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 __]]?

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.

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.

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

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

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

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.

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

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.

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)

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

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.
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).

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).
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 ___]?

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 ___]?

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

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)
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.

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>
<thead>
<tr>
<th>Issue</th>
<th>Structural accounts (e.g., Chomsky 1977, 1986a)</th>
<th>Functional accounts (e.g., Goldberg 2006, 2013; Abellé et al. 2020a)</th>
<th>Processing accounts (e.g., Hofmeister &amp; Sag 2010, Liu et al. 2021)</th>
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</thead>
<tbody>
<tr>
<td>The source of the island</td>
<td>Structural rules governing movement, as part of the innate language faculty (e.g., Subjacency)</td>
<td>Inaccessibility of the gap site, or clash of function between the filler-gap construction and the domain containing the gap</td>
<td>Processing difficulties, due to factors such as high working memory load or low linguistic exposure</td>
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<tr>
<td>Is gradience of island effects predicted?</td>
<td>Not straightforwardly, but see Chomsky 1986a, Müller 1998, Uraigereku 2012</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Where grammar comes from</td>
<td>Innate language faculty</td>
<td>Exposure and statistical generalizations</td>
<td>Not at issue in these approaches</td>
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<tr>
<td>Prediction of cross-construction variation</td>
<td>No</td>
<td>Only for the discourse-clash version, due to distinct functions of different constructions</td>
<td>There is no explicit account predicting cross-construction variation, but such variation is possible, depending on the processing difficulty associated with each specific construction.</td>
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<td>Prediction of cross-linguistic variation</td>
<td>Yes (e.g., bounding nodes, the core concept of Subjacency, vary across languages)</td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>Learnability of the relevant grammatical knowledge</td>
<td>Some constraints are unlearnable.</td>
<td>Grammatical knowledge is mostly learnable.</td>
<td>Not at issue in these approaches</td>
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</tbody>
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