The Reduplication of the Agentive -er Morpheme in Phrasal Verbs

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Abstract

For many English speakers, the agentive form of the phrasal verb *pick up* is *picker-upper*. The unusual reduplication of the -er has been subject to much debate on how it should be analyzed. I combined McIntyre’s existing proposal of viewing this as inflectional with my own proposal of a derivational relationship between -er and -ee, in order to account for data that was unexplained by his original proposal. To find more evidence to inform my combinative theory, I conducted two surveys gathering grammaticality judgements on a variety of forms from each. The results from Survey A, which attempted to test if there was a derivational relationship between -er and -ee, did not indicate such a relationship, but the distribution of the survey and the results are problematic and should be discounted. The results from Survey B, which asked about wider ranges of are open-ended, but indicate more variation in which morphemes double than previously thought, and also call into question some previously assumed properties of phrasal verbs.
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1 Introduction

The study of phrasal verbs, up until recently, has primarily been led by semanticists and Germano-philes (linguists looking to praise the beauty of Germanic languages and highlight the Germanic qualities of English). This is surprising, because phrasal verbs should be a rich source of study for syntacticians. There are still many under-analyzed topics. In this thesis, I address that of the reduplication of the agente morpheme in some phrasal verbs.

In this thesis, I first detail the properties and irregularities of phrasal verbs, especially with regard to their agente form. Then I discuss the theoretical research that has been done on the topic since the early 2000’s. I disagree with the majority of this, but I highlight one not-yet-complete analysis from Andrew McIntyre (2016) that I find promising. I then propose a possible solution to fix some of the holes in McIntyre’s analysis. I then lay out the data I collected from two separate surveys. One survey tested for a derivational relationship between the −er and −ee morphemes. The other survey was a general gathering of people’s judgements on various possible constructions of phrasal verbs with derivational morphemes. The results of my first survey does not find a derivational relationship between the −er and −ee morphemes, but I discard the data due to problems with the survey. The results of my second survey show that while −er is the most common morpheme that is reduplicated, −ing on phrasal verb gerunds is seen as grammatical with some frequency.

1.1 What is a Phrasal Verb?

Phrasal Verbs are verbs that have the form verb + particle, such as pick up. These ‘particles’ often appear to have the same form as a preposition or a spatial adverb. However, importantly, the particles differ from prepositions and

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1 The term ‘particle’ has been historically used as a grab bag to hold small words with unknown functions, and I will not deviate from such practices.
adverbs in several ways. First, particles have different distributional requirements, as they cannot be followed by a pronoun. Particles also have an inability to bear primary stress. These are related properties: when a pronoun is the object of a verb phrase, the pronoun becomes a simple clitic, and phonologically attaches to a stressed word. If the pronoun were to follow a non-stress-bearing particle, it would be unable to phonologically attach to a stressed word. The pronoun must follow the verb directly, with the particle being forced to follow after. Because of these observed properties of particles, there is a simple test to suss out whether a word in question is a particle. A phrasal verb can be identified as a true phrasal verb as opposed to a “nonphrasal preposition verb” (Bolinger 1971) i.e., a verb followed by a ‘true’ preposition, by where a pronoun, such as it, can occur. If the pronoun can only occur directly after the verb, then the word in question is a particle. If the pronoun can occur after the word in question, then this word is a preposition. Examples of this ‘it test’ are below:

(1)  a. Bonnie picked up the toy.  
    b. Bonnie picked it up.  
    c. *Bonnie picked up it.

(2)  a. Bonnie stepped over the toy.  
    b. *Bonnie stepped it over.  
    c. Bonnie stepped over it.

The results of this test mean that pick up is a true phrasal verb with the particle up, as the pronoun cannot be positioned sentence-finally, whereas step over is a verb followed by the prepositional over, as the pronoun cannot occur between the verb and the preposition. The reason behind why this test works, has to do with the ability of the particle to bear stress. Additionally, in the step over example, the it is the object of the preposition over, whereas in the pick up example, the it is the object of the whole verb phrase pick up.

An additional difference between particles and prepositions is an increased
fluidity of word order, when the object is not a clitic.

(3) a. Bonnie picked up the toy.
   b. Bonnie picked the toy up.
(4) a. Bonnie stepped over the toy.
   b. *Bonnie stepped the toy over.

The particle *up is able to have both positions in the sentence\(^2\), while the preposition over is unable to change position in the sentence.

1.1.1 The use of the word ‘particle’

The word ‘particle’ is often overused by linguists. According to Zwicky (1985), it has become an acategorical grab-bag for anything (clitics and independent words) that has more function than content. Often the use of the word ‘particle’ is both lazy and obfuscating, and, Zwicky argues, any good linguist should not use such an indeterminate word. Instead, a good linguist should analyze the features of what they are trying to describe, and categorize it dutifully, even if that means creating a subcategory within an established category. Often, the use of the word ‘particle’ can be wholly replaced by either ‘discourse markers’ or ‘distributionally restricted adverbs’.

The properties of the word *up in the phrase I picked up the book are listed: first, it does not bear primary stress; second, it modifies the verb ‘picked’, giving it its adverbal qualities; third, it is licensed by the verb ‘picked’ (it cannot occur in just any construction): fourth, it cannot occur between its licensing verb and a pronoun, which forces it to bear secondary stress.

Given these properties and the reason not to use the word ‘particle’ I should be calling the word *up in the phrasal verb pick up ‘a distributionally restricted adverb, that is also a clitic’\(^3\). However, the use of the word ‘particle’ among the

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\(^2\) when not blocked by stress requirements of clitics, as mentioned above

\(^3\) The classification as a ‘clitic’ comes from its inability to bear stress and its requirements of ordering around other simple clitics, such as pronoun
linguists and researchers studying this topic is ubiquitous, and it is shorter than ‘distributionally restricted adverb’. For the purposes of this paper, any use of the term ‘particle’ should be understood in these terms.

1.2 Why do Phrasal Verbs pose problems for current analyses?

Now, the morpheme –er is a derivational verb-to-noun morpheme. The noun it creates is most often\(^4\) an agent that does the action of the verb. A typical formation would be learn becoming learner, meaning ‘one who learns’. This formation can be analyzed as the morpheme –er being a noun (or nominalizer) that combines with the verb learn to form a right-headed noun phrase as follows:

\[
[\text{learn}]_V + [-er]_{nmz} \rightarrow [[\text{learn}]_V [-er]_{nmz}]_N
\]

However, when dealing with phrasal verbs such as pick up, consider the following sentences:

(5) a. Bonnie’s job is to pick up toys from the classroom floor. She is our *picker up.
   b. Bonnie’s job is to pick up toys from the classroom floor. She is our *pick upper.
   c. Bonnie’s job is to pick up toys from the classroom floor. She is our picker-upper.

As can be determined by the above example, not only is the grammatical nominalization of ‘pick up’ having the –er morpheme applied twice, but –er, a verb-to-noun derivational morpheme, is attaching to the particle up. English is seemingly both duplicating a morpheme and attaching a verbal morpheme to a non-verb. There are several satisfying analyses that explain the attachment of the verbal morpheme to the non-verb up, but the duplication remains a problem.

\(^4\)There are some examples where the –er morpheme is the theme, as in he’s a real looker. This also happens rarely with phrasal verbs, as in that house is a real fixer-upper.
that has been puzzled over with few satisfying answers. This phenomenon is particularly troubling, because there is an unexplained mismatch between the syntax and the phonology. This is of course assuming that the underlying form is:

\[ [\text{pick up}]_V + [-er]_{nmz} \rightarrow [\text{picker upper}]_N \]

A resolution to this mismatch might be made by claiming that there is no mismatch between the syntax and the phonology, and that really, there are two -er morphemes in the syntax. A quick analysis of this tells us that this is clearly false. The underlying form would look something like this:

\[ [\text{pick up}] + [-er] + [-er] \rightarrow [[\text{pick}]_V [-er]_{nmz}]_N + [[\text{up}]_I [-er]_{nmz}]_N \]

Such an analysis claims that picker upper is a compound of two nouns, picker and upper. This makes little sense semantically, as a picker upper is not a stimulant for people who pick things. Clearly, from an appeal to semantics, we can rule out the idea that there are two -er morphemes in the syntax.

It should be noted, this duplication appears to be mostly unique both to the agentive form and to phrasal verbs. To show that other morphemes do not duplicate on phrasal verbs, consider the following data:

\( (6) \)
- a. Katie picked up thirty toys last week.
- b. *Katie pick upped thirty toys last week.
- c. *Katie picked upped thirty toys last week.

The inflectional -ed morpheme is attaching only to the verb. But, with the derivational verb-to-adjective morpheme -able, it occurs in this way:

\( (7) \)
- a. Katie found the plush toys more *pickable up
- b. Katie found the plush toys more pick up-able.
- c. Katie found the plush toys more *pick-able up-able.

However, as shown in the data collected from one of my surveys, the gerund -ing morpheme, may be becoming more grammatical.
(8)  a. Katie’s picking up of the toys was very fast.
b. Katie’s %picking upping of the toys was very fast.
c. Katie’s *pick upping of the toys was very fast.

To show that the agentive -er form does not duplicate on other verbs, we must consider other verb compounds. Examples of these would be the verb-verb compound to kickstart, the noun-verb compound to island-hop, and the preposition-verb compound to downplay. Although there are differences between these two constructions and phrasal verbs, these hypothetically could pattern with phrasal verbs if the doubling of the -er morpheme was more commonplace. However, when the -er morpheme is applied to these verbs, there is no duplication.

(9)  a. My cousin kickstarted a company that wound up bankrupt. He is a failed kickstarter.
b. My cousin kickstarted a company that wound up bankrupt. He is a failed *kickerstart.
c. My cousin kickstarted a company that wound up bankrupt. He is a failed *kicker-starter.

(10)  a. Rebecca and I island-hopped around Greece this past summer. We were a couple of island-hoppers.
b. Rebecca and I island-hopped around Greece this past summer. We were a couple of *islander-hops.
c. Rebecca and I island-hopped around Greece this past summer. We were a couple of *islander-hoppers.

(11)  a. Maisie downplayed how long it would take to paint me again! She is a chronic downplayer.
b. Maisie downplayed how long it would take to paint me again! She is a chronic *downerplay.
c. Maisie downplayed how long it would take to paint me again! She is a chronic *downer-player.

It seems that this double application effect does not happen with any other morpheme, inflectional or derivational on any verbs other than phrasal verbs.
This is not to say that morphemes can never be doubly applied in English. Consider *re-rewind* and *industrializationalize*. The *re-* and *-ize* morphemes are doubly applied, but sequentially and each application acts as a unique derivation.

2 Background

2.1 Chapman

Looking at phrasal verbs from a historical perspective, Chapman (2008) describes three ways that phrasal verbs have taken on the agentive morpheme *-er*. The oldest formation type was a fronting of the particle, such as in the word *bystander*. This is also how Modern High German constructs such forms from its phrasal verbs. Chapman’s data shows that this was present during the 1400’s (as far back as his data goes) in equal percentage to the second oldest formation, but has been declining since then. These *bystander* forms (cf. *up-picker*) seem to be fossilizations and are barely productive in English today. The second oldest formation type is *-er* attaching directly to the verb, such as in the word *passerby* (cf. *picker up* and plural form *passers-by*). This formation type was present in the 1400s and rose to prominence as the preferred formation type in the 1600’s but has been declining in productivity since then. The third formation type is the double application, such as in our friend *picker-upper*. This is an incredibly recent formation type, its first attested use in writing being in 1936. In terms of productivity today, Chapman’s research shows that when native English speakers chose a phrasal verb nominalization, these speakers choose the double application 80% of the time. This differed from my study, in that I offered only choices of phrasal verbs. Chapman offered multiple non-phrasal
verb options, and only 16 out of around 100\textsuperscript{5} native English speakers chose any phrasal verb form.

The recentness of the double application formation type leads Chapman to suggest that the oddity of this construction is the result of language shift and not a synchronic issue that needs to be systematically analyzed. He proposes that phrasal verbs are undergoing a similar change as other left-headed phrases are in English today, such as Attorney-General.

Much how the plural form of Attorney-General is shifting from Attorneys-General to Attorney-Generals, Chapman says, so too is there a shift occurring from picker up to pick upper. He claims that the picker-upper is merely an intermediate stage of this shift.

However, this claim is unsatisfying. First, the form Attorney-Generals is seen quite often, but the form pick upper is never seen at all. If there were similar shifts in language occurring, we would expect to find both ‘end states’, but we do not. Second, such an “intermediary” form as picker-upper would imply the intermediary form Attorneys-Generals with similar reduplication. However, such a form cannot be attested reliably. The majority of English speakers find such a form ungrammatical.

McIntyre (2010, 2015) claims that this form is “web attested”, but this is dubious. Doing a google search for attorneys general produces 3.6 million results; the search for attorney-generals produce 921,000 results; and the search for attorneys-generals produces only 86,000 results. When filtered for the exclusive use of attorneys-generals, i.e., results that include only attorneys general and neither attorneys general nor attorney generals, there are 64,000 results. The double-plural form is used around 1\% of the time, which is not a useful

\textsuperscript{5}Chapman does not specify the exact number of native English speakers, only that the total number of survey participants is 200. There were 16 other non-native English speakers who also chose phrasal-verb nominalizations. Extrapolating from this smaller data set with a 50-50 split between native and non-native respondents, I chose to represent his total survey population of native English speakers as around 100.
metric by which to judge grammaticality.

2.2 Cappelle

Cappelle (2010) makes a similar argument for such an “intermediary” step occurring, but from a synchronic perspective. He claims that forms like *picker-upper are a word formation compromise. English speakers both want the –er morpheme to attach to the verb and to the right of the verb phrase. Normally, these positions are not contrastive, but in phrasal verbs, they are. So, the only form that does both is the double application of the morpheme. This is a reasonable proposition, but it comes from a cognitive/use perspective. From a theoretical standpoint, this is unsatisfying. This gives only vague hints as to what the underlying structure is, and nothing towards what intermediate processes allow for this form to hold. Additionally, this does little to explain why this occurs with only the –er morpheme and not with any others. How would this perspective explain the lack of forms such as *pickable upable?

2.3 McIntyre

Andrew McIntyre has studied phrasal verbs from the perspective of a semanticist and a syntactician. His earliest phrasal verb research (2005) was primarily on the differences of meaning between various placements of the particle, i.e. the different emphases and connotations that are drawn when a speaker says I picked up the book as opposed to I picked the book up. The primary difference in semantics between these two positions, he concludes, is that the particle in sentence-final position is resultative.

Afterwards, he began looking at the syntactic structure of phrasal verbs (presumably to improve his semantic analyses). Since then, he has primarily published syntactic work, although they often have some nod to semantic
perspectives.

In McIntyre’s (2015) research, he did two things. First, he added to the argument that phrasal verbs can exist as complex heads, and second, he began his look at the reduplication question. Both are discussed below.

### 2.3.1 Phrasal Verbs as Complex Heads

According to McIntyre, a current analysis of phrasal verbs is that when the particle occurs after the object, it functions as a resultative, and when the particle occurs immediately following the verb, it creates a complex verb phrase with the main verb, like so:

\[[\text{pick}]_V [\text{up}]_p]\_V

This is a left-headed phrase, which is relatively unusual in the English language, appearing only in forms like *Attorneys-General*, a borrowing from French, and *mothers-in-law*. However, this analysis offers benefits for our double –er problem, because it means that the verbal morpheme –er is not attaching to a non-verb, but rather to the right end of a verb phrase, making our analysis:

\[[\text{pick}]_V [\text{up}]_p]_V + [-er]_{nnz} \rightarrow [[[\text{pick}]_V [-er]]_V [\text{up}]_p [-er]_{nnz}]_N

This analysis removes the problem of a verbal morpheme attaching to a non-verb, it still does not explain reduplication. In fact, the problem has been moved from ‘why is –er attaching to the particle?’ to ‘why is –er attaching to the verb?’.

### 2.3.2 Attempts at Reduplication Analysis

McIntyre (2015) has tried to wave this inner reduplication away as simply a morpho-phonological process. He cites two data points:

(12) a. pick-up-able
b. *pick-able-up
   c. *pick-able-up-able
(13)   a. breaker-uppee
       b. *breake-uppee

McIntyre claims that -able is not reduplicating, because it is blocked by phonological processes. This must be a "heavy" (sic) morpheme, sounding awkward when reduplicated. He adds that since the grammatical duplication of the passive nominalization of the phrasal verb break up has an -er and not an -ee, the internal morpheme is meaningless semantically and syntactically, and must therefore be phonological in nature.

A note: for anyone who is unsure of breaker-uppee being at-all grammatical, consider the full sentence:

(14) It is easier to be the breaker-upper than it is to be the breaker-uppee.

However, McIntyre’s argument that is an unsatisfying analysis. If anything, the very nature that 13a is grammatical and 13b is ungrammatical shows that there is something complicated occurring in the syntax. How is it just “phonological processes” if the internal -er is reduplicated from nothing?

2.3.3 Inflection: Pointing Towards a Possible Solution

In a short summary detailing future work, McIntyre (2016) speculates, but does not provide any arguments for, a possible analysis: “Speculation: [the inner affix] is an inflectional stem”.

This speculation would answer the question of ‘why is -er attaching to the verb’ elegantly. This inner -er is inflecting to show agreement with the verb-to-noun derivation of the complex phrase. This is similar to what an underlying representation of Capelle’s use-perspective would be. Capelle emphasized the

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6 Presumably McIntyre is using the word “heavy” to mean “more than one syllable”, which is a significant increase, since the extra syllable would also need to be reduplicated.
“speaker’s desire” to put the –er morpheme on the verb, because that’s what’s ‘right’, in addition to the right side of the phrase. This might be the underlying grammar of his idea: the inner affix is inflecting to agree with the outer affix on the complex phrase.

McIntyre continues in his remaining problems section to say that the existence of the form breaker-uppee remains confusing. However, to me, these two work together perfectly: breaker-uppee is easily explained from viewing the inner affix as inflectional, and breaker-uppee is good evidence for viewing the inner affix as inflection.

The logic goes: if the inner –er is inflectional in breaker-upper, then it should also be inflectional in breaker-uppee. This would imply that breaker-upper is the original form, and then breaker-uppee is somehow a derived form, keeping the internal inflection, but transforming –er into –ee. This is exactly the hypothesis I based my data collection around, and while my research did not conclusively determine that the –ee morpheme is derived from the –er morpheme, this analysis remains succinct.

2.3.4 Retriplcation

Additionally, there are some forms of nominalized phrasal verbs that have retriplcation, such as the 2018 New Zealand film entitled The Breaker Upperers.

McIntyre (2010) mentioned that forms such as turner overer are seen less often because of the haplology of reduplicating –er on the word over, and that turner over is often preferred. However, in my experience, I have heard turner overer, with the –er ending on the word overer heavily emphasized (much in the same way that the –ee morpheme is often heavily emphasized, bearing its own stress). I believe that this anti-haplology has been spreading to other forms. So while breaker upper sounds smooth and natural to speakers, many are expecting an unnatural, emphasized ending, and so it is additionally added
to get the retriplication of *breaker upperers*.

An explanation for the retriplication could possibly be a semantic distinction (though it is not clear if this is the case). The breaker-upperers of the titular movie are people who break up relationships that the breaker upperer is not a part of (an anti-cupid, if you will). This is a separate meaning from the *breaker upper* of McIntyre's sentence from example 14, which means the person within a relationship who decides to end the relationship. Perhaps this is a clear distinction between the two, and that this would mean that a *breaker-upperer* is a breaker-upper-er, or someone who turns other people into *breaker-uppers*.

This parses semantically.

However, it is not clear that there is a distinction between reduplication and retriplication. No other retriplicated forms can be attested as to having this meaning. Where *picker-upperer* and other retriplicated forms appear, they share the same meaning. Additionally, for speakers who say *breaker-upper* instead of *breaker-upperer*, *breaker-upper* can mean both someone who breaks up their own relationship as well as someone who breaks up other people's relationships. Potentially, speakers only have one of the two forms (either reduplicated or retriplicated), and each form carries both meanings. It is still possible that speakers who have the retriplicated form have a distinction in meaning that speakers who only have the reduplicated form do not.

It appears that retriplication is more of a feature of Australian (and New Zealand) English. The internet-attested forms are all those that come from Australian and New Zealand English, such as the aforementioned New Zealand movie, yelp reviews of Australian restaurants\(^7\) and blogs by Australian speakers\(^8\). It does not appear that American English or British English speakers

\(^7\)https://www.tripadvisor.com/ShowUserReviews-g1315152-d8415468-r648248529-Masonmill-Carmel-Creator-Perth-Western-Australia.html

\(^8\)https://fifthcolumnistblog.wordpress.com/2013/05/19/the-thing-is-im-a-maker-upperer-of-words-innit/
retriplicate very often, although this might change. Since Australian and New Zealand speakers retriplicate many different agentive phrasal verbs, and this does not cause semantic change, it is likely that *breaker-upper* has the double meaning and that there is no distinction in meaning.

3 Methodology

I distributed two surveys primarily through social media. Survey A tested native English speakers’ grammaticality judgements on doubled derivational morphemes. Survey B tested the relationship between the –er and –ee forms.

Survey A was designed to test whether the presence of –er licenses the presence of –ee. That is to say, is a word ending in –ee seen as more grammatical if the respondent first sees the corresponding –er form? This hypothesis turned out not to be supported by my data. Survey respondents were randomly given a set of pairs of words, e.g., *hitter* and *hittee*. One set had the –er form come first for each pair and the other had the –ee form presented first for each pair. Respondents then ranked a Likert scale from 1 to 7, where 1 is “strongly disagree” and 7 is “strongly agree”, for whether they agreed with the statements that “[they] would use this word”, and that “[they] would think this word is normal” if heard it said by someone else.

I then performed several T-tests on the data, to determine possible correlation between the two sets. I performed T-tests between the average perceived grammaticality of all –ee forms, and between the average perceived grammaticality of each individual word, for each question.

Survey B asked people to select from a variety of strategies that make the most grammatical forms of several phrasal verbs with the derivational morphemes –er, –able, and –ing (as in *my writing contains many parenthetical remarks*). I chose the formation strategies based off of Chapman’s historical data.
of word formation. For each phrasal verb and derivational morpheme listed, there were six options listed: the verb with the morpheme and no particle, e.g., picker; the particle fronted and the verb with the morpheme, e.g., up-pickable; both the verb and the particle with the morpheme, e.g., picking-upping; the verb with the morpheme and the particle bare, e.g., picker-up; and the verb bare and the particle with the morpheme, e.g., pick-up-able. Respondents were also given the choice to select “other” and give alternative forms if they had any.

In Survey B, I also asked for judgements on which forms people would use for noun incorporation, e.g., trash picker-upper. The “passive” breakee-uppee form was also tested with similar variations as to the other phrasal verb forms, although with the added option of breakee-uppee.

4 Results

4.1 Survey A

Survey A had 40 total respondents. 26 people were given the set that had all the -er forms presented first, while 14 people were given the set that had all the -ee forms presented first.

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Table 1: This shows the p-values of the T-tests performed between the averages of perceived grammaticality for all responses and for each word. Question 1 was ‘would you say this word’ and Question 2 was ‘would you think it normal if you heard this word’. For no performed T-test was p ≤ .05.

Table 1 shows that no T-test had a p-value ≤ .05. For the total average,
and the averages of every word, there is no correlation between whether the \(-ee\) form or the \(-er\) form is presented first and the perceived grammaticality of the \(-ee\) form.

These results indicate that there is no difference between the two groups. This would cast into doubt our hypothesis that \(-ee\) is derived from \(-er\). However, in the ’Problems with Survey A’ section, I will call into question the validity of this survey and the usefulness of these results.

4.2 Survey B

Survey B had 110 respondents, 94 of whom were native English speakers. I only analyzed the data from the respondents who indicated they were native English speakers. The results were analyzed and are presented in three sections: comparison with Chapman’s historical analysis, all instances of morpheme reduplication, and the difference in perceived grammaticality with and without object incorporation.

4.2.1 Comparison to Chapman

My survey differs from Chapman’s historical analysis. Chapman’s analysis predicts that forms would be most common in the order of picker upper > picker up >> uppicker > pick upper. Overall, normalizing for when verb + \(-er\) (with no particle) was chosen. My data shows that the order of preference was picker upper > pick upper >> picker up > uppicker

For most of the tests, the “fronted particle” form, the form with particle + verb + \(-er\), or up-picker, was the least (or tied for least) chosen, often with none of the respondents selecting it as grammatical at all.

All the exceptions to this came from results for the phrasal verb \textit{watch over}. This is possibly for two reason: first that, uniquely for the phrasal verb \textit{watch}
over, overwatcher is the productive agentive form; second, the verb overwatch is an already existing word\textsuperscript{9,19} and so the agentive form overwatcher is perceived as grammatical.

More evidence that overwatch is a calcified lexical item comes from the fact that with object incorporation, house overwatcher was the least chosen form. This indicates that overwatch is not a productive agentive form, as it cannot handle new, on-the-spot coinages.

4.2.2 All Reduplications

I tested not only for the reduplication of the -er morpheme, but also for the reduplication of -er with an incorporated object, -able, and the gerund -ing. Predictably, -able was low, often being chosen by 0% of respondents. But two surprising things occurred: reduplicated -er for phrasal verbs with object incorporation were seen as less grammatical than those without; and the reduplication of -ing was consistently present, although low.

<table>
<thead>
<tr>
<th></th>
<th>-er</th>
<th>OI -er</th>
<th>-able</th>
<th>-ing</th>
</tr>
</thead>
<tbody>
<tr>
<td>pick up</td>
<td>85%</td>
<td>70%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>break up</td>
<td>65%</td>
<td>54%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>sweep away</td>
<td>10%</td>
<td>11%</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td>watch over</td>
<td>14%</td>
<td>0%</td>
<td>3%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Table 2: Percentage of respondents who selected a reduplicated form for each phrasal verb and morpheme combination. OI stands for 'object incorporation', as in trash picker-upper.

It might appear initially there is a strong difference in acceptability of the reduplicated -er form for the four tested phrasal verbs. However, I believe that this is related to the rates of the choice of the verb + -er alone.

As is clear in Table 3, the acceptability of the bare verb + -er to replace the nominalization of the phrasal verb crowds out the use of the nominalization

\textsuperscript{9}https://www.merriam-webster.com/dictionary/overwatch

\textsuperscript{10}Potentially, the word overwatch has become more frequently used because of the popular video game of the same name.
Table 3: This shows a comparison between the percentage of people who selected the reduplicated \(-er\) form and the percentage of people who selected the agentive form of the verb without the particle, as in \textit{watcher overer} vs. \textit{watcher}.

<table>
<thead>
<tr>
<th>verb</th>
<th>reduplicated (-er)</th>
<th>verb alone</th>
</tr>
</thead>
<tbody>
<tr>
<td>pick up</td>
<td>85%</td>
<td>11%</td>
</tr>
<tr>
<td>break up</td>
<td>65%</td>
<td>2%</td>
</tr>
<tr>
<td>sweep away</td>
<td>10%</td>
<td>72%</td>
</tr>
<tr>
<td>watch over</td>
<td>14%</td>
<td>60%</td>
</tr>
</tbody>
</table>

of the phrasal verb. This is most likely related to the range of difference in meaning between the bare verb and the phrasal verb. The pair \textit{sweep} and \textit{sweep away} are much closer in meaning than \textit{pick} and \textit{pick up} are, while \textit{break} and \textit{break up} are extremely different. One might expect \textit{break up} to have the highest rates of reduplication in that case, since it had the lowest competition from the form \textit{breaker}. However, it also had the highest rates of “other selection”, which may have taken away from the reduplicated form. Potentially, future studies should not include the bare verb \(+ \text{-er}\) forms as options, so as to have results that are only possible verb-particle nominalizations.

For the subject of retriplication, I had two survey respondents who spoke Australian English, one of whom listed, for several of the agentive options, an additional retriplicated form. This aligns with the retriplication above.

4.2.3 Object Incorporation

My research casts into doubt McIntyre’s claim (2016) that the grammaticality of the double \(-er\) increases with the incorporation of an object into the agentive form of the phrasal verb.

In all but one example, more people found the agentive form without object incorporation (OI) grammatical than the number of people who found agentive form with object incorporation grammatical. There were some people who found the forms with OI grammatical, but not the forms without OI (and vice versa).
However, these people, as previously mentioned, were mostly outnumbered.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>-er</th>
<th>OI -er</th>
</tr>
</thead>
<tbody>
<tr>
<td>pick up</td>
<td>86%</td>
<td>70%</td>
</tr>
<tr>
<td>break up</td>
<td>65%</td>
<td>54%</td>
</tr>
<tr>
<td>sweep away</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>watch over</td>
<td>14%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 4: Comparison between the grammaticality of the reduplicated form, with and without OI.

McIntyre’s claims on object incorporation increasing grammaticality comes from the fact that he found examples, e.g., two-cents-thrower-inner were perceived as more grammatical than their counterparts, e.g., thrower-inner. However, this seems to be a skewed test. The obvious relatedness of this specific object-incorporated forms to the common phrase ‘throwing in my two cents’ is artificially inflating its perceived grammaticality. If instead presented with a neutral object-incorporation, such as house thrower-inner, I believe this would be perceived as less grammatical than simply thrower-inner.

5 Problems with Survey A

Survey A is problematic and the results should be discounted for a few reasons.

First, the sample size is small. Survey A had only 40 total respondents. While 40 is not extremely low, when randomly presented with the two word sets, of those 40 respondents only 14 received the -ee first set. This is an unlucky result from the randomizer used. But it means that the data is not enough to meaningfully conclude a hard result.

Second, the -ee survey itself was poorly constructed. The two separate sets were supposed to be designed to make two separate conditioning environments. One where the -ee forms were conditioned by the -er being presented first,

\footnote{As in adding the deed to one’s house into a pool of money for gambling}
and one where the \(-ee\) forms were not conditioned by the \(-er\) forms being presented first. However, the survey itself did not create two truly separate conditioning environments. Because the \(-er\) forms were presented after the \(-ee\) forms, survey respondents, after the first two questions, were likely to see the pattern of questions. They would expect the \(-er\) as following, and the effect of the difference in conditioning environments would be lessened significantly. A better version of this survey would have had one set of words with \(-er\) forms first and \(-ee\) forms second, and another set of words with only the \(-ee\) forms and no \(-er\) forms at all. This would more accurately study the impact that the priming of \(-er\) has on the perceived grammaticality of the corresponding \(-ee\) forms.

Third, the survey presented the words decontextualized from a sentence or larger discourse. All the forms were only presented as a single word, without any context that would clue in the intended meaning of the word. I was surprised at how low the overall rating of grammaticality for every \(-ee\) form was (I have heard the word “hittee” uttered many times by many different speakers, for example), but I believe that this was due to a lack of contextualization. It gave overall false ratings of horrible grammaticality. A better prompt than the standalone word would have been the word used in one of two sentences. The set primed by \(-er\) should ask respondents if they believe an example like:

\textit{John hit Bill. John is the hitter and Bill is the hittee.}

is grammatical. The set not primed by \(-er\) should ask respondents if they believe a prompt like:

\textit{John hit Bill. Bill is the hittee.}

is grammatical. Prompts such as these would properly contextualize the \(-ee\) forms, as well as properly condition the with/without \(-er\) distinction.
Lastly, although this is not a disqualifying problem, age should have been asked as a demographic question for both surveys, especially considering that patterns of word formation can vary wildly between speakers of different ages.

Any future study should seek to rectify the problems addressed above. Before such a study is done, I believe it is best to discard the results from Survey A, and to continue to hold the view that 

6 Future Study

One of the aspects of phrasal verbs that I did not study was the factor of stress. As mentioned, stress is a determiner of the particle's word placement within a sentence. Potentially, particles are still stress-sensitive in nominalized and/or reduplicated forms. Future research should look at this potentially explaining the acceptability of which morphemes can reduplicate.
Appendix A

Survey A

Copy of Consent Information

You are being asked to participate in a research project examining word formation and judgements led by a student at Swarthmore College as part of their thesis. Your participation will take approximately 3 minutes in total. You will be asked your judgements on what words you might say in conversation. The risk in participating in this study is minimal, although if for any reason you should experience discomfort or wish to withdraw from the study, you are free to discontinue participation, or skip a demographic question, at any time. Should you choose to skip a question of discontinue participation, you will not be judged in any way. Your participation will be a valuable contribution to the understanding of how speakers form new words. All provided information will be kept in confidence, and your data will be associated with a participant number, ensuring that your identity will have no connection to this study. No identifiable personal data will be published. If you have any questions, comments, or concerns, please feel free to contact researcher Caleb Shapiro (cshapir2@swarthmore.edu), or the thesis advisor, Emily Gasser (egasser1@swarthmore.edu), at any time. IN CLICKING 'I AGREE' BELOW, YOU HAVE INDICATED THAT YOU ARE AT LEAST 18 YEARS OF AGE AND THAT YOU HAVE READ THE ABOVE AND AGREE TO PARTICIPATE IN THIS STUDY.

Demographic Questions

Are you a native speaker of English?
Do you natively speak any languages or dialects other than English?
What language(s) or dialect(s)?
Where did you spend the majority of your childhood (state, country)? Please
list multiple places if appropriate for you.

**Survey Questions**

Please rate the following forms from 1 to 7 on how likely you are to say this word, and how likely you are to think this word is normal if you were to hear it. [Survey respondents, unbeknownst to them, were randomly given either this set of words or the same set of words, but in reverse order, so that the -ee forms were presented before the -er forms].

Hairdresser
Hairdressee
Alienator
Alienatee
Curator
Curatee
Hitter
Hittee
Appendix B

Survey B

Copy of Consent Information

You are being asked to participate in a research project examining word formation and judgements led by a student at Swarthmore College as part of their thesis. Your participation will take approximately 10 minutes in total. You will be asked to read short sentences and choose which words fit best in the sentence and to say whether you would say certain words and forms. The risk in participating in this study is minimal, although if for any reason you should experience discomfort or wish to withdraw from the study, you are free to discontinue participation, or skip a demographic question, at any time. Should you choose to skip a question of discontinue participation, you will not be judged in any way. Your participation will be a valuable contribution to the understanding of how speakers form new words. All provided information will be kept in confidence, and your data will be associated with a participant number, ensuring that your identity will have no connection to this study. No identifiable personal data will be published. If you have any questions, comments, or concerns, please feel free to contact researcher Caleb Shapiro (cshapiro2@swarthmore.edu), or the thesis advisor, Emily Gasseer (egasseer1@swarthmore.edu), at any time. IN CLICKING ‘I AGREE’ BELOW, YOU HAVE INDICATED THAT YOU ARE AT LEAST 18 YEARS OF AGE AND THAT YOU HAVE READ THE ABOVE AND AGREE TO PARTICIPATE IN THIS STUDY.

Demographic Questions

Are you a native speaker of English?

Do you natively speak any languages or dialects other than English?

What language(s) or dialect(s)?
Where did you spend the majority of your childhood (state, country)? Please list multiple places if appropriate for you.

Survey Questions

Helah is picking up something. Helah is...
Helah is picking up trash. Helah is...
The trash is easy to pick up. It is very...
Helah picks up very well. Helah’s ... is amazing.
Eneko is breaking up with someone. Eneko is...
Eneko is breaking up with Johanna. Eneko is...
Eneko and Johanna are easy to break up. They are very...
Eneko breaks up very quickly. Eneko’s ... is fast.
Johanna is being broken up with. Johanna is...
Jackson is sweeping away something. Jackson is...
Jackson is sweeping away dust. Jackson is...
This dust is easy to sweep away. It is very...
Jackson sweeps away efficiently. Jackson’s ... is thorough.
Mahomet is watching over something. Mahomet is...
Mahomet is watching over a house. Mahomet is...
This house is easy to watch over. It is very...
Mahomet doesn’t often watch over. Mahomet’s ... is infrequent.
References


