

An experimental look at the negative implications of exceptives

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Exceptive phrases (EPs; 1-2a) have typically been treated as operators that modify quantifier phrases by domain subtraction ([4]), thus entailing an associated negatively-restricted relative clause (NRR; 1-2b).

- (1) a. Everyone *except/but the linguists* left. (2) a. No one *except/but the linguists* left. [EPs]
 b. \models Everyone *who is not a linguist* left. b. \models No one *who is not a linguist* left. [NRRs]

Except and *but* EPs are taken to be subject to additional conditions ([1],[5]), including prominently a **negative constraint**. (3) is supposed to be a semantic claim, and to distinguish ‘true’ EPs from *other than* phrases, which do not support it. A strong interpretation of (3) preserves the quantifier, producing the entailments (4-5a). A weaker interpretation gives (4-5b), with only the ‘bare’ exceptions extracted.

- (3) **Negative constraint.** Applying the predicate of [an excepted] quantifier to the exceptions yields the opposite truth value than applying the predicate to the non-exceptions. (4) a. (1a) \models (1b) & Every linguist did not leave.
 b. (1a) \models (1b) & The linguists did not leave.
 (5) a. (2a) \models (2b) & No linguist did not leave.
 b. (2a) \models (2b) & The linguists did not leave.

The strong interpretation of this constraint is challenged by the felicity of (6), from [3]. At the same time, [2] observes that weak (3) does not hold for the corpus-derived example (7) (which also argues against a putative *quantifier constraint* restricting EPs to *all*, *every*, and *no*). Given the strong intuitions supporting some type of negative/‘exceptional’ inference over EP-complements, these data demonstrate the need for careful empirical investigation to specify and refine the parameters of the negative constraint.

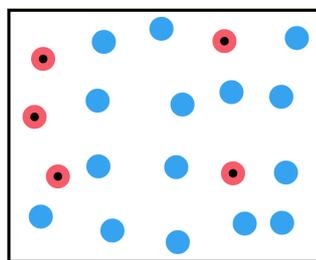
- (6) Everyone except Dr. Samuels has an alibi. Let’s go talk to Dr. Samuels and find out if he has one too.
 (7) Few except visitors know that Czechoslovakia produces wine.

$\not\models$ *Visitors don’t know that Czechoslovakia produces wine.*

We report on an experimental study that falsifies strong (3) for *except* and *but*, as well as *other than*. Our results motivate an account of EPs which includes *other than* and on which the negative constraint is realized as a condition precluding the use of an EP in contexts in which the associated unexcepted quantified claim holds (e.g. when *Everyone left* holds, for 1a). We also reveal a new, intriguing pattern of graded acceptability in contexts which verify the relevant NRR, but not the strong form of (3).

Method. 176 native English speakers completed a forced-choice T/F task on Amazon MTurk. Trials comprised a test description (8a-c) of a display of red and blue marbles (Figure 1). Each participant saw 24 test trials and 24 fillers. All displays had 20 marbles, with varying red/blue ratios (15/5, 10/10, or 5/15). The target colour (named in the EP) also varied. Test displays uniformly verified the appropriate NRR (8a), while the proportion of dot-bearing target marbles varied from $\{0, .2, .4, .6, .8, 1\}$.

Figure 1: A sample test trial



Is the following claim true or false?

"Every marble except the blue ones has a dot."

True False

- (8) Every/no marble ...
 a. *that is not blue* has a dot. [NRR]
 b. *other than the blue ones* has a dot. [other-than]
 c. *except/but the blue ones* has a dot. [EP]

Predictions. A strong negative constraint makes the predictions in (9), with NRRs and *other than* patterning together against EPs. Per (9c), EPs should be acceptable only at target-colour dot proportion 0 under *every* and 1 under *no*. $Q[C]$ represents the restriction of quantifier Q to set C .

- (9) a. Q -many C s that are not M are $P := Q[C - M]P$ [NRR]
 b. Q -many C s other than M are $P := Q[C - M]P$ [other-than]
 c. Q -many C except M are $P := Q[C - M]P \ \& \ Q[C \cap M] \neg P$ [EP]

Results. Figure 2 shows our experimental results, overlaid on the predictions of (9). Overall, our results are inconsistent with (9) for *other than*, *except*, and *but*; this is demonstrated by results in ‘across-the-board’ (AtB) contexts (where every/no marble has a dot, verifying the test sentence with the EP omitted), as well as by results in the *mid range* (0.2-0.8) of target dot proportions. EPs are rejected, as predicted, in AtB contexts, but here *other than* patterns with *but* and *except*, rather than with NRRs. This grouping is also supported by results in the *every* mid range; both EPs and *other than* are less acceptable than NRRs, but significantly more acceptable than in the AtB context. Results with *no* further problematize a strong negative condition: participants accept prompts that are false according to (9c) at a rate indistinguishable from the acceptance of NRRs and *other than*. These results prompt three empirical questions. (A) What singles out AtB contexts for *other than* and EPs? (B) Why are there 3 distinct levels of acceptability in *every*’s mid-range? (C), why does this gradient emerge under *every* but not under *no*?

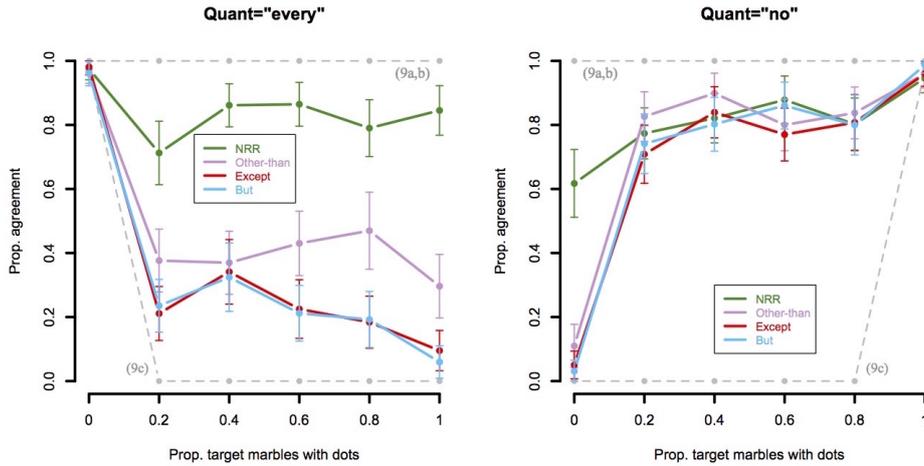


Figure 2: Acceptance rates for EPs, NRRs, *other-than* by proportion of blue marbles with dots.

Proposals. To address (A), we propose that *other than* belongs to the exceptive class, and that the EP negative constraint directly rules out AtB contexts, via the second conjunct in (10). We suspect that this conjunct represents not-at-issue or presuppositional content, on the basis of suggestions in [2]-[3], but our data alone does not rule out the possibility that it is an entailment.

$$(10) Q[C]P \text{ EXCEPTIVE } M := Q[C - M]P \& \neg Q[C \cap M]P$$

Second, we suggest that reduced acceptability of EPs in the mid range results from the falsity of an implicature to the strong negative condition. This is supported by similar results in [6] for the exceptive conditional *unless*; there, reduced mid-range acceptability was argued to follow from a false biconditional implicature. This interpretation moreover recalls [2]’s suggestion that an EP’s role is to defeat particular inferences that otherwise licensed by a (quantified) generalization: e.g. *Every marble has a dot*, absent an EP, licenses the inference that any specific marble has a dot. Gradation in the mid range is expected, for any particular EP, if speakers have variable expectations about the frequency at which the relevant inferences are defeated. The reliable difference between *other than* and *except, but* might on this view represent lexically-derived variation in defeasibility expectations for alternative exceptives.

Question (C) remains. Mid-range differences between *every* and *no* again replicate results in [6], where mid-range *unless* patterned with *if not* under *no*, but was non-categorically degraded under *every*. This pattern suggests a previously unnoticed pragmatic interaction between quantifier polarity and the inferences drawn from quantified generalizations. The precise nature of this interaction, as well as the pragmatics involved in choosing between exceptive alternatives (*other than* vs *except, but*) remain open issues. Our results serve as an advertisement for the usefulness of controlled experiments where subtle semantic/pragmatic judgements are involved. Quantitative data allow us to locate the appropriate empirical foundation (10) for the rough-and-ready intuitions about a negative constraint on EPs that

are expressed in the literature. They also indicate that these judgements involve a previously unnoticed interaction, and set the stage for further empirical study of quantifiers and exceptionality.

References

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