

Two measures of Backgroundedness predict island status of Wh-questions and RCs across 7 English constructions

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Abstract

The extent to which a construction *backgrounds* information inversely predicts how available that information is for long-distance dependency (LDD) constructions ($N=680$). Acceptability ratings were collected on declarative sentences and two types of corresponding LDDs (*Wh*-questions, relative clauses) which correlate ($r = .84$). Two measures of backgroundedness were collected and found to predict island status: i.e., each predicts the acceptability of both *wh*-questions and relative clauses more than declaratives. We interpret this to mean that island effects arise from a clash of discourse properties where LDD constructions make an argument prominent in the discourse while “island” constructions background information to varying degrees.

We report results in support of the claim that constraints on islands arise because of a clash between the functions of grammatical constructions to be combined (Goldberg, 2006; Cuneo & Goldberg; 2022; Namboordiripad et al. 2022). In particular, we argue that long distance dependency (LDD) constructions, both questions and relative clauses, make the “moved” constituent prominent in the discourse, while island constructions, including clausal temporal adjuncts, non-bridge verb complements, relative clauses, ensure their content is “backgrounded” to varying degrees. Results indicate that it is infelicitous for a speaker to make a constituent prominent in the discourse (via a LDD) to the extent that the prominent constituent is backgrounded (via an island construction). For example, if a speaker wishes to request information about a later event it is infelicitous for the same speaker to position that information within a clausal temporal adjunct which is typically backgrounded in discourse (i.e., not “at-issue”, Potts, 2004).

(1) He researched the purchase [after comparing prices]_{backgrounded}.

(2) What_{prominent} did he research the purchase [after comparing _]_{backgrounded}?

We collected from separate groups, 1) acceptability judgments on 84 declarative sentences 2) corresponding *wh*-questions, 3) corresponding sentences containing relative clauses. Table 2 provides example stimuli for each of 8 construction types tested. Several of the construction types are generally considered islands (e.g., relative clauses, clausal adjuncts), others are not (main clauses, “bridge” verb complements). However, we do not presuppose which constructions are islands or to what extent. Sample stimuli are provided in Table 1.

Table 1. Example declarative response sentences (no island violations) and *wh*-questions (potential island violations)

Constructions	Example Declaratives and LDDs (<i>Wh</i> -Question & Relative Clauses)
<i>Main Clauses</i>	The door that leads to the basement was closed. Where does the door that was closed lead to _ ? She admired the stone that the door that led to the basement was made of _ .

<i>Relative Clauses</i>	The door that was closed leads to the basement. Where does the door that leads to _ was closed? She admired the stone that the door that was made of _led to the basement.
<i>Causal Adjuncts</i>	He researched it by comparing prices. What did he research the question by comparing _ ? He was aware of the prices that he researched the purchase by comparing _
<i>Temporal Adjuncts</i>	He researched it after comparing prices. What did he research the question after comparing _ ? He was aware of the prices that he researched the purchase after comparing _.
<i>DO Recipients</i>	She showed Sam the portrait. Who did she show _ the portrait? The artist knew the buyer who Gary showed the portrait _.
<i>PO Recipients</i>	She showed the portrait to Sam. Who did she show the portrait to _ ? The artist knew the buyer who Gary showed the portrait to _.
<i>Clausal complements</i>	Alicia believed he got hired in Hawaii. What did Alicia believe that he got _ in Hawaii? Alicia wanted the job she believed he got _ in Hawaii.
<i>Clausal complements</i>	Alicia forgot he got hired in Hawaii. What did Alicia forget he got _ in Hawaii? Alicia wanted the job she forgot he got _ in Hawaii.
<i>Parasitic Gaps</i>	She puts conditioner in her hair after washing it. What does Mara put conditioner in _ after washing _ ? Her fans were impressed with her hair which she puts conditioner in after washing her face.
<i>Nonparasitic Gaps</i>	She puts conditioner in her hair after washing her face. What does Mara put conditioner in her hair after washing _ ? Her fans were impressed with her hair which she puts conditioner in after washing.

We separately collected judgments on two measures of Backgroundedness. The first is the Negation task used in previous work (e.g., Ambridge & Goldberg, 2008; Namboodiripad, et al., 2022). Constructions that background their information are presumed to be less affected by main clause negation; put differently, information that is more at-issue is more likely to be negated by main clause negation. In this task, the main clause of each of the declarative sentences was negated and participants were asked to what extent the information in the various target constructions was negated.

Finally, we used a Discourse task introduced in Cuneo & Goldberg (2022). Trials prompt participants for certain information (e.g., *Tell me why Nicole is so happy today*), and then asks which of two sentences is the “more direct and cooperative” response (see Table 2): Critically, both response options on each trial include the requested information and only differ in *how* the requested information is packaged. The sentence pairs are minimally different and neither contains any island violation. An acceptability survey confirmed there was no systematic difference in acceptability between the two types of responses. One response provides the requested information within a

construction that was hypothesized to be an “island” while the other provided the requested information within a construction that was hypothesized to be a non-island.

Table 1: Example stimuli in Discourse Task

Tell me why Ali got up so early.	
His rowing club that meets at the lake starts at 6:00. (<i>Main Clause</i>)	His rowing club that starts at 6:00 meets at the lake. (<i>Relative Clause</i>)
Tell me why that puppy is so happy.	
The owner got Fido outside by giving him treats. (<i>Causal adjunct</i>)	The owner got Fido outside while giving him treats. (<i>Temporal adjunct</i>)
Tell me what you did in the garden.	
I planted a tree without watering it. (<i>Parasitic coreference</i>)	I planted a tree without watering the flowers. (<i>Non-parasitic reference</i>)
Tell me why Iris took time off from school.	
Dan heard that she wasn't feeling well. (<i>potential “Bridge” Verb</i>)	Dan hated that she wasn't feeling well. (<i>“Non-bridge” Verb</i>)

Preregistration Each part of the experiment was preregistered before data collection, including number of participants, exclusion criteria, stopping rule and analyses Discourse:

<https://aspredicted.org/2bv9s.pdf>. Negation: https://aspredicted.org/see_one.php; Wh/declaratives: https://aspredicted.org/see_one.php; RC/dlinked: https://aspredicted.org/see_one.php

Participants For each measure, separate groups of 120 unique participants were recruited via the Cloud Research platform as a front end on Mechanical Turk (Litman et al. 2017).

Procedure For acceptability ratings on declaratives, wh-questions, relative clauses, and for judgments on the negation task and the discourse task, 72 stimuli were quasi-randomly assigned to one of 4 lists of 21 target sentences, with the stipulation that no participant judged more than one of any highly similar pair of sentences. Order of presentation of the stimuli was randomized for each participant. Acceptability ratings were based on a 7-point scale, negation scores, on a 5-point scale. Filler trials were included as catch trials on all lists.

Results.

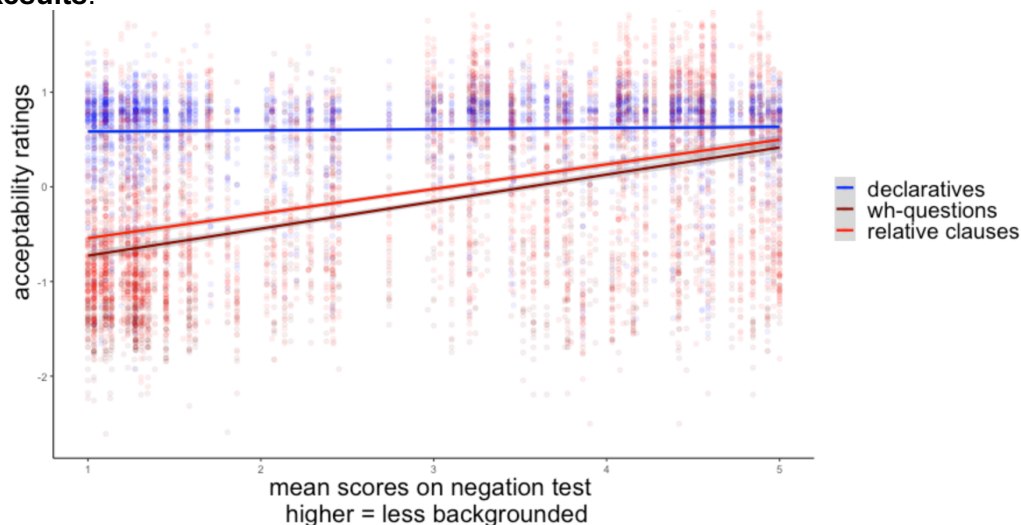


Figure 1. Responses to the **Negation task** predict the acceptability of *wh*-questions (dark red) and relative clauses (red) more than the acceptability of the declarative responses themselves (blue).

The Ordinal package was used in all analyses reported, with random effects for subjects, items and construction types.

Acceptability ratings on the two types of LDD constructions tested (questions and relative clause) strongly correlate ($r = .84$) (cf. Abeillé, et al. 2020; Sag 2010). As predicted, the interaction between Type (Declarative vs. LDD) and Discourse measure when predicting acceptability was significant for both discourse measures (negation: $\beta = 0.53218$, $p < .00001$; discourse: $\beta = 1.42$, $p < .0001$) Figure 1 shows the degree to which main clause negates the target construction (x-axis) predicts acceptability ratings on *wh*-questions (y-axis, in red), and RCs (y-axis, brown), and not declaratives (blue). Figure 2 shows the same is true for the same is true of the independent measure of Backgroundedness: the discourse task.

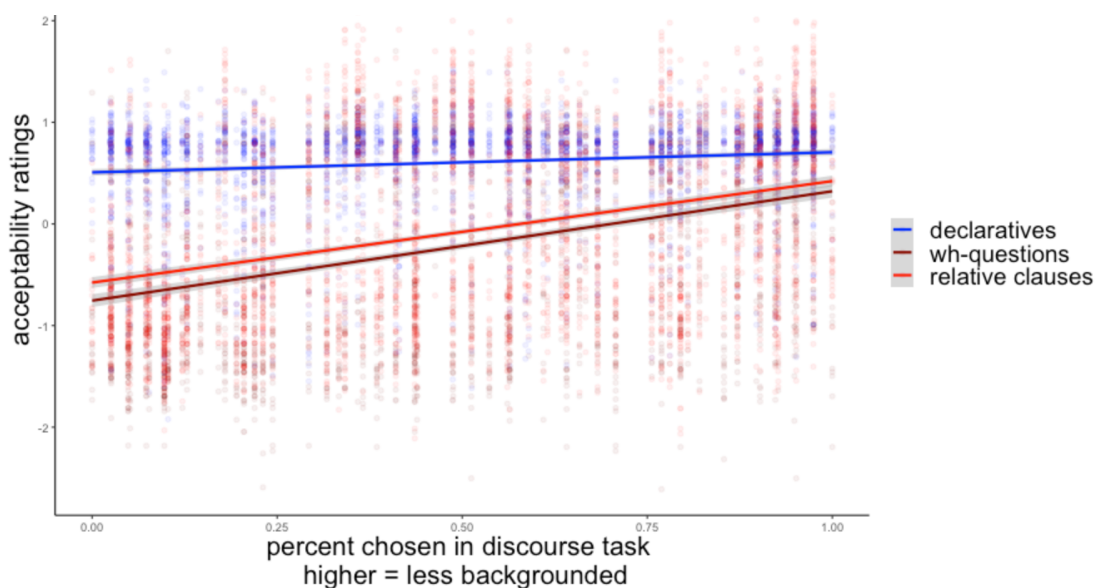


Figure 2. Responses to the **Discourse task** predict the acceptability of *wh*-questions (dark red) and relative clauses (red) more than the acceptability of the declarative responses themselves (blue)

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