

## Acceptability of extraction out of adjuncts depends on discourse factors

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Conditions on non-local dependencies usually referred to as “island constraints” have been at the center of much debate on the nature of language since Ross (1967). According to Boeckx (2012), “island effects are perhaps the most important empirical finding in modern theoretical linguistics.” For generative grammarians, these constraints are usually considered syntactic in nature (e.g., Huang, 1982, Chomsky, 1986) and should generalize across constructions (Schütze et al., 2015). Other linguists have argued that semantic and discourse factors play a role and that most examples reported to be ungrammatical are in fact pragmatically infelicitous, because they make salient elements that should belong to the background (Erteschik-Shir, 1973, 1981; Van Valin, 1986; Kuno, 1987; Takami, 1992; Goldberg, 2006, 2013). Abeillé et al. (2020) found a difference between *wh*-questions (1a) and relative clauses (1b) for PP extraction out of subjects in English and French, and propose that the differences in acceptability follow from differences in the discourse statuses of the two constructions: (a) in a *wh*-question, the extracted element is a focus, and interpreting it as the complement of the subject, which is a local topic, yields a clash of discourse status (and hence makes it less acceptable); (b) in a relative clause, the extracted element is not a focus (it corresponds to a local topic inside the relative clause), thus there is no discourse clash with the subject of the relative clause, and so it is more acceptable. They propose the **Focus-background conflict (FBC)** constraint: A focused element should not be part of a backgrounded constituent.

In this project, we seek to evaluate the FBC constraint on adjunct islands (Huang 1982, Stepanov 2007), across constructions. Most syntactic theories assume extraction out of an adjunct is worse than out of a complement, except for non-finite adjuncts denoting the same event as the main clause (2) (Truswell 2007, 2014). Some recent work has found differences across constructions that are as predicted by the FBC constraint, although not discussed in these terms (because the hypothesis did not yet exist): (a) in English, extractions from *if*-adjuncts are not islands in relative clauses, whereas they are in *wh*-questions (Sprouse et al., 2016); (b) in Norwegian, extractions from *if*-adjuncts are better in topicalizations in supportive context than in null-context *wh*-questions (Kush et al., 2017, 2019). These results are as predicted by the FBC constraint, but there were also confounds: e.g., in Sprouse et al., the RC involved an animate (*who*) while the *wh*-questions an inanimate (*what*).

We ran 3 acceptability experiments on English to directly test the FBC constraint, comparing *wh*-questions and relative clauses, for extraction out of a *that* complement clause and out of an adjunct *if* clause, with the same matrix predicates. According to syntactic theories of island effects, extraction out of *if*-clauses should be rated lower, and the same holds for frequency-based approaches since the verb+*that* frame was always more frequent than the verb+*if* frame (frequencies extracted from the COCA). According to the FBC constraint, on the other hand, a penalty is only expected with *wh*-questions, assuming that *if*-clauses are more backgrounded than *that*-clauses.

Experiment 1 was run on *wh*-questions, with  $\pm$  extraction and *that/if* clause, with the same predicates (5). We replicated the “island” effect from literature: extraction out of *if*-clause was rated lower than out of *that*-clause (Fig.2), and there was an interaction between extraction and clause type (lmer model on z-scores; beta = -.52; t = -4.12; p < .001). (There was also a main effect of “if” clauses, which were rated better than “that” clauses, but this probably relates to the plausibility of the events described by the two kinds of clauses, which is orthogonal to our research question.)

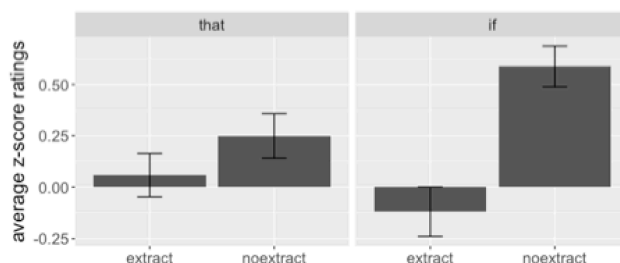
Experiment 2 was run on relative clauses with the same design (6). Unlike E1, there was no island effect (interaction: t = 0.65; p = .52). Across experiments, there was a 3-way interaction, showing that the interaction in E1 was not present in E2 (beta = -0.38; t = -2.49; p = .013). (Note that there was also a main effect of experiment, such that RC materials were rated lower, probably because of the extra clause in the RCs compared to the WHQs. This is again orthogonal to the effects of interest.) Following Abeillé et al. 2020, we propose that the differences in acceptability come from differences in the discourse status of the two constructions: *wh*-questions put the extracted element in focus position, which is incompatible with the FBC, but the relative clause does not change its discourse status, hence there is no adjunct penalty. This account predicts that an appropriate discourse context may ameliorate *wh*-questions. We ran E3 with the same *wh*-questions preceded by a supportive context, which made the questioned element less focal (7). Here, we did not find any adjunct penalty, and extraction out of the *if*-clause was rated as high as extraction out of the *that*-clause (Fig.3), resulting in no interaction between extraction and *if/that* in supportive contexts (interaction: t = -1.54; p = .14), and a 3-way interaction when compared with the null contexts (beta = -0.29; t = -1.92; p = .056).

We conclude that extraction constraints are limited to focalizing constructions (wh-questions, topicalizations) and are due to the lack of an appropriate discourse context. Hence they pose no learning conundrum, contrary to the syntax-only hypothesis.

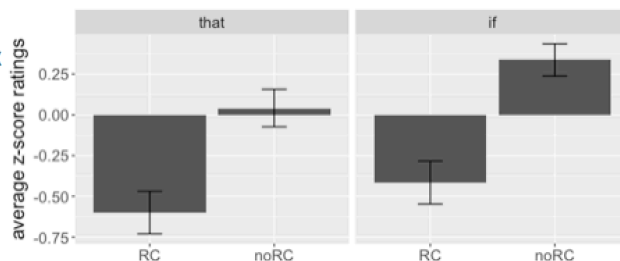
Abeillé, A., Winckel, E., Hemforth, B., Gibson, E. 2020. Extraction from subjects: Differences in acceptability depend on the discourse function of the construction. *Cognition* 204. Kush D.; Lohndal T.; Sprouse J., 2017. Investigating variation in island effects. *NLLT*, 1-37. Kush D.; Lohndal T.; Sprouse J., 2019. On the island sensitivity of topicalization in Norwegian: An experimental investigation. *Language* 95(3). Sprouse, J., Caponigro I., Greco C., Cecchetto C., 2016. Experimental syntax and the variation of island effects in English and Italian, *NLLT*, 34(1), 307-344 Truswell, R., 2007. Extraction from adjuncts and the structure of events. *Lingua* 117, 1355–1377.

- (1)a. Of which sportscar did [the color \_\_] delight the baseball player? (Abeillé et al. 2020)
- b. The dealer sold a sportscar, of which [the color \_\_] delighted the baseball player.
- (2) What did John come home [trying to understand \_\_]? (Truswell 2007)
- (3)a. Wh-no-island: *What* do you think [that the lawyer forgot \_\_ at the office] ? (Sprouse et al. 2016)
- b. Wh-island: *What* do you worry [if the lawyer forgets \_\_ at the office]?
- (4)a. RC-no-island: I called the client *who* the secretary thought [that the lawyer insulted \_\_].
- b. RC-island: I called the client *who* the secretary worries [if the lawyer insults \_\_]. (Sprouse et al 2016)
- (5) Experiment 1. Wh-questions; N = 60; 16 items
  - a. +extract-that: Which concert would Paul worry [that I miss \_\_]?
  - b. +extract-if: Which concert would Paul worry [if I miss \_\_]?
  - c. -extract-that: Would Paul worry that I miss this concert?
  - d. -extract-if: Would he worry if I miss this concert?
- (6) Experiment 2. Relative clauses; N = 60; 16 items
  - a. +extract-that: Paul told me about a concert which he would worry [that I miss \_\_].
  - b. +extract-if: Paul told me about a concert which he would worry [if I miss \_\_].
  - c. -extract-that: Paul cares about my music training, and he would worry that I miss this concert.
  - d. -extract-if: Paul cares about my music training, and he would worry if I miss this concert.
- (7) Experiment 3. Wh-questions with a supportive context; N = 60; 16 items
  - a. +extract-that: Paul cares about my music training. Which concert would he worry [that I miss \_\_]?
  - b. +extract-if: Paul cares about my music training. Which concert would he worry [if I miss \_\_]?
  - c. -extract-that: Paul cares about my music training. Would he worry that I miss this concert?
  - d. -extract-if: Paul cares about my music training. Would he worry if I miss this concert?

**Figure 1: E1 WHQs, null context; z-scores for (IF / That) x (WHQ, no-extract). Reliable island effect (interaction t-value = -4.12), replicating the literature**



**Figure 2: E2 RCs; z-scores for (IF / That) x (RC, no-extract). No island effect (interaction t-value = -0.65) 3-way interaction with E1/E2: t = -2.49; p = 013**



**Figure 3: E3 WHQs, supportive context; z-scores for (IF / That) x (WHQ, no-extract). No island effect (interaction t-value = -1.54) 3-way interaction with E1: t = -1.92; p = .056**

