Not (just) any licensors cause negative polarity illusions

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Initial attempts at resolving long-distance dependencies are occasionally error-prone (as in agreement attraction, anaphora, NPI licensing), and the similarities of these phenomena make highly general, memory-based explanations appealing [4]. These explanations invoke mistaken retrieval of an irrelevant lexical item, but we observe that the representations that are relevant to these dependencies may be more complex and more meaning-driven than a single syntactic node or word. In a series of three speeded acceptability studies, we show that the online resolution of a particular dependency (NPI licensing) involves accessing and evaluating whole clausal meanings, and perhaps even richer representations, such as inferred messages.

Our case study is the online licensing of negative polarity items (NPIs). NPIs, like *ever* or *any*, are only acceptable (compare (1a) with (1b)) within the scope of negation or some similar item ("licensor"), potentially because they create stronger assertions only in negative contexts [3]. It is well known that comprehenders are disproportionately likely to initially perceive an unlicensed *ever* as acceptable when there is a structurally irrelevant licensor as in (2) compared to when there is no licensor at all as in (3) [1,2,5,6,7].
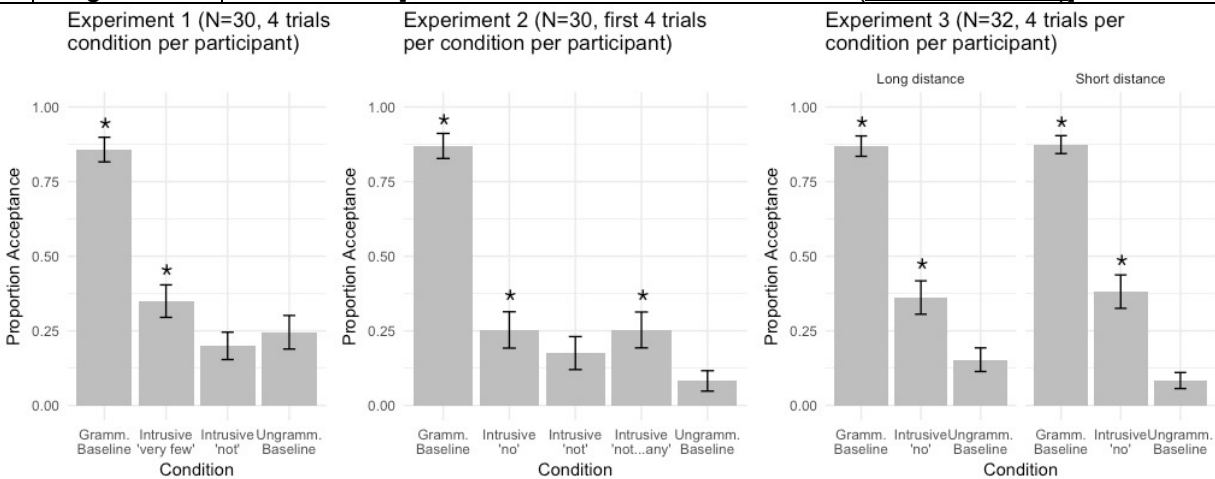
Previous accounts cannot explain the surprising specificity of the illusion: illusions occur with intrusive quantificational licensors such as *no*, but not simple sentential negation, *n't*, as in (4), and the illusion is "turned off" when the NPI is more distant from the licensor as in (5) [1,5]. Experiments 1 and 2 show that the licensor contrast is due to negative inferences at the clause level, and Experiment 3 suggests that the distance effect is about distance from the relative clause (RC). We believe these patterns are best explained by an online NPI licensing mechanism that accesses licensing contexts not individual licensing words.

Experiment 1 shows that the observed licensor contrast is not merely a consequence of the differing structural position of their two intrusive licensors. In the original study, intrusive *n't* appears in a lower structural position than intrusive *no*. We used subject RCs, in which intrusive quantifiers are necessarily lower than intrusive *n't* and we see the same contrast - illusions occur for quantificational licensors but not sentential negation. Experiment 2 shows that differences in clausal meaning, not differences in licensor identity, drive this contrast. That is, *the authors that the critics haven't recommended* and *the authors that no critics have recommended* convey somewhat different information - the latter is stronger, picking out a more restricted set of authors, those that received no recommendations whatsoever. In order to tease apart the difference in clausal meaning from the difference in licensor identity, we designed sentences that contain *n't* as an intrusive licensor but match the meaning of our *no* sentences, such as *the critics that haven't recommended any authors*. We find that illusions do arise for these sentences. Neither *n't* nor *any* induce illusions on their own, but when combined they create a context that intrudes on NPI processing. This suggests that it is not the individual lexical item that matters for an illusion, but the meaning of the whole RC. In Experiment 3 we investigate the distance effect. If NPI licensing requires accessing clausal meanings, we predict that illusions should depend not on distance to the licensor, but on distance to the licensing context. We compared illusion configurations with and without extra material inside of the RC (i.e. manipulating distance to the licensor while holding constant distance to the licensing context) and found that this has no impact on the illusion.

Taken together, these findings suggest that online NPI licensing involves accessing a clause meaning and evaluating the NPI in that context. The alternative hypothesis, which assumes that online NPI licensing involves accessing a lexical node in a syntactic representation, cannot account for the pattern of errors in NPI processing that we observe. We suspect that the aspects of clause meaning that matter most are those that contribute to a strong, exception-less inferred message, not merely the entailments of the clause, which we'll pursue in future work.

1a. I don't think John has ever been to Paris.   1b. * I think John has ever been to Paris.
2. * The authors that no critics recommended have ever written a best-selling novel. ←*illusion*
3. * The authors that the critics recommended have ever written… ←*ungrammatical baseline*
4. * The authors that the critics haven't recommended have ever written… ←*no illusion*
5. * The journalists that no editors recommended for the assignment thought that the readers would ever understand the complicated situation. ←*no illusion*

Exp.1	Gramm.	**Very few** critics [that have recommended the authors of alternative genres] have *ever* objected to mainstream literary trends.
	Intrusive *very few*	The critics [that have recommended **very few** authors…] have *ever*…
	Intrusive *n't*	The critics [that **haven't** recommended the authors…] have *ever*…
	Ungramm.	The critics [that have recommended the authors…] have *ever*…
Exp. 2	Gramm.	**No** critics [that have recommended the authors…] have *ever*…
	Intrusive *no*	The critics [that have recommended **no** authors…] have *ever*…
	Intrusive *n't*	The critics [that **haven't** recommended the authors…] have *ever*…
	Intrusive *n't…any*	The critics [that **haven't** recommended any authors…] have *ever*…
	Ungramm.	The critics [that have recommended the authors…] have *ever*…
Exp. 3	Gramm.	**No** authors [that the critics have recommended (in their reviews)] have *ever* received acknowledgment for a best-selling novel.
	Intrusive *no*	The authors [that **no** critics have recommended (in their reviews)] have *ever*…
	Ungramm.	The authors [that the critics have recommended (in their reviews)] have *ever*…

Experiment 1 (N=30, 4 trials condition per participant)

Experiment 2 (N=30, first 4 trials per condition per participant)

Experiment 3 (N=32, 4 trials per condition per participant)

In all figures, * indicates that a condition differs from the ungrammatical baseline, p<.05.

References
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