Onomatopoeic phrasal verbs
A corpus study of their meanings and usage in American English

Oskar Rydbлом
Abstract
This study examines how the meanings of onomatopoeic phrasal verbs are created and in which register these verbs are most frequently used. Through the study of previous research on the subject qualities of onomatopoeia and phrasal verbs are identified. Based on this a framework for identifying phrasal verbs and categorizing the meanings of onomatopoeic verbs and particles was created. Using the Corpus of Contemporary American English (COCA), a study of concordance lines and frequency in different registers was carried out on 50 onomatopoeic phrasal verbs. These verbs were constructed from ten mono-syllabic onomatopoeic verbs and three opposite pairs of spatial adverbs. The study found that several metaphorical meanings of the onomatopoeic verbs examined were not listed in the Oxford English Dictionary (OED). The meanings of the particles were strongly linked to metaphorical structures.

The conclusion of this study was that onomatopoeic verbs possess a flexibility that allows them to create a variety of different meanings. Furthermore, the types of meaning can be categorized after a pattern, although this pattern is often not found in the dictionary. The onomatopoeic phrasal verbs studied were most frequent in the fiction register, more so than other phrasal verbs. Understanding of the metaphorical nature of particles such as up and down is imperative to understand how the meaning of a phrasal verb is created. This should be taken into consideration when teaching English as a second language or creating a dictionary.

Keywords: Compositionality, corpus study, figurative meaning, extension of meaning, meaning, metaphors, onomatopoeia, ontological metaphors, orientational metaphors, phrasal verbs, registers, semantic
Table of contents

1 Introduction ................................................................................................................................................. 1
  1.1 Aim, scope and research questions ........................................................................................................ 1
2 Theoretical background ............................................................................................................................... 2
  2.1 Onomatopoeia ......................................................................................................................................... 2
  2.2 Phrasal verbs .......................................................................................................................................... 3
  2.3 Meaning ................................................................................................................................................ 5
    2.3.1 Categorising meaning of onomatopoeia ............................................................................................... 7
    2.3.2 Orientational metaphors ................................................................................................................... 7
  2.4 Registers ................................................................................................................................................. 8
3 Material and method .................................................................................................................................. 9
  3.1 Material .................................................................................................................................................. 9
  3.2 Method ................................................................................................................................................... 10
  3.3 Problems and limitations ....................................................................................................................... 11
4 Results ....................................................................................................................................................... 11
  4.1 The meaning of the verbs ....................................................................................................................... 11
    4.1.1 Bang ................................................................................................................................................. 12
    4.1.2 Bump .............................................................................................................................................. 13
    4.1.3 Crack ............................................................................................................................................. 13
    4.1.4 Knock ............................................................................................................................................ 14
    4.1.5 Pop ............................................................................................................................................... 15
    4.1.6 Ring ............................................................................................................................................... 15
    4.1.7 Slam .............................................................................................................................................. 16
    4.1.8 Smash ........................................................................................................................................... 16
    4.1.9 Snap ............................................................................................................................................. 17
    4.1.10 Zip ............................................................................................................................................... 18
    4.1.11 Meanings of the onomatopoeic verbs ............................................................................................... 18
  4.2 The meaning of the particles .................................................................................................................... 19
    4.2.1 Up and down .................................................................................................................................. 19
    4.2.2 In and out ..................................................................................................................................... 22
    4.2.3 On and off ..................................................................................................................................... 25
    4.2.4 Defining the meaning of onomatopoeic phrasal verbs .................................................................. 28
  4.3 Distribution in different registers ............................................................................................................ 29
5 Conclusion .................................................................................................................................................. 30
References ..................................................................................................................................................... 32
Appendix A ................................................................................................................................................... 34
1 Introduction

When studying language it is of great importance to understand how it is structured and what rules govern it. Typically a lot of time will be spent studying syntax, inflections, other parts of grammar and memorizing vocabulary. However, the meaning of a word is often quite complex. While a word may have a typical meaning it may also have a connotation, of being positive or negative, and there may be many associations connected with it. Bloomfield (1933:140) referred to meaning as “the weak point in language study” arguing that it would be a long time before we could efficiently classify meaning. The use of metaphors is a common phenomenon in the English language, and all others for that matter. For example war terms like defend a position or attack a weak point are sometimes used to describe an argument, creating the metaphor that ARGUMENT IS WAR (Lakoff & Johnson 1980). It is quite commonplace not to use the literal (typical) meaning of a word and we often come across phrases like: “I did not mean it literally” when a misunderstanding has occurred.

Phrasal verbs are constructed from a verb and a particle and their meaning is often not directly related to their parts and often metaphorical. This group of words is a unique feature of the Germanic languages (Darwin & Gray 1999) and often pose difficulties for those who learn English as a second language (Larsen-Freeman 1991). This study investigates how the meaning of a phrasal verb is constructed, more specifically when constructed from an onomatopoeic verb, such as snap. A previous study of three onomatopoeic words indicated that while they may describe various actions, there is a strong link to a particular context. Snap was linked to the concept of suddenness (Rydbloom 2010). Consider for example her head snapped around to face him. This paper looks at the patterns of meaning in a group onomatopoeic verbs and their stylistic value. While there are many studies on phrasal verbs, the extended meanings of onomatopoeia are less studied. There are even fewer studies that combine these two groups of words.

1.1 Aim, scope and research questions

The aim of this study is to examine how the meaning of onomatopoeic phrasal verbs is created from the words they consider and their distributions in different registers in a corpus. The scope is limited to a corpus study using the Corpus Of Contemporary American English, henceforth COCA, of 10 onomatopoeic verbs and their interaction with 6 particles often used when creating phrasal verbs. The following research questions are posed:

What meaning, based on Bredin's (1996:558) three categories, of the onomatopoeic verb is the base when creating a phrasal verb?

What, if any, patterns in the meanings of the particles of the phrasal verbs examined can be found?

What are the stylistic distributions of these verbs?
2 Theoretical background

In this section of the paper the theories on onomatopoeia, phrasal verbs, meaning and registers are examined to provide a template for analysing the data collected for the study.

2.1 Onomatopoeia

The *Oxford English Dictionary*, henceforth the OED, defines *onomatopoeia* as 'The formation of a word from a sound associated with the thing or action being named; the formation of words imitative of sounds'. In too many grammarians these words exist only as a subcategory to interjections, Quirk et al. (1985) for example spend only one of about 1700 pages discussing interjections. Onomatopoeia is only mentioned as a side note, as seen below.

Note: It can be argued that interjections form a relatively open class because they can be rather freely created by onomatopoeia. For example, comic-strip cartoons often contain such nonce interjections as *yuck*, *gr-r-r* and *blaat*. These reflect a similar unstructured freedom to make use of expressive vocalizing in ordinary conversation.

Quirk et al. (1985:74)

One important feature of onomatopoeic words is that unlike most words they are not entirely arbitrary. Most words in English are considered arbitrary, chosen for no specific reason to represent something (Cruse 2004:7). One good example of this is how the same thing can be represented by completely different words in different languages, e.g. *dog* (English), *hund* (Swedish) and *inu* (Japanese) all representing the same animal. However, words like *woof* and *slurp* are chosen for a specific reason, they are imitations of a sound. Because of this onomatopoeia is sometimes considered in research on *sound symbolism*, the study of the relationship between sound and meaning. Research in sound symbolism is often tied to what is universal in language and how language originated. Some researchers believe that when language was created it was largely made up of onomatopoeic words. However, as was pointed out by Jespersen (1922:896), we can only speculate.

Jakobson (1960:373) argues that one of the areas where we are most likely to come across cases of sound symbolism is poetry. He believes that in poetic language use there is a need for a strong connection between the words and what they represent, to give the words more weight. Following Jakobson's work Attridge (1984:1125) points out that how realistically onomatopoeic words represent a sound is not necessarily the most important point. To him the beauty and poetry of these words are in the art of mimicry, if done perfectly it is but a boring duplication. Language is in many cases abstract and thus we need to be able to use words for abstract representation (ibid). This clearly suggests that the meanings of onomatopoeic words are not strictly restricted by their connection to the sound they mimic. Bredin (1996:556) suggests that we have a strong desire for
things to sound “right” and thus want to use words whose sound “fit”. According to him we, to some extent, want to connect sound with meaning even if the connection is vague. Bredin (1996:566) argues that somehow Sherlock Holmes sounds better than Sheridan Holmes and somehow Conan Doyle realized this since he changed his original idea. Bredin passionately argues the importance of sound and rhythm in rhetoric as something that is often neglected when teaching the subject. This is an indication that onomatopoeic words, and therefore the onomatopoeic phrasal verbs examined in this study, are used to add extra effect to an utterance.

2.2 Phrasal verbs

Phrasal verbs are sometimes considered to be part of the category multi-word verbs (Quirk et al. 1985:1161). Within this group we find phrasal verbs, which are verbs combined with an adverb, that have a meaning that cannot always be easily derived from the meaning of the verb and the particle, like screw up. Other types of multi-word verbs are prepositional verbs, where the verb combines with a preposition, and phrasal-prepositional verbs, which have both a preposition and an adverb, like put up with (ibid). Some particles, like up, can be both adverb and preposition and often an adverb or preposition can follow a verb without making it a multi-word verb. Identifying phrasal verbs can sometimes be difficult. Perhaps the most common way to find out if a verb+particle combination is a phrasal verb, is to submit it to some tests. Bolinger (1971:1-19) suggested nine ways to identify a phrasal verb.

1. **Replacement.** See if the phrasal verb can be replaced with a verb. Example: seek out/find.
2. **Passive formation.** Transitive phrasal verbs can form passives. Example: I sought him out/he was sought out.
3. **Action nominal formation.** Phrasal verbs can form action nominals. Example: He was not involved in the seeking out part.
4. **Object movement.** In a phrasal verb the object can be moved in front of the particle. Example: He sought out Lisa/He sought Lisa out.
5. **Pronoun placement.** If the object is a pronoun it is placed before the particle. Example: I sought them out.
6. **Adverb insertion.** Phrasal verbs do not allow adverb insertion. Example: *I sought them quickly out.
7. **Stress.** In a phrasal verb some or all of the stress is on the particle. Example: He sought OUT Lisa.
8. **Definite noun phrases.** Phrasal verbs can precede a definite noun phrase. Example: He sought out the cat.
9. **Listing.** Suggests creating a list of phrasal verbs, however as new phrasal verbs are created
all the time this is difficult.

As can be seen the tests are designed to find phrasal verbs based on how they differ from other verb+particle combinations. However, Darwin & Gray (1999:75) argue that there are admitted exceptions to each of these tests. The phrasal verb *run down* changes meaning if the object is moved in front of the particle: *Why don't you run down the list?*/*Why don't you run the list down?* (ibid:72). In Quirke et al. (1985:1155) we can see that *pick up* cannot always form a passive: *The train picked up speed/*speed was picked up. Some tests are not focused on the general qualities of phrasal verbs, like finding a single-word verb with the same meaning, and passive formation which does not work on intransitive phrasal verbs.

Therefore Darwin & Gray (1999:76) suggest that instead of looking for proof that a verb is a phrasal verb we should assume that a verb is a phrasal verb until it fails one of their tests. This model is based on the assumption that phrasal verbs are a single lexical and syntactic unit, created from a verb and a particle, and that the particle cannot be replaced without changing the meaning. Darwin & Gray’s model consists of seven tests designed to exclude verb+particle combinations that are not phrasal verbs. Darwin & Gray (1999:76) argue that these tests focus more on the performance of phrasal verbs and, since a phrasal verb must pass all the tests, produce fewer exceptions. If a verb+particle combination fails a test there is no need to go any further.

This study will look at 50 different verb+particle combinations, therefore this method seems far more practical. The tests are described in the table below with examples of phrasal verbs that pass the test in the *In* column and those that are not phrasal verbs in the *Out* column. As you can see some of Bolinger’s (1971:1-19) tests, like adverb insertion and stress, have been incorporated by Darwin & Gray (1999:77-81). In this study the stress and intonation tests have not been given much consideration since the others are more easily applied when studying a text. All verb+particles found were submitted to the first five tests though.
<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>In</th>
<th>Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Particle repetition</td>
<td>A particle cannot be repeated without context in a phrasal verb.</td>
<td>*I messed up, up my report</td>
<td>I walked up, up the hill</td>
</tr>
<tr>
<td>2. Where question</td>
<td>If the particle can answer the question where the verb is not phrasal.</td>
<td>I messed up my report. Where did you mess up? *Up my test.</td>
<td>I walked up the hill. Where did you walk up? Up the hill.</td>
</tr>
<tr>
<td>3. Fronting</td>
<td>A particle in a phrasal verb has to follow the verb proper.</td>
<td>I messed up my report. *Up my report I messed.</td>
<td>I walked up the hill. Up the hill I walked.</td>
</tr>
<tr>
<td>4. Verb insertion</td>
<td>The particle in a phrasal verb cannot be shared by another verb.</td>
<td>*I messed and fouled up my report.</td>
<td>I walked and ran up the hill.</td>
</tr>
<tr>
<td>5. Adverb insertion</td>
<td>In a phrasal verb an adverb that modifies the whole verb cannot be inserted between the verb proper and the particle.</td>
<td>*I messed horribly up my report.</td>
<td>I walked slowly up the hill.</td>
</tr>
<tr>
<td>6. Stress</td>
<td>In a phrasal verb the particle will recieve some stress.</td>
<td>I MESSED UP my report.</td>
<td>I WALKED up the hill.</td>
</tr>
<tr>
<td>7. Intonation units</td>
<td>A thinking pause (/) cannot be inserted between the verb proper and particle in a phrasal verb.</td>
<td>*I messed / up my report.</td>
<td>I walked / up the hill.</td>
</tr>
</tbody>
</table>

### 2.3 Meaning

The subject of meaning is a big topic on which volumes and volumes have been written. This section will discuss only some of the aspects deemed important for this study. In his extensive examination of meaning, Cruse (2004:125) states that perhaps one of the best approaches to meaning is to regard it as conceptual. In his opinion conceptual thinking helps us organize and store our knowledge by relating it to other things we know. Words are often linked to others belonging to the same kind of group and have certain qualities associated with them. For example the word banana can be said to belong to the group fruit, which in term is a part of food, and have qualities like being yellow, oblong and so on. These relationships between concepts and meaning are central to some of the theories on how metaphors work, discussed later in this section.

Saussure (1915:13) placed great importance of the social nature of language. He suggests that the use of a word may differ from individual to individual. However, through interaction with
others an approximate average is established. This accepted meaning is often what we mean when we talk about the literal meaning of a word. Cruse (2004:195) discusses the difficulty in examining which meaning of a word is literal and which is not. He mentions some methods, such as determining which is the oldest meaning or the most frequent, but points out that there are problems with all of them. Words may, for example, change meaning with time. In the case of see most consider the literal meaning to be 'to observe', yet the most frequent meaning of see is 'to understand' (Cruse 2004:195). The meanings of phrasal verbs are not always clear by knowing the meaning of their parts. This indicates that knowledge of how the non-literal meanings of the verbs and particles are used is required. The two most common forms of non-literal meaning mentioned are metaphors and metonyms (ibid). A metaphor is defined by the OED simply as 'use of a word or phrase to mean something different than the literal meaning'. One specific type of metaphors, orientational metaphors, is discussed further in section 2.3.2. Metonomy involves representing one entity with another that is part of the same domain but less direct, as in saying: the white house made a statement when we mean someone in the white house made a statement (Kövesces and Radden 1998:39). Most cases of metonomy concern nouns or noun phrases, and since this study is concerned with verbs, this extension of meaning is not a concern in this study.

Another aspect of meaning that is highly relevant when studying phrasal verbs is the idea of compositionality. Compositionality describes how meanings are combined to create a more complex meaning, allowing us to create infinite ways to express ourselves using a finite vocabulary (ibid:65). In his introduction to compositionality Cruse (2004:16) lists three criteria that need to be realized.

I. The constituents completely determine the meaning of the complex expression.
II. If the meaning and rules that apply to the constituents are known the meaning of the complex expression is predictable.
III. Each constituent needs to contribute something to the meaning of the complex expression.

Phrasal verbs are not considered as an exception, as idioms are, to the principle of compositionality by Cruse (2004:16), and as such they should be bound by these rules. Section 4 of this paper discusses how the meaning of phrasal verbs can be deduced from its parts. However, this requires knowledge of how non-literal meanings such as metaphors work. It is easier to explain how the meaning of verb+particle combinations such as jump up is derived from its parts than phrasal verbs such as crack up. Larsen-Freeman (1991:283) points out that the problem most second language learners have with phrasal verbs is that they cannot always predict what they mean, showing the importance of studies such as these.
2.3.1 Categorising meaning of onomatopoeia
According to Bredin (1996:558) the meaning of onomatopoeic words can be separated into three categories:

- **Direct onomatopoeia**: The word simply represents a sound, for example *Poof!*
- **Associated onomatopoeia**: The word is used to illustrate an action or phenomenon associated with the sound, i.e. *he slammed the door.*
- **Exemplary onomatopoeia**: In this category the way in which a word is spoken suggests a quality, this quality then actually become the meaning. *Sluggish* and *sloth* take time to articulate while others like *nimble* and *dart* are spoken in a more quick and abrupt fashion.

This is an interesting division, however Bredin (1996) has a rather broad idea of what words can be considered onomatopoeic; most would not put *sluggish, sloth, nimble* and *dart* in this category. They would simply be considered a part of the broader category of sound symbolic words. Furthermore it should be noted that all the aspects described above are often part of the meaning. For example *he snapped off a branch* concerns the action of breaking something off. It may have produced a sound and there is a quality to the word that indicates that this is something that happened suddenly or violently. Therefore the categorization in this study is based on which aspect the meaning focuses on.

The words in this study are all verbs and therefore fit best in the associated category, however there are exceptions. *Snap* is associated with the action of breaking or biting something, however in *she snapped on the rubber gloves* the action has very little connection to breaking. In cases like these the fact that the sound was produced, seem to be more important than the action. In this study it is therefore considered direct onomatopoeia. In *he snapped off a salute* no sound is made and again there seems to be little connection to breaking or biting. The only association that can be found is that this is an action done suddenly or violently, therefore in this study such cases are considered to belong to the exemplary category.

2.3.2 Orientational metaphors
Lakoff & Johnson (1980:3) argue that in our conceptual way of thinking, metaphors play a vital part. We use them to connect areas that are less clearly defined, or structured, to areas that are. The connections we make are not arbitrary but tend to be grounded in our physical experience. One common type of metaphor is the orientational metaphor which organizes concepts in relation to eachother using terms for spatial orientation. This includes relations like up-down, in-out and front-back. Lakoff & Johnson (1980:14) conclude that metaphors based on these relations vary between cultures, usually with one of them being more common. In the case of western society the up-down relationship is highly popular. Lakoff & Johnson's (1980:15) study feature a number of examples of
metaphors created using this relationship and how they are grounded in our physical experience. Such as:

**Happy is up; sad is down**

Example: Feeling *up/down*.

In our physical experience: Erect posture suggests happiness, drooping posture depression.

**More is up; less is down**

Example: Sales are *up/down*.

In our physical experience: Add something to a pile and it becomes taller.

**Having control is up; not having control is down**

Example: I am on *top* of it. He is *under* my control.

In our physical experience: Size equals strength which in term suggests the power to dominate.

These metaphors can be found in many phrasal verbs without too much effort. Consider for example *speed up* which means 'to increase the speed'. Since the verb and the particle in a phrasal verb cannot be separated without changing the meaning it seems reasonable to assume that the meaning of the particle is often metaphorical. If the particle only functioned to show direction separation of verb and particle would be easier.

### 2.4 Registers

A register is a style of language used in a specific situation, such as writing a letter or speaking to a friend. In a study by Biber et al. (1998) the similarities and differences between different registers are described. One method suggested for the type of analysis described in the study is called the multi dimensional analysis. Within this method five major dimensions of variation are identified, and three of these are described in greater detail. They are also the three dimensions this study will be focusing on. These dimensions are a kind of measurable scale, the first dimension deals with whether involved or informational language is used. The second dimension deals with narrative or non-narrative and the fifth with impersonal or personal language (ibid). On these scales linguistic items can score either negative or positive in different dimensions.

The first dimension is characterized by a high frequency of linguistic forms such as private verbs, like *feel* and *think*, use of the second person pronoun *you* leads to a positive score. Other factors, such as the use of long words or varied language, result in a negative score. This dimension shows a strong difference between spoken and written language. Conversation scores very positive, fiction is about neutral, news negative and academic text more so (ibid:147).

In the second dimension, narrative versus non-narrative, the use of past tense or third person pronouns, among other things, lead to a positive score. In this dimension fiction holds the most positive score, news is just above neutral, conversation just below and academic slightly more
negative (ibid:153).

In the fifth dimension the use of passive constructions or past participle clauses result in high impersonal scores. Impersonal language is sometimes also referred to as technical or formal. Academic text scores the highest here, news slightly over neutral, fiction just below and conversation a bit more negative (ibid:155). Knowing the characteristics of these registers is a valuable tool that can provide insights when the distribution of the verbs studied is examined.

3 Material and method
In this section the material and method used to conduct the study as well as some limitations and problems encountered on the way is presented.

3.1 Material
This study is conducted on ten mono-syllabic onomatopoetic verbs, found in Sadler (1972:176), when combined with three opposite pairs of spatial adverbs, found in Lakoff & Johnson (1980:14), to create phrasal verbs. An initial study that included 14 verbs were used to see how many combinations provided phrasal verbs, see table 2 below.

<table>
<thead>
<tr>
<th>Phrasal verbs</th>
<th>up</th>
<th>down</th>
<th>in</th>
<th>out</th>
<th>on</th>
<th>off</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>bang</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>-</td>
<td>&lt;100</td>
</tr>
<tr>
<td><em>blurt</em></td>
<td>&lt;100</td>
<td>-</td>
<td>-</td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>-</td>
</tr>
<tr>
<td><em>bump</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>-</td>
<td>&lt;100</td>
<td>-</td>
<td>&lt;100</td>
</tr>
<tr>
<td><em>crack</em></td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>-</td>
<td>&lt;100</td>
<td>-</td>
<td>&lt;100</td>
</tr>
<tr>
<td><em>dash</em></td>
<td>-</td>
<td>-</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>-</td>
<td>&gt;100</td>
</tr>
<tr>
<td><em>hush</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>-</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td><em>knock</em></td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>-</td>
<td>&gt;100</td>
</tr>
<tr>
<td><em>pop</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td><em>puff</em></td>
<td>&gt;100</td>
<td>-</td>
<td>-</td>
<td>&gt;100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>ring</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>-</td>
<td>&lt;100</td>
</tr>
<tr>
<td><em>slam</em></td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>-</td>
</tr>
<tr>
<td><em>smash</em></td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
</tr>
<tr>
<td><em>snap</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>-</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
</tr>
<tr>
<td><em>zip</em></td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
<td>&lt;100</td>
</tr>
</tbody>
</table>

After the initial sweep it was decided to exclude *blurt, hush, puff and dash* from the study, as they produced fewer combinations, and to keep the other ten as they produced more than enough for the
purpose of this study. The OED was used for background on meaning and etymology of the phrasal verbs found, and the COCA was the corpus used for the study. COCA was created by Davies (2009) and is made up of five main sub-corpora (registers): Spoken, fiction, magazines, newspapers and academic. The corpus is evenly balanced in that each of these registers make up 20% of the total body of text. The corpus consists of texts transcribed from the year 1990 and onwards. Texts are taken from academic papers, fiction novels, newspapers, such as the New York times and Washington Post, weekly magazines on topics like sports, popular science etc. The spoken corpus consists of transcribed unscripted dialogue from TV and radio. It contains more than 400 million words, with 20 million new words added every year (ibid). This study is not really concerned with dialectal differences between American and British English. The COCA was therefore selected because of its size, to produce big enough samples, and the balance and variety of the registers.

3.2 Method
This paper is primarily a corpus-based study. Search parameters in the pattern of [verb]/[verb]/[verb] [particle], for example bang/bangs/banged up, were used to include different inflections of the verbs. The -ing form was excluded since it is sometimes functions as a noun as in the joy of writing. All phrasal verbs created from the ten onomatopoeic verbs and six particles selected were examined using these search parameters. This means that instances where the verb and particle were separated by a pronoun were not studied. For each search the first 100 phrasal verbs found in 200 concordance lines from a random sample were studied. When less than a 100 phrasal verbs could be found all were studied. The verbs found were submitted to the tests suggested by Darwin & Gray (1999) [see section 2.2]. If a verb failed, that concordance line was ignored and the search went on until 100 examples had been found or there were no more concordance lines to study. Thus the sentence A voice rang in her ear failed the second test, since it is possible to ask Where did the voice ring? and answer in her ear. The phrasal verbs found were then sorted after their meanings.

The meanings of these verbs were examined using the OED for background information and then categorized into the three categories suggested by Bredin (1996) [see section 2.3.1]. The particle's function in the phrasal verbs were then examined drawing mostly on the theories on orientational metaphors discussed by Lakoff & Johnson (1980)[section 2.3.2]. The stylistic distribution of the phrasal verb combinations in the different sub-corpora of the COCA was then examined using the same search parameters. The descriptions of different registers by Biber et al. (1999), were the main theoretical framework for this analysis.
3.3 Problems and limitations

In the initial study the particle was allowed to appear directly after or up to five positions to the right of the verb. The verb and particle were only separated in one or two instances in every 200 concordance lines. Since these parameters had a higher rate of concordance lines without phrasal verbs, it was decided to narrow the search to phrasal verb+particle combinations where the particle immediately follows the verb.

Analysing the meaning of a word in a corpus requires some degree of interpretation from the observer. What a word means may differ from person to person. However, in this study several uses of a word in different contexts were examined and examples are provided which should promote objectivity and give the reader an opportunity to use their own judgement.

For the purpose of determining patterns in the meaning of the particles the sample is on the small side to be conclusive, although it should provide an indication useful for future studies. When the distribution of phrasal verbs in the different sub-corpora was examined, there was no way to exclude verb+particle matches completely. This may have a small impact on the results. The spoken sub-corpus in the COCA was created using material from TV and radio shows. The conversations selected were unscripted. However, since people want to make a good impression, they may not be an accurate representation of casual speech. In Levin’s (forthcoming) study of progressives searches conducted on the same word sometimes yielded significantly lower frequency in the spoken sub-corpora of the COCA than in the Longman Spoken American Corpus.

This study is limited to the usage of these verbs in American English. The main reason for this is that the focus is more on extension of meaning of these phrasal verbs rather than on possible differences in usage between American and British English. Including this aspect and thus possibly a corpus of British English would have made this a considerably bigger study. The choice of the OED as the source dictionary can therefore be considered inappropriate as it focuses on British English. However, the OED does include usage of American English and was found to have more detailed descriptions of meaning and etymology than the American dictionaries initially considered.

4 Results

In this section the results of the study conducted in the COCA are presented. The first section discusses the meaning contributed by the verbs, the second the particles and the third will discuss the distribution of these 50 phrasal verbs in the five sub-corpora of the COCA.

4.1 The meaning of the verbs

This section seeks to identify what the ten onomatopoeic verbs used contribute, in terms of meaning, to the phrasal verbs found. The meaning of the whole phrasal verb, verb+particle, is more
fully discussed in section 4.2. To do this the OED's definition of the verb was used as a starting point. There are a number of specialized meanings described in the OED, however there is no room to include them all here. Therefore only the general meanings and those relevant to particular phrasal verbs are presented. The meanings of the phrasal verbs as they appeared in the concordance lines were then categorized and analysed using the theoretical background, the categorization used by Bredin (1996) in particular. However, as discussed in section 2.3.1 the different meanings can often not be easily separated, therefore the categorization is based on where the main focus of the meaning lies. Some phrasal verbs found may fit well into one category while others are more peripheral. For example some associated onomatopoeic phrasal verbs may have a closer connection to the sound, direct onomatopoeia, than others.

4.1.1 Bang

A total of 191 phrasal verbs that featured *bang* were found. Three of them were classified as derived from direct onomatopoeia, 126 as associated onomatopoeia and 62 as exemplary onomatopoeia. The OED defines the verb *bang* as: 'To strike violently with a resounding blow; to thump, thrash' or 'To make a violent noise'. The use of the word in this capacity is traced back as far as the middle of the 16th century. *Bang* combined with all particles except *on*, however only one of them, example (1) below, seem to be created from direct onomatopoeia.

(1) Shots *bang out*, ripping into the alien, which lets go.

(2) ...because builders must get approvals long before they *bang in* the first nail.

(3) Aloka and Hasari's eyes *bang off* of each other, she silently urging him to speak.

(4) We started shooting the moment the sun went down and *banged out* three quick takes before we lost the light.

Associated onomatopoeia can be found in example (2) and (3) above, they also illustrates one of the problems with what the literal meaning is. If we are to look at only these two examples it might be reasonable to assume that 'to strike' (in a nail) is the literal meaning while 'for looks to collide' is a figurative meaning. However, onomatopoeia are sound imitating and striking things will not always produce the same sound. Of course it could also be argued that bang can be used to represent sound that do not necessarily always sound the same, as Attridge (1984) points out realistic imitation is not necessarily the goal. As is argued in section 2.3.1, sound imitation is at the core of onomatopoeia. Thus direct onomatopoeia is considered closest to the literal meaning in this study. Finally example (4) above is an instance of exemplary onomatopoeia. The action above has little or no connection to striking or making noise, rather it appears to be related to doing something hurriedly. *Bang*, as it is used in the concordance lines, appears to have a kind of violent quality which is not easily described. Words like rash and chaotic come to mind.
4.1.2 *Bump*

*Bump* is defined as 'to strike heavily or firmly' or 'to move with a bump or a succession of bumps' by the OED and is traced back to the early 17th century. All of the 190 phrasal verbs found were classified as associated onomatopoeia, as illustrated below.

(5) Somebody *bumped up* against her, and she sloshed some of her drink on the sleeve of...

(6) ...the bureau's long-standing counterintelligence mission has been *bumped down* a notch on the priority list.

COCA

Example (5) is an instance of a prepositional-phrasal verb (Quirk et al. 1985). In all the cases where this phrasal verb was used to mean 'collide' it was followed by *against*. In (6) the meaning is more metaphorical, since a mission is an abstract concept that cannot physically be struck down.

Therefore this is a case of extension of meaning as discussed in section 2.3. *Bump* combined with the particles *up, down, out and off* into a total of 190 phrasal verbs, the phrasal verb *bump up* stood for a hundred of these cases.

4.1.3 *Crack*

In total 226 phrasal verbs created from *crack* were found in the samples. Out of these, three were direct onomatopoeia, 221 associated onomatopoeia and two were exemplary onomatopoeia. Unlike the other verbs the OED offer three general meanings of *crack*, and even more interesting is the fact that they follow the categories suggested by Bredin (1996) in section 2.3.1 very well:

I. 'Referring mainly to the sound. 1. a. *intr.* To make a sharp noise in the act of breaking, or as in breaking; to make a sharp or explosive noise (said of thunder or a cannon (chiefly *dial.*), a rifle, a whip, etc.).'

II. 'Referring mainly to the breaking indicated by the sound. 9. *trans.* a. To break anything hard with a sudden sharp report; now chiefly of things hollow, a skull, a nut, etc.'

III. 'Of sharp or sudden action. 21. *trans.* To move with a stroke or jerk; to 'whip' out or on, snatch out, clap on. (colloq.)'

OED

The first meaning is traced as far back as the middle of the 13th century, and the other two to the beginning of the 16th century. Just like *bump, crack* did not combine with the particles *in and on.* Of the phrasal verbs found only a handful, such as example (7) below, fit into the category direct onomatopoeia.

(7) They **CRACK off** a couple quick shots, then Mullins aims his gun at the corner

(8) The poison snail had **cracked out** of its shell and was expanding.

(9) ...until the very end of the Cold War believed the Soviet Union was going to **crack up** and collapse -- but it did...

(10) **Crack off** a good salute.

COCA

13
It is interesting to note that both *bang* and *crack* are used to mimic the sound of gunfire, since apart from the phoneme [ae] they are pronounced quite differently. In example (8) we again find a more direct (physical) use of associated onomatopoeia, an action more closely related to the sound. In example (9) a more figurative (metaphoric) meaning is illustrated. It is quite impossible for a country like the Soviet Union to break with a loud *crack*, yet the imagery is quite powerful. Just as with *bump*, the majority of combinations created from associated onomatopoeia tended to be used metaphorically. As discussed in 2.3.2 they connect something abstract to something close to our physical experience (Lakoff & Johnson 1980). In example (10) we come upon another case of exemplary onomatopoeia used most likely to illustrate something happening quickly.

4.1.4 *Knock*

The OED explains *knock* as 'To strike with a sounding blow, as with the fist or something hard; esp. to rap upon a door or gate in order to call attention or gain admittance', it is traced back as far as the 11th century. *Knock* is yet another onomatopoeic verb that has been related to striking something. In the samples examined no phrasal verbs constructed with direct onomatopoeia were found.

(11) She knocks up the kickstand, the engine rumbles, behind her she can no longer hear...
(12) ...a penicillin-like drug that knocks out numerous viruses—influenza, SARS and more.
(13) Wahlberg's past few years are proof he's found a groove: The actor knocked out the films *Four Brothers*, *Invincible*, *The Departed*...

At this stage it seems appropriate to return to the argument of the literal and metaphorical meanings of the phrasal verbs presented. It may seem reasonable to consider direct onomatopoeia to hold the literal meaning, because they are more closely related to the sound. The words studied in this paper are all verbs, from which follows that they describe an action taking place. As Lakoff & Johnson (1980) explains it metaphors, considered by Cruse (2004) as the most common figurative meaning, are used to relate an abstract phenomena with areas well known to us. How the drug described in example (12) deals with a virus is hard for us to describe without linking it to something more concrete, as in example (11), to strike an object. Therefore the logical step at this stage seems to be to include actions that are capable of producing the sound into the literal meaning.

Example (13) features another action of producing something, performed by Mark Wahlberg, which has very little to do with striking. As explained in 2.3.1, when the focus is more on how the action is performed, in (13) with some form of haste or ease, it is an example of exemplary onomatopoeia. All in all 464 phrasal verbs were found in the samples studied. With no direct onomatopoeia 24 were exemplary onomatopoeia and the remaining 440 derived from associated onomatopoeia.

Coca
4.1.5 *Pop*

The OED describes the verb *pop* as 'to strike, punch, knock; to deliver (a blow) to a person', 'to put or move (something) quickly, suddenly, or unexpectedly' or 'To make a small quick explosive sound; to burst or explode with a pop'. Like the other verbs examined, *pop* is not a new verb and can be traced back to the 16th century. It is interesting to note the versatility of this verb, as it is linked to striking, moving and exploding in the OED. Out of those three meanings only the meaning of 'moving something quickly' was found reflected among the phrasal verbs in the sample studied, as in example (14) below.

(14) Andy said quietly, as he *popped* out the tape and scanned the row of motel rooms along the side.

(15) ...my office is 100 metres from where we live, so I *pop in* at lunchtime...

(16) Whenever they could, they'd *pop off* an Americanism with great pride.

Notice also that while the OED only refers to the movement of objects, example (15) illustrates that it can also be used for animate objects like people. *Pop off* in example (16) is a colloquial form defined by the OED as 'to speak hastily or angrily; to complain loudly; to lose one's temper', in this case to hurriedly utter an Americanism. As it does not appear to be related to movement, striking or exploding it was categorised as an exemplary onomatopoeia. Another sign of the versatility of the verb *pop* is that the phrasal verbs found included combinations of all six particles. This can be seen as evidence to support the wish to add sound effects to our language, as discussed in section 2.1 (Bredin 1996). Out of 355 phrasal verbs 350 were categorized as associated onomatopoeia and the other 5 as exemplary onomatopoeia.

4.1.6 *Ring*

*Ring* is defined by the OED as 'To give out the clear or resonant sound characteristic of certain hard metals when struck with, or striking upon, something hard. Also of a trumpet, etc.: To sound loudly'. As can be seen from the OED definition, and the concordance lines, the focus on the sound is much stronger in this verb. *Ring* combined with all particles except *on* to create phrasal verbs.

(17) It’s an account of what happened when gunshots *rang out* today on the streets of Tehran.

(18) Another voice *rang down* from a railing: "I need those incests!!!!!

(19) It was then, apparently, that Cortes said, in a phrase that has *rang down* through the ages, ...

(20) Marines stationed in Hawaii went to a Waikiki bar to *ring in* the new year.

Both example (17) and (18) can be said to be actions very closely related to sound, however the sounds they describe, gunshots and a voice, are quite different in character. Nevertheless both are loud sounds and once again, as Attridge (1984) states, a close resemblance is not necessary. Examples (18) and (19) were placed in the direct onomatopoeia category as an action described as
'to sound loudly' clearly suggests that the sound is the aspect of meaning in focus here. Example (19) is more metaphorical. Cortes voice is unlikely to be heard, physically, through the ages. Nonetheless the sound is the action in this case as well, and it was therefore also put into the direct onomatopoeia category. Example (20) is more concerned with marking or signalling a change, and is therefore, as focus is on the action, considered to be associated onomatopoeia.

Another indication that the meaning of ring is closer related to sound is that no exemplary onomatopoeia, where a quality, not action or sound is the focus, was found in any of the samples. In a total of 293 phrasal verbs 112 were direct onomatopoeia and 181 were associated onomatopoeia.

4.1.7 Slam
The OED defines slam simply as 'to beat or slap vigorously', for once in fact not using the word strike. A little younger than the other verbs studied so far, slam can be traced back to the late 17th century. No combinations of slam and the particle off were found.

(21) He tried to slam down the receiver on the hook but missed.
(22) More windows slammed up, more screen doors opened.
(23) Eventually, I slammed out of the house and took off in my car... COCA

No instances of direct onomatopoeia were found in the sample. Instead this verb seemed to lean more towards the action, and the quality of it being hasty or forceful. In (21) the connection to beating or slapping something is not too difficult to realize. Example (22) poses a bit more difficulty, however, as it is intransitive the connection is possible even though the quality of forcefulness and hastiness is quite tangible. In (23) this connection to hastiness appears even more dominant. The OED provides no definition for this phrasal verb, however The Macmillan dictionary (www) defines slam out as 'to leave a place quickly and angrily'. While this phrasal verb may very well be related to striking or slamming a door, the focus of this verb is, as the definition above indicates, more on a dramatic exit. For this reason the instances of slam out were categorized as exemplary onomatopoeia. 285 phrasal verbs featuring slam were found, 240 were associated onomatopoeia and 45 were exemplary onomatopoeia.

4.1.8 Smash

Smash is defined in the OED as 'To break (anything) in pieces violently; to dash to pieces; to crush, shatter, or shiver' or 'To move rapidly with shattering effect; to dash or smite violently; to crash' and is traced back to the late 17th century. This verb did not combine with the particle on nor did it provide a great variety of meanings.

(24) And this bird has actually developed a technique to grab a rock and smash up an ostrich egg and eat it.
(25) ...what was once a residential neighborhood has been smashed down to its component parts … COCA
As examples (24) and (25) illustrates, the phrasal verbs found being 179 in total, were all associated onomatopoeia with a fairly literal meaning, ‘to destroy something’.

4.1.9 Snap

Snap is covered quite thoroughly in the OED. It lists five separate main meanings of which I have excluded the third, as it is closely synonymous to the first meaning. Also notice that in all meanings the action is described as quick or sudden indicating a strong quality tied to this onomatopoeic verb.

I. 'To make a quick or sudden bite at something; to feed on in this way'
II. 'To catch, capture, or seize quickly, suddenly, or by surprise'
IV. 'To break suddenly and (usually) with a sharp noise or report; to give way or part suddenly owing to strain or tension.'
V. Adverbially: With, or as with, a snap; quickly, smartly.

The OED remarks that meaning II was common but is now only used dialectically or in special cases. The origins of the meaning 'to bite', is traced as far back as the early 16th century. The first three meanings should be regarded as associated onomatopoeia of which the third seems to be most closely linked to the sound. Since meaning IV says more about how the action is performed this indicates the use of snap as an exemplary onomatopoeia. Phrasal verbs created from snap included all particles except in. Example (26) below shows one of the rare cases of direct onomatopoeia, where focus is more on the sound.

(26) He rolled like mad out of its way, then snapped off a pair of shots.
(27) The tip of the blade snapped off, flying away to nick the sleeve of Proctor's jacket.
(28) She snapped out of her trance when Kade walked into the kitchen.
(29) ...but she ignored the pain, her head snapped up, and she stared him directly in the face.
(30) the kids and instructors snap on protective glasses and put in earplugs.

Number (27) and (28) above are examples of associated onomatopoeia. Example (28) illustrates a more metaphorical use of snap, as to 'break out of something'. Examples (29) and (30) are both clear examples of actions performed with a sense of quickness. The movement in (29) is not an action related to biting or breaking something, the focus is more on the way the action is performed. Some protective goggles come with an elastic strap so the meaning of snap in (30) could be related to the sound such a strap makes, however there is little way of knowing for certain. The judgement call was made to categorize both (29) and (30) as exemplary onomatopoeia. This idea of quickness with a possible hint of violence or at least lack of caution is repeated verb after verb in this study. There is a feeling that these onomatopoeia are sometimes chosen simply to give an action more ompfth, for lack of better phrasing. Snap was used to create 429 phrasal verbs of which three where
direct onomatopoeia, 281 associated onomatopoeia and 145 exemplary onomatopoeia.

4.1.10 Zip
The OED defines zip as 'to make the sound expressed by 'zip'; also to move briskly or with speed'. It is traced back to the middle of the 19th century making it the youngest onomatopoeic verb in this study. Phrasal verbs created from zip contained all six particles.

(31) Val gives Lester a tough look as he zips in.
(32) I zipped up my parka, fished out my truck keys.
(33) The Church is zipped up tight on this one, I worked through the whole fist of contacts... COCA

Example (31) is a fairly clear-cut example of associated onomatopoeia, whereas (32) may require a closer look. This use of the verb is clearly closely related to the sound yet the focus seems to be on moving the zipper up rather than the sound. This is based mainly on the fact that zip down means the opposite. Therefore (32) is classified as an associated onomatopoeia with close relations to the sound and (33) as more figurative use meaning to 'zip one's lips shut'. In total 161 phrasal verbs created from zip were found, all of them associated onomatopoeia.

4.1.11 Meanings of the onomatopoeic verbs
All ten verbs included, a total of 2773 instances of phrasal verbs were found. Only 4.4% of these were deemed direct onomatopoeia, 85.4% as associated onomatopoeia and 10.2% as exemplary onomatopoeia. The vast majority of direct onomatopoeia came from the verb ring. Seeing as sound is more commonly expressed through interjections, like Bang!, or nouns, as in there was a loud bang, the low number is not surprising. The focus in a verb is naturally on the action, which explains why associated onomatopoeia are so dominant. It is interesting to note that 10.2% can be considered exemplary onomatopoeia and 1/10 instances can hardly be considered a few odd cases. However, only in the cases of crack and snap were this type of meaning described in the OED.

There were quite a few similarities in meaning between the verbs studied. Five of them were defined in the OED as striking, hitting or beating something and three others as to destroy or shatter something. Thus the majority of the verbs studied represented a sound derived from some form of collision. This explains why many of them have a sense of something violent or sudden about them. In fact, five of them were described as sudden, quick or hasty actions in the OED. This could very well be related to what was discussed in section 2.3.1, that verbs that can be uttered quickly have a quality of quickness associated with them (Bredin 1996).
4.2 The meaning of the particles

Now that the meaning of the onomatopoeic verbs have been established and discussed this section of the paper explores the whole meaning of the phrasal verbs. With the help of the theoretical background they are then analysed to see what the particles contribute to the meaning.

4.2.1 Up and down

At the core of what Lakoff & Johnson (1980) said about orientational metaphors is the idea of connecting an abstract concept to a spatial direction. In the examples below this connection is relatively easy to spot.

(34) Carrie turned her back and Art Deco zipped up her dress.
(35) He said White cornered him in the rectory hallway, zipped down his pants and attempted oral sex.
(36) Her gaze snapped up to the grinning young doctor.
(37) Julia's finger snapped down. "Are you still teaching?"
(38) Christie and her friend checked in late and were bumped up to first class.
(39) Lt. David Uthlaut, was later bumped down from the Rangers to the regular Army...

Just as in the examples of orientational metaphors given in section 2.3.2, the phrasal verbs above are three opposite pairs found of up and down. In (36) and (37) there is a movement of someone's eyes and finger while in (34) and (35) it is the movement of a zipper. The situation in example (38) and (39) is more metaphorical and deals with a shift in status. In (38) a customer is moved up in status while the lieutenant's professional status is moved down in (39). The 'high status is up' metaphor is related to physical power (Lakoff & Johnson 1980:16).

Most phrasal verbs examined where not opposite pairs. However, some, like those found below, had closely related meanings.

(40) Five or six years ago, he'd fallen off his bike and banged up his left knee.
(41) Stephen BANGS down another door. Sticks his head in to check.
(42) I'm a big bot and I'd have smashed up the apartment in my haste.
(43) When those hills got smashed down to superimpose the grid on the city, the rivers were pushed underground.
(44) Saddam Hussein did not knock down the World Trade Center.

At first glance we can tell that the verbs above are somehow related to causing damage, which is not unexpected as they are all defined by the OED as having to do with striking something (see section 4.1). Further study of the concordance lines also support that they deal with physical damage, caused by some form of attack or collision. Lakoff & Johnson (1980:15) state that exerting force is up while being subjected to force is down. However, in (41) and (42) the subject is the aggressor and the object the victim, yet different particles are used. Therefore it seems reasonable to return to one of the more basic relationships, that 'standing is up' and 'lying is down'(ibid). The door,
the hills and the World Trade Center in the examples above have all been made to fall down, yet the man in (41) is most likely still standing. In (42) it is not the apartment in itself that has been damaged but its contents. The structure that holds up the apartment, the walls and ceiling, are most likely more or less intact and still standing. Knock up does not have a similar meaning to knock down in (44) above. The meaning of knock up will be discussed later in this section. The meaning of knock down is however synonymous to (41) and (43). The examples above and other concordance lines also suggest that combinations with smash are slightly more violent than the others, not to say that they were not violent as well. This can be related to smash being defined as breaking something while the other two are defined as striking.

The following group of phrasal verbs all follow the theme of collision.

(45) So what if we bumped up against each other in the kitchen?

(46) ...dwarfed by the sound he made when a knee like a tree trunk smashed up between his legs.

(47) A number of major scholars in our field have knocked up against the problem of ahistoricism.

(48) ...the fight progresses to me getting slammed up against the doorway and getting the dryer sheet shoved in my mouth...

(49) Her head snapped forward as the nose of the car slammed down.

(50) People began to run; some were knocked down; bodies were flying.

Example (46) and (49) describe the direction one of the objects in the collision and (50) illustrates the results of a condition that follows the same metaphor as (41), (43) and (44) discussed earlier. The phrasal verbs in (45), (47) and (48) are all followed by against, indicating that they are in fact prepositional-phrasal verbs (Quirk et al. 1985). These cases also seem to leave the participants in the collision standing afterwards, consistent with the metaphor 'standing is up'. Bump seems to indicate a softer collision while slam and smash are far more violent, a fact to which the unfortunate victims in (46) and (48) can probably testify to.

In the last group of onomatopoeic phrasal verbs containing up and down, the metaphor that 'more is up' and 'less is down' can be found (Lakoff & Johnson 1980:15). It is illustrated by the two phrasal verbs with differing onomatopoeic verbs in example (51) and (52) below, that make up another opposite pair.

(51) That's just going to bump up Democratic votes, in their opinion.

(52) But shoot video at the same time and the resolution is knocked down to 2 megapixels.

(53) Not to mention that if it could ring up his cell phone, who knew what it could pull from WiFi...

(54) I thought I'd ring down to the boondocks while I'm waiting for a client to show up.

To analyse the last two examples above, it is necessary to consider two metaphors for up featured in Dirven (2001): 'close is up' and 'activity is up'. Since more or less all verbs in this study describe some form of activity, this can be considered a bit of a left-over category. Nevertheless it seems to
be the most fitting explanation of the meaning in (53). The word *boondocks'* very nature suggests a place far out in the countryside, thus if *up* is close then *down* is far, and that explains example (54).

The meaning of the phrasal verbs displayed below all contain the particle *up* and have no relation to their counterparts, the same verbs combined with the particle *down*. The verb *crack* was described in the OED as meaning to break or strike something, most likely hollow (see section 4.1.3). Arguments could be made that in (55) and (56) below this meaning is combined with the metaphor 'up is awake', as in laughter or madness awakening and breaking through. Another possibility is more visual, suggesting that a barrier we put up is cracking. However, in both examples there is an undertone of people not being able to control themselves. Therefore the most likely explanation is that *crack* combines with the metaphor 'up is to have control' (Lakoff & Johnson 1980:15) to create the meaning 'to break the control someone has'. This does not contradict the connections to being awake or putting up a barrier, as these are both also states where we have more control.

(55) ...eliciting a huge guffaw from both Todd and Marv, which makes everybody else crack up, too.
(56) ...and had blinked at them, thinking he'd cracked up at last. But they were real,...
(57) Trooper Thomas had knocked up a Springfield police sergeant's daughter...
(58) Amy just pops up in the strangest places.
(59) Doubtless, some visitor would snap up my space, and I'd have to park- Oh no.
(60) When I got to the register, the girl rang up everything else, her long, clawlike fingernails flying over the keys...

The OED offers no explanation to how *knock up*, in (57), came to mean 'to make someone pregnant'. Although this is only one of many meanings listed for this phrasal verb it dominates the sample examined. 97 out of 100 entries found had this meaning. One of the other meanings, one rarely used these days, listed for *knock up* in the OED was to wake someone, which suggests that the metaphor 'up is awake' is appropriate. Therefore we have to attack/strike a woman or awake something. Very metaphorical, yet there is an undertone of the woman being a victim in the event when this phrasal verb is used. The meanings of the phrasal verbs in examples (58), 'to appear', (59), 'to grab', and (60), 'to register', can be linked to the metaphor 'up is activity' as the verb provides most of the meaning in all three cases.

As with the previous group, a number of phrasal verbs featuring *down* were not connected to those created with the particle *up*.

(61) Prosecutors suggested that this marriage cracked up when bill collectors started cracking down.
(62) It's easy to pop down several of these gnocchi before your brain registers how rich they are...
(63) ...the book of Revelation, foretell the great and terrible events that will ring down the curtain on human history.

At first glance it seems plausible to assume that *crack down* in example (61) is linked to the
metaphor 'down is to be subjected to control', however the meaning of this verb is about exerting control. Earlier in the sentence we can see that crack up again illustrates loss of control over a situation. It is a bit hard to see how crack down could be the opposite, seeing as that would be a loss of not having control. If we instead consider that as crack means 'to strike' this phrasal verb can be considered synonymous with strike down implying that down represents the direction of the attack. This is also the case with pop down in (62), indicating the gnocchi going down to your stomach, and ring down in (63), where there is a signal for the curtain to move downwards.

The up and down particle pair contained 1300 of the 2773 phrasal verbs examined in this study. In the meaning of 341 of these there was an opposite relationship, in 246 of the verb pairs the meaning was similar and in the majority, 719 verbs, there were no such relationships. The conceptual metaphors described by Lakoff & Johnson (1980) of up and down as a scale have been very useful in tracing the meaning of these particles. In the next section we move on to the particle pair in and out and the container metaphor.

4.2.2 In and out

Any physical space with boundaries can be considered a container (Lakoff & Johnson 1980:30). The concept of containers is central when dealing with the particles in and out. The first group of phrasal verbs shown below all deal with movement into or out of a bounded space.

(64) Rachel Maddow, Billie Jean King, and Antonio Sabato Jr. pop in.

(65) This is three or four bleeping amateurs who pop out and sissy-punch somebody, then crawl back and hide...

(66) And, as I looked for cover, another mortar round slammed in. There were no casualties.

(67) Dad slammed out the front door and sure enough in the next apartment Marla Goldstein's window slid up the casing.

(68) The little bird -- agitated -- zips in to defend its territory,...

(69) At the time, however, I just grabbed a pillowcase and zipped out the door.

In (64) the TV show, or set of, is the bounded space into which the three named guests enter. The presence of a door in (67) and (69) hints at a house or an apartment as the bounded space, however Quirke (1985:678) states that for leaving a room or such the form out of is the grammatically correct one. Estling (1999:23) suggest that go out is more connected with apertures, doors and windows. Apertures can be considered to be the boundary in a bounded space, which still makes the metaphor valid. In the other three cases, (65), (66) and (68), it is safe to assume that there is a physical space even though we cannot pinpoint its boundaries more accurately without more detailed information on where the observer is located.

In the first two sentences below the objects, a DVD and a tape, are physically inserted into a container so in this case it is not very metaphorical.

(70) She turns on the TV, watches Medium, and pops in a DVD.
(71) Andy said quietly, as he popped out the tape and scanned the row of motel rooms along the side.
(72) Sander Loewe METALLICS Shimmer and shine rang in the fall season for both evening and daywear.
(73) ...to witches and Halloween to others - rang out the old year and brought in the new.

To understand what is going on in example (72) and (73) the container needs to be expanded to include periods of time. This is described in the metaphor 'states are containers' (ibid). In (72) the fact that we are entering a state of fall is signalled and in (73) the end of a year is marked. Thus we can, metaphorically, enter or exit a period of time.

The phrasal verbs presented below all deal with the, by now common, theme of damaging or striking.

(74) Over the next six years, Ben knocked in walls, moved doorways, and added skylights and porches and...
(75) ...dark warren of small rooms until I'd knocked out walls, opened the ceiling to expose the rafters,...
(76) Then he smashed in the window of my car.
(77) He got so mad he threw a can of frozen orange juice that smashed out the kitchen window...

Considering movement in and out of boundaries of a physical space, it is not too hard to make sense of examples (76) and (77). If the car is the container then the window is smashed inwards and if the kitchen is the container the same is true for the window being smashed outwards. In sentences (74) and (75) perspective becomes important, since both are concerned with removing walls within a building. The importance of perspective is supported by the metaphor 'field of vision is a container' (Lakoff & Johnson 1980:30). In (75) the room is the container and walls are knocked outwards to expand it. In (74) the building is the container and the demolition takes part inside it thus the motion is inwards. However, as can be seen in (74) and (75) the perspective was not clarified in the 11 instances found providing little evidence for this hypothesis. The distinction may be more or less arbitrary.

In the examples below phrasal verbs are used to illustrate the act of scoring points in sports.

(78) ...but near the end of the first period, Ryan Larson banged in a goal off a rebound.
(79) ...manager Ozzie Guillen said of Quentin, who knocked in two runs and has a team-leading 40 RBI.
(80) ...said defender Brandi Chastain, who slammed in the winning penalty kick.
(81) Kelsey Jacobson, who led the Eagles with 14 points, knocked down three 3-pointers during the rally.

Examples (78) and (80) are fairly self-explanatory at this stage. Knock and slam mean 'to strike' and the objects that are struck enter the container of the goal. Levin (2008) argues that the language used in sports commentary contains many constructions, set phrases that are so familiar to us that parts of them can be changed quite freely and we still get the message. According to his findings more than 50 different verbs, such as bury, hammer and poke, were used with the construction the ball into the roof/corner of the net, (78) and (80) may be similar constructions. Example (79) is
more complicated as there is no physical goal container in baseball. Lakoff and Johnson (1980:31) explain that activities and events are containers. As such they also contain actions and activities part of that event or activity and store that which is necessary for the event. Therefore if the event of a baseball game is a container, then Quentin is contributing material to it by putting his runs into the container. The unusual use of the particle down in a phrasal verb in example (81) is worth special consideration. With just this example in mind it would be plausible to assume that it has something to do with the ball going down through the basket hoop. However, this verb was also used for other actions in sports such as 'to complete a pass'. The answer is to be found in the OED, which defines this phrasal verb as 'To strike or fell [sic] to the ground with a blow or blows; fig. to overcome, vanquish, cause to succumb'. The knock down featured here, meaning to score, is in other words simply a metaphorical use of the verb described in example (50) in section 4.2.1, as scoring means overcoming your opponent.

If material can be added to a container representing an event or activity, it follows that there must also be a way for material to leave the container. The examples below all deal with the activity of making or producing something.

(82) Anyway, I sat up and banged out an e-mail to Karl: See you there and then...
(83) He knocked out a trio of mid-'90s masterpieces before getting very, very lost.
(84) But those are the tip of the iceberg; between 1985 and 1997, she slammed out hit after hit...
(85) And a few would be frustrating at first, like developing the timing required to snap out proper casts.

The act of producing or making something results in a product of some kind. As can be seen in all examples above this resulting product comes out of the container that is the producing activity (Lakoff & Johnson 1980:31). It is also of interest to note that all onomatopoeic verbs featured in this meaning are exemplary onomatopoeia, implying that the act was made with haste.

The next group of phrasal verbs are concerned with something or someone being somewhat forcefully removed from somewhere. The forcefulness most likely comes from the meaning 'to strike', which all the onomatopoeic verbs below share.

(86) ...now some families have been bumped out of eligibility to receive food stamps.
(87) ...the chance to lay hands on the wood and to crack out the Black & Decker tool kit he'd brought.
(88) Woods was knocked out of the Accenture Match Play Championship by Tim Clark of South Africa.

The examples above each feature a different type of container. In example (86) families are forced out of the state of being eligible to receive food stamps container, in (87) the tool kit is taken from a physical space container and in (88) Tiger Woods is forced out of a championship event container.

The final set of phrasal verbs that feature the particle out use all different forms of onomatopoeic meaning, direct, associated and exemplary.

(89) The music of 50 Cent banged out from overhead speakers,...
(90) A voice rang out from the house, what sounded like a child's, maybe a girl...
(91) So I figured if anything even if I was knocked out, they could maybe find me...
(92) And Mayor Bloomberg says it appears both engines were knocked out...
(93) Are you feeling like you're on top of the world? Well, snap out of it.

Examples (89) and (90) are connected with a sound, direct onomatopoeia, leaving a physical space container, speakers and a house. In (91) and (92) a strike, associated onomatopoeia, forces someone out of the state container of consciousness, and the engine out of its functioning state container. Finally in (93) someone is asked to hurriedly leave, exemplary onomatopoeia, a state container of confidence.

A total of 784 out of the 2773 phrasal verbs studied were constructed from the particle pair in and out. 159 of the verb pairs, for example zip in and zip out, had opposite meanings, 77 similar meaning. Whereas for 548 of these phrasal verbs there was no such connection of meaning within the verb pair. The container metaphor (Lakoff & Johnson 1980) was instrumental in determining the meaning of the particles in and out. This metaphor is also a solid base when the last particle pair, on and off is discussed in the next section.

4.2.3 On and off

No specific metaphors are described for the particles on and off by Lakoff & Johnson (1980), however the OED offers some insight into how these particles are used. The main meaning of on is defined as 'Of local position outside of, but in contact with or close to, a surface. Primarily of physical things, but also of non-physical things treated as having extension'. It is also explained that on often refers to contact from above. Another important meaning is listed further down as 'Into action or operation; so as to function; so as to be activated or brought about'. Off is defined as 'Expressing motion or direction from a place: to a distance, away' or 'Expressing separation from attachment, contact, or position'. It is also noted that this can figuratively mean falling asleep or dying. A listing further down states that off can also mean 'So as to exhaust or finish; so as to leave none; to the end; entirely, completely, to a finish'.

This can be summarized into two metaphors: 'on is contact; off is separation' and 'on is activating/starting; off is deactivating/ending'. Interestingly, both can potentially be used to explain the first example listed below. Jimmy could either be seen as physically striking (associated onomatopoeia) and making contact with the gas pedal of his car, or hurriedly and/or violently (exemplary onomatopoeia) activating the acceleration.

(94) Jimmy slams on the gas and the car takes off into the distance.
(95) The alarm clock shifts to 6:00 am and pops on to local news and traffic.
(96) The two of them stare down at the grave. The stage light pops off.
(97) With one hand I snapped on the bedside light and with the other grabbed the receiver.
(98) She stomped back to the door and snapped off the bright lights on her way out.
(99) I also would have kept my mouth shut if you banged off the TV because you would not...

In examples (95) through (99) the focus seems to be on activation or deactivation rather than make contact, thus to hurriedly and/or violently activate something. These four examples may also be constructions (Levin 2008), since on/off the lights is a very common and well-known phrase.

The phrasal verbs below are all related to the process of dressing or undressing and therefore the metaphor 'on is contact; off is separation' is the logical choice. The use of pop for 'to put on' a straw hat, in (100), may simply be a way to make the sentence more colourful. The sentence is not describing an action, it is in fact fashion advice from the *Cosmopolitan*, and therefore it is unlikely to have anything to do with haste. Looking at other verbs such as pop in, 'to visit', there seems to be a carefree quality associated with this verb.

(100) Or pop on a straw hat, use a bobby pin to pull out select strands...
(101) Next came a chin-to-knee, white linen apron, and finally she snapped on thick rubber gloves.
(102) She snapped off her latex gloves.
(103) ...but you can zip on an extra layer to make your bag 15 to 30 degrees warmer.
(104) The jacket sleeves zip off, too.

Examples (101) to (104) all seem to have a strong connection to the sound associated with the action, such as the snapping sound latex gloves make when you remove them or put them on in (101) and (102). Since zip up and zip down have a close relation to dressing or undressing zip on and zip off, in examples (103) and (104), appear to have taken on the specialized meaning off adding or removing a part of a garment.

In the particle pair discussed in this section combinations with off were far more common, the phrasal verbs below all have the meaning 'to leave' in common.

(105) A cold hand clutched at Sally's heart and she banged off upstairs to the loo.
(106) Write a short story in which your favorite villains and heroes pop off the page!
(107) ...he and his girlfriend zipped off the lot with a 1997 Chevy Blazer.

With the use of physical or metaphorical space as a container and the metaphor 'off is separation' the construction of meaning of the three phrasal verbs above can be realized quite easily. In (105) Sally violently separates herself from the downstairs container. In (106) heroes are metaphorically separated from the page container, and finally in (107) the Chevy blazer hurriedly separates itself from the lot.

The meaning 'to somewhat forcefully remove something or someone' found in phrasal verbs constructed with out is found again here with the particle off. Studies of other concordance lines, with the same meaning of knock off as in example (110) below, indicate that this verb often take on
the meaning of removing and/or replacing someone or something.

(108) He was bumped off of his flight and wound up on this plane by chance.

(109) The police guards who accompany the drug suspect crack off his handcuffs and wait outside the door.

(110) ...it's not going to be easy to knock off St. Mark's, which dominated at last weekend's Texas State Prep Wrestling.

(111) ...on "The Sopranos": a husband or wife hiring a hit man to bump off an unsuspecting spouse.

(112) This is where O.J. lived when he knocked off his wife and her boyfriend.

The phrasal verbs above can all be understood using the metaphor of separation. In (108) it is a person somewhat forcefully separated from his flight. In (109) the separation of handcuffs from a drug suspect, and in (110) a separation of a wrestling team from their position in the ranks. In examples (111) the more figurative meaning of off is used to forcefully separate people from their state of life or existence.

In the final collections of meanings of the phrasal verbs examined in this study the hurried act of shooting, closely related to sound, can be found in examples (113) and (114) below. They can possibly be explained as bullets being separated from, or as a result of, the activity container of shooting.

(113) Alain furiously cracks off shots at the advancing Riffs.

(114) ...always a heart-stopping surprise and you won't have much time to snap off a shot.

(115) We knocked off at nightfall, and the water was already as high as our ankles.

(116) "Perhaps we should just ring off." "Ring off. Jesus. Ring off? Did you actually say "Ring off"? What're you, a goddamn limey or something?"

(117) We loved the SRAM drivetrain for its ability to crack off shifts with a confidence rarely found at this price...

(118) When we returned, I popped off fifty pushups.

Examples (115) through (118) can be explained with the metaphor 'end/finish is off' in combination with exemplary onomatopoeia indicating haste or even ease. In (115) work is ended, while shifts and push ups are finished in (117) and (118). The suggestion made in (116) is about ending the call, and thus the conversations. As the discussion in (116) suggests ring off is more commonly featured in British English than American English according to the OED.

689 out of the 2773 phrasal verbs examined were constructed using the particles on and off. 226 of them had an opposite pair relationship, quite a few considering that only the verbs pop, snap and zip combined with both on and off. 463 phrasal verbs had no such relationship. The absence of pairings with similar meaning, and a more substantial part of opposite pairing suggest that the contrast between on and off may be stronger than in in and out and up and down. The container metaphor described in Lakoff & Johnson (1980) was important for understanding the meaning contributed by on and off. In and out often involve crossing the borders of the container while on and off appear to treat the containers as a mass, something one can be in contact with or from which
a part can be separated.

On the whole phrasal verbs created with the particle up were most frequent and constituted 32% of all the phrasal verbs studied, down 15%, in 9%, out 18%, on 9% and off 17%. In many of the pairs with opposite meaning one was far more frequent, for example 100 instances of zip up was found but only three instances of zip down.

4.2.4 Defining the meaning of onomatopoeic phrasal verbs

Although the OED is very comprehensive, 17 out of the 50 phrasal verbs examined in this study were not listed in the OED. Among them were for example pop on, bump out and bang in. Out of those 33 that were listed, only 24 entries covered all the different meanings of the verbs identified in this study. For example the OED makes mention of the phrasal verb crack up as 'to start laughing', however the meaning of 'go crazy/lose control' is not included in the entry. Of course the rules of compositionality states that if we can arrive at the meaning of a phrasal verb by knowing the meaning of its part it does not necessarily need to be listed. Looking back at the results of the study it can be concluded that the phrasal verbs studied follow the rules suggested by Cruse (2004:16) in section 2.3. The parts of the phrasal verb make up the whole. The meaning of the whole can be arrived at if the meanings of the parts are known, and all parts contribute to the meaning of the whole. Some cases, such as the meaning to score and turn on/off, may not be listed since they are part of a construction (Levin 2008). However, while this explanation may be valid for the two cases above, it does not cover non-listed verbs such as bump out, meaning 'to remove or exclude'.

The problem then lies in knowing the meaning of the parts. In six out of the ten onomatopoeic verbs studied in section 4.1 instances of exemplary onomatopoeia was found, however, as stated in section 4.1.10 only in the case of snap and crack was the exemplary meaning listed in the OED. Likewise the meanings of the particles are in many cases very difficult to understand without knowledge about orientational and ontological metaphors (container metaphors). Of course native speakers are often aware of these relationships, although they may not always be able to explain how. However, for second language learners this can be problematic. Simply looking at the meanings of these particles in a dictionary makes it very difficult to grasp these concepts. Just consider the partial excerpt of an entry on up in the OED displayed below.

I. Denoting actual movement or direction in (or in relation to) space.

II. In figurative and transferred applications.

Under the following heads are placed only those figurative uses which admit of being classified under some general concept. Further illustration will usually be found under the verbs most commonly occurring in the various phrases, together with many special uses which are confined to one or other of those verbs (see e.g. BRING v. 27, CAST v. 83, COME v. 74, DRAW v. 89, etc.). Some uncertainty attaches to the origin and development of many of these uses, the
variety of which is so great that the adverb comes to present a number of highly divergent and even directly opposite senses, e.g. *to bind up* (sense 19) in contrast with *to break up* (sense 21b).

III. With a preposition following.

This is only the main meanings listed for the adverb *up*. The entry for the *adverb* is separate, although meanings derived from metaphors like 'more is up' and 'the future is up' (Lakoff & Johnson 1980:16) are listed in the more specific entries, how these metaphors function is not really discussed. Also as we can read in II not all meanings are listed. Considering the importance of these metaphors in determining the meaning of phrasal verbs this should definitely be a consideration. Especially since phrasal verbs are in no means a small category of words, the *Longman Phrasal Verb Dictionary* (2000) contains 5000 phrasal verbs.

4.3 Distribution in different registers

The distribution of phrasal verbs in the five main registers in COCA can provide insights into how onomatopoeic phrasal verbs are used. Using the dimension theories described in Biber et al. (1998) explains what kind of language is used in different registers. Fig. 1 below represents the distribution in percent of an average onomatopoeic phrasal verb. It was constructed by calculating an average from the distribution of all 50 onomatopoeic phrasal verbs in the study, see Appendix A for more detail. Fig. 2 was constructed from figures presented in an example study of phrasal verbs, Davies (2009:183), and displays how frequent all phrasal verbs are in the different registers in COCA.

Comparing the two figures shows that onomatopoeic phrasal verbs are considerably more frequent in fiction and far less frequent in the spoken and academic registers than phrasal verbs in general. They are also slightly more frequent in magazines and newspapers. As was pointed out in section 3.3 the spoken sub-corpus of the COCA may not be ideally representative of speech. It is constructed from unscripted dialogue from TV and radio, a situation where people may not feel
very casual. Biber et al. (1999) found that phrasal verbs existed almost as frequently in the subcorpus *conversation* as in *fiction*, 1800/million in conversation and 1900/million in fiction. It is therefore possible that if another corpus was used, the distribution of onomatopoeic phrasal verbs would have been higher in fiction. Nevertheless, the finding that average onomatopoeic phrasal verb was less frequent in the spoken sub-corpus when compared to all phrasal verbs in COCA remains significant since both studies were conducted in the same corpus.

Of course not all of the onomatopoeic phrasal verbs in this study followed the pattern of fig.1 closely. For example *bump out* was most frequent in the spoken register while almost 96% of all instances of *slam out* were found in fiction, see Appendix A for more details. Applying the multi dimension analysis, Biber et al. (1998), this would indicate that they are slightly more personal than impersonal, slightly more informative than involved and very much narrative in nature. This is in agreement with what Jakobson (1960) claims about sound symbolism being most likely to be found in poetry and literature. The onomatopoeic verbs in this study were also continuously found to be most frequent in the sub-genres Fiction:Movies, Fiction:General(books), Magazine:Sports, Magazine: Entertainment, News:Sports and Spoken:FOX. These are all genres to some degree connected to entertainment, FOX is a network broadcasting mainly entertainment shows. This is a genre where casual language and colourful descriptions would seem to fit in very well. The concordance lines studied give many examples that support the claims by Bredin (1996) that we use onomatopoeia to make things sound better. In example (100) in section 4.2.3, the author could have selected the more common phrasal verb *put on* but opted for to instead write to *pop on a straw hat*.

5 Conclusion

It is the findings of this study that an understanding of how meaning is extended, typically by the use of metaphors, is necessary to explain the construction of onomatopoeic phrasal verbs. As suggested by Bredin (1996), and confirmed in this study, the meaning of onomatopoeic verbs is not limited to an action or the sound it results in. This study discovered that all three categories of meaning suggested by Bredin (1996) in section 2.3.1 were used as base for the meaning of phrasal verbs in this study. Associated onomatopoeia, where the meaning focuses on the action, is the most frequent meaning and is also considered the main meaning in dictionaries like the OED. It stretches from actions closely related to the sound, as in to *zip up* your pants, and more metaphorical, as in *zip up*, 'become quiet', when someone is talking to you. The exemplary onomatopoeia, where the meaning is focused on the quality associated with the action, supplied meaning to one out of ten phrasal verbs found. Although it is clearly significant it is often overlooked, even in prestigious dictionaries such as the OED. A categorization of these words following Bredin's (1996) model could lead to a better understanding on how they function.
It is also the findings of this study that the meaning contributed by the particles in the phrasal verbs studied followed the pattern of conceptual metaphors very closely. The orientational and ontological metaphors, and the pattern in constructing them, presented by Lakoff & Johnson (1980) were, with a couple of additions from Dirven (2001), an invaluable tool to analyse how the meaning of phrasal verbs are constructed. Native speakers and speakers of languages with similar metaphorical structure may intuitively be aware of these relationships. However, for those who are not this knowledge is vital. As pointed out in Lakoff & Johnson (1980), these orientational metaphors can vary in different cultures. This study has concluded that the up and down pair yielded the most combinations of onomatopoeic phrasal verbs as well as the highest frequency.

The stylistic distribution of the phrasal verbs in this study was focused in the fiction register. Onomatopoeic verbs were more frequent in the fiction category than phrasal verbs generally are. The fact that out of 60 possible combinations 50 yielded phrasal verbs suggests a flexibility and ability to create a broad spectrum of meaning in these verbs and particles. The frequency of onomatopoeia in the fiction register supports this flexibility, particularly as it is higher than for phrasal verbs in general. The quality that is the focus of exemplary onomatopoeia, a violent, sudden or carefree action, is naturally felt even in most associated onomatopoeia, which may as Bredin (1996) and Jakobson (1960) add something extra to a sentence.

This study covers 50 different onomatopoeic phrasal verbs, however only mono-syllabic onomatopoeic verbs and three opposite pairs of particles were selected. A broader study including onomatopoeic words with more syllables and other particles may yield different results. Further research could also reveal if exemplary meanings are present in other sound symbolic words or even in phrasal verbs constructed from other mono-syllabic verbs. More research on how conceptual metaphors are related to the particles common in phrasal verbs is of course also of interest, especially considering that it is a group of words that is constantly expanding.

Leaving that aside, it is the conclusion of this paper that the findings made in the material are not isolated instances but repeated in over and over. For second language learners and others who seek to understand how meaning in language is constructed the flexible meanings of onomatopoeic verbs and the metaphorical relationships associated with the particles need to be given more consideration, in the class room as well as in dictionaries.
References

Primary sources


Secondary sources


Cognitive Linguistics Vol. 9 No. 1. Mouton de Gruyter.


http://mail.udgvirtual.udg.mx/biblioteca/bitstream/123456789/1372/1/


### Appendix A: Distribution of the Phrasal verbs in the different sub-corpora

<table>
<thead>
<tr>
<th>Verb</th>
<th>Spoken %</th>
<th>Fiction %</th>
<th>Magazine %</th>
<th>Newspaper %</th>
<th>Academic %</th>
<th>Tokens/million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bang/bangs/banged up</td>
<td>15.20</td>
<td>31.56</td>
<td>15.20</td>
<td>35.67</td>
<td>2.34</td>
<td>0.424973598</td>
</tr>
<tr>
<td>Bump/bumps/bumped up</td>
<td>19.66</td>
<td>13.10</td>
<td>38.28</td>
<td>22.41</td>
<td>6.55</td>
<td>0.720715458</td>
</tr>
<tr>
<td>Crack/cracks/cracked up</td>
<td>14.32</td>
<td>48.54</td>
<td>23.54</td>
<td>12.14</td>
<td>1.48</td>
<td>0.1023912996</td>
</tr>
<tr>
<td>Knock/knocks/knocked up</td>
<td>16.13</td>
<td>40.65</td>
<td>27.74</td>
<td>12.20</td>
<td>3.23</td>
<td>0.385209988</td>
</tr>
<tr>
<td>Pop/pops/popped up</td>
<td>17.43</td>
<td>25.72</td>
<td>28.80</td>
<td>24.18</td>
<td>3.88</td>
<td>4.677194802</td>
</tr>
<tr>
<td>Ring/rang/rued up</td>
<td>9.61</td>
<td>33.63</td>
<td>31.23</td>
<td>23.12</td>
<td>2.40</td>
<td>0.827580164</td>
</tr>
<tr>
<td>Slam/slams/slammed up</td>
<td>7.69</td>
<td>69.23</td>
<td>15.38</td>
<td>7.69</td>
<td>0.00</td>
<td>0.064815869</td>
</tr>
<tr>
<td>Smash/smashes/smashed up</td>
<td>20.99</td>
<td>49.38</td>
<td>18.52</td>
<td>7.41</td>
<td>3.70</td>
<td>0.201303283</td>
</tr>
<tr>
<td>Snap/snaps/snapped up</td>
<td>5.64</td>
<td>24.00</td>
<td>32.00</td>
<td>35.09</td>
<td>3.27</td>
<td>1.366874145</td>
</tr>
<tr>
<td>Zip/zips/zipped up</td>
<td>4.49</td>
<td>66.94</td>
<td>18.18</td>
<td>8.16</td>
<td>1.22</td>
<td>0.608880301</td>
</tr>
<tr>
<td>% of total</td>
<td>14.19%</td>
<td>31.48%</td>
<td>28.11%</td>
<td>22.87%</td>
<td>3.38%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>13.12%</td>
<td>40.28%</td>
<td>24.99%</td>
<td>18.18%</td>
<td>2.86%</td>
<td></td>
</tr>
<tr>
<td>Bang/bangs/banged down</td>
<td>12.50%</td>
<td>62.50%</td>
<td>10.42%</td>
<td>12.50%</td>
<td>2.08%</td>
<td>0.119290834</td>
</tr>
<tr>
<td>Bump/bumps/bumped down</td>
<td>2.78%</td>
<td>68.33%</td>
<td>25.00%</td>
<td>11.11%</td>
<td>2.73%</td>
<td>0.085468126</td>
</tr>
<tr>
<td>Crack/cracks/cracked down</td>
<td>38.59%</td>
<td>2.42%</td>
<td>14.77%</td>
<td>35.61%</td>
<td>8.42%</td>
<td>2.727997127</td>
</tr>
<tr>
<td>Knock/knocks/knocked down</td>
<td>22.35%</td>
<td>21.40%</td>
<td>22.92%</td>
<td>27.56%</td>
<td>5.78%</td>
<td>2.622489359</td>
</tr>
<tr>
<td>Pop/pops/popped down</td>
<td>30.43%</td>
<td>43.48%</td>
<td>26.09%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.057160192</td>
</tr>
<tr>
<td>Ring/rang/rued down</td>
<td>13.95%</td>
<td>65.81%</td>
<td>16.28%</td>
<td>9.30%</td>
<td>4.65%</td>
<td>0.106864706</td>
</tr>
<tr>
<td>Slam/slams/slammed down</td>
<td>5.18%</td>
<td>78.35%</td>
<td>10.67%</td>
<td>4.27%</td>
<td>1.52%</td>
<td>0.815154036</td>
</tr>
<tr>
<td>Smash/smashes/smashed down</td>
<td>10.87%</td>
<td>71.74%</td>
<td>13.04%</td>
<td>2.17%</td>
<td>2.17%</td>
<td>0.114320832</td>
</tr>
<tr>
<td>Snap/snaps/snapped down</td>
<td>2.86%</td>
<td>71.43%</td>
<td>20.00%</td>
<td>5.71%</td>
<td>0.00%</td>
<td>0.08698269</td>
</tr>
<tr>
<td>Zip/zips/zipped down</td>
<td>0.00%</td>
<td>46.15%</td>
<td>23.08%</td>
<td>30.77%</td>
<td>0.00%</td>
<td>0.096232803</td>
</tr>
<tr>
<td>% of total</td>
<td>25.62%</td>
<td>24.22%</td>
<td>17.72%</td>
<td>26.49%</td>
<td>5.95%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>13.95%</td>
<td>51.16%</td>
<td>18.23%</td>
<td>13.92%</td>
<td>2.74%</td>
<td></td>
</tr>
<tr>
<td>Bang/bangs/banged in</td>
<td>12.79%</td>
<td>41.86%</td>
<td>25.58%</td>
<td>15.12%</td>
<td>4.65%</td>
<td>0.213728412</td>
</tr>
<tr>
<td>Knock/knocks/knocked in</td>
<td>9.91%</td>
<td>20.72%</td>
<td>23.42%</td>
<td>45.05%</td>
<td>0.90%</td>
<td>0.275860056</td>
</tr>
<tr>
<td>Pop/pops/popped in</td>
<td>14.16%</td>
<td>31.71%</td>
<td>33.40%</td>
<td>17.85%</td>
<td>3.17%</td>
<td>1.175511765</td>
</tr>
<tr>
<td>Ring/rang/rued in</td>
<td>13.86%</td>
<td>40.95%</td>
<td>20.85%</td>
<td>18.80%</td>
<td>5.74%</td>
<td>1.95906858</td>
</tr>
<tr>
<td>Slam/slams/slammed in</td>
<td>9.64%</td>
<td>28.93%</td>
<td>14.21%</td>
<td>44.67%</td>
<td>2.54%</td>
<td>0.489389467</td>
</tr>
<tr>
<td>Smash/smashes/smashed in</td>
<td>10.48%</td>
<td>47.62%</td>
<td>18.10%</td>
<td>20.00%</td>
<td>3.81%</td>
<td>0.2659487</td>
</tr>
<tr>
<td>Zip/zips/zipped in</td>
<td>7.32%</td>
<td>39.02%</td>
<td>26.83%</td>
<td>26.83%</td>
<td>0.00%</td>
<td>0.101894254</td>
</tr>
<tr>
<td>% of total</td>
<td>12.84%</td>
<td>36.38%</td>
<td>23.76%</td>
<td>22.88%</td>
<td>4.13%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>11.17%</td>
<td>35.83%</td>
<td>23.20%</td>
<td>26.83%</td>
<td>2.97%</td>
<td></td>
</tr>
<tr>
<td>Bang/bangs/banged out</td>
<td>6.31%</td>
<td>49.56%</td>
<td>24.32%</td>
<td>17.12%</td>
<td>2.70%</td>
<td>0.275860055</td>
</tr>
<tr>
<td>Bump/bumps/bumped out</td>
<td>28.95%</td>
<td>26.32%</td>
<td>15.79%</td>
<td>23.68%</td>
<td>5.26%</td>
<td>0.084438577</td>
</tr>
<tr>
<td>Crack/cracks/cracked out</td>
<td>3.85%</td>
<td>65.38%</td>
<td>15.38%</td>
<td>15.38%</td>
<td>0.00%</td>
<td>0.064615809</td>
</tr>
<tr>
<td>Knock/knocks/knocked out</td>
<td>24.05%</td>
<td>21.97%</td>
<td>20.08%</td>
<td>30.24%</td>
<td>3.66%</td>
<td>3.906597538</td>
</tr>
<tr>
<td>Pop/pops/popped out</td>
<td>10.15%</td>
<td>46.81%</td>
<td>23.45%</td>
<td>16.80%</td>
<td>2.79%</td>
<td>2.766056224</td>
</tr>
<tr>
<td>Ring/rang/rued out</td>
<td>14.17%</td>
<td>54.52%</td>
<td>17.13%</td>
<td>11.84%</td>
<td>2.34%</td>
<td>1.595514911</td>
</tr>
<tr>
<td>Slam/slams/slammed out</td>
<td>0.00%</td>
<td>95.74%</td>
<td>0.00%</td>
<td>2.13%</td>
<td>2.13%</td>
<td>0.116805609</td>
</tr>
<tr>
<td>Smash/smashes/smashed out</td>
<td>14.29%</td>
<td>60.00%</td>
<td>5.71%</td>
<td>11.43%</td>
<td>8.57%</td>
<td>0.0968829</td>
</tr>
<tr>
<td>Snap/snaps/snapped out</td>
<td>5.77%</td>
<td>63.74%</td>
<td>17.86%</td>
<td>11.26%</td>
<td>1.37%</td>
<td>0.0904922161</td>
</tr>
<tr>
<td>Zip/zips/zipped out</td>
<td>0.00%</td>
<td>51.11%</td>
<td>27.78%</td>
<td>11.11%</td>
<td>0.00%</td>
<td>0.044734063</td>
</tr>
<tr>
<td>% of total</td>
<td>15.84%</td>
<td>40.47%</td>
<td>20.06%</td>
<td>20.66%</td>
<td>2.97%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>10.75%</td>
<td>54.51%</td>
<td>15.75%</td>
<td>15.70%</td>
<td>2.88%</td>
<td></td>
</tr>
<tr>
<td>Verb</td>
<td>Spoken %</td>
<td>Fiction %</td>
<td>Magazine %</td>
<td>Newspaper %</td>
<td>Academic %</td>
<td>Tokens/million</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>------------</td>
<td>-------------</td>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Pop/pops/popped on</td>
<td>12.50%</td>
<td>48.33%</td>
<td>20.83%</td>
<td>16.67%</td>
<td>1.67%</td>
<td>0.298227086</td>
</tr>
<tr>
<td>Slam/siams/slammed on</td>
<td>7.04%</td>
<td>64.79%</td>
<td>15.65%</td>
<td>10.92%</td>
<td>1.41%</td>
<td>0.705804104</td>
</tr>
<tr>
<td>Snap/snaps/snapped on</td>
<td>3.04%</td>
<td>61.60%</td>
<td>19.39%</td>
<td>14.83%</td>
<td>1.14%</td>
<td>0.653614364</td>
</tr>
<tr>
<td>Zip/zips/zipped on</td>
<td>13.51%</td>
<td>29.73%</td>
<td>35.14%</td>
<td>21.62%</td>
<td>0.00%</td>
<td>0.091953392</td>
</tr>
<tr>
<td>% of total</td>
<td>6.82%</td>
<td>58.95%</td>
<td>19.03%</td>
<td>13.92%</td>
<td>1.28%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>9.02%</td>
<td>51.11%</td>
<td>22.80%</td>
<td>16.01%</td>
<td>1.05%</td>
<td></td>
</tr>
<tr>
<td>Bang/bangs/banged off</td>
<td>5.26%</td>
<td>73.68%</td>
<td>21.05%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.047219289</td>
</tr>
<tr>
<td>Bump/bumps/bumped off</td>
<td>11.84%</td>
<td>23.68%</td>
<td>28.95%</td>
<td>30.26%</td>
<td>5.26%</td>
<td>0.188877155</td>
</tr>
<tr>
<td>Crack/cracks/cracked off</td>
<td>0.00%</td>
<td>44.00%</td>
<td>48.00%</td>
<td>8.00%</td>
<td>0.00%</td>
<td>0.062130943</td>
</tr>
<tr>
<td>Knock/knocks/knocked off</td>
<td>16.64%</td>
<td>24.83%</td>
<td>21.80%</td>
<td>33.69%</td>
<td>3.04%</td>
<td>1.881315869</td>
</tr>
<tr>
<td>Pop/pops/popped off</td>
<td>10.09%</td>
<td>40.83%</td>
<td>27.98%</td>
<td>18.35%</td>
<td>2.75%</td>
<td>0.541779207</td>
</tr>
<tr>
<td>Ring/rang/rung off</td>
<td>14.69%</td>
<td>62.94%</td>
<td>11.19%</td>
<td>10.49%</td>
<td>0.70%</td>
<td>0.356387278</td>
</tr>
<tr>
<td>Smash/smashes/smashed off</td>
<td>0.00%</td>
<td>80.00%</td>
<td>20.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.012426129</td>
</tr>
<tr>
<td>Snap/snaps/snapped off</td>
<td>3.78%</td>
<td>60.17%</td>
<td>29.07%</td>
<td>5.81%</td>
<td>1.16%</td>
<td>0.854917647</td>
</tr>
<tr>
<td>Zip/zips/zipped off</td>
<td>13.04%</td>
<td>30.43%</td>
<td>21.74%</td>
<td>34.78%</td>
<td>0.00%</td>
<td>0.067160192</td>
</tr>
<tr>
<td>% of total</td>
<td>12.11%</td>
<td>39.01%</td>
<td>23.98%</td>
<td>22.55%</td>
<td>2.36%</td>
<td></td>
</tr>
<tr>
<td>Average %</td>
<td>8.37%</td>
<td>48.95%</td>
<td>25.53%</td>
<td>15.71%</td>
<td>1.44%</td>
<td></td>
</tr>
</tbody>
</table>