This is the structure that we wonder why anyone produces it:
Resumptive pronouns in English help production but hinder comprehension

[authors]

Speakers sometimes utter structures that are not grammatical. Some of these solecisms are disfluencies, others reflect shortcomings of the production system. There is one structure, however, which, despite its apparent ungrammaticality, is often heard and can be reliably elicited in production experiments where participants have boundless time for planning:[2,6] resumption. In English, a language that primarily uses gaps to form Wh-dependencies (1a), resumptive pronouns (RPs; 1b) are not acceptable.[1,3,5,7] Nevertheless, they appear frequently, particularly in syntactic domains where gaps are unacceptable[6] (e.g., islands). So: Why do speakers use them?

Hofmeister & Norcliffe (2013) ran a self-paced reading study to test the claim that RPs facilitate comprehension.[8,1] They found faster reading times after RPs as compared to gaps, which they took to indicate that RPs help readers understand sentences. A potential problem with this conclusion, however, is that their stimuli were designed so that readers could correctly infer the intended meaning just by knowing the words and with no syntactic parsing (e.g., *the prisoner that the guard helped __ to escape*); comprehension (not reported) was presumably at ceiling.[4]

There are alternative explanations to faster reading times after RPs, however. One of them is that the syntactic parse gets abandoned because of its ungrammaticality, and people simply click through the sentence quickly to end it. If this is the case, we should see lower comprehension with RPs when the lexical context does not provide enough cues to understand the sentence.

In order to test this, we designed 48 sets of stimuli using 8 animal characters so that reasoning over world knowledge could not systematically guide comprehension. We manipulated DEPENDENCY (gap/RP) and CLAUSE type with three levels: non-islands like those in H&N (e.g., 1), which are almost exclusively produced with gaps; Wh-islands (2), which typically elicit roughly 50% RPs and 50% gaps; and adjunct islands (3), which elicit close to 90% RPs (data from [6]). After self-paced reading each sentence, participants chose one of four options to answer the comprehension question, "Who did what to whom?" Possible responses included the three characters named in the sentence and one random fourth character in various roles: Dino hitting Piggy (what we called the 'TARGET' response); Dino hitting Duckie ('LOCAL'); Dino hitting Froggy ('DANGLE'); and Duckie tickling Dino ('INSANE'). There was no feedback. 60 fillers of five different types were included to prevent participants from developing an orthogonal interpretation heuristic.

Reading times (Figure 1) were significantly faster following RPs than gaps ($\beta = -1.2\times10^{-4},\ t = -6.31$), a replication of H&N's reading time advantage for RPs. This effect was not modulated by CLAUSE (no interaction: $t = 0.9,\ t = -0.94$), which is surprising given speakers' different rates of experience with RPs in our various clause types. In comprehension questions (Figure 2), RPs led to a marginal decrease in TARGET responses to comprehension questions ($\beta = -0.065,\ p = 0.088$) and a corresponding significant increase in LOCAL responses ($\beta = 0.124,\ p = 0.001$). These comprehension findings were replicated in a one-item picture matching task in which participants saw the whole sentence for the duration of the trial and clicked on one of four scenes (Figure 3). Thus, contrary to H&N's claim that RPs facilitate comprehension, we find that in the absence of pragmatic cues, RPs in fact *hinder* comprehension by leading readers to locally coherent, but globally inaccurate interpretations.

Instead of serving a facilitatory function in comprehension, we argue in favor of recent analyses of English RPs as a production phenomenon: In structures where gaps are degraded (e.g., islands), producers of Wh- dependencies will probabilistically abandon the gap strategy and produce a pronoun to satisfy local subcategorization constraints. Our data are consistent with this, and also reveal a weakness in processing studies that measure reading times but not interpretation: Faster reading times alone cannot be interpreted as facilitation; they may signal any number of other underlying features, such as abandoning the parse, which we suspect plays a role in our reading time effect.

1. (a) It was Miss Dino who Miss Rabbit *said that* Mr. Piggy tickled ___ with a feather.
   (b) It was Miss Dino who Miss Rabbit *said that* Mr. Piggy tickled **her** with a feather.
2. It was Miss Dino who Miss Rabbit *wondered why* Mr. Piggy tickled ___/her with a feather.
3. It was Miss Dino who Miss Rabbit *slept while* Mr. Piggy tickled ___/her with a feather.

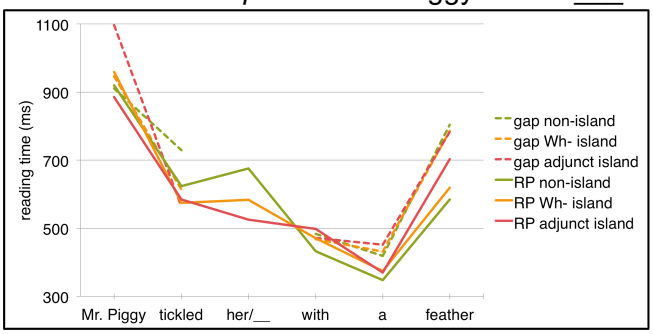
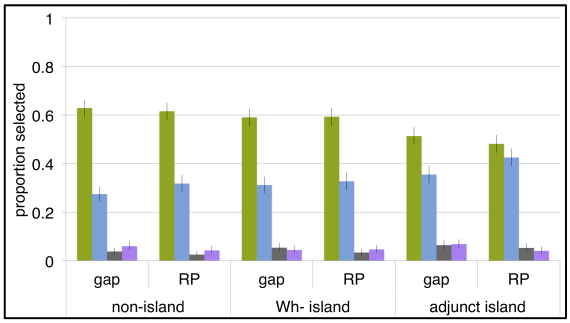
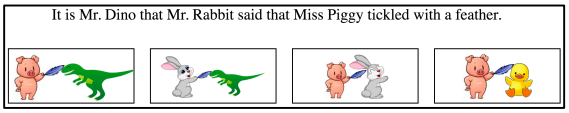


Figure 1. Reading time results

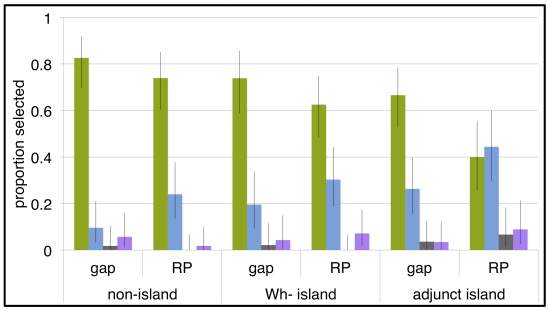


TARGET	Mr. Piggy tickled Miss Dino with a feather.
LOCAL	Mr. Piggy tickled Miss Rabbit with a feather.
DANGLE	Mr. Piggy tickled Miss Duckie with a feather.
INSANE	Miss Rabbit tickled Miss Dino with a feather.

Figure 2. Comprehension question results for self-paced reading study.



(a)



(b)

Figure 3. One-item picture matching task screenshot (a) and results (b).

References

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