“I am a rock, I am an island”: Subject islands are not reducible to discourse function

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Roadmap

1. Syntactic approaches to islands
2. Discourse function based approaches
3. Present Study
    a. Wh-Questions
    b. Relativization
    c. Topicalization
4. Comparing Constructions
5. General Discussion

Syntactic approaches to islands

- *Islands* : environments which block extraction (Ross 1967)

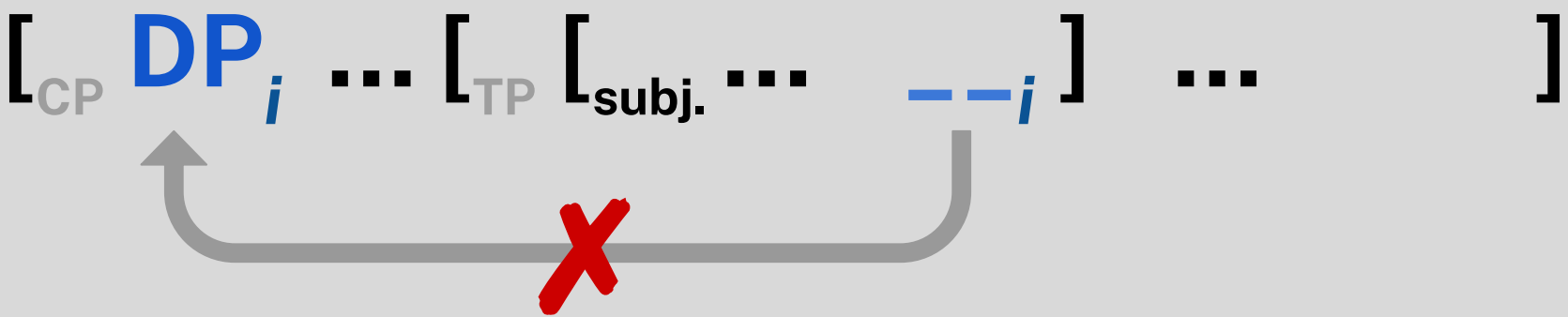
(1) a. Jaden meditated before meeting Mariella.
b. *Who$_i$ did Jaden meditate [before meeting _ _$_i$]?

- Sub-extraction of wh-phrase from an adjunct, for example, leads to ungrammaticality

Syntactic approaches to islands

(2) **a. *Who$_i$ did [a friend of __$_i$] invite to the party?**

b. Who did Sue invite [a friend of __$_i$] to the party?



Syntactic approaches to islands

(2) a. *Who$_i$ did [a friend of _ _$_i$] invite to the party?

b. Who did Sue invite [a friend of _ _$_i$] to the party?

Syntactic approaches to islands

- The unacceptability of sub-extraction from particular domains reflects **generalized syntactic constraints** on extraction
- **Subject Condition:** constituents within a syntactic subject cannot be targeted for sub-extraction (Chomsky 1973, Huang 1982, Pesetsky 1982, Privoznov 2021, Ross 1967)

Syntactic approaches to islands

- Island effects arise with a wide range of dependency formations that differ in their semantic contribution and discourse function, suggesting a common syntactic underpinning: ***movement*** (Schütze, Sprouse & Caponigro 2015)

Discourse function based approaches

- Islands reflect interactions of information-structural categories of backgroundedness, focus, and prominence (Abeillé et al. 2020, Ambridge & Goldberg 2008, Cuneo & Goldberg 2023, Erteschik-Shir 1973, Hofmeister & Sag 2010, Kuno 1987)
- Thus, the unacceptability of certain instances of (sub-)extraction is not purely syntactic in nature

Discourse function based approaches

- Extraction is restricted out of embedded contexts which are not “at-issue” (Erteschik-Shir 1973)
- Differences in the presuppositionality of verbal complements engenders contrasts in the availability of object extraction

(3) a. Who$_i$ did Nora say that Marcus visited _$_i$?

b. *Who$_i$ did Nora rejoice that Marcus visited _$_i$?

Discourse function based approaches

- Recent work suggests that the islandhood of subjects is due to their status as backgrounded (not at-issue)
- Dependencies which foreground the extracted constituent engender an *information-structural clash*:

(4) **Focus-Background Conflict Constraint (FBC):**
A focused element should not be part of a backgrounded constituent (Abeillé et al. 2020)

Discourse function based approaches

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Discourse function based approaches

- Abeillé et al. (2020) observed subject island effects with wh-questions, but not relativization, attributing the contrast to their information structure profiles
- In wh-questions, the extracted element is a focal domain, bearing prominent content (Lambrecht 1994)
- In relativization, the extracted element is ascribed some property, without a dedicated discourse function (Gundel 1988, Kuno 1976, Lambrecht 1994)

Present Study:

- We test the predictions of the FBC using a factorial design for investigating the acceptability of islands (Sprouse 2007, Sprouse et al. 2012)

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- We test the predictions of the FBC using a factorial design for investigating the acceptability of islands (Sprouse 2007, Sprouse et al. 2012)
- We compare the cost of sub-extraction from subjects and objects across **three constructions**:
    - wh-questions (WHQ)
    - relative clauses (RC)
    - topicalization (TOP)

Present Study:

- We add topicalization to the set of constructions investigated by Abeillé et al. (2020)
- In topicalization, the extracted element is marked as backgrounded, and predicated about in the proposition (Lambrecht 1994, Prince 1984)

(5) This structure$_i$, the students are familiar with _ _$_i$

✗ Wh-question

✗ Relativization

✗ Topicalization

Syntactic accounts

✗ Wh-question

✓ Relativization

✓ Topicalization

FBC

Present Study: Design

- In our factorial design, we aim to isolate the components that contribute to the difficulty of processing islands: complexity, extraction, islandhood (Sprouse 2007, Sprouse et al. 2012)
- By comparing across conditions, we can estimate the independent costs of complexity and extraction, and whether island configurations exceed these costs

Example itemset (subject position) from **Exp. 1: WHQs**

Present Study: Design

No Extraction		
a.	*Simple*	Stephanie said the investigator had already questioned the driver.
b.	*Complex*	Stephanie said the investigator of the crime had already questioned the driver.
Full Extraction		
c.	*Simple*	Which investigator did Stephanie say __ had already questioned the driver?
d.	*Complex*	Which investigator of the crime did Stephanie say __ had already questioned the driver?
Sub-Extraction		
e.	*Complex*	*Which crime did Stephanie say [the investigator of __] had already questioned the driver?

For each construction (WHQ, RC, TOP), we constructed a 2 x 2 + 1 factorial design across subject and object positions

DP Complexity
(Simple, Complex)

Extraction Type
(No Extraction, Full Extraction, Sub-extraction)

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Complexity Cost = a - b

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Complexity Cost = a - b

Extraction Cost = a - c

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e.	*Complex*	*Which crime did Stephanie say [the investigator of __] had already questioned the driver?

Complexity Cost = a - b

Extraction Cost = a - c

Predicted Costs of Complexity + Extraction = [(a-b) + (a-c)]

Present Study: Design

No Extraction		
a.	*Simple*	Stephanie said <u>the investigator</u> had already questioned the driver.
b.	*Complex*	Stephanie said <u>the investigator of the crime</u> had already questioned the driver.
Full Extraction		
c.	*Simple*	<u>Which investigator</u> did Stephanie say __ had already questioned the driver?
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Sub-Extraction		
e.	*Complex*	*<u>Which crime</u> did Stephanie say [the investigator of __] had already questioned the driver?

Complexity Cost = a - b

Extraction Cost = a - c

Predicted Costs of Complexity + Extraction = [(a-b) + (a-c)]

Sub-extraction Cost (Difference of Differences): (e) - [(a-b) + (a-c)]

Present Study: Design

No Extraction		
a.	*Simple*	Stephanie said <u>the investigator</u> had already questioned the driver.
b.	*Complex*	Stephanie said <u>the investigator of the crime</u> had already questioned the driver.
Full Extraction		
c.	*Simple*	<u>Which investigator</u> did Stephanie say __ had already questioned the driver?
d.	*Complex*	<u>Which investigator of the crime</u> did Stephanie say __ had already questioned the driver?
Sub-Extraction		
e.	*Complex*	*<u>Which crime</u> did Stephanie say [the investigator of __] had already questioned the driver?

Example itemset (subject position) from **Exp. 2: RCs**

Present Study: Design

No Extraction		
a.	*Simple*	I noticed that [Stephanie explained the investigator had already questioned the driver].
b.	*Complex*	I noticed that [Stephanie explained the investigator of the crime had already questioned the driver].
Full Extraction		
c.	*Simple*	I noticed [the investigator that Stephanie explained __ had already questioned the driver].
d.	*Complex*	I noticed [the investigator of the crime that Stephanie explained __ had already questioned the driver].
Sub-Extraction		
e.	*Complex*	*I noticed [the crime that Stephanie explained [the investigator of __] had already questioned the driver].

Example itemset (subject position) from **Exp. 3: TOP**

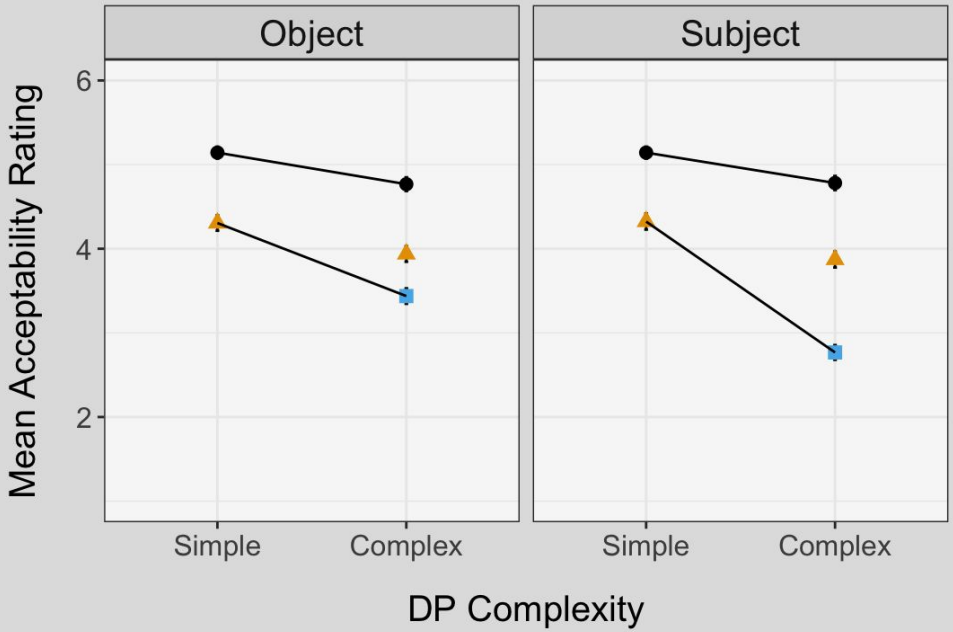
Present Study: Design

No Extraction		
a.	*Simple*	Stephanie explained the investigator had already questioned the driver.
b.	*Complex*	Stephanie explained the investigator of the crime had already questioned the driver.
Full Extraction		
c.	*Simple*	That investigator, Stephanie explained __ had already questioned the driver.
d.	*Complex*	That investigator of the crime, Stephanie explained __ had already questioned the driver.
Sub-Extraction		
e.	*Complex*	*That crime, Stephanie explained [the investigator of __] had already questioned the driver.

Present Study: Experiments

- We conducted three individual experiments for WHQ, RC and TOP constructions
  - 36 items, 72 fillers
  - 72 participants recruited via Prolific
  - Acceptability judgment task: participants rated each sentence on a 6 point scale

Results: WHQ Ratings

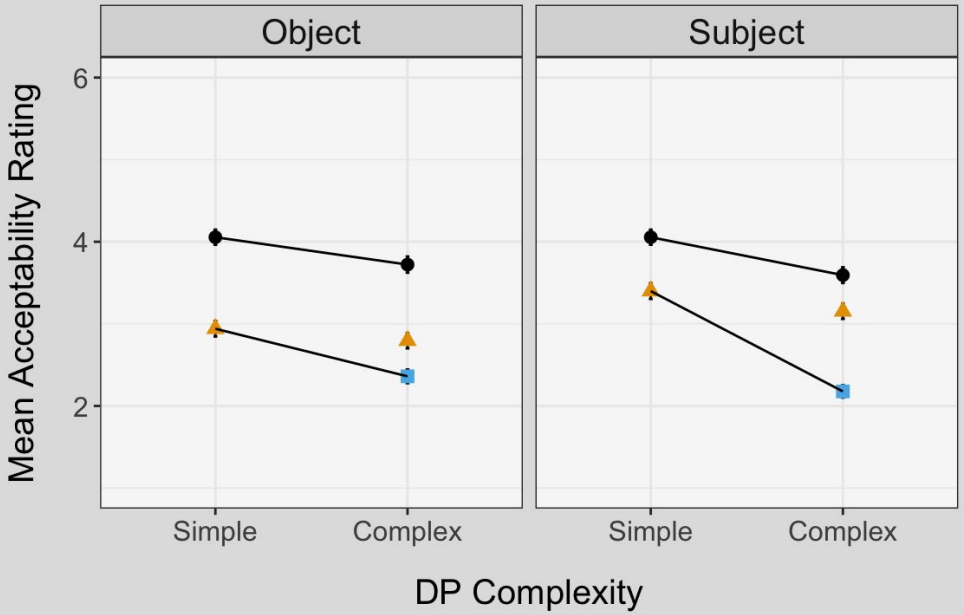


Subject DD Score:
0.79 (S.E. 0.12)

Object DD Score:
0.32 (S.E. 0.09)

Greater sub-extraction penalty for subjects vs objects
(β = -0.94, 95%CrI = (-1.54, -0.32),
Std.Err. = 0.31, Pr(β < 0) = 99%)

Results: RC Ratings

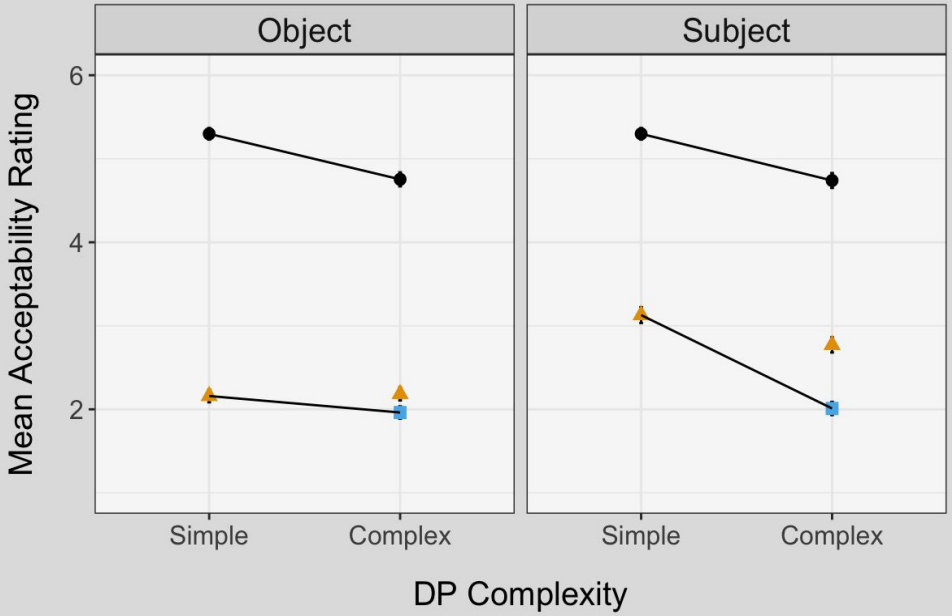


Subject DD Score:
0.49 (S.E. 0.12)

Object DD Score:
0.16 (S.E. 0.11)

Greater sub-extraction penalty for subjects vs objects
(β = -0.58, 95%CrI = (-1.17, 0),
Std.Err. = 0.30, Pr(β < 0) = 97%)

Results: TOP Ratings



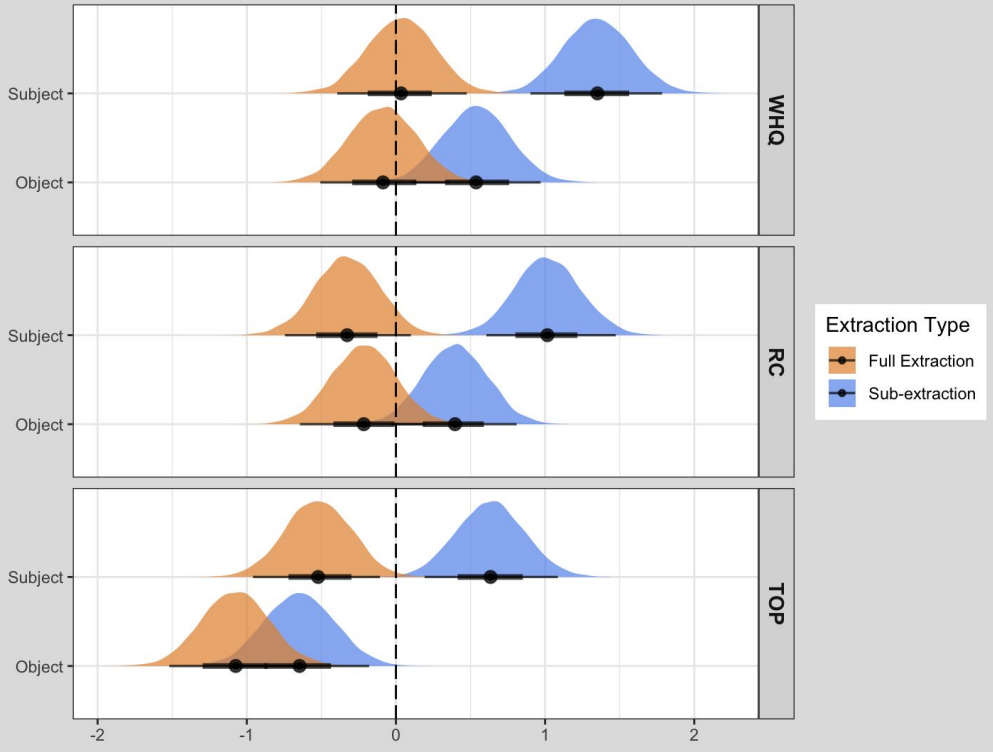
Subject DD Score:
0.29 (S.E. 0.08)

Object DD Score:
-0.19 (S.E. 0.09)

Greater sub-extraction penalty for subjects vs objects
(β = -1.24, 95%CrI = (-1.90, -0.59),
Std.Err. = 0.33, Pr(β < 0) = 100%)

To investigate the variability in sub-extraction penalties, we fit additional models to compare the costs of full extraction & sub-extraction

Comparing Constructions



Sampled posterior distributions (with 95% HPDI) of standardized extraction costs by position, faceted by experiment

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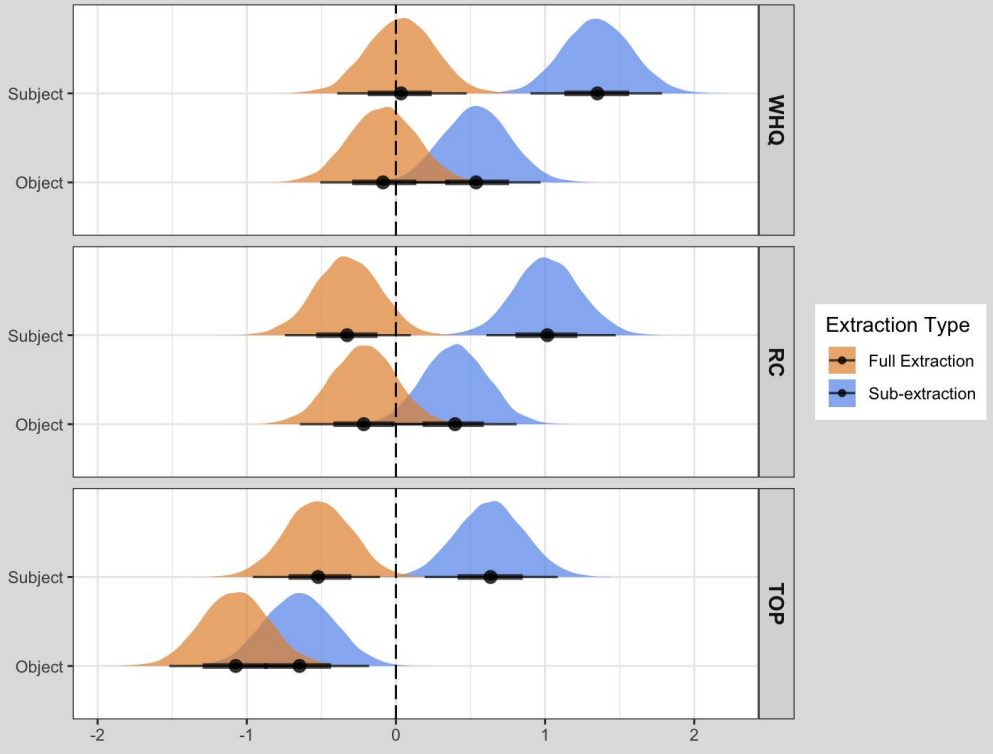
Consistently greater difference in extraction costs for subjects vs objects across WHQ, RC, & TOP



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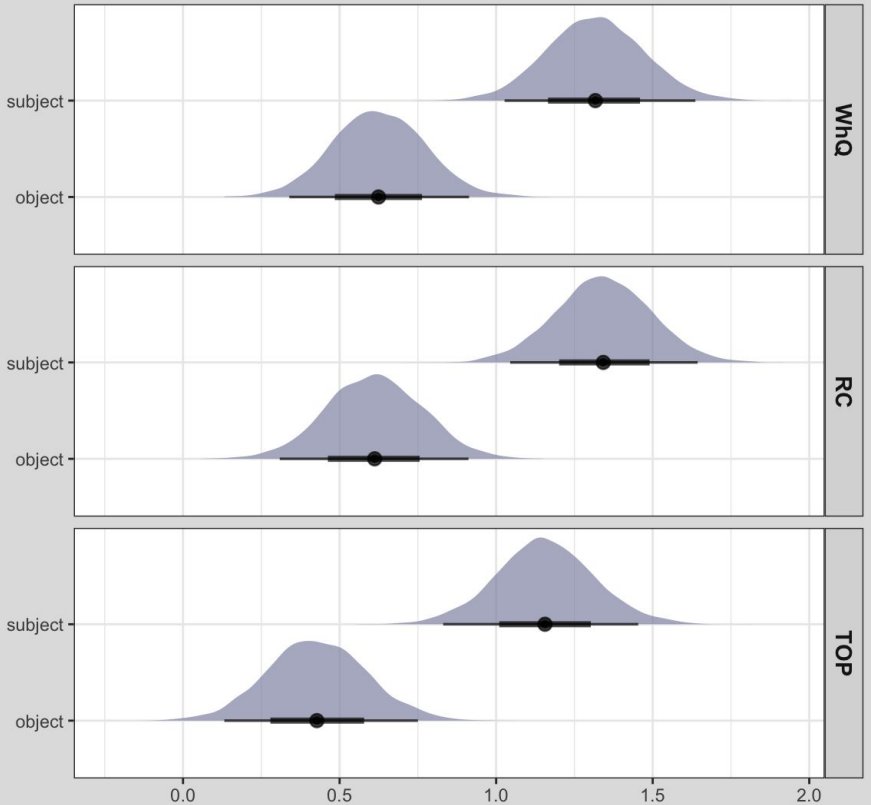

Posterior distributions (with 95% HPDI) of difference between standardized full- and sub-extraction costs by position, faceted by experiment

Discussion

- The degradation in acceptability for sub-extraction from subjects was significantly greater than the combined cost of DP complexity and extraction
- We observed an additional penalty associated with sub-extraction from subjects that is not predicted by these independent costs
- **Upshot:** subject island effects across all three constructions

Discussion

- Our findings are incompatible with the FBC, which predicts that only WHQs give rise to a subject island effect
- We found a stable difference in the extraction costs subjects vs. objects across constructions, suggesting a single underlying constraint that regulates the grammatical operation of movement

Conclusion

- We conclude that subjects are islands across TOP constructions, WHQs, and RCs, despite information structural differences between these constructions
- The ban on subject sub-extraction cannot be solely attributed to construction-specific discourse functions

Thank you!

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