



Behavioral and ERP responses for definiteness restriction violations

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[BACKGROUND] English existential constructions of the form “There is X...” are typically judged to be deviant when Strong DPs appear in the X (pivot) position, ex. *There is */?the/a man in the room, There is */?every/some man, There is */?John/rice in the room.* Such examples have been classified as violations of the Definiteness Restriction (DR) and there are a range of explanations for what goes wrong when the DR is violated. These range from formal semantic accounts: the pivot of the existential must be property-denoting (McNally 2011), there-constructions involve existential quantification, but strong-NPs are already under existential quantification so other quantifiers can’t bind them (Milsark 1974, 1977)... to pragmatic accounts: existential constructions over Strong DPs are tautologous or “systematically uninformative” (Barwise & Cooper 1981), the X following the existential must be new information for the hearer (Prince 1992, Ward & Birner 1995, Abbot 1992), the existential construction is most appropriately applied to arguments that do not normally make good subjects (Borschev & Partee 2002, 2007; Mikkelsen 2002; Beaver et al. 2005). Previous electrophysiological studies have shown a P600 followed by a left anterior negativity (L-LAN) for DR violations (Drury & Steinhauer 2009), and similar P600/L-LAN profiles have also been shown for logical contradiction and NPI licensing violations (Shao & Neville 1998). Furthermore, when studying cases involving ambiguous reference (ex. “David_{1?} shot at John_{1?} as he₁ jumped over the fence” vs. “David_{1?} shot at Linda as he₁ jumped over the fence”) Van Berkum et al. found that cases with two possible referents for the pronoun elicited sustained LAN activity, while cases without any available referent (ex. “David shot at John as she jumped over the fence”) elicited only a P600 response (Van Berkum et al. 2007). Since these violations have a similar electrophysiological profile and also contain similarities within their available theoretical analyses, the current study seeks to compare them within subjects with the intent of delineating between available theoretical accounts of the Definiteness Restriction.

[STUDY] Previous studies of the DR only tested existentials where the Strong DP leads to unacceptability, and even among native speakers it is sometimes not clear how unacceptable DR violations are. To address these issues we tested participants on similar cases that were either placed under negation (*n’t* & *never*) or focused (*only*, *just*, *also*) since it has been suggested that focus can drastically improve typical DR constructions, while negation appears to degrades it.

(1a) “There was */? John/rice in the room.”	-	Unmodified
(1b) “There was never */? John/rice in the room.”	-	Negation
(1c) “There was only John/rice in the room.”	-	Focus

The study focuses specifically on the processing of proper names vs. mass nouns. This contrast was the most appealing because neither mass nouns nor proper names attract strong prepositional readings under negation and because similar constructions (minus the negation and focus cases) have already been illustrated in past work (Drury, Steinhauer 2009). The study is both a replication of past data, and an attempt to further investigate the P600-L-LAN profile by attempting to turn its components off/on via focus/negation.

Previous studies of linguistic P600 effects have primarily discussed their correlation to syntactic/structural violations (Osterhout, Holcomb 1992); however, there is a growing literature that report P600s for non-syntactic violations (Kim, Osterhout 2005; Van Herten et al. 2006). A secondary purpose of studying the DR using ERP methodology was to compare it as patently non-syntactic violation to well-known P600-eliciting syntactic violations such as affix mismatches, ex. "He could (swim/*swims) at the pool", and Function Word-Swaps, ex. "He could swim (at the/*that at) pool. We hope for this comparison to contribute evidence against the potentially over-simplified claim that the linguistic P600 is only correlative of syntactic type violations.

[METHODS] Sentence presentation was standard RSVP (words were shown one at a time in the center of a screen with 500ms breaks between each word) and were followed by prompts for sentence-final acceptability judgments on a forced-choice 1-4 scale (this serves to test our intuitions about the effects of focus and negation). ERPs were time-locked to target words and were examined for 1200 ms epochs (100 ms baseline).

[CONCLUSION] I predict proper names in both the Unmodified and Negation cases to yield clear P600/L-LAN effects versus their mass noun controls and for the focus cases to diverge (confirmed by initial data). In addition I expect the final behavioral data to mirror the prediction focus>unmodified>negation in regards to acceptability. The nature of what 'fixes' the focus cases and worsens the negation cases will be the key theoretical components to developing a more informed account of the DR.

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