Introduction

Acquisition of phrasal verbs (e.g., take off, open up) is particularly problematic for learners of English as they tend to avoid these constructions (Luo & Fukuya, 2004), especially those phrasal verbs that allow for alternations in structural form.

Although a number of corpus-based studies on phrasal verb construction use exist, few psycholinguistic methods have been applied to assess processing of these constructions, especially in the L2 literature (Gries & Wulf, 2009; Shin & Christiansen, 2012).

We investigated the role of verb-specific bias for a phrasal verb in one construction (continuous versus discontinuous) over the other using by assessing prime surprisal effects.

According to prediction based models of language processing, the difference between what the language user expects and the actual input is used to adjust expectations and reduce future prediction errors (Chang et al., 2006).

Those phrasal verbs that have a larger prediction error are those which have larger syntactic surprisal.

This means that phrasal verbs that occur more frequently in either the continuous or discontinuous construction will have larger surprisal, and hence, larger subsequent priming effects for the alternative construction.

Two different L1 learner groups were recruited to investigate possible influences of the L1 on L2 processing and production (Talmy, 1985).

Chinese is a satellite-framed language: combines motion and manner within one lexical unit and highlights path in a ‘satellite’ (e.g. ad to go-go to go-ping-pong); (walk-enter park).

Spanish is a verb-framed language: conjugates path and manner and encodes manner in a different word and clause (e.g. entro (motor path) comendo (manner); he entered running).

Previous research has found that learners from satellite-framed languages tend to use phrasal verbs in the L2 more often than learners from verb-framed languages (Gonzalez, 2010).

For each experimental phase, participants were given a verb, particle and object in an order they normally do not occur in, which allowed for three possible configurations (see Figure 2), and instructed to produce a sentence out loud. All data was recorded using Audacity software.

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Methods

Participants:
- 29 native speakers of American English
- 29 Chinese learners of English
- 26 Spanish learners of English

Materials:
Phrasal verbs with stronger preferences for a particular construction (continuous versus discontinuous) were used as primes. Verb bias was calculated based on native speaker data from a norming study.

Sentence elicitation: 24 critical, 32 fillers
Priming: 24 critical, 24 fillers

Procedure:
1. Sentence elicitation phase, (2) Digit span task, (3) Priming phase, (4) MELICET (English proficiency assessment), (5) LEAP-Questionnaire

Task

For each experimental phase, participants were given a verb, particle and object in an order they normally do not occur in, which allowed for three possible configurations (see Figure 2), and instructed to produce a sentence out loud. All data was recorded using Audacity software.

Figure 1: Examples of two alternating phrasal verb constructions including a verb, particle and object.

Results

The dependent variable for both elicitation and priming phases was the construction (continuous or discontinuous) of the target response.

Sentence elicitation:
- Chinese learners produced roughly the same ratio of discontinuous to continuous responses as native English speakers (3:4; see Figure 5).
- Spanish learners produced about half the number of discontinuous constructions as continuous ones (roughly 1:2).
- A logistic mixed-effects model across all three language groups revealed no significant effect of language or verb bias (measured in a norming study).

Sentence Priming: Neither native speakers of English, Chinese learners, or Spanish learners revealed significant priming effects.

Chinese learners produced more discontinuous to continuous target constructions compared to Spanish learners.

All groups produced a greater proportion of continuous constructions for both continuous and discontinuous primes as opposed to discontinuous responses.

Chinese learners produced numerically more discontinuous to continuous target constructions compared to Spanish learners.

The interaction of prime structure and surprisal for learner groups was not significant (Chinese: \( p = 0.06 \)).

Discussion and Conclusion

1. Do learners produce phrasal verbs in the continuous construction more than in the discontinuous construction, and is this preference stronger than it is for native speakers?

Chinese learners were just as likely to use the discontinuous construction as native speaker were; given the target phrasal verb, Spanish produced the continuous construction twice as often as the discontinuous one. All three groups used more continuous structures than discontinuous.

2. Does the amount of priming for each construction differ between Spanish and Chinese learners?

Overall, no priming effects were found for the three language groups.

3. Are learners sensitive to surprisal effects on the basis of native speaker constructional preferences for specific verbs?

As corroborated by previous studies, prime verb surprisal effects had a significant effect on target production in native speakers in the structure that was overall non-preferred (discontinuous), but not on learners.

Why was no priming found? The current study required participants to read and repeat prime sentences, but this may not have been enough for participants to fully process sentences if they used their short-term memory to quickly memorize prime sentences.

English, Spanish and Chinese are inherently different in syntactic construction of certain multword constructions:
- Chinese allows for separable verb-object constructions, Spanish does not.
- Data neither support nor dismiss an implicit error-based learning mechanism for learners.
- Two possible explanations: learners may not be able to predict to the same extent that L1 speakers do or may make different types of predictions (Kaan, 2014).

Sentence elicitation findings suggest that learners rely on their experience with a particular word and constructions associated with it when processing in the L2, and even rely on their L1 knowledge based on the numerical trend for Spanish learners to produce fewer discontinuous constructions than the other language groups.

References


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