The definite DP island in *wh*-questions and relative clauses

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1. Introduction

Extraction out of DPs is sensitive to the definiteness or specificity of the DP, as demonstrated in (1). While extraction is acceptable out of an indefinite DP *a picture of* (1a), extraction becomes increasingly degraded when the DP is headed by the definite *the* (1b), demonstrative *that* (1c), and possessive NP *John's* (1d).

(1) a. Which superhero did you see **a** picture of ____?
b. ?Which superhero did you see **the** picture of ____?
c. ??Which superhero did you see **that** picture of ____?
d. *Which superhero did you see **John's** picture of ____?

There have been different approaches to explain the phenomenon. A family of analyses link this restriction with structural difference between definite and indefinite DPs. Chomsky (1977) reduces the difference to specificity, while Bowers (1987) and Davies & Dubinsky (2003) propose that only definite DPs are DPs, and indefinite noun phrases are NPs. More recently Jiménez-Fernández (2012) proposes that definite DPs are phases while indefinite ones are not. Diesing (1990) and Mahajan (1992) suggest that definite DPs resist subextraction because they themselves have been moved. The structural approach, despite different mechanisms, predict that the definite DPs act as an island for A' movement in general, including *wh*-movement, relativaization, cleft, topicalization, etc.

Recently, non-syntactic approaches have been proposed which reduce the definite DP island effect to discourse-based or semantic constraints. A discourse-based approach from Abeillé et al. (2020) argues for a Focus-background conflict constraint (FBC), built on the Background Constituents are Islands constraint (BCI) originally proposed by Goldberg (2006). According to this approach, definite DPs are backgrounded, thus movement that involve focus e.g. *wh*-movement, cannot occur within them. Crucially, movement of non-focused element is predicted to be allowed out of definite DPs. On the other hand, a semantic based account proposed by Simonenko (2015) argues that the definite DP island effect is due a semantic clash between *wh*-question and anaphoric DPs. Unique DPs, which are also marked with definite articles, do not block subextraction.

This paper experimentally evaluates the discourse-based approach and the semantic approach. In Section 2, we compare definite DP islandhood in *wh*-questions and relative clauses as the structural and the FBC approach make distinct predictions there. Section 3 evaluates the semantic-based approach proposed by Simonenko (2015) by comparing the islandhood in unique definite DPs and anaphoric definite DPs.

2. Evaluating the FBC approach

Abeillé et al. (2020) propose a discourse constraint in (2). The authors argue that subject island and adjunct island can be accounted for by this constraint as most subjects and adjuncts are backgrounded. When the extracted elements are focalized as in *wh*-movement, the constraint in (2) would be violated.

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On the other hand, this approach predicts that movement that does not involve focus (e.g. relativization and topicalization) do not violate the constraint and thus do not show island effect. Empirical support from subject and adjunct island in English and French can be found in Abeillé et al. (2020, 2022).

(2) Focus-Background Conflict constraint: a focused element should no be a part of a backgrounded constituent.

Abeillé et al. (2020) expands this proposal to the definite DP island, with (3) as support. While *wh*-movement is only possible with the indefinite DPs headed by *a* and degraded with the definite DPs head by *that* in (3a), relativization is possible with both the indefinite and the definite DP. The proposal suggests that definites are backgrounded while indefinites are not. As follows, *wh*-movement, a focused movement, is degraded out of a definite DP. Because relativization is not focused, extraction is allowed regardless of whether the DP is indefinite or definite.

(3) (Grosu 1981 as cited in (Abeillé et al. 2020: 20))
   a. Which actress did you buy **a/#that** picture of ____?
   b. That is the actress who I bought **a/that** picture of ____.

However, a different empirical claim has been made since Ross (1967) in (4). As is shown, the definite DP island effect is also observed in relative clauses. The judgments in (4) are compatible with the structural approach to the definite DP island since the structure or position of the definite DPs are assumed to be constant when they are in relative clauses and *wh*-questions.

(4) a. The man who I gave John a picture of was bald.
   b. ??The man who I gave John this picture of was bald.

Given that the structural and the FBC approach to the definite DP island make distinct predictions on *wh*-questions and relative clauses, and that the empirical evidence is under debate, this paper uses experimental methods to verify the island effect in *wh*-questions and relative clauses in English. As a spoiler, we found definite DP island effect in both *wh*-questions and relative clauses.

2.1. Experiment 1: wh-movement

2.1.1. Design

Exp 1 tests definite DP island effect in English *wh*-questions. We use a 2 × 2 factorial design, following Sprouse et al. (2016) among others. Two factors are included: DP Type (indefinite vs. definite DPs) and Dependency Length (short dependence vs. long dependence). This gives us the four conditions in (5).

(5) a. I wonder which journalist ____watched a movie about Wonder Woman. IND | SH
   b. I wonder which superhero Amy watched a movie about ____. IND | LG
   c. I wonder which journalist ____watched that movie about Wonder Woman. DEF | SH
   d. I wonder which superhero Amy watched that movie about ____. DEF | LG

The factorial design allows us to isolate the effect of DP Type, the effect of Dependency Length, and the effect of extraction from an island construction. The penalty of the presence of a definite DP would be the difference between the rating of (5a) and (5c). The effect of long distance movement would be the difference between (5a) and (5b). The island effect is present if the penalty of extraction from a definite DP is larger than the penalty of long movement and the penalty of a definite DP combined, i.e. a superadditive effect. This can be quantified with the Difference in Difference (DD) score, which is calculated as ((5c) - (5d)) - ((5a) - (5b)). A positive DD score indicates the island effect while the lack of the island effect is indicated by a DD close to zero. Statistically, the island effect is present if a significant interaction is found between the two factors.

2.1.2. Materials and procedure

16 lexically matched items were constructed for each condition, an example of which is (5). To keep the length and complexity of the sentences similar to relative clauses in Exp. 2, embedded *wh*-questions were used. We choose D-linked *wh*-elements (e.g. *which superhero*) to avoid potential processing difficulties of bare *wh*-elements (Hofmeister & Sag 2010). All object DPs involve depiction nouns, e.g. *picture*. The demonstrative *that* is used in the definite DP conditions to keep consistent with the examples in (3). We avoided using verb of creation as the main verb since they have been shown to ameliorate the definite DP island effects (Davies & Dubinsky 2003, Erteschik-Shir & Lappin 1979, Lim 2022).

Each participant saw 4 items per condition for a total of 16 test items. Additionally, there were 32 filler items and 5 check items to ensure participants were paying attention and were native speakers of English. The participants were asked to rate the sentences on a 7 point scale where 1 was labeled as *completely unacceptable* and 7 as *completely acceptable*. All test items were randomised with PCIbex farm and 66 native speakers of American English were recruited over Prolific.

2.1.3. Results

The ratings were z-score transformed. The mean rating for each condition is shown in Table 1. The DD score ((def.sh - def.lg) - (ind.sh - ind.lg)) is 0.34.

conditions	**DP Type**	**Dependency Length**	**z-score**
ind-sh	indefinite	short	0.85
ind-lg	indefinite	long	0.45
def-sh	definite	short	0.94
def-lg	definite	long	0.20

Table 1: Results of Exp 1 definite DP island in *wh*-questions

A linear mixed effect model was constructed with DP Type and Dependency Length as fixed factors and items and subjects as random factors. The model revealed a significant main effect of DP Type (F=4.25, p = 0.0425), where indefinite DPs are more acceptable than definite DPs. A significant main effect of Dependency Length was also revealed (F=171.62, p <.0001), where short movement is more acceptable than long movement. Crucially, there is a significant interaction of the two factors (F = 21.56, p <.0001), indicating the definite DP island effect. The results here verified the island status in *wh*-questions, which is compatible with both the structural and the FBC approach.

2.2. Experiment 2: Relativization

2.2.1. Design, materials, and procedure

Exp 2 uses the same design and set up to test definite DP island in relative clause. Examples of the test items for the four conditions are shown in (6). Each list include 4 items per condition and the same filler and check items were included. 64 participants were recruited for Experiment 2. There was no overlap of participants between the experiments.

(6) a. I recognized the journalist who ____watched a movie about Wonder Woman. IND | SH
b. I recognized the superhero who Amy watched a movie about ____. IND | LG
c. I recognized the journalist who ____watched that movie about Wonder Woman. DEF | SH
d. I recognized the superhero who Amy watched that movie about ____. DEF | LG

2.2.2. Results

The 7 point ratings were z-score transformed in Table 2. The DD score ((def.sh - def.lg) - (ind.sh - ind.lg)) is 0.24.

conditions	DP Type	Dependency Length	z-score
ind-sh	indefinite	short	0.79
ind-lg	indefinite	long	0.26
def-sh	definite	short	0.87
def-lg	definite	long	0.10

Table 2: Results of Exp 2 definite DP island in relative clause

The same linear mixed effect model was constructed. The model reveal a significant effect of Dependency Length ($F = 196.99$, $p < .0001$) with long movement rated lower than short movement. No main effect of DP Type was revealed ($F = 1.52$, $p = .22$). Crucially there is a significant interaction between DP Type and Dependency Length($F = 12.1$, $p < .001$). The significant interaction and the positive DD score indicates the island effect in relative clauses.

2.3. Discussion of Experiments 1 and 2

Results from Experiments 1 and 2 reveal definite DP island effect in both *wh*-questions and relative clauses. As laid out above, the FBC approach predicts that movement in relative clause does not show island effect, contrary to the findings. On the other hand, the structural approach makes the correct prediction: regardless of the discourse functions of the movement, the structure of the definite DPs remains the same and is predicted to block subextraction.

An ad hoc analysis combining Exp 1 and 2 was run with DP Type, Dependency Length, and Construction (*wh*-question vs. relative clause) as fixed factors and items and subjects as random factors. The model did not reveal a significant three-way interaction ($F = 0.8464$, $p = 0.36$).[1] In other words, we did not find evidence showing different island effect sizes between *wh*-questions and relative clauses.

2.4. Experiments 3 and 4: Pied-piping

In Exp 1 and 2, items in the the long conditions involve P-stranding as shown in (7). P-stranding is the default option for extraction from NPs in English.

(7) a. I wonder which superhero Amy watched that movie **about** ____. Exp 1
b. I recognized the superhero who Amy watched that movie **about** ____. Exp 2

Another option is pied-piping, moving the entire PP instead of the DP as is shown in (8). Experiments on subject island in Abeillé et al. 2020 revealed different locality profiles of P-stranding and pied-piping. Namely, while P-stranding shows subject island effects for both *wh*-questions and relative clauses, pied-piping only shows subject island effects in *wh*-questions and not relative clauses. To be thorough, we conducted two additional experiments using pied-piping.

(8) a. I wonder **about** which superhero Amy watched that movie ____. Exp 3
b. I recognized the superhero **about** who Amy watched that movie ____. Exp 4

Exp 3 tests definite DP island effect in *wh*-questions with pied-piping and Exp 4 tests the effect in relative clauses with pied-piping. Exp 3 uses the same design and setup as Exp 1 and 2 with the only difference being that the long conditions use pied-piping. Sample items for each condition are shown in (9). 64 participants were recruited via Prolific.

(9) a. I wonder which journalist ____watched a movie about Wonder Woman. IND | SH
b. I wonder about which superhero Amy watched a movie ____. IND | LG

[1] lmer(judgment ~DpType*DependencyLength*Construction + (1+DpType*DependencyLength*Construction|subject) + (1|lexical), data=d)

c. I wonder which journalist ____watched that movie about Wonder Woman. DEF | SH

d. I wonder about which superhero Amy watched that movie ____. DEF | LG

The mean z-scores for each condition are shown in Table 3. The DD score is 0.21. The linear mixed effect modal revealed a main effect of DP Type (IND>DEF; $F = 10.47$, $p < .01$) and Dependency Length (SH>LG; $F = 272.7$, $p < .0001$). Crucially there is a significant interaction effect between the two factors ($F = 6.39$, $p = 0.014$). The signature of definite DP island is found.

Exp 4 tests relative clauses with pied-piping, as seen in (10). Otherwise, the design and setup are identical to Exp 2. 63 participants were recruited for this experiment.

(10) a. I recognized the journalist who ____watched a movie about Wonder Woman. IND | SH

b. I recognized the superhero about who Amy watched a movie ____. IND | LG

c. I recognized the journalist who ____watched that movie about Wonder Woman. DEF | SH

d. I recognized the superhero about who Amy watched that movie ____. DEF | LG

The mean z-scores for each condition are shown in Table 3. There was a positive DD score of 0.20. The linear mixed effect model revealed a main effect of DP Type (IND>DEF; $F = 5.36$, $p = 0.021$) and Dependency Length (SH>LG; $F = 1013.14$, $p < .0001$). Crucially, the significant interaction effect between the two factors remained ($F = 6.97$, $p = .008$).

conditions	DP Type	Dependency Length	Exp 3	Exp 4
ind-sh	indefinite	short	0.99	0.92
ind-lg	indefinite	long	0.22	-0.12
def-sh	definite	short	0.95	0.94
def-lg	definite	long	-0.03	-0.3
DD score			0.21	0.20

Table 3: Results of Exp 3 and 4 definite DP island with pied-piping

A analysis combining results from Exp 3 and 4 did not find a significant three way interaction ($F = 0.02$, $p = 0.887$). As with P-stranding, there is no significant difference between *wh*-questions and relative clauses regarding the size of island effect.

2.5. Discussion of Exp. 1-4

In Experiments 1-4, we found that, in English, the definite DP island effect in *wh*-questions and relative clauses regardless of whether the movement involved is pied-piping or P-stranding. No difference was observed between focus and non-focus constructions, i.e. *wh*-questions and relative clauses. This result is surprising for the FBC approach to the definite DP island, but is expected for approaches that treat this island effect as a constraint on A' movement in general, e.g. the structural approach. The results here contrast with the experimental results reported for subject island and adjunct island in (Abeillé et al. 2020, 2022) and beg the question on how extendable the FBC approach to island constraints is.

3. Evaluating a semantic analysis

In this section we evaluate a semantics analysis of the definite DP island effect proposed by Simonenko (2015). The proposal builds on Austro-Bavarian German, which has a strong and a weak definite article. DPs headed by the weak article *d* correspond to a unique definite that requires "a unique individual with a nominal property in the Common Ground" (p. 667). In contrast, the strong article *die* (which corresponds to an anaphoric definite) requires "the presence of an indefinite anaphoric antecedent" (p. 667), i.e. an anaphoric definite. Simonenko (2015) observes that the strong definite article blocks subextraction out of the DP while the weak article allows subextraction. In other words, the definite DP island effect only appears in anaphoric definite DPs headed by the strong article. The context in (11) restricts

the interpretation to the anaphoric definite, which matches the strong article used. The extraction is unacceptable. On the other hand, the context in (12) involves a unique definite, which matches the weak article used. The extraction is acceptable.

(11) **Context establishing an antecedent**: Hans' mom told Hans' dad that the kid read a story she wrote about a stuffed animal. Hans' dad asks her,

*Über wen hot da Hons [**die** Gschicht t] glesn?
about who has det_w Hans **det**$_s$ story t read

'Who did Hans read the story about?' (Simonenko 2015: 667)

(12) **Context establishing uniqueness**: Hans' mom wrote a story about each of Hans' stuffed animals: Peter, Elsa, and Otto, respectively. Hans read one story. Hans' dad asks Hans mom,

Über wen hot da Hons [**d** Gschicht t] glesn?
about who has det_w Hans **det**$_w$ story t read

'Who did Hans read the story about?' (Simonenko 2015: 667)

Based on the contrast above, Simonenko (2015) proposes that the island effect of definite DPs results from an interaction of the semantics of the strong article and the semantics of the *wh*-question. Essentially, *wh*-subextraction out of directly referential DPs would result in a trivial question, hence the unacceptability. She additionally notes that the English definite article *the* involves lexical ambiguity between the unique and the anaphoric definite.

The semantic approach accounts for the contrast between definite and indefinite DPs reported in Exp 1-4 in a straight-forward way: subextraction out of indefinite DPs do not make the questions trivial and thus the island effect does not appear.[2] Extending the approach to English can also account for the observed contrast between the definite article and demonstratives in blocking subextraction in English shown in (13): the definite DP island effect on DPs headed by *the* has been observed to be weaker than that on demonstrative DPs. This is accounted for if demonstratives unambiguously head anaphoric DPs which are islands, while the definite article *the* allows unique definite DPs which allow subextraction.

(13) a. ?Who did you see the picture of ____?
b. ??Who did you see this picture of ____?

Moreover, previous experimental studies found dubious evidence for island effect with DPs headed by *the*: Tollan & Heller (2016) found island effects for a sentence completion task, but not for self-paced reading tasks; Neal & Dillon (2021) found significant island effects for matrix questions, but marginal effects for embedded questions; Shen & Lim (2022) found significant effects for bare *wh*-elements, but marginal effects with D-linked *wh*-elements. This contrasts with the island effect found on DPs headed by the demonstratives. As shown in Exp 1 and 3, D-linked *wh*-elements show significant island effect. Based on the semantic approach, the mixed patterns observed above could result from the ambiguity of English *the*. Participants that interpreted the DPs as unique definites will allow subextraction whereas those who interpreted the DPs as anaphoric definite DPs will disallow subextraction, rendering mixed results. The semantic approach then predicts that when contexts are controlled for, a context that requires an anaphoric definite would show island effects for *wh*-movement while a context that requires a unique definite would not. Experiments 5 and 6 test this prediction.

3.1. Experiment 5: Anaphoric definite

Exp 5 tests the island effect for the anaphoric definite while Exp 6 tests the island effect for the unique definite. Exp 5 and 6 use the same 2 × 2 design as in Exp 1-4. The two factors are DP Type (indefinite vs definite) and Dependency Length (short vs long). To control the reading of DPs, we precede each

[2] Simonenko (2015) focuses on *wh*-questions and leaves definite DP island effect in relative clauses open, though see brief discussion in Simonenko 2015: 699.

item with a context. In Exp 5, the items are presented as a conversation between A and B with A's utterance setting the context. The contexts were constructed based on examples given in Simonenko 2015. A sample of test items are shown in (14). In the long conditions, A's utterance contains a linguistic indefinite antecedent (*a movie about Wonder Woman* in (14)) which the definite DP in B's utterance refers to, rendering the anaphoric reading. Participants were instructed to rate "*how natural B's response is to A's utterance*" on a 7 point Likert scale.

(14) a. A: Someone watched a movie about Wonder Woman last night.
B: Who watched a movie about Wonder Woman? IND | SH

b. A: Amy watched a movie about someone last night.
B: Who did Amy watch a movie about? IND | LG

c. A: Someone watched a movie about Wonder Woman last night.
B: Who watched the movie about Wonder Woman? DEF | SH

d. A: Amy watched a movie about someone last night.
B: Who did Amy watch the movie about? DEF | LG

The test items in Exp 5 (and 6) are matrix questions. The definite conditions use the definite article *the*, unlike the demonstratives used in Exp 1-4. Each list contains 16 test items and 32 filler items (also with context setting utterances). Apart from the 5 catch items, two additional items were added to check if the participants paid attention to the context setting utterance. Participants who failed one or both context checks were excluded from the analysis. The study was conducted on PCIbex and the participants were recruited for the experiment via Prolific. Results from 66 participants were included in the analysis.

The mean z-score for each condition and the DD score are shown in Table 4. The DD score is positive (0.18). Note that the z-scores for the long conditions in Exp 5 are well above 0, as a result, the DD score is numerically smaller than that of Exp 1-4. This could result from the task: instead of the acceptability of the sentences as in Exp 1-4, the participants were asked to rate how natural the sentences as responses to the preceding utterance. What is important here is the difference among the conditions.

Linear mixed effect model with DP Type and Dependency Length as fixed factors and lexical and subject as random factors revealed a main effect of DP Type (IND>DEF; $F = 5.13$, $p < .05$) and Dependency Length (SH>LG; $F = 59.86$, $p < .05$). There was also a significant interaction between the two factors ($F = 16.82$, $p < .001$). The positive DD score and the interaction indicate definite DP island effect in anaphoric definite DPs as is predicted by the semantic approach.

conditions	DP Type	Dependency Length	z-score
ind-sh	indefinite	short	0.87
ind-lg	indefinite	long	0.79
def-sh	definite	short	0.91
def-lg	definite	long	0.65
DD score			0.18

Table 4: Results of Exp 5 definite DP island with anaphoric definite

3.2. Experiment 6: Unique definite

Having established the island effect in anaphoric definites in Exp 5, we turn to the unique definites in Exp 6, which the semantic approach predicts not to show island effect. Exp 6 uses the same 2×2 design as Exp 5, however, the context is set so that the *unique* definite reading is induced. The contexts were constructed based on examples given in (Simonenko 2015). A sample of the conditions is shown in (15). The context seeks to set out a unique referent. In this case, the context establishes that there is a unique movie about each superhero.

To distinguish from the anaphoric reading which requires a linguistic antecedent, the items in Exp 6 are not set up as a conversation, but rather a scenario and an utterance uttered in this scenario. Thus the definite DP in the utterance would not refer to any linguistic antecedent, ruling out the anaphoric reading. Participants were asked to rate '*'How natural is A's utterance in the scenario?*"

(15) a. Scenario: *Three superhero movies were just released this weekend, one about Wonder Woman, one about Batman, and one about Aquaman. Someone watched the one about Wonder Woman.*
A: Who watched a movie about Wonder Woman? IND | SH

b. Scenario: *Three superhero movies were just released this weekend, one about Wonder Woman, one about Batman, and one about Aquaman. Amy watched one of them.*
A: Who did Amy watch a movie about? IND | LG

c. Scenario: *Three superhero movies were just released this weekend, one about Wonder Woman, one about Batman, and one about Aquaman. Someone watched the one about Wonder Woman.*
A: Who watched the movie about Wonder Woman? DEF | SH

d. Scenario: *Three superhero movies were just released this weekend, one about Wonder Woman, one about Batman, and one about Aquaman. Amy watched one of them.*
A: Who did Amy watch the movie about? DEF | LG

As in all experiments above, 16 lexically matched sets were constructed. Each list includes 16 test items (4 items per condition) and 32 filler items. The fillers were also presented with preceding scenarios. 7 check items were included as in Exp 5. Results from 65 participants who did not participate in any experiments above were included in the analysis.

The mean z-score for each condition is shown in Table 5. The DD score is 0.15. The linear mixed effect model revealed a significant main effect of DP Type (IND>DEF; $F = 4.73$, $p < .05$), and no main effect of Dependency Length ($F = 1.18$, $p = 0.287$). There was a significant interaction between the two fixed factors ($F= 5.94$, $p < .05$). The significant interaction and the positive DD score indicate island effect in the unique definite, just like the anaphoric definite.

conditions	DP Type	Dependency Length	z-score
ind-sh	indefinite	short	0.76
ind-lg	indefinite	long	0.74
def-sh	definite	short	0.76
def-lg	definite	long	0.59
DD score			0.15

Table 5: Results of Exp 6 definite DP island with unique definite

3.3. Discussion of Experiments 5 and 6

The results of Exp 6 are unexpected for the semantic approach proposed in Simonenko (2015), according to which, unique definite DPs should not show island effect. Combining the results from Exp 5 and 6, a linear mixed effect model was constructed with DP Type, Dependency Length, and Definite Type (anaphoric vs. unique) as fixed factors and subject and items as random factors. The model did not reveal significant three way interaction ($F = 0.1387$, $p = 0.71$), suggesting that the DP island effect does not differ between anaphoric and unique definite DPs.

The results of Exp 5 and 6 are compatible with accounts that do not rely on the interpretation of the DPs. For example the structural approach mentioned above and the discourse-based approaches like the FBC approach or the dominance approach (Erteschik-Shir & Lappin 1979). However, the findings do not necessary falsify the semantic approach to the definite DP island. From example, it is possible that the context manipulation in Exp 5 and 6 did not adequately induce the intended readings. It is also possible that the semantic approach is applicable to the strong and weak articles in Austro-Bavarian German but not the English definite article *the*. Further studies are required to investigate these possibilities.

4. Conclusion

In this paper, aspects of two different approaches to the definite DP island were experimentally tested. Exp 1-4 evaluated whether the FBC approach from Abeillé et al. (2020) can be extended to the definite DP island. The results show evidence for island effects in both *wh*-questions and relative clauses, regardless

of whether there was P-stranding or pied-piping, which was not predicted by the discourse-based, FBC approach. Exp 5 and 6 evaluated a semantic approach from Simonenko (2015) and found island effects in anaphoric and unique DPs. This result is also not predicted by the semantic approach.

This paper adds to the growing experimental work looking into definite DP island effects and island effects in general. Given the results, an adequate analysis of the definite DP island needs to account for the islandhood in both *wh*-questions and relative clauses, as well as in both anaphoric and unique definite DPs. At the same time, the effect size of DP island observed in the experiments is smaller than other islands including subject island, adjunct island, and *wh*-island, which remains unexplained in all the analyses we are aware of.

References

Abeillé, Anne, Barbara Hemforth, Ruihua Mao & Edward Gibson. 2022. Acceptability of extraction out of English adjunct clauses: The role of topicalization. In *The 35th annual conference of Human Sentence Processing*.

Abeillé, Anne, Barbara Hemforth, Elodie Winckel & Edward Gibson. 2020. Extraction from subjects: Differences in acceptability depend on the discourse function of the construction. *Cognition* 204. 104293.

Bowers, John. 1987. Extended X-bar theory, the ECP, and the left branch condition. In *Proceedings of the 6th west coast conference on formal linguistics*, vol. 6, 47–62.

Chomsky, Noam. 1977. On wh-movement. *Formal Syntax* 65. 71–132.

Davies, William D & Stanley Dubinsky. 2003. On extraction from NPs. *Natural language & linguistic theory* 21(1). 1–37.

Diesing, Molly. 1990. *The syntactic roots of semantic partition*. University of Massachusetts Amherst.

Erteschik-Shir, Nomi & Shalom Lappin. 1979. Dominance and the functional explanation of island phenomena. *Walter de Gruyter & Co.*

Goldberg, Adele. 2006. *Constructions at work: The nature of generalization in language*. . Oxford: Oxford University Press.

Hofmeister, Philip & Ivan A. Sag. 2010. Cognitive constraints and island effects. *Language* 86. 366–415.

Jiménez-Fernández, Ángel L. 2012. A new look at subject islands: The phasehood of definiteness. *Anglica Wratislaviensia* 50. 137–168.

Lim, Meghan. 2022. *The bridging effects of verbs of creation: An experimental look*. National University of Singapore MA thesis.

Mahajan, Anoop. 1992. The specificity condition and the ced. *Linguistic Inquiry*. 510–516.

Neal, Anissa & Brian Dillon. 2021. Definitely islands? Experimental investigation of definite islands. *Experiments in Linguistic Meaning* 1. 237–248.

Ross, John Robert. 1967. *Constraints on variables in syntax.* Massachusetts Institute of Technology dissertation.

Shen, Zheng & Meghan Lim. 2022. Extraction from definite, indefinite, and superlative DPs: An experimental approach. *Proceedings of the 52th annual meeting of North East Linguistics Society*.

Simonenko, Alexandra. 2015. Semantics of DP islands: The case of questions. *Journal of semantics* 33(4). 661–702.

Sprouse, Jon, Ivano Caponigro, Ciro Greco & Carlo Cecchetto. 2016. Experimental syntax and the variation of island effects in English and Italian. *Natural language & linguistic theory* 34(1). 307–344.

Tollan, Rebecca & Daphna Heller. 2016. Elvis Presley on an island: wh dependency formation inside complex NP objects. *Proceedings of North East Linguistics Society 46 (NELS)* 46.