomb in a diving fashion/when diving', that is, a type of bombing. This expectation agrees with the interpretation given by speakers (see above). The fact that speakers interpret the action of diving coming first and the action of bombing second follows from the hyphenations being endocentric SUB: the action of the first verb is subordinated to the second verb but must be carried out first in order for the second verb to take place (e.g. in order to be able to bomb, one must first dive), which is also the case for the rest of the hyphenations.

The forms type-write and trickle-irrigate in "b" also seem to be endocentric SUB hyphenations like the hyphenations in "a". In type-write, write appears to be

the semantic and formal head. That is, type-write can be interpreted as writing by typing and write is inflected for past tense. However, most speakers treat type-write as writing using a typewriter, the form from which the verb is derived. In other words, type-write is treated as a backformation. However, recall from the discussion above that forms like type-write can be assimilated to the group of endocentric SUB hyphenations with a VV structure. Concerning trickle-irrigate, it also looks like an endocentric SUB hyphenation: trickle-irrigate would be to irrigate in a certain way, namely by trickling. On closer inspection, trickle can also be treated as a noun ('to irrigate using only a trickle of water') and trickle-irrigate as a backformation of trickle-irrigation. In short, trickle-irrigate could be assimilated to the hyphenations, given that the two patterns exist independently of backformations.

As for the forms in "c", they are rather peculiar. Whether they are hyphenations or not is not obvious. If they can be treated as hyphenations, the alleged hyphenating process to which they belong is no longer alive in the language. They would be SUB hyphenations: the first verb selects the second one in all three cases. It seems that daresay should be distinguished from dare-say. Daresay can only be used in 1st person singular and in present tense (prescription found in the MWOD and observed by speakers), which suggests that it has become a lexicalised expression. Note that as a lexicalized form, if it could occur in other contexts other than present tense, we would expect formal endings to attach at the end of the word. Dare-say seems to be better analyzed as dare being the head that selects a verbal complement, namely say. If this is the correct view, we would expect formal endings to attach to dare and not to say (a kind of 'want + to + infinitival form', or 'help + infinitival form') This expectation is confirmed by the results given above, which have the highest number of hits for dared-say, but the other possibilities of formal marking are also surprisingly quite high. Most of the cases consist of Dare as a proper name followed by the past tense of say. The Google search draws no distinction between the two forms being hyphenated or

written as two separate words, the latter case also involving Dare as a proper name most of the time.

Make-believe and make-do are similar to dare-say in the sense that the first verb seems to select the second one. If they were hyphenations, they would be endocentric SUB hyphenations as well. Make gets the formal ending when the hyphenation form is conjugated in the past in both forms. Consider the following examples:

- a. He made believe that he didn't hear her
- b. They made do on half a loaf of bread every day

Rather than hyphenations, though, they resemble the causative construction in Romance: the first verb selects the second one in a sequence of two verbs.

[AV]V hyphenations. Like verbal NV hyphenations, verbal AV hyphenations are usually claimed to be no genuine hyphenations by the fact that some of them may be derived from nominal or adjectival hyphenations, via back-formation (e.g. literary-editor > literary-edit, free association > free associate, soft landing > soft land) or conversion (blackmail, cold call, cold shoulder, free fall, short-circuit, shortcut, wisecrack). There are other cases where the verb and the noun arise almost simultaneously in the language, which makes it difficult to tell which hyphenating type is the genuine one. That is the case of blue-pencil and deep-freeze for example. All these facts put together may explain why verbal AV hyphenations have been called 'pseudo-hyphenation verbs' by Marchand (1969) or claimed to be non-existent by Selkirk (1982). According to Plag, [57; 62, p. 154-155] the main constraint for this type of hyphenation comes from the fact that English verbs cannot have 'adjectival/adverbial non-heads', which he illustrates with the contrast between *fastdrive and a fast-driving chauffeur, and *slow(ly)-move and a slow-moving animal. Like in the previous two cases of verbal hyphenations (i.e. NV and VV), it might seem that there are cases in which there is no nominal/adjectival counterpart (e.g. deep-fry) or if there is one, it seems to be derived from the verbal hyphenation (e.g. double-bookV > double bookingN, fine-tuneV > fine-tuningN, white-washV | N), which could be taken as evidence for a

genuine AV hyphenation process. The reality, nonetheless, points to the opposite direction: all AV hyphenations seem to have a nominal/adjectival counterpart (deep-fry ~ deep-frying). However, this fact cannot mean that AV hyphenations are not a legal object in the language; otherwise, nominal and adjectival AV forms would not result in a verbal hyphenation of the AV type (recall the discussion above). Therefore, all AV hyphenations (base-generated and derived) receive the same treatment in the present thesis, some of which are given in the following.

Black-mail, blindfold, blue-pencil, broadcast, cold-call, cold rinse, cold-shoulder, deep-freeze, deep-fry, double-book, dry-clean, fine-tune, free-associate, freefall, literary-edit, sharp-shoot, short-circuit, shortcut, short spin, slow-bake, slow-cook, soft-land, sweet-talk, quick-brew.

Among the examples, note that forms like cold rinse, short spin, slow bake and warm iron seem to be derived from commands and the adjective seems to perform the function of an adverb. Although we understand that the term ‘adjective’ includes the categories which are traditionally defined as ‘adjective’ and ‘adverb’, at some points it will be useful to keep the two terms separate.

On the one hand, some AV hyphenations are endocentric SUB hyphenations: deep-fry is ‘to cook/fry in deep fat’ (SUB relation and semantic head) and tense marking is placed on the verb (formal head). On the other hand, other AV hyphenations seem to be endocentric ATR hyphenations: soft land is ‘to have a soft landing’ (ATR relation: the landing is soft). In this case, land is also interpreted as the semantic and formal head: soft land is to land in a certain way, and the verb gets the verbal inflections.

Taking up the constraint mentioned by Plag, we believe that his statement that English verbs cannot have ‘adjectival/adverbial non-heads’ if an adverb occupies the non-head position of the verbal hyphenation [Adv-V], and the semantics of the hyphenation is transparent, then competition between morphology and syntax predicts that the syntactic merger of the adverb and verb will win over the morphological one. The prediction is borne out by the data: *to deeply-fry vs.

to fry deeply. By contrast, if the hyphenation contains an adjective and the phrase an adverb, then there is no competition, and the two structures are predicted to co-exist: to quick-brew and to brew quickly. Notice that sometimes a verbal AV hyphenation (e.g. He quick-brewed the stout) is inserted in a larger hyphenation: quickbrew wine, low-build tyres and slow-cook marathon.

Now we want to revisit Plag's claim that the contrast between *slow(ly)-move and a slow-moving animal is due to the verbal and adjectival nature of move vs. moving. We agree that move is verbal and moving adjectival, but we think that the contrast in grammaticality has to be established on the basis of different sets of data. As just seen above, the merger of an adverb and a verb will take place in syntax and not in morphology if the merger involves transparent semantics. This explains the ungrammaticality of *slow(ly)-move (as opposed to move slowly). As for a slow-moving animal, there is no competition in the non-head position of hyphenation, and hence the hyphenation is predicted to exist. If one wants to contrast the non-head, i.e. slow-moving, with its potential syntactic competitor, i.e. moving slowly, the different merger of categories in both cases will suspend competition and the two structures are again predicted to exist. The same explanation can be applied to fast-drive and a fast-driving chauffeur.

3.3. Semantic Analysis Adjectival hyphenations

We will see below that there are only two types of adjectival hyphenations: AA and NA hyphenations. Spencer [58; 69, p. 33] observes that they are "sporadic" and "semantically restricted" and comments that, regarding AA hyphenations, adjectives cannot usually modify other adjectives and concerning NA hyphenations, they are mostly non-compositional phrases.

First, the right-headed complex forms with an adjective as the second constituent are presented: NA, VA, and AA, of which only the NA and AA forms have been argued to be hyphenations. Then, it is argued that the PA/AP complex forms are not hyphenations, nor are the [PN]N and [VN]V hyphenations being used adjectivally. Finally, the VV sequence is discussed and we conclude that it cannot be an instance of adjectival hyphenations. After surveying the different

possible adjectival hyphenations available in English, we conclude this subsection with a table summarizing the results.

[NA]A hyphenations. [NA]A hyphenations are all endocentric and can be divided into ATR and SUB hyphenations, as shown in “a” and “b, c, d” respectively. The endocentricity of the hyphenations comes from the fact that the hyphenation is an adjective, like the constituent in second position, which acts as the formal and semantic head.

a. ash-blond, baby-smooth, continent-wide, country fresh, diamond-cut, fire-hot, gift-wrapped (parcels), ice-cold, knee-deep, paper-thin, razor-sharp, shoulder-high, skin-tight, sky-high, star-bright, stone-cold, stone-deaf, and world-wide.

b. almond-eyed, bull-necked, chicken-hearted, eagle-eyed, lantern-jawed, pigeon-toed, and wasp-waisted.

c. sugar-coated, and chocolate-flavoured.

d. affiliates-led, alcohol-related (incidents), an architect-designed (house), bloodthirsty, a car-dependent (culture), car-dominated (streets), a chauffeurdriven (car), citizens-sponsored, class-conscious, colour-fast, commission-hungry (advisers), computer-matched, a coral-encrusted (wreck), disease inhibitory, drought-ravaged (areas), drug-induced (wisdom), energy-efficient (buildings), flavour-sealed (coffee), foil-packed (coffee), foolproof, germresistant, girl-crazy, a glass-fronted (building), guild-laden, guilt-ridden, hand-sewn, hand-written, heat-sensitive, host-specific, issues-oriented, his jail-painted (portraits), a London-based (company), a media-shy (financer), oil-rich, paper-bound, poverty-stricken, profits-based, security-coded (doors), space-born, structure-dependent, sun-baked, tailor-made, time-poor, time-worn, top-heavy, university-controlled, user-friendly, and water-repellent.

The noun in the hyphenations in “a” acts as a modifier of the head adjective, hence the label of ATR hyphenations. A very common relationship between the constituents of the hyphenation is that of comparison, as in ash-blond, which means ‘blond like ash’. It is not clear to us whether colour names like blood-red and bottle-green¹ should receive the same treatment - i.e. NA hyphenations with a

relation of comparison between the two constituents: e.g. bell-jar. Although our inclination is to treat them as NN hyphenations, we will leave the question open here. Notice that the two patterns to which these hyphenations can be assimilated exist independently, so the grouping of colour names like blood-red to either pattern will have no effect on the overall hyphenating patterns of the language.

An attributive relation is also found between the two internal constituents of the hyphenations in “b”, where the relation of comparison is also prominent: almond-eyed means that one’s eyes are like almonds in shape. Although superficially the hyphenations are a sequence of a noun and an adjective, the first noun gives an attribute to the underlying noun on which the adjective is based. The two nouns (e.g. almond and eye) are, in turn, subordinated to the suffix –ed, the head of the hyphenation, which provides the hyphenation with the adjectival category and the meaning ‘having X, provided with X’. In terms of semantics, the suffix attaches to the complex nominal base, as shown by [[almond eye]ed], but phonologically it is added to eye (a bracketing paradox). The relation between –ed and almond eye is one of subordination, hence endocentric SUB hyphenations. A requirement for the hyphenations under analysis appears to be that the second constituent is a body part.

The hyphenations in “c” are also endocentric SUB hyphenations, but they are a bit different. They do not involve a body part as a second constituent and, according to Adams (2001), the relation between the two parts of the hyphenation is ambiguous. They can be understood as ‘having a sugar coat’ but also as ‘coated with sugar’. The two readings would correspond to two different morphological structures, but they do not have any repercussions on the type of hyphenation. The possibility of having two alternative structures corresponding to different semantics is excluded in the hyphenations in “b” and “d”. However, once native speakers have been consulted, it is not clear that there is an extensional difference between the paraphrases ‘having a sugar coat’ and ‘coated with sugar’.

Concerning the hyphenations in “d”, the noun is an argument or is subcategorized by the adjectival head, as in structure-dependent. The noun can also

be an adjunct indicating, for example, location as in his jail-painted (portraits). In other words, they are endocentric SUB hyphenations with the head on the right. In some cases the adjective is underived and then the internal structure is the same as that of the hyphenations in “a”, but in other cases the adjective is derived and then they have the same internal structure as the hyphenations in “b”.

[VA]A formations. Bauer (1983) observes that adjectival VA hyphenations exist but that they are rare, and Carstairs-McCarthy [59; 29] mentions that this type hardly exists, which he attributes to the fact that verbs do not easily combine in hyphenations, but that it is not difficult to create new ones, like sing-happy ‘happy enough to sing’ and float-light ‘light enough to float’. If that were the case, [VA]A hyphenations would be endocentric SUB hyphenations.

die-hard, and fail-safe.

However, the reality seems to point in the opposite direction. That is, fail-safe is the only oft-cited example which represents the alleged adjectival VA hyphenation, although the result can also be a noun. Regarding diehard, Lieber [60; 58] mentions that the result can either be a noun or an adjective. In short, both fail-safe and diehard are not prototypical examples of the so-called adjectival VA hyphenation type, which seems to be nonexistent due to the impossibility of creating new forms based on this pattern. We conclude then that there is no adjectival VA hyphenation in English, which may be due to the restriction that verbs do not combine with adjectival heads.

[AA]A hyphenations. CRD “a, b”, ATR “c” and SUB hyphenations.

a. bitter-sweet, blue-green, deaf-mute, devilish-holy, foolish-witty, fortunate-unhappy, harsh-rude, shabby-genteel, phonetic-semantic, sober-sad, social-political, stubborn-hard, and sweet-sour.

b. cruel-compassionate expression, French-German cooperation, the high-low alternation, (one’s) humble-surlly way, a public-private partnership, and a French-English dictionary.

c. freezing-cold, icy-cold, silky-soft, white-hot, and wide-awake.

d. bare-footed, blue-eyed, clear-headed, clear-sighted, flat-chested, good-natured, hard-hearted, long-tailed, long-winded, red-bearded, red-roofed, right-fisted, rosy-fingered, sharp-eared, short-lived, short-sighted, straight-backed, straight-faced, sure-footed, thick-headed, and three-legged.

The hyphenations in “a” and “b” are all CRD hyphenations, the former being endocentric and the latter exocentric. Concerning the semantics of the former, Lieber (2008) distinguishes ‘simultaneous’ from ‘mixture’ endocentric CRD hyphenations. A hyphenation with a simultaneous relationship between the two constituents is deaf-mute and a hyphenation with a mixture relationship between the two constituents is blue-green. According to Adams (1973), this type of hyphenation is more common in the literature than in the general vocabulary and, according to Lieber (1983), these hyphenations can be “readily coined”.

Regarding the exocentric CRD hyphenations in “b”, recall that Lieber (2008) identifies three different relationships, namely relationship, collective and disjunctive, of which we eliminated the last one. The first relation can be exemplified by French-German cooperation; the second one by a cruel-compassionate expression. Recall also that Bauer (2008) also distinguished two subtypes of hyphenations: translative (a French-English dictionary) and co-participant (French-German cooperation).

Recall that our understanding of hyphenating leads us to deny the existence of CRD hyphenations. For us, the forms in “a” are just phrases with asyndetic coordination. While the CRD relation may not be visible in forms like bitter-sweet and blue-green, which may have come to denote for some speakers a kind of flavour and a new colour respectively (as a result of mixing the two coordinated elements), in other cases the CRD relation is clearly visible: e.g. shabby-genteel is understood as genteel but shabby, and social-political as involving both social and political aspects. Some forms are treated by speakers as not making much sense: e.g. devilish-holy, foolish-witty, fortunate-unhappy and harsh-rude. By their very nature, adjectives need to be attributed to some entity, which explains why the nonsensical coordinated adjectives are rescued by placing a noun outside them: e.g.

devilish-holy, fight/fray, foolish-witty love, fortunate-unhappy thing, harsh-rude tongue. Note that it is also due to their (contradictory) semantics that the two adjectives cannot easily enter into a CRD relation; the insertion of a noun makes such a relation possible.

Similarly, the coordinated forms in (b) do not make much sense unless they are predicated of a noun outside the coordinate structure: public-private vs. a public-private partnership. In short, it seems that an AA sequence can easily be interpreted as a coordination when it is inserted in the nonhead position of a hyphenation which has a head noun whose inherent semantics licenses a coordinate relation. For example, partnership semantically involves two or more people, a requirement which is satisfied in a public-private partnership. In other words, the forms in “b” are hyphenations by virtue of having a noun outside the coordinate structure. They are endocentric hyphenations with the noun being the formal and semantic head. What is not so clear is whether they are SUB or ATR hyphenations: a public-private partnership is a partnership between public and private organizations (SUB) but a cruel-compassionate expression is an expression which is cruel but compassionate (ATR). The issue of the SUB/ATR division will be taken up in the discussion section.

The hyphenations in “c” are endocentric ATR. They consist of a sequence of two adjectives: the first one modifies the second one, which is the head. For example, icy-cold indicates that it is as cold as ice. They exemplify the same pattern we found for adjectival NA hyphenations like ash-blond. Like the hyphenations in “a”, Lieber [61; 58, p. 255-260] also considers that AA hyphenations like icy-cold and wide-awake are “readily coined”. By contrast, according to Huddleston & Pullum [62; 44, p. 528] adjectives cannot be modified by other adjectives, except for a few cases: icy cold, freezing cold, red-hot, boiling hot, scalding hot, of which they note that “These expressions have the character of fixed expressions (...) this is not a productive construction”. Notice that some modifying adjectives are based on a noun: icy<ice, silky<silk while others are based on a verb: freezing<freeze. If Huddleston & Pullum’s view is correct, then

we have reason to believe that forms like bluish-green, dark-blue, light-green, pearly-grey and snowy-white, which could initially be taken as AA hyphenations, should be considered AN hyphenations.

The hyphenations in (d) are endocentric SUB, with the same structure as the adjectival NA hyphenations which we have seen above, but with the hyphenations at hand there is no relation of comparison between the two internal constituents but a copulative relation. For instance, in blue-eyed, the eyes are blue, which means that blue modifies the noun eye underlying the second adjective. The head of the hyphenation, the ornative derivational suffix –ed, attaches to eye formally, resulting in eyed, but semantically attaches to [blue eye] giving it the meaning of ‘having X (=blue eyes)’ and also providing it with the adjectival category. All the hyphenations involve a body part (or something related to the human body like wind, nature, life) as the second internal constituent, which is inalienably possessed by the noun the hyphenation as a whole modifies: a [[threeA leg(g)N]ed]A table (the table necessarily has legs or something similar to legs) vs. *a [[twoA skirtN]ed]A woman (the woman does not necessarily need to have skirts). In short, in addition to the ATR relation between blue and eyes, there is a SUB relation between the suffix –ed and blue eye. Hyphenations very similar to the ones in “d” are given below:

- a. free-spirited (culture), and a low-powered (airgun).
- b. two great-coated (figures), our light-industrial (heritage), and his many-pocketed (fishing vest).

As for the hyphenations listed in (b), the noun outside the hyphenation does not need to inalienably possess the entity which is suffixed with –ed: in two great-coated (figures), figures do not necessarily have coats.

[PA]A formations. Under the heading [PA]A hyphenations, some authors like Carstairs-McCarthy (2002) have included complex forms which are the result of prefixation rather than hyphenating. As discussed earlier (e.g. in the case of some nominal [PN]N hyphenations), the Ps over and under have developed a specific meaning, which is different from the meaning of the P when it is found in

isolation, suggesting that there is a bound prefix form besides a free form. For example, *over-* intensifies the property denoted by the adjectival base, as in *over-aggressive*, *over-confident*, *over-concise*, and *overripe*, a meaning not found when *over* functions as a free form (e.g. *The plane flew over the city*). As for the rest of the apparent adjectival PA hyphenations, Berg (1998) shows that they are the result of inversion from a syntactic combination (e.g. *built in* > *inbuilt*). While some PA formations have developed a specialised meaning different from their syntactic source (*come up* > *upcoming*) due to the passage of time, other complex PA words can still be semantically associated with the syntactic phrase from which they are derived (e.g. *speak out* > *outspoken*). The fact that one cannot put any P and A together to form hyphenation supports the hypothesis that there are no adjectival PA hyphenations in English. In short, alleged cases of [PA]A hyphenations are either the result of prefixation or the result of a verbal phrase undergoing conversion into an adjective.

[AP]A formations. Forms like *strung out* and *worn out* also develop out of phrasal verbs. The semantic link between some adjectival forms and their syntactic source is still visible in some cases (e.g. *wear out* and *worn out* are both related to tiredness and exhaustedness) but opaque in other cases (*string out* means ‘to spread out’, but *strung out* means ‘to be addicted to a drug’). In other words, the source for the alleged hyphenation under consideration is a phrasal verb, which is converted into an adjective later on. Like in the previous case (i.e. [PA]A formations), there is no [AP]A hyphenating process.

[PN]A formations. As we saw in the subsection on nominal hyphenations, P+N is a possible combination for a hyphenation noun (e.g. *out-post*, *under-arm*, *out-tray*). The hyphenations listed in below seem to have the same internal structure. In all cases, the internal argument of the P is satisfied by the noun. We understand that the result of merging a preposition with a noun can be adjectival when it has undergone semantic drift (to some degree) and the meaning is not totally transparent. Some evidence for them acting as adjectives comes from their

placement in comparative contexts: They live in a very down-market neighborhood. [63; 29, p. 65]

before-tax (profits), downmarket, in-house, off-shore, upmarket, upscale, and with-profits.

It seems that once P+N words have been incorporated into the language, they are subject to historical accidents: some words may have remained faithful to their category (e.g. offstageP), some others may have developed a nominal use, others may have developed adjectival and nominal uses (e.g. underarmN/A, undergroundN/A) and still others may have ended up being used as adjectives only. Note that not all the forms exemplify the latter development: e.g. *a very off-shore account (contra Carstairs-McCarthy 2002). Off-shore seems to have the same role as the PP off the shore, with the reduced form probably being a preposition. Since [PN]A forms cannot be created spontaneously, the forms in cannot be taken as hyphenations. Notice that the existence of such words depends on a conversion process, which is unpredictable.

[VN]A formations. The words seem to have their source in nominal [VN]N hyphenations. The noun is the internal argument of the verb, and a zero-affix satisfies its external argument and gives the nominal category to the hyphenation. As in the previous case, we believe that once such forms have been in the language for some time, they can deviate from their original meaning and can subsequently develop other usages, like an adjectival one. Consider the following cases: at breakneck speed, a cutthroat razor, and kick-arse attitude. These examples show that breakneck, cutthroat and kick-arse cannot be interpreted literally. For example, breakneck does not literally mean ‘to break somebody’s neck’ but ‘very fast’. Similarly, cutthroat is interpreted as ‘cruel’ and kick-arse/kick-ass as ‘very tough, aggressive’. Since the existence of [VN]A forms seems to depend on the existence of [VN]N hyphenations and the categorial change (NIA) is not systematic, the conclusion is that [VN]A words do not constitute a hyphenation type. Semantic drift seems to be a requirement for VN forms to be able to be used adjectivally.

break-neck, cut-throat, kick-arse.

Note that nowadays most of these forms are used only adjectivally (e.g. lack-lustre) and in fixed expressions (e.g. at breakneck speed). This fact may be attributed to the fact that the entities that these forms may have denoted originally are no longer relevant in our world (e.g. cut-throat designating a criminal). One might propose another analysis, namely that the forms under study are converted VPs, which would explain why such forms seem to lack a nominal counterpart (at least nowadays). However, we believe such a proposal cannot explain why native speakers cannot come up with new forms since the pattern which would underlie the process is an active one in the language (a verb plus its internal argument).

[VV]A formations. We have found only the two examples that conform to the [VV]A pattern, which may be indicative of the low presence of this hyphenation in the language if it exists at all.

make-believe, and wash-wear.

As already noted in the subsection on verbal hyphenations of the VV type, the source of make-believe seems to be a sequence of two verbs in syntax, with a relation of subordination between them (make being the head). Losing its transparency, this verbal sequence has acquired an adjectival function and can now be used in sentences like: She has a make-believe friend and His story is all make-believe. Regarding wash-wear, it looks like a lexicalized phrase of wash-and-wear, a syntactic phrase as well. This leads us to conclude that there are no real cases of adjectival VV hyphenations. Examples in which the forms are used in context are given below:

a. “Discuss ways to tell the difference between books that tell make-believe stories and books that tell real facts.”

b. “Tom Sawyer outfits were not only stylish, but were wash-wear meaning they could be easily laundered.”

Conclusion

The present study examines the role of hyphenation in the processing of English compound words. English hyphenated words that appear in the English language (eg. grown-up) and unspaced (eg. grownup) were chosen as target stimuli. Half of the hyphenated words chosen appeared more frequently in their hyphenated form while the other half of the hyphenations appeared more frequently in their unspaced form. The words were embedded in sentences in both their hyphenated and unspaced forms. Participants were instructed to read a randomly selected set of sentences while their eye movements were recorded.

First fixation duration showed a significant interaction between hyphenation type and spatial layout presentation which indicated a significant processing gain for unspaced compound words shown as hyphenated. However, for hyphenated words more familiar as unspaced, gaze durations significantly increased with the addition of the hyphen. There was no significant main effect for hyphenation type or spatial layout presentation in gaze duration, indicating no significant benefit from the transformation of hyphenation into an unspaced hyphenation. The results indicate that while spatial segmentation benefits initial word processing by facilitating lexical decomposition, it has detrimental affects on later word processing when whole word retrieval occurs.

Though research has been done on spacing in compound word processing, little to no research has been done on the effect of hyphenation and whether it facilitates word processing. A recent move by dictionaries such as the Oxford English Dictionary towards converting many hyphenated words into either spaced or unspaced compound words presents the question of whether or not hyphenation serves an important purpose in word recognition and whether the move to delete them facilitates or impedes word processing. In this study, hyphenation of two groups of compound words was manipulated: those that generally appear hyphenated and those that generally appear unhyphenated. The eye-movements of participants were recorded in order to see if the deletion or insertion of a hyphen increases or decreases word processing speed.

A hyphenated word is a combination of two or more words that function as a single unit of meaning. There are three types of hyphenations: Those written as single words, with no hyphenation, are called closed hyphenations--the word "flowerpot," for example. Hyphenated hyphenations, such as "merry-go-round" and "well-being," are the second type. Those in the third group, called open hyphenations, are written as separate words – the nouns "school bus" and "decision making," for example.

We should keep in mind that hyphenations can function as different parts of speech. In such cases, the type of hyphenation can change, too. "Carry over," for example, is an open hyphenation as a verb but a closed hyphenation ("carryover") as a noun and an adjective:

In contrast, a hyphen that is always displayed and printed is called a **hard hyphen**. Soft hyphens are inserted into the text at the positions where hyphenation *may* occur. It can be a tedious task to insert the soft hyphens by hand, and tools using hyphenation algorithms are available that does this automatically. Current modules of the Cascading Style Sheets (CSS) standard provide language-specific hyphenation dictionaries.

The word segmentation rules of most text systems consider a hyphen to be a word boundary and a valid point at which to break a line when flowing text. However, this is not always desirable behavior, especially when it could lead to ambiguity (such as in the examples given before, where *recreation* and *re-creation* would be indistinguishable), or in languages other than English (e.g. a line break at the hyphen in Irish *an t-athair* or Romanian *s-a* would be undesirable). For this purpose, Unicode also encodes a **nonbreaking hyphen (non-breaking hyphen, no-break hyphen)**. This character looks identical to the regular hyphen, but it is treated as a letter by word processors, namely that the hyphenated word will not be divided at the hyphen should this fall at what would be the end of a line of text; instead, the whole hyphenated word either will remain in full at the end of the line or will go in full to the beginning of the next line. The non-breaking space exists for similar reasons.

As for the types of English hyphenations, the majority of discussions about English hyphenating do not include prepositional hyphenations. Examples like *into*, *onto*, *upon*, *without* and *within* which could instantiate prepositional hyphenations are lexicalizations of two prepositions frequently occurring together, which have developed a unitary semantic interpretation with the consequence that they are perceived as one word by speakers. In addition, new formations based on the P+P pattern appear to be impossible: **withby*, **upunder*. However, forms like *outdoors*, *offstage*, *overhead*, *uphill* and *underfoot*, which are the union of a preposition and a noun, could be seen as prepositional hyphenations. This is the position defended, for example, by Boertien (1997) but the speakers consulted do not agree on the productivity of such forms, which explains why we leave them out from the present survey of English hyphenating (but we hope to study them further in future research). In the subsections of nominal and adjectival hyphenations, we will see that these forms can act as nouns and adjectives. Our survey of hyphenations in English starts with nominal hyphenations. Then verbal hyphenations are presented, and finally adjectival hyphenations are discussed.

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Appendix

Sentences used in this study. The first sentence in each pair contains the hyphenation in hyphenated form and the second sentence contains the same hyphenation in unspaced form. The first set of sentences contain target compound words that are more familiar as unspaced and the second set of sentences contain target compound words that are more familiar as hyphenated. Target words are presented in bold.

Sentences Containing Hyphenations more Familiar as Unspaced

My birthday cake was almost an **after-thought**, since I focused on dinner first.

My birthday cake was almost an **afterthought**, since I focused on dinner first.

They had to call a helicopter to **air-lift** her to the nearest hospital.

They had to call a helicopter to **airlift** her to the nearest hospital.

Through the comic series, Superman's **arch-enemy** is Lex Luthor.

Through the comic series, Superman's **archenemy** is Lex Luthor.

He threaded the flower through the **button-hole** on his jacket.

He threaded the flower through the **buttonhole** on his jacket.

Anna headed to the dentist for her **check-up** and regular tooth-cleaning.

Anna headed to the dentist for her **checkup** and regular tooth-cleaning.

My friend's hands are almost **child-like** because his fingers are so short.

My friend's hands are almost **childlike** because his fingers are so short.

My mom showed me her old 80's **get-up** and clothes, which look rather silly now.

My mom showed me her old 80's **getup** and clothes, which look rather silly now.

The airplane ride left the **heavy-set** man feeling squished and claustrophobic.

The airplane ride left the **heavysset** man feeling squished and claustrophobic.

We couldn't figure out what the **hold-up** on the highway was until we were past.

We couldn't figure out what the **holdup** on the highway was until we were past.

The children played **keep-away** in the yard during recess.

The children played **keepaway** in the yard during recess.

A football game's **kick-off** is one of the few parts I understand.

A football game's **kickoff** is one of the few parts I understand.

The painting was incredibly **life-like** and captured the subject's personality.

The painting was incredibly **lifelike** and captured the subject's personality.

I rarely buy any kind of **make-up** since I only use it on special occasions.

I rarely buy any kind of **makeup** since I only use it on special occasions.

The union workers had a **nation-wide** strike until their demands were met.

The union workers had a **nationwide** strike until their demands were met.

We had to count carefully to play the **off-beat** rhythms correctly.

We had to count carefully to play the **offbeat** rhythms correctly.

Liz was insulted by my **off-hand** comment about her outfit.

Liz was insulted by my **offhand** comment about her outfit.

The legislature started instigating **state-wide** changes in property taxes.

The legislature started instigating **statewide** changes in property taxes.

Though the cat and dog played dumb, the **tell-tale** signs of a fight were there.

Though the cat and dog played dumb, the **telltale** signs of a fight were there.

When I get home late, I **tip-toe** through my apartment so I don't wake anyone.

When I get home late, I **tiptoe** through my apartment so I don't wake anyone.

The shape of the sine curve **wave-form** is my favorite of the trig functions.

The shape of the sine curve **waveform** is my favorite of the trig functions.

Sentences Containing Hyphenations more Familiar as Hyphenated

Due to the drought, there was a **city-wide** ban on lawn sprinklers and hose use.

Due to the drought, there was a **citywide** ban on lawn sprinklers and hose use.

The deal seemed straightforward and **clear-cut**, so I was surprised by the catch.

The deal seemed straightforward and **clearcut**, so I was surprised by the catch.

I jumped and had a few moments of **free-fall** before opening the parachute.

I jumped and had a few moments of **freefall** before opening the parachute.

When I was little, I didn't want to be a **grown-up** and have responsibilities.

When I was little, I didn't want to be a **grownup** and have responsibilities.

I only took a quick **half-hour** lunch break because I came in late to work.

I only took a quick **halfhour** lunch break because I came in late to work.

The new gaming system was **hand-held** and came with a stylus pointer.

The new gaming system was **handheld** and came with a stylus pointer.

The new set of **high-rise** apartments was the tallest thing on campus.

The new set of **highrise** apartments was the tallest thing on campus.

Even though the senator is **left-wing** now he once was a moderate conservative.

Even though the senator is **leftwing** now he once was a moderate conservative.

Though his family was in the upper **middle-class**, he was on financial aid.

Though his family was in the upper **middleclass**, he was on financial aid.

Because of a computer error, there was a **mix-up** between two tables' orders.

Because of a computer error, there was a **mixup** between two tables' orders.

The actress went from **one-time** extra to a major TV star in only a few years.

The actress went from **onetime** extra to a major TV star in only a few years.

To help pay for school, I found a **part-time** job during the semester.

To help pay for school, I found a **parttime** job during the semester.

Hilary Clinton's **right-wing** conspiracy theory hasn't resurfaced in awhile.

Hilary Clinton's **rightwing** conspiracy theory hasn't resurfaced in awhile.

The brick building was **run-down** and looked abandoned.

The brick building was **rundown** and looked abandoned.

It is only by having **self-respect** that others will also respect you.

It is only by having **selfrespect** that others will also respect you.

Billy was always a **show-off** and wanted all the attention to himself.

Billy was always a **showoff** and wanted all the attention to himself.

The show was so popular that a **spin-off** was made about the lead actress.

The show was so popular that a **spinoff** was made about the lead actress.

Almost all of the internet **start-up** companies seem to be running out of steam.

Almost all of the internet **startup** companies seem to be running out of steam.

Though the photo was good, it needed a **touch-up** to digitally fix the spots.

Though the photo was good, it needed a **touchup** to digitally fix the spots.

The new professor was one of the most **well-read** people in the Math department.

The new professor was one of the most **wellread** people in the Math department.

Comments to Used Marks in the Work

N –Nominal

V – Verbal

A– Adjectival

NN – noun-noun

AN – adjective-noun

NA – noun-adjective

PN – preposition-noun

VN – verb-noun

VV – verb-verb

VP – verb-preposition

PV – preposition

AA – adjective-adjective.

THE MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION OF
THE REPUBLIC OF UZBEKISTAN

URGENCH STATE UNIVERSITY

Faculty: foreign languages

Master student: Matyakubov Khakimbay

Department: English and Literature

Supervisor: Utkir Yusupov

Academic year: 2012-2014

Specialty: Linguistics (English)

ANNOTATION OF MASTER DEGREE DISSERTATION ON THE
THEME “MORPHOLOGICAL AND SEMANTIC ANALYSIS OF
HYPHENATED WORDS IN ENGLISH”

The actuality of the theme is determined in the main aim of our dissertation is to define the morphological and semantic analysis of the hyphenated words that existing in the English dictionary, and besides to define their given meanings commentaries and definitions and also to give own ideas about them, and then to collect all the hyphenated words out of the dictionary of the English language, newspapers, journals, scientific-public and literary books. In our work we also aimed at defining the particular features of hyphenated words semantically, phonetically, morphologically.

The aim of the research is to show the ways of usage of hyphenated words in English, to carry out the semantic analysis of them. Relying on the above mentioned aims the following **duties** have been established:

1. To show the ways of separating and joining usage of hyphenated words in English;
2. To observe the meanings of compound words when they are hyphenated;
3. To discover the role of hyphenation in English compound words;
4. To carry out the semantic analysis of hyphenated words and
5. To differentiate nominal hyphenations, verbal hyphenations and adjectival hyphenations.

The object and subject is compound and hyphenated words of the English language vocabulary and carrying out the discoveries on the morphological usage

of compound and hyphenated words and defining the differences between their semantic usages.

The methods of investigation: The methods of description, the method of componential analysis, the method of contextual analysis, distributional method, the method of choosing hyphenated words among the compound words, the classifying method, the method of semantic analysis.

The novelty of the research. The goal of this dissertation is to study a specific type of complex word-formation, namely hyphenating, and its relation to the morphology-syntax interface, with the ultimate aim of gaining a better understanding of the phenomenon.

The theoretical value is that scientific methodological manuals can be created. For instance, all the hyphenated words that exist in the English language have been noted to the shoots separately, so that more than thousands of hyphenated words have been written down.

The practical value of the work is that it enriches the scientific mental outlook of the students on hyphenated words. Students will explore these areas through a particular method:

- Historical development of English vocabulary;
- Morphological study: word formation;
- Semantic study: word meaning and sense relations;
- Word in context
- lexical and morphological change

The structure of the work consists of an introduction, three chapters, and conclusion at the end of each chapter, bibliography and appendix.

Main results of the work take into consideration the morphological usage of hyphenated words and the semantic results as nominal, adjectival and verbal hyphenations.

Scientific supervisor:

mpop. Kocymob. Y.K.
(Signature)

Master student:

Kocymob. Y.K.
tasdiqlayman:
O'z MU KB katta inspektori
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O'ZBEKISTON RESPUBLIKASI OLIY VA O'RTA MAXSUS TA'LIM
VAZIRLIGI

URGANCh DAVLAT UNIVERSITETI

Fakultet: Chet tillari

Magistrant Matyakubov Hakimboy

Bo'lim: ingliz tili va adabiyoti

Ilmiy rahbar: O'.Q. Yusupov

O'quv yili: 2012-2014

Mutaxassislik: Lingvistika (ingliz tili)

**“INGLIZ TILIDA JUFT SO'ZLARNING MORFOLOGIK VA SEMANTIK
TAHLILI”“ MAVZUSIDAGI MAGISTRLIK DISSERTATSIYA ISHIGA
ANNOTATSIYA**

Mavzuning dolzarbligi ishimizning oldiga qo'yilgan maqsadida o'z aksini topadi, ya'ni ingliz tili lug'atida mavjud juft so'zlarni morfologik va semantik jihatdan tahlil qilish, ularga izoh berish va ta'riflash, hamda lug'atda mavjud barcha juft so'zlarni jamlash, ya'ni gazeta, jurnallar, badiiy asarlardan misollar yig'ish ishimizning asosiy maqsadi hisoblanadi. Bizning ishimizda yana juft so'zlarning fonetik, morfologik va semantik o'ziga xosliklari ochib beriladi.

Tadqiqot maqsadi ingliz tilidagi juft so'zlarning nutqda ishlatilish usullarini ko'rsatib berish va ularni semantik jihatdan tahlili qilish hisoblanadi. Yuqoridagi maqsadga erishish uchun ishimizda quyidagi vazifalar belgilab olindi:

1. Ingliz tilidagi juft so'zlarning nutqda ayirish va birikish usullari bilan qo'llanilishini ko'rsatish;
2. Qo'shma so'zlar juft so'zga aylanganda ularning ma'nolarini kuzatish;
3. Ingliz tilidagi juft so'zlarning semantik tahlilini olib borish;
4. Ot, fe'l va sifat so'z turkumiga kiruvchi juft so'zoarni farqlash.

Tadqiqot ob'ekti va predmeti. Ingliz tilida mavjud juft so'zlar tadqiqotning ob'ekti hisoblansa, juft va qo'shma so'zlarni morfologik va semantik jihatdan tahlil qilish va ma'no jihatdan farqlash tadqiqot predmeti hisoblanadi.

Tadqiqot metodlari: tasvirlash metodi, komponent tahlil metodi, matn tahlil metodi, distributiv metod, tanlash metodi (qo'shma so'zlar orasidan juft so'zlarni), tasniflash metodi, semantik tahlil metodi.

Tadqiqotning ilmiy yangiligi: Ushbu dissertatsiyaning muhim yutug'i shundaki, unda murakkab so'z yasalishi, asosan, juft so'zlarning o'ziga xos turlarini va ularning morfologik va sintaktik sathda aks etishi o'rganiladi.

Tadqiqotning nazariy ahamiyati shunda aks etadiki, undan barcha ilmiy tadqiqotchilar o'quv-usubiy qo'llanmalar, ilmiy maqolalar yaratishda va yozishda foydalanish mumkin. Masalan, ingliz tilida mavjud barcha, mingdan ziyod juft so'zlar, ko'rib chiqilgan.

Tadqiqotning amaliy ahamiyati esa shuki, dissertatsiya talabalarning juft so'zlar haqidagi tasavvurlarni oshiradi. Ma'lum usul orqali talabalar quyidagi soxalarni kashf qilishlari mumkin:

- Ingliz tili lug'atining tarixiy rivojlanishi;
- Morforlogik ta'lim, so'z yasalishi;
- Semantik ta'lim: so'z ma'nolari;
- Matnda so'z;
- Leksik va morfologik o'zgarish.

Ishning tuzilishi kirish, asosiy uchta bob va xulosa, foydalanilgan adabiyotlar ro'yxati va ilovalardan iborat.

Tadqiqotning asosiy natijalari juft so'zlarning morfologik jihatdan qo'llanilishi va semantik tahlil natijalari – ot, sifat, fe'l juft so'zlarning farqlanishini o'z ichiga oladi.

Ilmiy raxbar:

Uyqov. Waynab Y.K.
imzo

Magistrant:

Matqaribov M.M.
imzo

<i>Waynab Y.K.</i>	imzosini	651
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**Al-xorazmiy nomidagi Urganch davlat universiteti 5A220102 – Lingvistika
(ingliz tili) mutaxassisligi magistranti Matyakubov Hakimboyning
“Morphological and Semantic Analysis of Hyphenated Words in English”
mavzusidagi magistrlik dissertatsiyasiga ilmiy rahbar professor O`Q.
Yusupov tomonidan**

TAVSIYANOMA

Mustaqillik yillarida O`zbekiston dunyo hamjamiyatida o`zining munosib o`rnini egalladi. Bugun uning jahondagi obro`-e`tibori tobora yuksalmoqda. Bu, ayniqsa, mamlakatimizda demokratiya va bozor iqtisodiyotiga oid islohotlarni amalga oshirish natijasida qo`lga kiritilayotgan ulkan yutuqlarning xalqaro hamjamiyat tomonidan e`tirof etilishida, davlatimizning mintaqada barqarorlik va xavfsizlikni mustahkamlashga qaratilgan tashabbuslari berayotgan samaralarida o`z ifodasini topmoqda. Ta`lim davlat miqyosida ijtimoiy-iqtisodiy jarayonlarni tashkil etish va boshqarishning alohida sohasiga aylanib ulgurdi. Aynan shuning uchun ham istiqlolning dastlabki yillarida ta`lim O`zbekiston Respublikasi ijtimoiy taraqqiyotning usutvor yo`nalishi deb e`lon qilindi. Yurtimiz prezidenti I.A.Karimov rahbarligida demokratiya asoslarini jadallashtirishga, xalq farovonligini muttasil oshirishga, shuningdek, ta`lim tizimini isloh qilishga doimiy e`tibor qaratilmoqda.

Bugungi kunda, tilshunoslikni morfologiya, semantika va leksikologiya sohalarini o`rganib, ingliz tilida so`z yasalishining yuqoridagi sathlarda ko`rib chiqish va farqlarini yoritish nazariy va amaliy ahamiyatga ega hisoblanadi.

Ushbu magistrlik dissertatsiya ingliz tilidagi mavjud juft so`zlarning morphologic va semantic sathdagi tahlilini amalgam oshirish, hamda tahlil natijalarini o`rganishga bag`ishlangan.

Mazkur dissertatsiyaning oldiga qo`yilgan asosiy maqsad ingliz tilida juft so`zlarning nitqda qo`llanilish usullarini morphologik sathda ko`satish va ularni semantik tahlil qilish hisoblanadi.

Soʻz yasalişini oʻrganganda ularning qirralari yasaliş turlarini alohida koʻrib chiqqanda namoyon boʻladi. Hozirgi kunda, tilshunoslikda soʻz yasalişini kategoriyasini morfologik va semantik tahlil qilinishi natijasida gaplardagi juft va qoʻshma soʻzlarning yasalişini, ularning maʼno va morfologik farqlari nuqtai nazardan yondashuv dolzarb masalalardan hisoblanadi. Ingliz tilida juft va qoʻshma soʻzlar muammolari boʻyicha Adams, V., Bauer, L., Grimshaw, J. B., Jackson H. and E.Z. Amvela, Lieber, R. kabi boshqa koʻp tilshunoslar ilmiy izlanishlar olib borishgan. Ammo, hozirgacha qoʻshma soʻzlar juft soʻzga aylanganda maʼnosi oʻzgarib boshqa soʻz turkumiga aylanib qolishi, juft soʻzlarning nutqda qoʻllaniliş usullari va semantik jihatdan tahlili oxirigacha oʻrganilmagan. Shunday ekan, magistrant tanlagan mavzu hozirgi kun tilshunosligida dolzarb oʻrin egallaydi. Davr talabiga koʻra, har bir soʻz yasaliş turiga mantiqan yondasha olishlari lozim. Shu maqsadda, magistrant “Morfological and Semantic Analysis of Hyphenated Words in English” kabi dolzarb mavzuni tanlagan.

Ish kirish, asosiy 3ta bob, xulosa, foydalanilgan adabiyotlar roʻyhati va ilovalardan iborat.

Kirish qismida magistrant juft soʻzlarni morfologik va semantik jihatdan tahlil qilishning dolzarbliğı, oʻrganiliş darajasi, tadqiqotning maqsad va vazifalari, obykti, predmeti hamda tadqiqotning metodologik bazalarini yaxshi yoritgan.

Birinchi bob “The Role of Hyphenation in English Compound Words” deb nomlanib, bu bob asosan nazariyaga asoslanadi. Bobning birinchi qismida ingliz tilida soʻzlarning juftlanilişini oʻrganilişga bagʻishlangan ilmiy tadqiqot ishlar tahlil qilinadi. Ikkinchi qism juft soʻzlar ustida tadqiqot amalga oshiriş metodlarini oʻrganilişga bagʻishlangan boʻlib, unda avvalgi tadqiqotlarda qoʻllanilgan tadqiqot matodlari, hamda ushbu tadqiqotda qoʻllanilgan matodlar toʻgʻrisida soʻz yuritiladi.

Birinchi bobning uchinchi qismi qoʻshma soʻzlar ichida juft soʻzlarning ahamiyati, ularning bir-biridan farqi, qoʻshma soʻzlar juft soʻzga aylantirilgandagi

ma`nolariga bog`liq dolzarb muammolar yoritib berilgan va aniq misollar bilan ko`rsatib berishga erishilgan. Masalan, bu qismda so`zlar juftlanishining turlari, ular juft usulda yasalganda va qoshma usulda yasalganda qaysi so`z turkumiga qarashli bo`lishi, hamda ot, sifat, fe`l so`z turkumiga oid juft so`zlar komponentlari qaysi turkumga oid so`zlardan tashkil topganligi organib chiqilgan.

Ikkinchi bob “Morphological Usage of Hyphenated Words in English” deb nomlanadi va u ko`proq amaliyotga asoslanadi va bu bobda magistrant ingliz tilida juft so`zlarning morfologik qo`llanilish usullari to`g`risida so`z yuritadi.

Bobning birinchi qismi ingliz tilidagi juft so`zlarning nutqda ayiruv usuli bilan qo`llanilishiga bag`ishlanib, qismda bunga oid yaqqol misollar berilgan. Ikkinchi qismda magistrant juft so`zlarning biriktiruv yo`li bilan qo`llanilish usullarini ko`rsatib bergan. Bobning bu ikkala qismlarida juft so`zlarning ayiruv va biriktiruv yo`llari bilan nutqda qo`llanilishidagi turlariga ko`ra tasniflangan va ushbu tasnifga ko`ra qismlar ichki kichik qismlarga ajratilib o`rganilgan. Bunda magistrant har bir usulning o`zini tasniflab, aniq misollar bilan o`z fikrlarini isbotlay olgan.

Uchinchi bob “Semantic Analysis of Hyphenated Words in English” deb nomlanadi va bu bob ham amaliyotga tayanadi. Bu bobda magistrant juft so`zlarni semantik jihatdan tahlil qiladi va qilgan tahlili natijasida ingliz tili lug`atidagi juft so`zlarni (gazeta, jurnal va badiiy adabiyotlardan olingan mingdan ziyod misollar) uchta katta guruhga – ot so`z turkumiga kiruvchi, sifat so`z turkumiga kiruvchi hamda fe`l so`z turkumiga kiruvchi juft so`zlarga ajratadi. Bunga ko`ra bobning birinchi qismida ot so`z turkumiga oid juft so`zlar semantik jihatdan tahlil qilinadi. Ikkinchi qismda fe`l so`z turkumiga oid juft so`zlar semantik tahlil qilinadi, hamda uchinchi qismda esa sifat so`z turkumiga oid juft so`zlar tahlil qilinadi/ Shu bilan birga, magistrantning har bir turkumga kiruvchi juft so`zlar qismlarining qaysi so`z turkumiga mansub bo`lishi jihatidan ham kichik – kichik guruhlariga ajratib tasniflashi ayniqsa e`tiborga loyiqdir.

Tadqiqotning xulosa qismida esa, yuqoridagi fikrlar umumlashtirilgan bo'lib, magistrant ishda o'z oldiga qo'ygan vazifalarni to'raligicha bajarishga muvaffaq bo'lgan:

- Ingliz tilidagi juft so'zlarning nutqda ayirish va birikish usullari bilan qo'llanilishini ko'rsatish;
- Qo'shma so'zlar juft so'zga aylanganda ularning ma'nolarini kuzatish;
- Ingliz tilidagi juft so'zlarning semantik tahlilini olib borish;
- Ot, fe'l va sifat so'z turkumiga kiruvchi juft so'zlarni farqlash.

Dissertatsiyaning har bobiga doir xulosalar qisqa, lo'nda va tushunarli bo'lib, ular nazariy va amaliy jihatdan asoslangan.

Magistrant Matyakubov Hakimboyning dissertatsiya ishida ba'zi texnik kamchiliklar mavjud bo'lib, ular magistrlik ishining sifatiga ta'sir qilmaydi.

Suni ham aytish kerakki, ish tugallangan bo'lib, undagi nazariy fikrlar va xulosalar ilmiy va amaliy ishonarli darajada asoslangan. Magistrant ilgari surgan fikrlar ingliz tilshunosligini ilmiy va amaliy jihatdan boyitdi.

Ushbu dissertatsiya ishidan umumiy tilshunoslik, morfologiya, leksikologiya, amaliy va nazariy grammatika fanlarida qo'llanma sifatida foydalanish va u asosda o'quv qo'llanmalar, darsliklar yaratish mumkin.

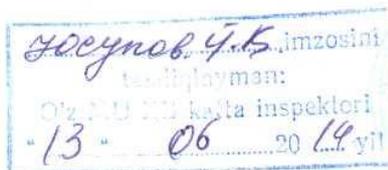
Dissertatsiya ishi ingliz tilida tushunarli ilmiy til bilan ravon yozilgan.

Umuman, Matyakubov Hakimboy Xamidovichning magistrlik dissertatsiya ishi Oliy Attestatsiya Komissiyasining barcha talablariga to'liq javob beradi va undagi yangicha ilmiy qarashlar, mustaqil fikrlar bilan hal qilingan ko'pgina muammolarning nazariy va amaliy ahamiyati ishni ijobiy baholash uchun asos bo'ladi. Uning muallifi Matyakubov Hakimboy 5A220102 – Lingvistika (ingliz tili) mutaxassisligi bo'yicha magistrlik darajasini olishga munosib, deb xisoblayman va ushbu dissertatsiyani himoyaga tavsiya qilaman.

Ilmiy rahbar:



f.f.d. professor O'.Q. Yusupov



**Al-xorazmiy nomidagi Urganch davlat universiteti 5A220102 – Lingvistika
(ingliz tili) mutaxassisligi magistranti Matyakubov Hakimboyning
“Morphological and Semantic Analysis of Hyphenated Words in English”
mavzusidagi magistrlik dissertatsiyasiga**

TAQRIZ

O'zbekiston Respublikasi mustaqillikka erishganining dastlabki kunlaridanoq ta'lim sohasidagi islohot va yuksalishlarga katta e'tibor qaratdi. Buning natijasi o'laroq, yurtimizdagi yosh avlod tomonidan barcha sohalarda keng qo'lga kiritilayotgan yutuq va natijalar fikrimiz isbotidir. Yurtimizda ta'lim barcha sohalarni tashkil etishda ijtimoiy-iqtisodiy va siyosiy jarayonlarni tashkil etishda boshqaruvning alohida yo'nalishi sifatida qaraladi. Aynan shuning uchun ham istiqlolning dastlabki yillarida ta'lim O'zbekiston Respublikasi ijtimoiy taraqqiyotning usutvor yo'nalishi deb e'lon qilindi. Mustaqillik yillaridan keyin muxtaram prezidentimiz I.A.Karimov rahbarligida yurtimizda ta'lim tizimini demokratik tashkil qilinishi, xalq farovonligini muttasil oshirishga doimiy e'tibor qaratilmoqda.

Mustaqillik mevasi bo'lgan demokratik boshqaruv yurtimizda barcha sohalarni qisqa davr ichida jadallik bilan rivojlanishiga, jahonning ilg'or davlatlari bilan har sohada raqobatdosh bo'la oladigan darajaga chiqq olishiga imkon yaratdi desak adashmagan bo'lamiz. Fikrimizning isbotini birgina tilshunoslik sohasida ham ko'rishimiz mumkin. Tilshunoslikning tipologiya yo'nalishi mustaqillikdan keyin, ayniqsa, alohida rivojlandi.

Ushbu magistrlik dissertatsiyasida ingliz tilida mavjud juft so'zlarni morfologik va semantic jihatlari imkon darajasida yoritilgan. Dissertatsiya ishining asosiy maqsadi ingliz tilida mavjud juft so'zlarni morfologik sathda ko'rsatish va semantic tahlil qilish va joiz topganda ularni qo'shma so'zlar va ingliz tilidagi juft so'zlarni o'zbek tilidagi muqobillari bilan taqqoslab ularning o'xshashlik va farqli jihatlari qisqacha ta'rif berishdan iboratdir.

Tilimizda va ingliz tilida ham soʻz yasashining qirralari, yasash usullari ularni alohida koʻrib chiqqanimizda namoyon boʻladi. Tilshunoslikda soʻz yasashi kategoriyasining morfologik –semantik tahlil qilinishi asosida gapdagi juft va qoʻshma soʻzlarning yasashi, ularning maʼno va yuqorida takidlanilgan tahlil boʻyicha farqlari jihatdan yondashuv tilshunosligimizning dolzarb muammolaridan biri hisoblanib kelingan. Yuqorida koʻrsatib oʻtilgan muammolar yuzasidan ingliz tilshunosligida quyidagi tilshunoslar oʻzlarining alohida xissalari bilan muammoni yoritishga oʻzlarining xissalarini qoʻshganlar. Adams, V., Bauer, L., Grimshaw, J. B., Jackson H. and E.Z. Amvela, Lieber, R. kabilar va boshqa koʻplab tilshunoslar ilmiy izlanishlar olib borishgan. Ammo, hozirgacha ushbu muammolar boʻyicha yaʼni, qoʻshma soʻzlar juft soʻzga aylanganda maʼnosi oʻzgarib boshqa soʻz turkumiga aylanib qolishi, juft soʻzlarning nutqda qoʻllanilish usullari va semantik jihatdan tahlili oxirigacha oʻrganilmagan. Shunday ekan, magistrant tanlagan mavzu hozirgi kun tilshunosligida dolzarb oʻrin egallaydi. Davr talabiga koʻra, har bir soʻz yasash turiga mantiqan yondasha olishlari lozim. Shu maqsadda, magistrant “Morfological and Semantic Analysis of Hyphenated Words in English” kabi dolzarb mavzuni tanlagan.

Ish kirish, asosiy 3ta bob, xulosa, foydalanilgan adabiyotlar roʻyhati va ilovalar va qisqartmalarga qisqacha tarifdan iborat.

Kirish qismida magistrant juft soʻzlarni morfologik va semantik jihatdan tahlil qilishning dolzarbligi, oʻrganilish darajasi, tadqiqotning maqsad va vazifalari, obykti, predmeti hamda tadqiqotning metodologik bazalarini yaxshi yoritgan.

Nazariy qisimga asosan birinchi bobda chuqur yondashilgan. Ushbu bob “The Role of Hyphenation in English Compound Words” deb nomlangan. Bobning birinchi qismida ingliz tilida soʻzlarning juftlanishini oʻrganishga bagʻishlangan ilmiy tadqiqot ishlar tahlil qilinadi. Ikkinchi qism juft soʻzlar ustida tadqiqot amalga oshirish metodlarini oʻrganishga bagʻishlangan boʻlib, unda avvalgi tadqiqotlarda qoʻllanilgan tadqiqot metodlari, hamda ushbu tadqiqotda qoʻllanilgan metodlar toʻgʻrisida soʻz yuritiladi.

Juft soʻzlarning qoʻshma soʻzlar bilan oʻxshash jihatlari, qoʻshma soʻzlar ichida juft soʻzlarning ahamiyati, ularning bir-biridan farqi, qoʻshma soʻzlar juft soʻzga aylantirilgandagi maʼnolariga bogʻliq dolzarb muammolar yoritib berilgan va aniq misollar bilan koʻrsatib berishga erishilgan. Masalan, bu qismda soʻzlar juftlanishining turlari, ular juft usulda yasalganda va qoʻshma usulda yasalganda qaysi soʻz turkumiga qarashli boʻlishi, hamda ot, sifat, feʼl soʻz turkumiga oid juft soʻzlar komponentlari qaysi turkumga oid soʻzlardan tashkil topganligi oʻrganib chiqilgan.

Amaliy qismga asosan ikkinchi bobda katta eʼtibor qaratilgan. Bob “Morphological Usage of Hyphenated Words in English” deb nomlanadi va u koʻproq amaliyotga asoslanadi va bu bobda magistrant ingliz tilida juft soʻzlarning morfologik qoʻllanilish usullari toʻgʻrisida soʻz yuritadi.

Bobning birinchi qismi ingliz tilidagi juft soʻzlarning nutqda ayiruv usuli bilan qoʻllanilishiga bagʻishlanib, qismda bunga oid yaqqol misollar berilgan. Ikkinchi qismda magistrant juft soʻzlarning biriktiruv yoʻli bilan qoʻllanilish usullarini koʻrsatib bergan. Bobning bu ikkala qismlarida juft soʻzlarning ayiruv va biriktiruv yoʻllari bilan nutqda qoʻllanilishidagi turlariga koʻra tasniflangan va ushbu tasnifga koʻra qismlar ichki kichik qismlarga ajratilib oʻrganilgan. Bunda magistrant har bir usulning oʻzini tasniflab, aniq misollar bilan oʻz fikrlarini isbotlay olgan.

Dissertatsiya ishida koʻrsatilgan farqli jihatlarni magistrant uchunchi bobda yoritib beradi. Uchinchi bob “Semantic Analysis of Hyphenated Words in English” deb nomlanadi va bu bob ham amaliyotga tayanadi. Bu bobda magistrant juft soʻzlarni semantik jihatdan tahlil qiladi va qilgan tahlili natijasida ingliz tili lugʻatidagi juft soʻzlarni (gazeta, jurnal va badiiy adabiyotlardan olingan mingdan ziyod misollar) uchta katta guruhga – ot soʻz turkumiga kiruvchi, sifat soʻz turkumiga kiruvchi hamda feʼl soʻz turkumiga kiruvchi juft soʻzlarga ajratadi. Bunga koʻra bobning birinchi qismida ot soʻz turkumiga oid juft soʻzlar semantik jihatdan tahlil qilinadi. Ikkinchi qismda feʼl soʻz turkumiga oid juft soʻzlar semantik tahlil qilinadi, hamda uchunchi qismda esa sifat soʻz turkumiga oid juft

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TAQRIZ

Mustaqillik yillaridan keyin yurtimiz jahon hamjamiyatiga yuz tutarkan, buning natijasida nafaqat siyosiy-iqtisodiy o'zgarishlar guvohi bo'lamiz, balki, bu yangilik va rivojlanishlar tilshunosligimiz sohalarida ham o'zining sezilarli natijasini ko'rsatib kelayotganligini guvohi bo'lishimiz mumkin. Buning natijasida, tipologiya, leksikologiya, semantika va boshqa tilshunosligimizning mavjud yo'nalishlarida o'zbek va ingliz tillarini solishtirib, qiyosiy tipologik jihatdan o'xshashlik va farqlarni ko'rsatishning rivojlanayotganligi alohida ta'rifga loyiq. Bugungi kunda, tilshunoslikni morfologiya, semantika va leksikologiya sohalarini o'rganib, ingliz tilida so'z yasalişining yuqoridagi sathlarda ko'rib chiqish va farqlarini yoritish nazariy va amaliy ahamiyatga ega hisoblanadi.

Ushbu magistrlik dissertatsiya ingliz tilidagi mavjud juft so'zlarning morphologic va semantic sathdagi tahlilini amalgam oshirish, hamda tahlil natijalarini o'rganishga bag'ishlangan.

Mazkur dissertatsiyaning oldiga qo'yilgan asosiy maqsad ingliz tilida juft so'zlarning nitqda qo'llanilish usullarini morfologik sathda ko'satish va ularni semantik tahlil qilish hisoblanadi.

So'z yasalişini o'rganganda ularning qirralari yasaliş turlarini alohida ko'rib chiqqanda namoyon bo'ladi. Hozirgi kunda, tilshunoslikda so'z yasalişini kategoriyasini morfologik va semantik tahlil qilinishi natijasida gaplardagi juft va qo'shma so'zlarning yasalişini, ularning ma'no va morfologik farqlari nuqtai nazardan yondashuv dolzarb masalalardan hisoblanadi. Ingliz tilida juft va qo'shma so'zlar muammolari bo'yicha Adams, V., Bauer, L., Grimshaw, J. B., Jackson H. and E.Z. Amvela, Lieber, R. kabi boshqa ko'p tilshunoslar ilmiy izlanishlar olib borishgan. Ammo, hozirgacha qo'shma so'zlar juft so'zga aylanganda ma'nosi o'zgarib boshqa so'z turkumiga aylanib qolishi, juft

soʻzlarning nutqda qoʻllanilish usullari va semantik jihatdan tahlili oxirigacha oʻrganilmagan. Shunday ekan, magistrant tanlagan mavzu hozirgi kun tilshunosligida dolzarb oʻrin egallaydi. Davr talabiga koʻra, har bir soʻz yasaliş turiga mantiqan yondasha olishlari lozim. Shu maqsadda, magistrant “Morfological and Semantic Analysis of Hyphenated Words in English” kabi dolzarb mavzuni tanlagan.

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Birinchi bob “The Role of Hyphenation in English Compound Words” deb nomlanib, bu bob asosan nazariyaga asoslanadi. Bobning birinchi qismida ingliz tilida soʻzlarning juftlanishini oʻrganishga bagʻishlangan ilmiy tadqiqot ishlar tahlil qilinadi. Ikkinchi qism juft soʻzlar ustida tadqiqot amalga oshirish metodlarini oʻrganishga bagʻishlangan boʻlib, unda avvalgi tadqiqotlarda qoʻllanilgan tadqiqot matodlari, hamda ushbu tadqiqotda qoʻllanilgan matodlar toʻgʻrisida soʻz yuritiladi.

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Dissertatsiyaning har bobiga doir xulosalar qisqa, loʻnda va tushunarli boʻlib, ular nazariy va amaliy jihatdan asoslangan.

Magistrant Matyakubov Hakimboy Hamidjonovich ishlagan quyidagi magistrlik himoya ishi Oliy Attestatsiya Komissiyasining barcha talablariga to'liq javob beradi. Ishda texnik kamchiliklar yo'q. Ushbu ishning muallifi Matyakubov Hakimboy 5A220102 – Lingvistika (ingliz tili) mutaxassisligi bo'yicha magistrlik darajasini olishga munosib deb hisoblayman va ushbu dissertatsiyani himoyaga tavsiya qilaman.

Ingliz tili va adabiyoti kafedrası



katta o'qituvchi Rahimova G.

