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Structural, Functional, and Processing Perspectives on Linguistic Island Effects
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Unacceptable long-distance filler-gap structures have been called syntactic "islands" (Ross, 1967)

subject-island: ??Who do you think [NP the gift from __] prompted the rumor?
NP-island: ?? Who did you hear [NP the statement [S that the CEO promoted __]]?

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Chomsky (1973, 1977, 1981, 1986a) argued for a pure syntax account of the badness of island effects, originally called Subjacency.

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Traditionally the unacceptability of islands has been presumed to come from the grammar. Our article summarizes current evidence, which provides little support for the syntax view.

Speculation: most islands will be explained in terms of discourse, frequency, and memory.

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Sprouse et al (2012, 2016) suggest that for all islands, there is a super-additive interaction in acceptability between some 2x2 components (distance: short, long) x NP-structure (simple, complex) that contribute to the processing difficulty of the island structure.

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Short, simple: Who heard that the CEO promoted the manager?
Short, complex: Who heard the statement that the CEO promoted the manager?
Long, simple: Who did you hear that the CEO promoted __?
NP-island: Long, complex: Who did you hear the statement that the CEO promoted __?

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Sprouse et al. interpret this super-additivity as evidence for syntactic constraints making such structures syntactic islands.

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Sprouse et al. (2012): "We believe that the results of the experiments presented in this article provide strong support for grammatical theories of island effects because we can find no evidence of a relationship between processing resource capacity and island effects" p. 118

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Fallacy: Contrary to Sprouse et al., we have no reason to think that the source of super-additivity might be coming from syntax (or discourse or processing). Finding an interaction means only there is some additional factor contributing to complexity, but we do not know what

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A further issue with Sprouse et al. 2012, 2016, is that they give no theory of syntactic islands: they simply assume that the source is in the syntax

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As a result of these issues, we define syntactic "island" as an unacceptable filler-gap dependency, which has been traditionally interpreted as ungrammatical: not generated by the grammar of the language in question.

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In this article, we summarize the evidence and arguments, focusing on experimental research over the past 15 years.

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An island effect that researchers agree on: Extractions of full conjuncts (Ross 1967; Chaves & Putnam 2020):
*Who did you invite Mark and __?
*Who did you invite __ and Mark?
*Who did you invite __ and __?

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Researchers explain these phenomena in terms of the "conjunct constraint" (Sag 2010). Without movement, the definition of coordination as a construction that necessarily implies (at least) two conjuncts can account for the ill-formedness of these examples.

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Problems with assuming that other syntactic islands are ungrammatical:
Many acceptable examples have been provided (including by Ross):
e.g., counterexample to NP island
The funds that I have [hopes [the bank will squander __]] amount to more than a billion. (Ross 1967, p. 139)

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Consequently there are functional / discourse and processing explanations for many island effects.

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The functional / discourse-clash approach (Erteschik-Shir, 1973; Kuno, 1987; Deane, 1991; Goldberg, 2006): An approach proposed by Abeillé et al. (2020a) involves dispensing with linking island phenomena to fronting, in order to keep only their discourse function.

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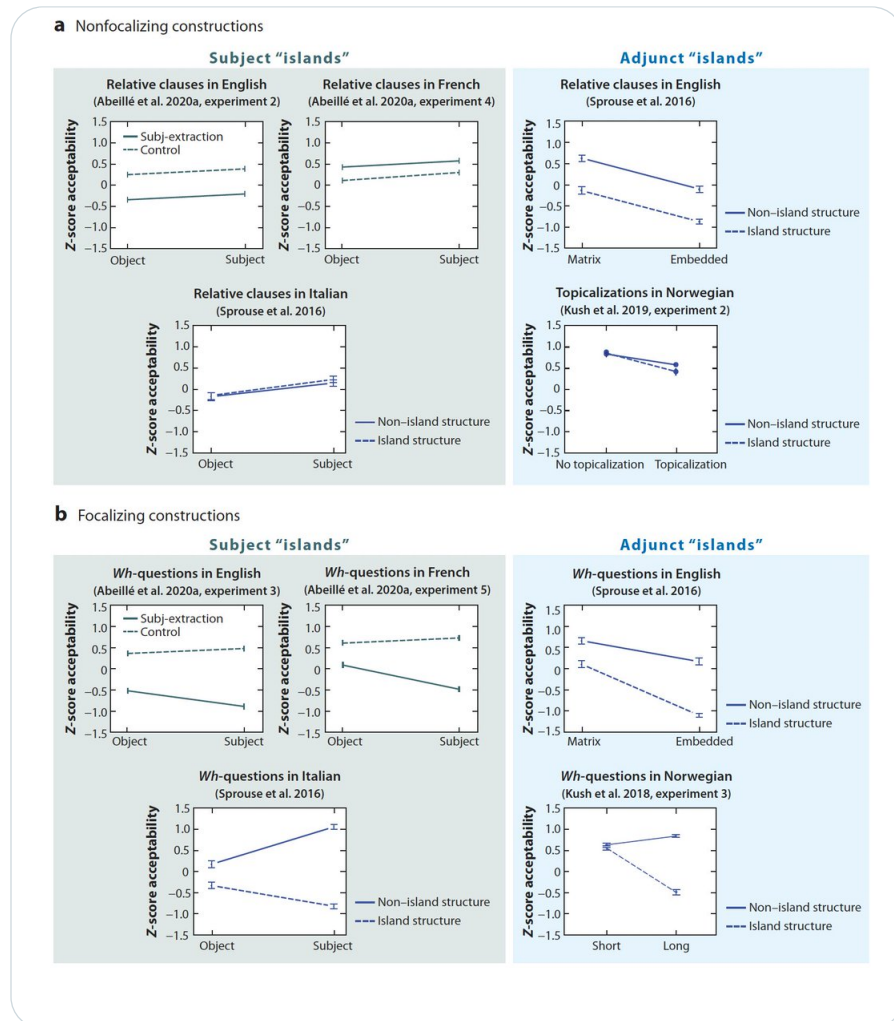**Ted Gibson, Language Lab MIT** @LanguageMIT · Jan 12, 2022

They define the Focus–Background Conflict (FBC) constraint as follows: "A focused element should not be part of a backgrounded constituent" (Abeillé et al. 2020a, p. 3) ("backgrounded" should be understood as presupposed or non-focus).

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They and others demonstrate island (unacceptable) super additive interactions for focalizing constructions (e.g., wh-questions) but no interactions for non-focalizing constructions (e.g., relative clauses)



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Another discourse factor: Relevance
An element of a sentence can be more or less related to the main question under discussion. This property, "relevance", depends on our world knowledge (Kuno, 1987).

*What did you see [a book about __]?
What did you read [a book about __]?

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Processing accounts: Island effects explained by weak encoding associated with a bare pronoun wh-word.
Hofmeister & Sag (2010); Hofmeister (2011)

who: Who did Albert learn [whether they dismissed __ ]?
which: Which employee did Albert learn [whether they dismissed __ ]?

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Island effects explained by difficult retrieval from memory (Lewis, Vasishth & Van Dyke, 2006)

Keshev&Meltzer-Asscher (2019) compared Hebrew materials with a long filler-gap dependency to matched materials with a long anaphoric dependency and found a similar interaction in both

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Lexical + construction frequency effects in Islands: Liu et al (2021) show that extractions across factive and manner-of-speaking verbs are additively explained from construction freq (low for whq) and verb subcat freq (joint prob of verb and it taking a sentence complement)

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Bridge verb: What did John say/think that Mary bought?
Factive verb: ?? What did John know/notice that Mary bought?
Manner-of-speaking verb: ?? What did John whisper/mutter that Mary bought?

So no syntactic explanation is needed.

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The structural accounts, functional/discourse accounts, and processing accounts differ in the answers they provide to a number of general questions about the human capacity of language processing

**Table 1** The three approaches discussed in this review and their predictions with respect to six major unresolved issues about the source of island effects

| Issue | Structural accounts (e.g., Chomsky 1977, 1986a) | Functional accounts (e.g., Goldberg 2006, 2013; Abeillé et al. 2020a) | Processing accounts (e.g., Hofmeister & Sag 2010, Liu et al. 2021) |
|---|---|---|---|
| The source of the island | Structural rules governing movement, as part of the innate language faculty (e.g., Subjacency) | Inaccessibility of the gap site, or clash of function between the filler-gap construction and the domain containing the gap | Processing difficulties, due to factors such as high working memory load or low linguistic exposure |
| Is gradience of island effects predicted? | Not straight-forwardly, but see Chomsky 1986a, Müller 1998, Uriagereka 2012 | Yes | Yes |
| Where grammar comes from | Innate language faculty | Exposure and statistical generalizations | Not at issue in these approaches |
| Prediction of cross-construction variation | No | Only for the discourse-clash version, due to distinct functions of different constructions | There is no explicit account predicting cross-construction variation, but such variation is possible, depending on the processing difficulty associated with each specific construction. |
| Prediction of cross-linguistic variation | Yes (e.g., bounding nodes, the core concept of Subjacency, vary across languages) | No explicit account. Human communication is expected to use a strategy based on salient and backgrounded information cross-linguistically. However, the details might differ cross-linguistically. | To the extent that constructions vary in their usage across languages, this kind of account is consistent with cross-linguistic variation (e.g., topicalization is more frequent in Norwegian than in English (Kush et al. 2019). In addition, differences in word order predict differences in processing difficulty across languages. |
| Learnability of the relevant grammatical knowledge | Some constraints are unlearnable. | Grammatical knowledge is mostly learnable. | Not at issue in these approaches |

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