

UC San Diego

San Diego Linguistic Papers, Issue 5

Title

English particle verb alternations: Evidence from acceptability judgments

Permalink

<https://escholarship.org/uc/item/8ws431kj>

Author

Lepic, Ryan

Publication Date

2015-06-21

English Particle Verb Alternations: Evidence from Acceptability Judgments

Ryan Lopic

University of California, San Diego

1 Introduction

This paper uses a sentence acceptability judgment task to examine the factors that influence particle verb alternations in English.¹ The goal of this paper, following previous empirical studies, is to determine whether speakers are sensitive to the factors that condition the particle verb alternation when assessing, rather than producing, sentences containing particle verbs. The results of this study reinforce linguist intuitions about the acceptability of certain constructions, particularly the general unacceptability of sentences like *He **threw up** it*, while also finding significant differences between constructions that introspective judgments might otherwise equate under a general label of "acceptable" or "grammatical", for example *She **ate up** the apples* > *She **ate** the apples **up***.

The evidence presented here supports considering the continuous construction, with the particle appearing before the object, as the more neutral construction, from the point of view of the recipient. Methodologically, the evidence presented in this paper demonstrates that statistically gradient ratings can be collected for "acceptable" sentences, in the same way that gradient ratings have been recorded for "unacceptable" sentences pertaining to other syntactic phenomena. This paper therefore advocates acceptability judgment tasks as an empirical method for investigating particle verb constructions in English, and to complement existing empirical work on the grammatical alternations.

2 Particle verbs

Particle verbs are pervasive in English, and are well-known for their semantic and syntactic properties (e.g., van Dongen 1919; Jowett 1951; Bolinger 1971; Quirk et al. 1972; Jackendoff 2002). Notably, many particle verbs have *idiomatic* meanings that are not entailed by the meanings of their parts taken together (1). Moreover, many transitive particle verbs can appear either followed (2) or split (3) by the direct object. These two alternatives are called the *continuous* and *discontinuous constructions*, respectively.

- (1) He **threw up**. (=vomited); They **passed out**. (=fainted)
- (2) They **threw away** their trash.; She **picked up** the box.
- (3) They **threw** their trash **away**.; She **picked** the box **up**.

¹ This paper is a revised version of a "comps paper" manuscript dated 14 May 2010, written in partial fulfillment of the requirements for a master's degree in Linguistics from the University of California, San Diego. I thank Farrell Ackerman, Grant Goodall, and John Moore for their feedback, as well as my colleagues Dan Michel and Bethany Keffala for their collaboration in running the acceptability task.

Several previous studies have addressed idiomaticity in particle verb constructions. For example, Bannard (2002) divides particle verbs into categories based on which part of a particle verb can be analyzed as contributing a literal meaning to the whole construction. This creates a four-way distinction that reframes idiomaticity in terms of non-compositionality:

- (4)
- | | |
|---|--|
| a. They took the boy back . | (verb and particle both entailed) |
| b. They sought out the best deal. | (only the verb is entailed) |
| c. They turned his brother in . | (only the particle is entailed) |
| d. He set her up . | (neither the verb nor the particle are entailed) |

Though there are many views of compositionality and idiomaticity in particle verb constructions, here we will follow Dehé's (2002) tripartite classification of particle verb semantics. For Dehé, compositional particle verbs are those in which the particle transparently contributes to the meaning of the whole construction, and can therefore be replaced with another particle without changing the core meaning of the verb, as in (5):

- (5)
- Bring** the luggage **out**.
 - Bring** the luggage **in**.
 - Pull** your hat **off**.
 - Pull** your hat **on**.

Unlike compositional particle verbs, idiomatic particle verbs cannot freely recombine; as the examples in (6) show, idiomatic particle verbs are those that have strayed from their literal, compositional meanings, and so changing the particle may completely change the meaning of the whole construction:

- (6)
- The road **dropped off** quite suddenly. (=ended)
 - #The road **dropped in** quite suddenly. (=visited, *not* started)
 - We **took** the stray cat **in**. (=adopted)
 - #We **took** the stray cat **out**. (=dispatched, *not* abandoned)

Aspectual particle verbs are also non-literal, strictly speaking, however in these constructions, the particle contributes a sense of telicity (Dehé 2002), repetition (Jackendoff 2002), resultativeness (Bolinger 1971), or emphasis (Quirk et al. 1972) to the whole construction, while the verb remains quite literal. Some examples can be seen in (7):

- (7)
- He **ate** the cake **up**.
 - She **slept** the day **away**.

Aspectual particle verbs therefore seem to be a sub-category of non-compositional particle verbs; the particles' meanings have drifted from their original, prepositional functions and instead denote completion or resultative states affecting the object of the verb.

In addition to their interesting semantic properties, particle verbs are remarkable in that they typically alternate between two construction types. Rather than the deterministic output of a categorical rule, the choice between the continuous or discontinuous construction is conditioned by a range of factors. However, until relatively recently, many previous approaches to the study of English particle verbs have been somewhat limited by the fact that they are supported

primarily by introspective judgments, making it hard to tease apart the factors that condition the particle verb alternation.

2.1 Factors conditioning particle verb alternations

Two recent empirical studies have pursued a multifactorial analysis of the particle verb alternation. Dehé (2002) tests the particle verb alternation through a speech production task, asking participants to convert a list of randomly ordered constituents (for example, 'up - she - turned - the radio') into a sentence. The results of the task suggest that, for speakers, continuous particle verb constructions are more natural; with the exception of stimuli that were ordered with the object constituent before the particle (for example, 'turned - the radio - up - she'), participants overwhelmingly produced sentences in the continuous order: *she turned up the radio*.

In a follow-up experiment, Dehé tested information-structural and intonational factors on the particle verb alternation. Sentences with different manipulations of information structure (e.g. changing the *news value* of the direct object by manipulating its *focus* or *complexity*) were presented to subjects, who were recorded reading them aloud. Analysis of the resulting spectrograms showed that information structure had a strong influence on speakers' intonational choices. For example, sentences with pronominal objects appear overwhelmingly in the discontinuous order, as in (8). In order for pronouns to appear in the continuous order, they must be focused, which, Dehé argues, has the effect of changing their news value in the sentence (9).

(8) Greta **knocked** it **over**.

(9) Greta **knocked over** IT. (=rather than it knocking her over)

Dehé concludes that the underlying form for particle verb constructions is the continuous construction, and the discontinuous alternation is derived for the purposes of accommodating a marked relay of information, such as when the object is a pronoun. This casts the continuous construction as the neutral, or pragmatically unmarked, alternant (cf. Lambrecht 1994). The factors that Dehé identifies as affecting choice of one alternation over the other therefore include the status of the direct object, such as whether it is a pronoun or a phrase; the length of the direct object; the news value of the direct object; and the idiomaticity of the construction.

Another empirical study, Gries (2003), ties many of these factors into a general processing hypothesis, which states that the continuous construction is correlated with lower processing costs, while the discontinuous construction is correlated with higher processing costs. Under Gries's account, processing costs are incurred by separating the parts of an idiomatic particle verb, or referring to objects that are long or complex. Gries supports the processing hypothesis with a statistical, multifactorial analysis of particle verbs in the British National Corpus. In a comprehensive model that evaluates particle verb constructions on more than 20 variables, Gries finds that some of the strongest determinants of the particle verb alternation are the length of the object, in words and in syllables, with longer objects appearing in the continuous construction; the status of the object, with pronominal objects appearing in the discontinuous construction, and lexical objects appearing in the continuous construction; the definiteness of the object's determiner, with indefinite determiners appearing in the continuous construction; and the idiomaticity of the verb, with compositional verbs appearing in the discontinuous construction, and idiomatic verbs appearing in the continuous construction (cf. van Dongen 1919).

Dehé (2002) and Gries (2003) draw on production data to support the argument that the particle verb alternation is conditioned by a number of interacting factors: Dehé's data come from an elicited production task, and Gries's come from a large corpus. A relevant question concerns

whether these factors that affect the production of sentences containing particle verbs also affect the acceptability of sentences containing particle verb alternations, from the point of view of a listener or reader: are listeners/readers sensitive to the factors that condition the particle verb alternation in the same way that speakers/writers are?

2.2 Experimental syntax

This paper addresses the question of whether readers are sensitive to the factors that condition the particle verb alternation for speakers/writers, through an experimentally-controlled acceptability judgment task. Recent work in syntax has shown that experimental syntax techniques can provide a more fine-grained understanding of acceptability than is usually possible with introspective judgments alone (Alexopoulou and Keller 2007). By polling a large number of naïve participants, theorists can capture gradient judgments that might not be obvious under the more traditional view of sentences as either being "grammatical" or "ungrammatical", and collect data without resorting to introspection (Cowart 1997). Following Sprouse (2007) and Meyers (2009), among others, this paper adopts the position that experimental syntax techniques are beneficial for at least two reasons: first, they formalize the process through which theoretical linguists acquire acceptability judgment data, and second, they can reveal statistical distinctions that are otherwise unavailable via introspection alone. Accordingly, the next section outlines an experiment for collecting statistically gradient acceptability judgments about sentences containing particle verbs.

3 The current study

This section describes the structure of an acceptability judgment task designed to test reader sensitivity to a subset of the factors that have been argued to condition the particle verb alternation in production. The task comprises two sub-experiments, both following the same methodology and run with the same participants, however testing the effects of different morphosyntactic factors. The factors in each sub-experiment are discussed separately, followed by a general description of the methodology, and finally, the results. In general, as we shall see, objects that emulate the effect of discourse familiarity, namely pronominal and definite objects, are predicted to be more acceptable overall, while objects that emulate the effect of discourse novelty are predicted to be more acceptable in the continuous construction.

3.1 Sub-experiment 1

The first sub-experiment follows a 2x2x2 factorial design, to test whether there is a relationship between the syntactic construction (CONTINUOUS or DISCONTINUOUS) a particle verb appears in, and the semantic type (COMPOSITIONAL or IDIOMATIC) of the verb, and the status (PRONOUN or PHRASE) of the direct object. These factors interact in stimuli sentences as follows:

(10) Factorial design of sub-experiment 1

		CONTINUOUS construction	DISCONTINUOUS construction
COMPOSITIONAL verb	PRONOMINAL object	Bill threw away them.	Bill threw them away .
	PHRASAL object	Bill threw away the insurance claims forms.	Bill threw the insurance claims forms away .
IDIOMATIC verb	PRONOMINAL object	Bill filled out them.	Bill filled them out .
	PHRASAL object	Bill filled out the insurance claims forms.	Bill filled the insurance claims forms out .

A hypothesis tested in sub-experiment 1 is that the acceptability of a given construction type is correlated with the semantic type of the verb, such that idiomatic verbs are more acceptable in the continuous construction, and compositional verbs are more acceptable in the discontinuous construction. Additionally, in line with informal judgments from the literature, pronominal objects are expected to be more acceptable in the discontinuous construction, and phrasal objects are expected to be more acceptable in the continuous construction.

3.2 Sub-experiment 2

The second sub-experiment also follows a 2x2x2 factorial design, to test whether there is a relationship between the syntactic construction (CONTINUOUS or DISCONTINUOUS) a particle verb appears in, the definiteness (DEFINITE or INDEFINITE) of the object, and the number (SINGULAR or PLURAL) of the object. These factors are interact in the following sentences in (11); in sub-experiment 2, all particle verbs were of the aspectual type, and so there was no manipulation of verb compositionality here:

(11) Factorial design of sub-experiment 2

		CONTINUOUS construction	DISCONTINUOUS construction
DEFINITE object	SINGULAR object	Isabella sold off the heirloom.	Isabella sold the heirloom off .
	PLURAL object	Isabella sold off the heirlooms.	Isabella sold the heirlooms off .
INDEFINITE object	SINGULAR object	Isabella sold off an heirloom.	Isabella sold an heirloom off .
	PLURAL object	Isabella sold off heirlooms.	Isabella sold heirlooms off .

A hypothesis tested here is that the construction type is correlated with characteristics of the object, such that definite objects will be preferred in the discontinuous construction, and indefinite objects will be preferred in the continuous construction. Additionally, in line with

informal judgments in the literature, we expect to find that definite objects are preferred over indefinite objects, and that singular objects are preferred over plural objects, regardless of construction type.

3.3 Methodology

Each of the two sub-experiments contains eight sentence types, as described in sections 3.1 and 3.2. For each sub-experiment, sentence frames (i.e., [name] [past-tense-verb] {particle} [object] {particle}) were lexicalized and rotated via Latin square to create written stimuli lists containing exactly two instances of each experimental sentence type, with no repeated lexical items. Individual particle verbs were collected from the literature, particularly Bannard (2002)'s list of "Gold Standard Data", as well as data reported by Dehé (2002) and Gries (2003). Stimuli were combined with distractors in a 1:2 ratio. This resulted in 16 stimuli lists containing 96 items each: 16 stimuli from sub-experiment 1, 16 stimuli from sub-experiment 2, 32 distractors from another experiment testing an unrelated syntactic phenomenon (Keffala 2011), and 32 filler distractors representing a mix of unacceptable and acceptable sentences. The 16 lists were duplicated and counterbalanced to control for ordering effects; yielding a grand total of 32 lists containing 96 items each.

In total, 121 participants took part in the acceptability judgment task. Participants were self-reported native speakers of English, and were recruited from the undergraduate population at the University of California, San Diego, in exchange for course credit. Each participant was randomly assigned a stimuli list via WebExp. Participants were asked to rate each of the sentences on their assigned list from 1 ("unacceptable") to 11 ("acceptable"), using their own knowledge about English and its everyday use as a guide. Participant responses were collected via WebExp, and statistically analyzed using R and Microsoft Excel.

3.4 Results

3.4.1 Sub-experiment 1

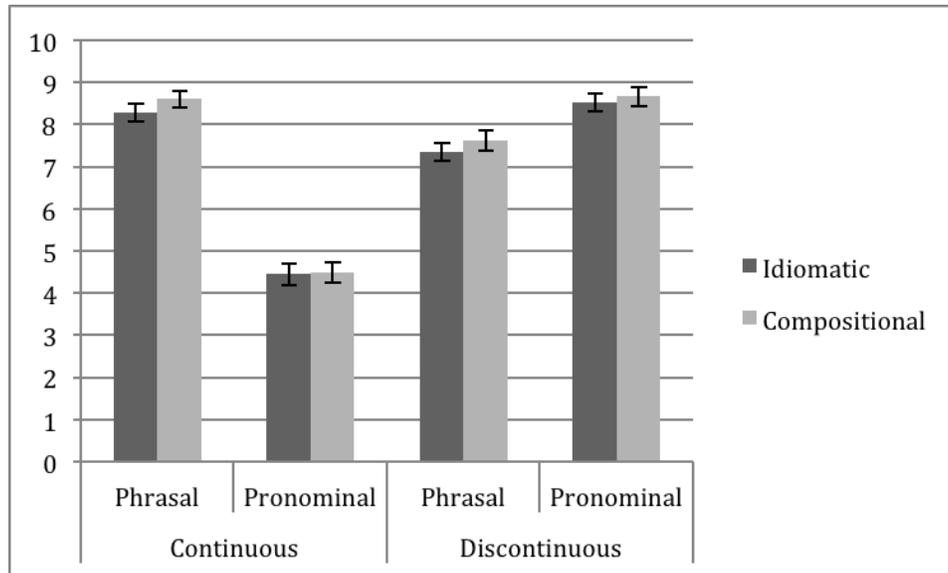
In sub-experiment 1, each stimulus was designed to test three variables: verb type (IDIOMATIC or COMPOSITIONAL), object type (PRONOMINAL or PARTICLE), and construction type (CONTINUOUS or DISCONTINUOUS). The mean acceptability judgment score for each of the resulting eight sentence types from sub-experiment 1 is listed in (12).

(12) Mean acceptability scores (and standard deviations) for sub-experiment 1

		CONTINUOUS construction	DISCONTINUOUS construction
COMPOSITIONAL verb	PRONOMINAL object	4.49 (2.76)	8.67 (2.56)
	PHRASAL object	8.60 (2.19)	7.62 (2.67)
IDIOMATIC verb	PRONOMINAL object	4.45 (2.78)	8.53 (2.26)
	PHRASAL object	8.29 (2.26)	7.36 (2.40)

A 2x2x2 analysis of variance (ANOVA) was calculated on participants' ratings for each sentence type. As can be seen in (13), the effect of verb type was not significant, $F(1, 960) = 1.36, p = .24$.

(13) No effect of verb type in sub-experiment 1



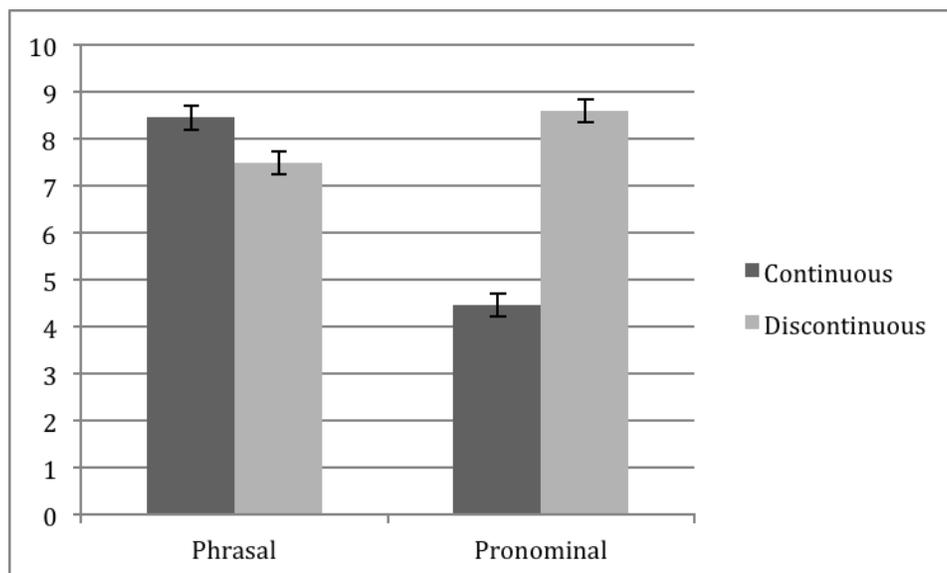
Though the current experiment drew idiomatic and compositional particle verbs from the existing literature, many particle verbs are ambiguous, and often fall somewhere between fully compositional and fully idiomatic, and so a lack of effect is therefore perhaps not surprising. For example, the particle verb *hold down* is idiomatic in (14a) but compositional in (14b), and so a sentence like (14c) is ambiguous between the two.

- (14) a. The soldiers **held down** the fort.
 b. The programmer **held down** the shift key.
 c. The baker **held it down**.

Of course, another possible interpretation of this lack of effect is that verb type does not affect sentence acceptability in the same way it is hypothesized to affect sentence production, which could be investigated more directly in future studies.

The 2x2x2 ANOVA revealed a significant main effect of object type, $F(1, 960) = 97.42, p < .0001$, a significant main effect of construction type, $F(1, 960) = 79.98, p < .0001$, and a significant interaction of object and construction type, $F(1, 960) = 251.89, p < .0001$. As can be seen in (15), the interaction of object and construction type was such that phrasal objects are preferred in the continuous construction ($M = 8.45, SD = 1.96$) over the discontinuous construction ($M = 7.49, SD = 2.17$), $t(240) = 3.62, p < .05$; while pronominal objects are preferred in the discontinuous construction ($M = 8.60, SD = 2.11$) over the continuous construction ($M = 4.47, SD = 2.35$), $t(240) = 8.47, p < .0001$.

(15) Interaction of object type and construction type in sub-experiment 1



3.4.2 Sub-experiment 2

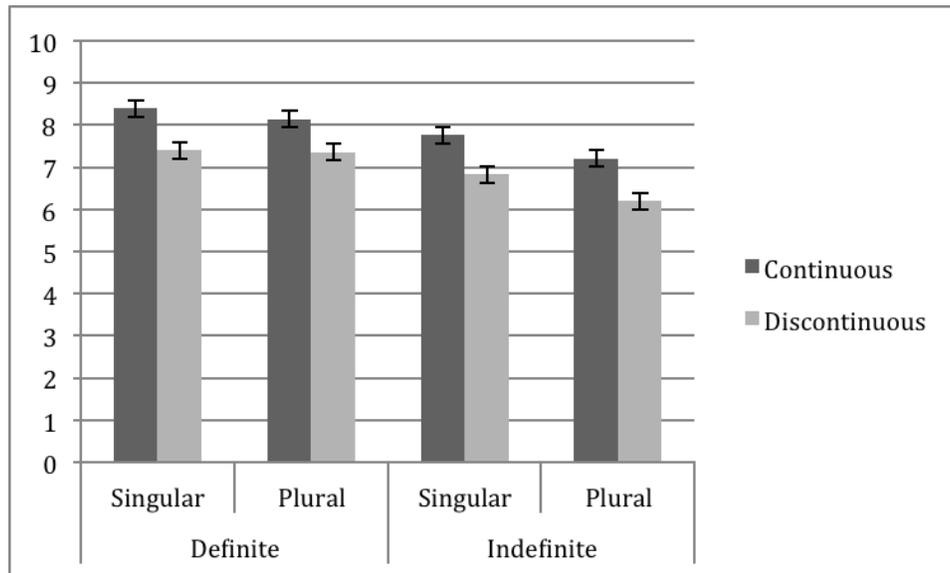
In sub-experiment 2, each stimulus was manipulated to test three variables: construction type (CONTINUOUS or DISCONTINUOUS), object definiteness (DEFINITE or INDEFINITE), and object number (SINGULAR or PLURAL). The mean score for each of the resulting eight sentence types from sub-experiment 2 is represented in (16).

(16) Mean acceptability scores (and standard deviations) for sub-experiment 2

		CONTINUOUS construction	DISCONTINUOUS construction
DEFINITE object	SINGULAR object	8.39 (2.40)	7.40 (2.46)
	PLURAL object	8.14 (2.60)	7.36 (2.45)
INDEFINITE object	SINGULAR object	7.76 (2.84)	6.83 (2.38)
	PLURAL object	7.21 (2.65)	6.20 (2.48)

A 2x2x2 ANOVA was calculated on participants' ratings for each sentence type. There was a significant main effect of definiteness $F(1, 960) = 25.12, p < .0001$, a significant main effect of construction type, $F(1, 960) = 32.29, p < .0001$, and a significant main effect of number, $F(1, 960) = 5.13, p = .024$. However, as can be seen in (17), there were no significant interactions.

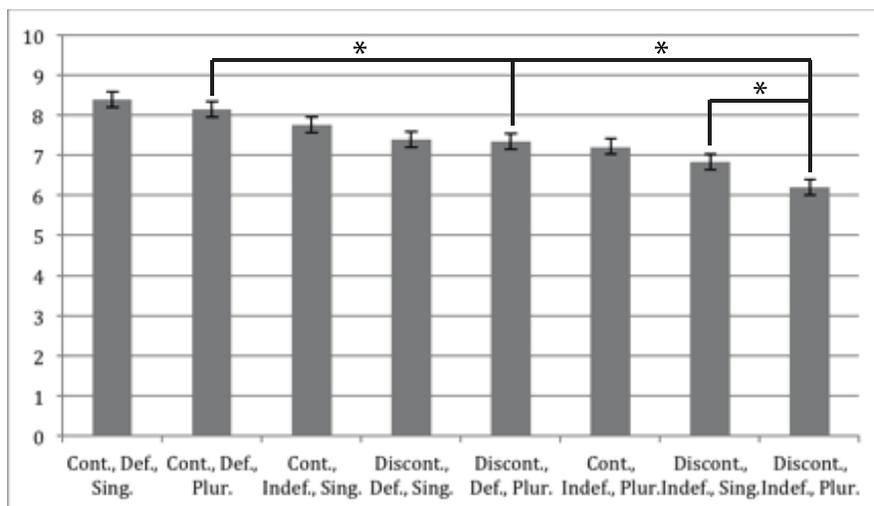
(17) No statistically significant interactions among factors in sub-experiment 2



The main effects were such that definite objects ($M = 7.82$, $SD = 1.85$) are preferred over indefinite objects ($M = 7.00$, $SD = 1.91$), $t(240) = 3.39$, $p < .001$; and that the continuous construction ($M = 7.88$, $SD = 2.01$) is preferred over the discontinuous construction, ($M = 6.95$, $SD = 1.76$), $t(240) = 3.82$, $p < .001$.

However, the comparison between mean scores for singular objects ($M = 7.60$, $SD = 1.93$) and plural objects ($M = 7.23$, $SD = 1.94$), found them not to be significantly different $t(240) = 1.49$, $p = .14$. Rather than an having an overall effect, number only had an effect on mean acceptability judgments in one experimental context, in the ratings assigned to sentences with indefinite objects in the discontinuous particle verb construction. This can be seen when the mean acceptability scores for the eight sentence types are arranged in from highest to lowest, as in (18).

(18) 8 sentence types from sub-experiment 2, ranked from most to least acceptable



In (18), not all neighboring means are significantly different, however, planned comparisons between sentence types which differ by only one factor reveal that many of these means are indeed significantly different, including the difference between discontinuous/indefinite/*singular* sentences and discontinuous/indefinite/*plural* sentences. Sentence types which differ only by one experimental factor and also have significantly different means are listed in (19); for reference, three comparisons, marked in bold in (19), correspond to comparisons marked with a '*' in (18).

(19) Significant differences between sentences differing by only one experimental factor

Shared factors	Test factor		$t(240) =$	$p =$
Definite, Singular	Continuous 8.39	Discontinuous 7.40	3.16	.002
Definite, Plural	Continuous 8.14	Discontinuous 7.36	2.42	.016
Indefinite, Singular	Continuous 7.76	Discontinuous 6.83	2.76	.006
Indefinite, Plural	Continuous 7.21	Discontinuous 6.20	3.05	.003
Continuous, Plural	Definite 8.14	Indefinite 7.21	2.75	.006
Discontinuous, Plural	Definite 7.36	Indefinite 6.20	3.64	<.001
Discontinuous, Indefinite	Singular 6.83	Plural 6.20	2.02	.044

4 General Discussion and Conclusion

Following primarily Dehé (2002) and Gries (2003), a hypothesis tested in sub-experiment 1 concerned the interaction of verb and construction type: specifically, we expected higher mean ratings for sentences containing idiomatic particle verbs in the continuous construction (*Bill filled out the insurance claims forms* > *Bill filled the insurance claims forms out*), and higher mean ratings for sentences containing compositional particle verbs in the discontinuous construction (*Bill threw the insurance claims forms away* > *Bill threw away the insurance claims forms*). This hypothesis was not supported by the data, as there was no significant effect of verb type in sub-experiment 1.

A second hypothesis tested in sub-experiment 1 concerned the interaction of object and construction type: we expected higher mean ratings for sentences containing phrasal objects in the continuous construction (*Bill threw away the insurance claims forms* > *Bill threw the insurance claims forms away*), and higher mean ratings for sentences containing pronominal objects in the discontinuous construction (*Bill threw them away* > *Bill threw away them*). This hypothesis was confirmed, suggesting that some, if not all, of the factors that condition the particle verb alternation in sentence production also affect acceptability judgments of sentences containing particle verbs.

Sub-experiment 2 examined characteristics of the object, rather than of the verb. A hypothesis tested in sub-experiment 2 concerned the definiteness and number of the object, and the

interaction with the construction type. Following e.g., van Dongen (1919), Dehé (2002), and Jackendoff (2002), not only do we expect higher mean ratings for sentences with definite determiners (*Isabella sold off **the** heirloom* > *Isabella sold off **an** heirloom*), but we also expect higher mean ratings for sentences containing definite determiners in the continuous construction (*Isabella **sold off** the heirloom* > *Isabella **sold** the heirloom **off***). These hypotheses were both partially supported by the data in sub-experiment 2. There was a significant main effect of definiteness, as well as an effect of construction type, such that definite and continuous constructions were preferred overall. However, we observed no interaction such that the definite determiner in the continuous construction garnered a significantly higher mean rating than would otherwise be expected. An additional hypothesis tested in sub-experiment 2 was Gries's (2003) finding that bare (indefinite) plural objects are dispreferred, compared to plural objects with a determiner (*Isabella **sold** the heirlooms **off*** > *Isabella **sold** heirlooms **off***). This hypothesis was also supported by the data; indeed, this contrast was found to be the only effect of the experimental factor of plural vs. singular number in sub-experiment 2.

Comparing the findings of sub-experiments 1 and 2, we find a nice contrast between the one sentence type that is widely believed to be unacceptable, one more "marginal" sentence type, and the remaining sentence types which are generally agreed to be acceptable; in sub-experiment 1, sentences containing pronominal objects in the continuous construction (*Chris **wore out** it*) received relatively low a mean rating of 4.5 out of 11, while the other three sentence types containing pronominal objects in the discontinuous construction (*Chris **wore it out***), phrasal objects in the continuous construction (*Chris **wore out** the floral print shirt*), and phrasal objects in the discontinuous construction (*Chris **wore** the floral print shirt **out***) ranged from 7.4 to 8.7 out of 11. In sub-experiment 2, one sentence type (*Chris **wore** floral print shirts **out***) had a slightly lower mean rating of 6.2, and the remaining seven sentence types had mean ratings ranging from 6.8 to 8.4 out of 11. Though these sentence types can all perhaps be considered "acceptable", because they scored higher than the "unacceptable" 4.5 from sub-experiment 1, we observed statistically significant differences among many of these "acceptable" sentences. For example, sentences containing definite, plural objects in the continuous construction (*Melinda **cleaned up** the kitchens*) were preferred over sentences containing definite, plural objects in the discontinuous construction (*Melinda **cleaned** the kitchens **up***). However, sentences containing definite, plural objects in the discontinuous construction (*Melinda **cleaned** the kitchens **up***) were in turn preferred over sentences containing indefinite, plural objects in the discontinuous construction (*Melinda **cleaned** kitchens **up***). This fine-grained data reinforces the potential benefits of the methodology of experimental syntax, and demonstrates that it is possible to capture and quantify subtle distinctions between intuitively similar sentence types.

The experimental results of this paper have demonstrated that the experimental syntax methodology, which uses acceptability judgments to assess subtle syntactic phenomena, can be used to evaluate gradient acceptability in the same way that they have been used to evaluate gradient unacceptability (Meyers 2009, Keffala 2011). This paper has also suggested that perhaps the factors that influence the production of sentences containing particle verbs do not necessarily influence the acceptability of sentences containing particle verbs in exactly the same way, a topic which could be examined more directly in future research.

In sum, the results of this experiment support considering the continuous construction the "neutral" particle verb alternant, though it remains to be seen whether this extends beyond the context-less experimental setting, in which many individual sentences are consciously judged, one at a time. The extent to which context and information structure may play a role in determining the acceptability of sentences containing particle verbs was not examined in the current study, and so a natural follow-up would be to examine information structure more directly

in a related future experiment. This might be accomplished by incorporating short passages or context sentences as part of the acceptability judgment task. Relatedly, a natural extension of the current methodology would be to consider the factors that condition other constructional alternations, for example dative shift (Bresnan et al. 2004), with the goal of using native speaker acceptability judgments to complement existing corpus-based work.

References

- Alexopoulou, T., and Keller, F. (2007). Locality, cyclicity, and resumption: at the interface between the grammar and the human sentence processor. *Language*, 83:110-160.
- Bannard, C. (2002). Statistical techniques for automatically inferring the semantics of verb-particle constructions. *LinGO working paper no. 2002-06*.
- Bolinger, D.L. (1971). *The phrasal verb in English*. Harvard University Press, Cambridge, MA.
- Bresnan, J., Cueni, A., Nikitina, T., Baayen, H.R. (2004). Predicting the dative alternation. *KNAW colloquium: cognitive foundations of interpretation*. Amstrdam.
- Cowart, W. (1997). *Experimental syntax: applying objective methods to sentence judgments*. Sage Publications, London.
- Dehé, N. (2002). *Particle verbs in English: Syntax, information, structure, and intonation*. John Benjamins North America, Philadelphia.
- Gries, S.Th. (2003). *Multifactorial analysis in corpus linguistics*. Continuum, New York.
- Jackendoff, R. (2002). English particle constructions: the lexicon, and the autonomy of syntax. In Dehé, N., Jackendoff, R., McIntyre, A., and Urban S., Eds., *Verb-particle explorations*. 67-94. Mouton de Gruyter, Berlin.
- Jowett, W.P. (1951). On phrasal verbs. *ELT journal*, 6.
- Keffala, B. (2011). Resumption and gaps in English relative clauses: Relative acceptability creates an illusion of 'saving'. In Cathcart, C. Chen, I.H., Finley, G., Kang, S., Sandy, C.S., & Stickles, E., Eds., *Proceedings of the 37th Annual Meeting of the Berkeley Linguistics Society*, 37(1):140-154.
- Lambrecht, K. (1994). *Information structure and sentence form*. Cambridge University Press, New York.
- Meyers, J. (2009). The design and analysis of small-scale syntactic judgment experiments. *Lingua*.
- Quirk, R., Greenbaum, S., Leech, G., and Svartvik, J. (1972). *A grammar of contemporary English*. Seminar press, New York.
- Sprouse, J. (2007). Continuous acceptability, categorical grammaticality, and experimental syntax. *Biolinguistics*, 1:117-128.
- van Dongen, W.A. (1919). He puts on his hat and He puts his hat on. *Neophilologus*, 4:322-353.

Ryan Lopic
University of California, San Diego
rlepic@ucsd.edu