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EFFECTS OF UNIQUENESS ON EXTRACTION FROM DEFINITE NP OBJECTS*

Rebecca Tollan[1], Bahareh Doroudiani[2], and Daphna Heller[2]

[1]University of Delaware [2]University of Toronto

Going back to Ross (1967) and Chomsky (1973), it is recognized that acceptability of *wh* extraction out of syntactic "island" configurations is ill-formed. One kind of configuration which has received a lot of attention is NP objects. Here, extraction is sensitive to definiteness: Whereas extraction from an indefinite NP is judged as grammatical, extraction from a definite NP is reported to be ungrammatical (e.g., *Which book did Sharon read a/*the chapter of?*; Fiengo & Higginbotham, 1981). However, NPs are not homogeneous (Grimshaw, 1990), but minimally comprise (i) concrete (ii) result, and (iii) process nouns. It has been claimed that these three nominal subclasses respond differently to the definiteness asymmetry in NP subextraction (Davies & Dubinsky, 2003). We re-examine Davies & Dubinsky's generalizations using three acceptability judgement experiments, coupled with novel corpus data. We demonstrate the relevance of the distinction between relational nouns (e.g., *chapter*) and functional nouns (e.g., *title*). We propose a novel analysis whereby questions with extraction out of a definite object are degraded if uniqueness presupposition of definite *the* is not satisfied. This extends a growing body of literature arguing that most "island" effects are not rooted in syntax but arise from semantic-pragmatic inconsistencies (Erteschik-Shir, 1973; Szabolcsi & Zwarts, 1993; Abrusán, 2011; Abeillé, Hemforth, Winckel & Gibson, 2020, a.o.).

Keywords. *Wh* dependencies, NP objects, island effects, definiteness, uniqueness, A-bar movement.

1. Introduction

Constructions such as *wh* questions and relative clauses involve filler-gap dependencies, in which a displaced *wh* phrase appears at a place in the sentence different from where it is assigned its thematic interpretation. Current syntactic theory posits that these constructions involve *A-bar movement*, whereby the *wh* phrase is base-generated in its thematic position and undergoes movement to the left-peripheral edge of the clause, a process often referred to as *extraction*. It has been known since at least Ross (1967) that A-bar movement is not unrestricted: There are various structural configurations that constitute *islands*, meaning that *wh* extraction is disallowed. These include clausal subjects (1a), adjunct clauses (1b), embedded *wh* clauses (1c) (see e.g., Szabolcsi, 2006, for a comprehensive overview).

(1) a. *Which book did [the cover of __] surprise Sharon? *Subject island*
b. *Which book did Sharon visit Peter [after she read __]? *Adjunct island*

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c. *Which book did Sharon wonder [who read __]? *Wh island*

One such configuration that has generated widespread discussion is the so-called "definite NP island". Historically, an NP object is said to constitute an island when it is definite[1], in which case extraction is degraded, as flagged by the asterisk in (2a). This situation changes, however, when the NP is *in*definite, in which case extraction is permitted (Fiengo & Higginbotham, 1981), as in (2b).

(2) a. * Who did Sharon read [**the** book about __]?
b. Who did Sharon read [**a** book about __]?

(Davies & Dubinsky, 2003: 24)

The source of the contrast in acceptability between constructions like (2a) and (2b) has been a topic of ongoing empirical study and extensive theoretical debate (Fiengo & Higginbotham, 1981, Bowers, 1987; Diesing, 1990;; Davies & Dubinsky, 2003; Jiménez-Fernandez, 2012; Simonenko, 2015; Tollan & Heller, 2016; Abeillé, Hemforth, Winckel & Gibson, 2020: 20; Chaves & Putman, 2020; Neal & Dillon, 2021; Shen & Lim, 2022, a.o.). Broadly speaking, formal approaches to the contrast in (2) typically fall into one of two approaches: those claiming that the source of the definiteness restriction is structural – or syntactic – in nature (Bowers, 1987; Diesing, 1990; Mahajan, 1992; Davies & Dubinsky, 2003; Jiménez-Fernandez, 2012; Shen & Lim, 2022), and those that appeal to semantic and pragmatics factors (Simonenko, 2015; Abeillé, Hemforth, Winckel & Gibson, 2020:20; Chaves & Putnam, 2020).

Davies & Dubinsky (2003) point out that the asymmetry in (2) does not hold for *all* nominals. They propose that nouns fall into three groups that each exhibits different behavior with respect to the definite NP island. In particular, **concrete** nouns (e.g., *dog* in 3) disallow *wh* extraction altogether; **result** nouns (e.g., *book* in 4) exhibit the definiteness asymmetry, whereas **process** nouns (e.g., *examination* in 5) allow *wh* extraction independent of the determiner of the object. In other words, Davies & Dubinsky (henceforth: D&D) argue that only result nouns actually exhibit the definiteness asymmetry introduced in (2).

(3) CONCRETE
a. *Which neighbor did Shelly find [a **dog** of __] next to a tree?
b. *Which neighbor did Shelly find [the **dog** of __] next to a tree?
(adapted from D&D, 2003: 16)

[1] Our focus here is on definite descriptions (for example, we do not discuss demonstratives). Defining definiteness goes beyond the scope of this paper.

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(4) RESULT[2] [= (2)]
a. Who did Sharon read [a **book** about __]?
b. * Who did Sharon read [the **book** about __]?
(D &D, 2003: 24)

(5) PROCESS
a. Which patient did the surgeon forget to observe [an **examination** of __]?
b. Which patient did the surgeon forget to observe [the **examination** of __]?
(adapted from D&D, 2003: 17)

Davies & Dubinsky (2003) tie this subextraction behavior to the argument structure of the different noun classes, adopting Grimshaw (1990)'s typology. First, concrete nouns usually refer to tangible objects, and, therefore, tend not to have arguments: That is, the PP material that follows a concrete N^0 is not actually true syntactic "complement" structure, but is an adjoined XP. D&D argue that extraction out of these complex concrete NPs is disallowed in parallel to the ban on extraction from adjuncts in general (cf. 1b); thus, definiteness has no bearing on the acceptability of extraction here. Second, result nouns are associated with certain complements that are not arguments but are nonetheless linked to participants in the noun's lexical-conceptual structure: a book, for example, is always about something or someone, and so the existence of that something or someone is implied by the noun *book*. D&D take a *syntactic* approach to the definiteness asymmetry of result NPs, arguing that definite D^0s constitute "blocking categories" or "barriers" for extraction (Bowers, 1987). Indefinite result NPs, on the other hand, do not comprise a DP layer and therefore permit extraction.[3] Finally, process nouns are complex event nominals, often derived from verbs that select for complements, and therefore have a full argument structure (A-structure): As per Chomsky (1986), post-nominal elements can be extracted here because extraction from arguments is generally allowed. Importantly, for process nouns, D&D propose that abstract incorporation of the head N^0 with the eventive verb from which it is derived voids barrierhood of the D^0 at LF, meaning that definiteness does not impact well-formedness of extraction these NPs. According to D&D, therefore, the only acceptable extraction out of a definite complex DP object is found with process nouns.

More recently, D&D's empirical generalizations have been called into question based on both experimental findings (Tollan & Heller, 2016) and naturally-occurring, corpus examples (Chaves & Putnam, 2020). First, Tollan & Heller (2016) conducted an experimental study examining result

[2] D&D note that certain nouns, like *book,* behave as "representational" nouns in the sense that they can have a result reading or a concrete reading, depending on the selecting verb. When the selecting verb determines an informational reading, as in (14), wherein the reading pertain to the information contained within the book rather than the physical object itself, book behaves as a result nominal with respect to extraction. When the selecting verb instead determines a physical reading, as in *destroy a book*, the same noun behaves as a concrete nominal and extraction is not permitted regardless of definiteness (e.g., **Who did Sharon destroy a/the book about __ ?*).

[3] In the context of more recent developments in syntactic theory, this would mean that a definite D^0 is a phasal head (Chomsky, 1999; Jiménez-Fernandez, 2012); because nothing in our forthcoming investigation hinges on this distinction, however, we will continue to use D&D's framework and refer to the status of D^0 as a "syntactic blocking category" or "barrier".

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nominals (as in 2 and 4). Participants in that study read a short context story such as (6) which introduced a complex result NP (e.g., a movie about Elvis Presley). The story was followed by one of four possible question fragments (6a-d), and participants were asked to complete the fragment in order to create a well-formed question (participants were explicitly told that if no additional material was needed, they should simply add a question mark).

(6) **Question fragment experiment** (Tollan & Heller, 2016: pp.4-6)

One day of the holidays, the weather was horrible and rainy. Instead of going to the park, as she had planned, Lizzie went to the movie theatre. She was in for a big surprise! There was a premiere of a new movie about the singer Elvis Presley, and lots of famous singers were gathering in the concourse. Lizzie met her favourite artist, a 1970s singer called Kate Bush, and got to sit next to her during the Elvis Presley movie. What an amazing day!

	Condition	*Fragment presented*	*% of "Elvis Presley with?"*
a	*Yes-no* – indefinite	*Did Lizzie see **a** movie about*	*97%*
b	*Yes-no* – definite	*Did Lizzie see **the** movie about*	*99%*
c	*wh* – indefinite	*Which singer did Lizzie see **a** movie about*	*2%*
d	*wh* – definite	*Which singer did Lizzie see **the** movie about*	*11%*

The yes-no questions (6a, b) were ungrammatical as is, and indeed, participants added the continuation on almost all trials, independent of definiteness (these fragments were included to ensure that participants did not simply accept all fragments). The *wh*-question fragments tested the acceptability of extraction from result NP objects: If such extraction was acceptable, only a question mark would be added (e.g., *"Which singer did Lizzie see a/the movie about?"*). If, however, participants did not find such extraction acceptable, they could add the appropriate information from the context story (e.g., *"Which singer did Lizzie see a/the movie about Elvis Presley with?"*). Participants added the continuation only 2% of the time in the indefinite condition, indicating that they found the fragment acceptable as argued by D&D. Furthermore, as expected from D&D, Tollan & Heller (2016) found that participants were more likely to add the continuation in the *wh*-definite condition (6d: 11%), indicating that these fragments were deemed as less acceptable than the indefinite ones. Crucially, however, these fragments were *not* generally rejected – they were accepted 89% of the time, a finding that casts doubt on D&D's theory of syntactic barrierhood.

More recently, Chaves & Putnam (2020) presented a series of naturally occurring sentences (given in 7) from the *Corpus of Contemporary American English* (COCA; Davies, 2008), which include extraction out of a definite NP. Indeed, such sentences – where the head N^0 is *not* a process noun – should not be attested if extraction across D^0 is prohibited, as argued by D&D.

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(7) **Corpus examples from Chaves & Putnam (2020)**

a. That's another question that we don't really have [the answer to __].
b. …and then ask her which one she likes [the sound of __]?
c. Just in case there turned out to be somebody you couldn't stand [the sight of __]?
d. […] the tool icons of a creative photo-retouching program that Gurney was just starting to get [the hang of __].
e. […] What would that have been [the result of __]?
f. …Cuomo is a leading rival because of who he is [the son of __].
g. […] I might find a ribbon appropriate for the violence that abortion providers, clinics, and patients have been [the target of __].

(Chaves & Putnam, 2020: 64-65)

The goal of the current paper is to present a novel generalization regarding acceptable extraction from definite NP objects, and to develop an account of these cases. As demonstrated by both Tollan & Heller (2016) and Chaves & Putnam (2020), extraction out of a definite NP object is acceptable with *some* non-process nominals, but what about other aspects of D&D's generalization? We begin our empirical investigation by evaluating the definiteness effect for the three types of nouns – concrete, result, and process (Experiment 1, section 2). Because the results of Experiment 1 do not simply mirror D&D's generalization, in Experiment 2 we take a step back and directly test what aspects are indeed tied to subextraction (Section 3). In Section 4, we appeal to a distinction between functional and relational nouns (Lobner, 1985), demonstrating that extraction from a definite result NP object is acceptable when the head noun is functional (i.e., it combines with its complement to yield a unique entity), in contrast to relational noun (i.e., one that maps its complement onto a set of entities), which we show in Experiment 3.

Our semantic-pragmatic account is presented in section 5. In short, the starting point is that a speaker normally asks a question when they are ignorant about the answer (Searle, 1969), a situation that is captured in semantics as variability in the denotation of the *wh* phrase (i.e., a question denotes the set of its answers). At the same time, the definite NP object from which this *wh* phrase is extracted carries the standard presupposition associated with definite description, namely the existence of a unique (or familiar) entity in the discourse context that satisfies the descriptive content. We propose that this presupposition is not consistent with the variability in the subpart of the object, resulting in a degraded question due to presupposition failure (cf. Abrusán, 2011 on negative and factive islands). Our Experiment 3 demonstrates that when the meaning of the head noun is such that the uniqueness presupposition can be satisfied despite the variability in the subpart of the object, the question is acceptable. We demonstrate how our analysis accounts for aspects of D&D's original generalizations, for the novel patterns we find here, and how it makes predictions for further observations.

We note that while the two studies mentioned here are relatively recent, non-syntactic approaches to islandhood have existed for decades. For example, pragmatic approaches appeal to information structure, arguing that degraded questions arise because an extracted *wh*-phrase has the discourse status of *focused*, and that might be inconsistent with the discourse status of the position from which it has been extracted (e.g., Erteschik-Shir, 1973; Kuno, 1987; Deane, 1991;

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Van Valin Jr., 1995; Goldberg, 2006; 2013; Chaves & Dery, 2019; Abeillé, Hemforth, Winckel & Gibson, 2020, a.o.). Alternatively, semantic approaches attribute certain islands to problems in representing their meaning, specifically with the answers (Szabolcsi & Zwarts, 1990; Fox & Hackl, 2007; Simonenko, 2015) or the presuppositions (Oshima, 2006, Abrusán, 2011).

2. Experiment 1: D&D's generalization about concrete, result, and process nouns.

The goal of Experiment 1 is to assess experimentally the empirical generalizations of Davies & Dubinsky (2003) about how the definiteness asymmetry in extraction interacts with the three types of nominals, namely concrete, result, and process, as summarized in (8).

(8) Summary: D&D's typology of extraction by nominal type and definiteness

		Nominal type		
		Process (e.g., *felling*)	**Result** (e.g., *book*)	**Concrete** (e.g., *dog*)
Definiteness	**Indefinite**	✓ extraction	✓ extraction	× extraction
	Definite	✓ extraction	× extraction	× extraction

D&D's original materials included 31 different NP + PP complement constructions (10 concrete, 12 result, 9 process). Starting with their examples, we constructed 24 experimental questions: Eight questions with concrete nouns as in (9a), eight with result nouns (9b), and eight with process nouns (9c). While D&D's examples used both simple *wh* phrases (e.g., *who*, *what*) and D-linked ones (i.e., *which NP*), for consistency we used *which NP* phrases throughout (see also materials in Abeillé et al., 2020). The full set of materials is provided in the Appendix.

(9) **Example stimuli**

a. Concrete Noun *Which church did Ashley like {a/the} cafe near?*
(cf. D&D's ex. 2)

b. Result Noun *Which nation did the Vikings aim for {a/the} triumph over?*
(cf. D&D's ex. 32)

c. Process Noun *Which moon did NASA film {a/the} rotation of?*
(cf. D&D's ex. 44)

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To assess the acceptability[4] of these questions, we presented participants with an acceptability judgement rating task (Schütze, 1996): participants were asked to rate the questions for how well-formed they sounded along a Likert scale of 1 (= unacceptable) to 7 (= fully acceptable).

Davies & Dubinsky (2003) represent acceptability as a binary contrast, following common practice in syntactic theory (i.e., use of an asterisk to mark an unacceptable sentence, and no marker for an acceptable one), and the question of how this translates into a scale is unsettled. For the present purposes, we expect extraction from concrete NPs to be rated low, closer to 1 (with no definiteness contrast), extraction from process NPs to be rated high, closer to 7 (again, with no definiteness contrast), and a definiteness contrast for result NPs, where extraction from indefinites should be rated higher than from definites – see again (8). In other words, if D&D's core generalization is correct – that different nominal types respond differently to definiteness, then the main 2x3 model should reveal a statistically significant interaction of definiteness with nominal type. Specifically, we then expect a pairwise difference between ratings to definite vs. indefinite tokens for result nouns, but no difference for concrete nouns or for process nouns.

2.1. Method.

Participants. Twenty-eight undergraduate students at the University of Toronto, all native speakers of English, participated in an acceptability rating study in exchange for course credit.

Materials. The experimental questions were all in the format of "*Which NP did SUBJECT VERB DET NOUN PREPOSITION*". There was a total of 24 items, with 8 (different) questions for each of the three types: concrete, result and process. Thus, the first manipulation – noun type – was *between* items (i.e., different questions in different conditions). The second manipulation was definiteness: for each question, we created an indefinite and a definite version by manipulating whether the determiner was "*a"* or "*the"*: this manipulation was within items (i.e., the same questions appeared in both conditions). This resulted in a 3 x 2 within-subjects design.

Two presentation lists were created. Each list included 24 experimental items (eight for each nominal type, half indefinite and half definite), as well as 24 filler questions that, like the experimental items, started with *which NP* and ended in a preposition. Half of the fillers were well-formed, and involved no instances of subextraction (e.g., *"Which sister did Annica give the book to?"*) and half were ill-formed, employing a violation of argument structure (e.g., "*Which queen did the teacher the pupils discuss about?*"). Thus, each participant judged a total of 48 questions. Questions were presented in a pseudo-random order, with no two critical items of the same condition adjacent, and no more than two critical items adjacent.

Procedure. Participants performed an acceptability judgment task on a computer in a quiet space. They were instructed to "read each question carefully and decide whether you think it sounds like a well-formed question of English". Participants provided a rating on a scale of 1 to 7 (1 = "bad"; 7 = "good"). The task took approximately 30 minutes to complete.

[4] Although "acceptability" is typically used interchangeably with "grammaticality", here we refer only to "acceptability", since this term better reflects the behavioral response collected in a judgement task. "Grammaticality", on the other hand, refers to some inference drawn from the behavioral data; it cannot be measured directly.

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2.2. Results.

Figure 1 plots the mean ratings of questions, both critical items and fillers (one critical question had to be completely removed from analysis due to an orthographic error in presentation). In the Figure, the mean rating for the well-formed fillers (12 questions) is represented as the upper dashed line; as expected, that mean was towards the top of the scale, at 6.4. The ill-formed fillers (12 questions with an argument structure violation) are represented by the lower dashed line; as expected, the mean rating for these items was towards the bottom of the scale, at 2.1. Thus, the fillers serve as benchmarks for (un)acceptability in this task.

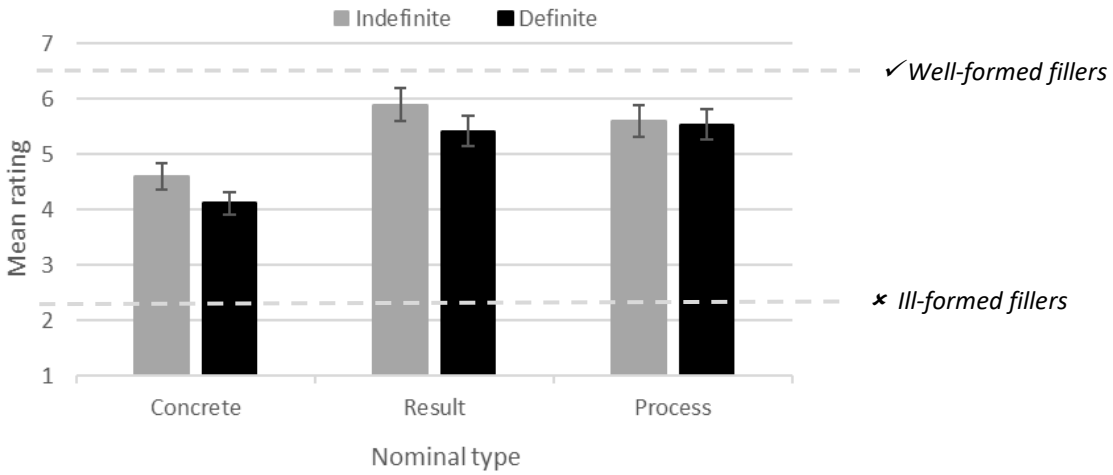

Figure 1. *Mean ratings by nominal type and definiteness. Error bars show 95% confidence intervals. The dashed reference lines indicate the ratings for acceptable and unacceptable filler items.*

Against this background, we turn to the experimental items that involve subextraction. We note, first, that they are all rated *between* the two types of fillers, meaning that they are neither acceptable to the level of the grammatical fillers with no subextraction, nor unacceptable to the level of an argument structure violations. If anything, they are rated as closer to the "acceptable" benchmark than the "unacceptable" one. More importantly, we find different patterns with each of the three noun types. One observation is that questions with concrete nouns were overall rated lower than those with result or process nouns[5]. A second observation is that definiteness does not affect all nouns equally: it does seem to have an effect with concrete nouns (contra D&D) and with result

[5] Note that the set of questions with concrete nouns adapted from D&D is not homogenous. First, three of these eight tokens (i.e., "a/the table of Mahogany", "a/the tower of the cathedral", "a/the figurine of the princess") involve modifiers that can be rephrased using the Germanic partitive construction (i.e., "a/the Mahogany table", "a/the York Cathedral tower", "a/the princess figurine"). Second, one of the items uses the noun "book" which is disambiguated here into a concrete reading due to the verb "drop": since publication of D&D (2003), this noun has assumed a second representational meaning (i.e., "to appear in stores/online"). To ensure that our reported ratings were not due to these items, we also computed the mean ratings for a subset of items where they were removed: the pattern was unchanged: indefinite: 4.4, definite: 4.1).

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nouns (as expected from D&D), but not with for process nouns (again, as expected from D&D). We now turn to the statistical examination of these observations.

Because different participants may use the scale differently, we did not perform statistical analysis on the raw scores, but instead normalized their ratings first: for each participant, we calculated the standardized ("z"-) score for each experimental item. We analyzed the z score-transformed data by fitting a 3 x 2 mixed-effects linear regression with crossed random effects for participants and items (Baayen, Davidson, & Bates, 2008), using the *lme4* package (R 4.0.2: Bates, Maechler, Bolker, & Walker, 2015). Our first predictor was Definiteness (2 levels), which was coded as +1/2 for indefinites and -1/2 for definites. The second predictor, Nominal type, has 3 levels, and so we chose centered Helmert contrasts as they address two theoretical questions. The first contrast asked about the difference between Concrete nouns (coefficient: +2/3) and the mean of Result nouns (coefficient: -1/3) and Process nouns (coefficient: -1/3): this contrast asks about the effect of extracting participants: Concrete NPs do not have such participant structure, whereas Result and Process nouns do. The second contrast coded the difference between Process nouns (coefficient: +1/2) and Result (coefficient: -1/2), asking about the effect of argument participant material which is available in Process nouns but not in Result nouns (note that Concrete nouns do not participate in this comparison; they are assigned the coefficient 0). We selected the most parsimonious model supported by the data (Bates, Kliegl, Vasishth, & Baayen, 2015), starting with the maximal random effects structure that converged, and simplifying this by removing random slopes that did not at least marginally improve the model. The final model is summarized in Table 1. *P* values were calculated via a Satterthwaite approximation, as computed using the *LmerTest* function.

Table 1. The 3 x 2 mixed-effects linear regression model (top part), along with the effect of Definiteness at each level of Nominal type (bottom part). Significant effects are bolded.

Effect	*β*	*SE*	*t*	*p*
[Intercept]	0.41	0.09	4.62	<.0001
Concrete vs. Result+Process	**-0.51**	**0.18**	**-2.78**	**.011**
Result vs. Process	-0.03	0.21	-0.16	.87
Definiteness	**0.13**	**0.04**	**3.27**	**.001**
Concrete vs. Result+Process x Definiteness	0.11	0.08	1.3	.2
Result vs. Process x Definiteness	**-0.24**	**0.1**	**-2.47**	**.014**
a) NP Type = *Concrete*				
Definiteness	**0.2**	**0.07**	**2.95**	**.003**
b) NP Type = *Result*				
Definiteness	**0.21**	**0.07**	**3.11**	**.002**
c) NP Type = *Process*				
Definiteness	-0.03	0.07	-0.39	.7

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The full model revealed, first, a main effect of definiteness: extraction out of an indefinite NP was overall rated as significantly better than extraction out of a definite NP (raw means5.4 vs. 5.0: β = 0.13, *SE* = 0.04, *t* = 3.27, *p* = .001). In addition, extraction from concrete NPs was rated significantly lower than from result and process nominals, pooled (raw means 4.4 vs. 5.6: β = -0.51, *SE* = 0.18, *t* = -2.78, *p* = .01). This factor did not interact with definiteness (*p* = .2), consistent with D&D's proposal whereby extraction from concrete NPs is argued to be completely banned. Next, while extraction from result and process nominals did not differ from each other (*p* = .87), it did show a significant interaction with definiteness (β = -0.24, *SE* = 0.1, *t* = -2.74, *p* = .014), meaning that extraction from result and process nominals were affected differently by definiteness – this is also consistent with D&D's generalizations that the two types of nominals respond differently to definiteness.

Because D&D's theory makes specific predictions about the effect of definiteness in each nominal type (concrete, result, process), we unpacked this interaction by running a second model with definiteness *nested* within nominal type; this model tests the effect of definiteness for each of the three nouns separately, while still taking into account the variability in the full dataset – this second model is summarized at the bottom of Table 1. First, we found a significant effect of definiteness with concrete nouns, whereby extraction from an indefinite NP was rated higher than extraction from a definite (β = .20, *SE* = 0.07, *t* = 2.95, *p* = .003): this finding is surprising, because D&D argued that concrete nouns are not affected by definiteness. Second, for result nouns, extraction from an indefinite NP was rated as significantly higher than extraction from a definite NP (β = .21, SE = .07, *t* = 3.11, *p* = .002): this difference provides quantitative support for D&D's generalization regarding the effect of definiteness on extraction from result nouns. Finally, for process nouns, there was no significant effect of definiteness on acceptability of extraction (*p* = .7): thus, in accordance with D&D's generalization, there was no evidence for definiteness affecting the well-formedness of extraction out of a process noun.

2.3. Discussion.

Some of the results of Experiment 1 are consistent with D&D's (2003) empirical generalizations. First, we find that extraction from concrete NPs is, overall, rated lower than extraction from result or process NPs. This pattern is consistent with D&D's generalization that extraction of non-participant complements to the head N (as with concrete nouns) is worse than extraction of participant complements (as with result and process nouns), a contrast which D&D trace to Chomsky's (1986) proposed asymmetry in extraction from arguments versus adjuncts. A second finding that is consistent with D&D's generalization is that extraction from result NPs shows the definiteness asymmetry reported by D&D, with extraction from definite result NPs rated as worse than extraction from indefinite result NPs. Finally, as predicted by D&D, the pattern of extraction from process NPs is not sensitive to definiteness.

Importantly, however, some aspects of our results are *not* consistent with D&D's generalization. First, in contrast to D&D who argue that extraction from concrete nominals is ungrammatical independent of definiteness, here we find that the (degraded) extraction from concrete NPs *is* sensitive to definiteness, exhibiting the same pattern as result nouns whereby extraction from definite NPs is rated worse than extraction from indefinite NPs. A more general

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property of our results is that extraction from NP objects is rated rather close to the fully grammatical fillers. This is noteworthy in the case of definite result NPs which were characterized as "ungrammatical" by D&D.

Because our findings in Experiment 1 did not simply mirror D&D, we wanted to ensure that our findings are indeed characteristic of subextraction. In other words, we must consider – and hopefully reject – the possibility that the patterns observed here arise from the status of the different type of NPs; after all, the different nouns were embedded in different questions (i.e., a between-items design). This is the goal of Experiment 2.

3. Experiment 2: Extraction vs. subextraction with concrete and result noun.

In this section, we take a step back and test whether the definiteness asymmetry reported in D&D for result NPs and attested in our Experiment 1 for both concrete and results NPs is truly tied to subextraction. The motivation for this investigation is that the pattern in Experiment 1 diverges from D&D's predictions, both in that concrete NPs exhibit the definiteness asymmetry and in that question with concrete nominals were overall rated as worse than those with result and process NPs.

To operationalize this question, we focus on the two types of nominals that showed the definiteness asymmetry in Experiment 1, namely, concrete and result nominals. We took the tokens of concrete and result nouns from Experiment 1 and used *wh* phrases such as *why*, *when* and *where* to create *wh* questions that do *not* involve subextraction. Examples of the experimental questions are given in (10) and (11).

(10) **Concrete nominals (cf. 9a)**

a. Baseline, indefinite *Why did Ashley like [a café near the old church] _?*
b. Baseline, definite *Why did Ashley like [the café near the old church] _?*
c. Subextraction, indefinite *Which church did Ashley like [a cafe near_]?*
d. Subextraction, definite *Which church did Ashley like [the cafe near_]?*

(11) **Result nominals (cf. 9b)**

a. Baseline, indefinite *When did the Vikings hope for [a triumph over the English] _?*
b. Baseline, definite *When did the Vikings hope for [the triumph over the English] _?*
c. Subextraction, indefinite *Which nation did the Vikings aim for [a triumph over_]?*
d. Subextraction, definite *Which nation did the Vikings aim for [the triumph over_]?*

We conducted the same acceptability judgement rating task as in Experiment 1. If effects of definiteness are indeed tied to subextraction, we should only observe these effects in questions with subextraction and not in the baseline questions.

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3.1. Method.

Participants. Thirty-six native speakers of English, recruited from Amazon's Mechanical Turk, participated in an acceptability judgement experiment in exchange for $2.50. We screened for native speakers using demographic questions that were presented at the end of the experiment (we assume responses were truthful since payment was not contingent on how participants answered).

Materials. We used questions from Experiment 1, eight questions with concrete nouns and eight questions with result nouns, manipulating three factors in a 2 x 2 x 2 within-subjects design. The first factor was extraction site (baseline vs. subextraction; within items): in the subextraction conditions, questions had a *which NP* phrase that was extracted from within the complex NP object, whereas in the baseline condition the *wh* phrases (*when*, *why*, *where*) was extracted from a location outside of the NP object. The other two factors were as in Experiment 1. The second factor was the type of the nominal in the NP object (concrete vs. result; between items), and the third factor was definiteness (indefinite vs, definite; within items).

We created four presentation lists, each with 16 experimental questions (8 concrete, 8 result). In each list, half of the questions appeared in the baseline condition and half in the subextraction condition; half appeared with an indefinite object and half with a definite object. Each list also included sixteen filler *wh* questions: half ended with a preposition; the other half ended in a noun or verb. Half of the fillers were grammatical, and half were ungrammatical; ungrammaticality was achieved by violating the argument structure, as in Experiment 1. Each participant therefore judged a total of 32 questions. Like in Experiment 1, the questions were presented in a pseudo-random order, with no two critical items of the same condition adjacent, and no more than two critical items adjacent.

Procedure. Participants were informed that they would see a series of questions and were instructed to rate each one according to whether it sounded acceptable as a sentence of English, on a scale of 1 (= "unacceptable") to 7 (= "fully acceptable"). The experiment was administered using the software IbexFarm (Drummond, 2013). Participants saw a single item on the screen at any one time. After assigning a rating using the provided scale, they would press spacebar to move to the next item. The task took approximately 15-20 minutes to complete.

3.2. Results.

Figure 2 plots the mean ratings of questions in the eight conditions, averaging across participants. Qualitatively, we note three important patterns. First, we note that extraction from inside a complex NP (i.e., subextraction) is overall rated as worse than extraction from outside of the NP (i.e., baseline): this penalty reflects the complex NP island. Furthermore, while subextraction out of complex NPs is rated worse when the NP is definite, replicating what we found in Experiment 1, baseline questions with definite NPs are actually rated higher, suggesting that the definiteness effect we saw in Experiment 1 is specific to subextraction. Interestingly, we see that, independent of the type of extraction, questions with concrete NPs are overall rated as worse than questions with result NPs, suggesting that the effect of the noun type we saw in Experiment 1 is tied to noun type, and is not specific to subextraction.

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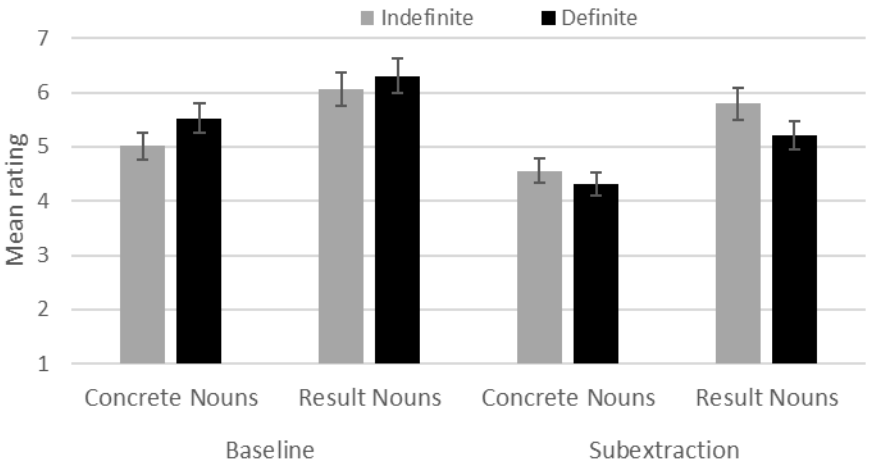

Figure 2. *Mean ratings by nominal type and definiteness for each level of Extraction site. Error bars show 95% confidence intervals.*

For purposes of statistical analysis, we again calculated z-scores that take into account how different participants use the scale and fitted a 2x2x2 mixed-effects linear regression model following the same statistical principles as in Experiment 1. Each predictor had two levels; our first predictor was NP type (coded as +1/2 for concrete and -1/2 for result), the second was Extraction site (coded as +1/2 for subextraction and -1/2 for baseline), and the third was Definiteness (coded as +1/2 for indefinite and -1/2 for definite). The full model is summarized in Table 2.

Table 2. The 2 x 2 x 2 mixed-effects linear regression model. Significant effects are bolded.

Effect	*β*	*SE*	*t*	*p*
[Intercept]	0.5	0.07	6.7	< .0001
NP type	**-0.43**	**0.15**	**-2.88**	**.011**
Extraction site	**-0.34**	**0.08**	**-4.4**	**< .001**
Definiteness	-0.02	0.06	-0.24	.82
NP type x Extraction site	-0.09	0.14	-0.65	.53
NP type x Definiteness	-0.15	0.11	-1.37	.19
Extraction site x Definiteness	**0.3**	**0.13**	**2.31**	**.033**
NP type x Extraction site x Definiteness	-0.13	0.26	-0.49	.63

The model revealed that all and *only* the three qualitative patterns discussed above were significant. First, there was a main effect of Extraction site, confirming that there is a significant penalty for subextraction from within a complex NP (β = -0.34, *SE* = 0.08, t = -4.4, $p < .001$). This main effect was further qualified by a significant interaction of Extraction site and Definiteness (β = 0.3, *SE* = 0.13, t = 2.31, p = .033). This is an important finding that validates the interpretation of our results in Experiment 1: the definiteness effect in extraction from inside a complex NP – with definites rated as worse – is specific to NP subextraction, namely to NP islands. Third, the main effect of NP type indicates that questions with concrete nouns are *overall* rated worse than those with result nouns (β = -0.43, *SE* = 0.15, t = -2.88, p

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= .011). Importantly, this difference between noun type did *not* interact with either Extraction site or Definiteness (both *p*s > .19), meanings that there is a general dispreference for complex nominals with concrete nouns, and this is not a property specific to questions with subextraction.

3.3. Discussion.

In this experiment which focused on concrete and result NP objects, we found direct evidence for the existence of NP object islands: This was manifest as a main effect of Extraction site, with subextraction being rated as significantly worse.

This experiment also produced novel insights regarding concrete NP objects. Specifically, we found that questions with concrete nominals as objects were *overall* degraded compared with questions with result nominals: This was manifest as a main effect of NP type. Interestingly, however, this effect of NP type did not interact with Extraction site – meaning that the dispreference for concrete nouns is not tied to subextraction (as it characterizes baseline extraction as well). In other words, questions with concrete nominals are just rated lower overall than questions with result nominals. What could account for this difference? One possibility is that the inclusion of a PP modifier is less acceptable in concrete NPs because concrete nouns do not have any arguments – in contrast to result nouns that have a lexical-conceptual participant structure (Grimshaw, 1990; D&D, 2003). At the very least, our results show that concrete nouns are, in fact, not immune to effects of definiteness: they behave like result NPs in this regard but are rated lower overall.

With respect to the definiteness asymmetry of object NP islands, we confirmed that the asymmetry observed in Experiment 1 – where indefinites are rated as better than definite – is indeed tied to subextraction. When there is no subextraction, as in our baseline condition, questions with definite NP objects are not degraded compared to their indefinite counterparts. This is manifested as a significant 2x2 interaction of definiteness and extraction site, indicating that the effect of definiteness on acceptability differs depending on whether the question involves extraction or subextraction. In the next section we investigate the definiteness asymmetry directly, focusing on result nouns; we return to concrete and process nouns in section 5.

4. Experiment 3: definiteness and uniqueness in result nouns

We now turn to investigate the indefiniteness asymmetry in NP objects, whereby extraction out of a *definite* NP object is degraded compared to extraction out of an *indefinite* NP object. In both our experiments, we found this effect for result nominals (as per D&D) and in concrete nominals (contra D&D). Our results depart from D&D in yet another important way: while they argue that extraction out of a *definite* NP object – concrete or result – is categorically ungrammatical, in our experiments extraction out of definite NP objects was not rated low (definite concrete: 4.1 in Exp.1 and 4.2 in Exp. 2; definite result 5.5 and 5.2). These results extend prior findings that extraction across a definite determiner is *not* always ungrammatical, which have been observed in a sentence

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completion task (Tollan & Heller, 2016) and with naturally occurring sentences (Chaves & Putman, 2020). For simplicity, our investigation here focuses on result nominals.

To investigate what makes extraction from definite NP objects acceptable, we searched for such cases in the *Corpus of Contemporary American English (COCA*; Davies, 2008). These examples, shown in (12) should be unattested according to D&D.

(12) Corpus examples of extraction from definite result NP

a. *Can you help me find **a book** I can't remember **[the title of _]**?*
[COCA, WEB: 2012]

b. *This is an opinion held by one particular girl, by the name of Runa, who lived a long time ago in **a village** no one quite remembers **[the name of _].***
[COCA, FICTION: 2016]

c. *Nick turned the taps off and dried his hands and heard Max finish **a sentence** he'd missed **[the beginning of _].***
[COCA, FICTION: 2000]

d. ***What magazines** have you been on **[the cover of __]?***
[COCA, SPOKEN: 2016]

How are the tokens in (12) different from the examples in D&D? We observe that a book normally only has one title, a village tends to have just one name, a sentence only has one beginning, and a magazine only has one cover. We note that these cases contrast with the result nominals in D&D's examples: there can reasonably be more than one book about any person (in 4), more than one triumph over any nation (as in 9), and similarly for other representational nouns (rumor about some pupil, joke about some friend, documentary about some animal, essay about some politician, and thesis about some philosopher – see Appendix).

Following Löbner (1985), we appeal to a distinction between *functional* and *relational* nouns. A functional noun, such as *title* or *name*, combines with its complement to yield a unique entity. For example, when the noun *name* takes any village as its complement (see 12b), the output of this composition is the unique entity that is the name of that specific village (one-to-one mapping is what defines a function). In contrast, relational nouns denote functions that map their complements onto a *set* of entities. When a relational noun, such as *book*, combines with its complement – any person (see 4b) – the output of this composition is the *set* of books about that specific person (a relation is one-to-many).

In Experiment 3, we examine whether the semantic nature of the head noun as functional (one-to-one) or relational (one-to-many) plays a role in determining the acceptability of extraction from definite object NPs. Like in Experiments 1 and 2, we examine the acceptability of questions with *which* NP phrases, and NP objects of the form *a/the* + *N* + *of*. This time, however, we created minimal pairs, manipulating the head noun of the NP object: it was either a functional noun, such

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as *title* (13a-b) – a book normally has only one title, or a relational noun, such as *chapter* (13c-d) – a book normally has several chapters.

(13) Example stimuli

a.	Definite - Functional	*Which book did Joan read the **title** of?*
b.	Indefinite - Functional	*Which book did Joan read a **title** of?*
c.	Definite - Relational	*Which book did Joan read the **chapter** of?*
d.	Indefinite - Relational	*Which book did Joan read a **chapter** of?*

If our observation above is correct, namely that a functional head noun obviates the definite NP object island, we make two predictions regarding how the definite-functional (13a) should be rated compared to questions with relational nouns we have examined in Experiments 1 and 2. First, (13a) should be rated as more acceptable than its definite-relational counterpart (13c). Second, we do not expect to find any difference in rating between (13a) and the indefinite-relational (13d) – this is the type of question that has been characterized as grammatical by D&D. While these are the two comparisons of interest, we included the indefinite-functional (13b) to complete the paradigm. We note that the indefinite-functional (13d) is expected to be degraded because, as pointed out by Löbner (1985), functional nouns tend to be less acceptable with the indefinite determiner which is associated with anti-uniqueness (Percus, 2006). Our goal in including this forth condition is to ensure that these predicted effects of definite unique NPs (13a) are truly tied to *definiteness* and are not a more general effect of extraction from functional NPs.

Importantly, these novel predictions are not shared with any theory that ties the acceptability of extraction out of NP objects to the presence of the definite determiner. If the definiteness contrast arises from syntactic "blocking" effect (as per D&D), or a phasal constraint, then the lexical-semantic properties of the head noun, including whether it is relational or functional, should have no effect on the acceptability of extraction. If, however, the type of relationship between the head noun and its complement affects the acceptability of subextraction, this would call for an account of NP object islands that is sensitive to this aspect of meaning.

4.1. Method.

Participants. Thirty-two native speakers of English, recruited through the same platform as Experiment 2, participated in an acceptability judgement experiment in exchange for $2.

Materials. The experimental items were *wh* questions of the format "*Which NP did SUBJECT VERB DET NOUN of*". The first factor, noun type, targeted whether the OBJECT was either functional or relational, but always a result noun. For example, in the question "*Which book did Joan read the OBJECT of?"* we used either *title*, a functional noun (a book maps onto a unique title) or *chapter*, a relational noun (e.g., a book maps onto a *set* of chapters). The second factor, definiteness, manipulated whether the object included a definite determiner (i.e., *the*) or an indefinite determiner (i.e., *a*). Thus, the experiment had a 2x2 within-subjects design, crossing the factors of noun type (functional vs. relational; within items) and definiteness (definite vs. indefinite; within items). The full list of items is provided in the Appendix.

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Four presentation lists were created following a Latin Square design, and two items in each condition were assigned to each list. In addition to the eight experimental questions, each list also included 12 filler questions. Six fillers were grammatical *wh* questions, that – like the experimental items – ended in a preposition, but did not involve subextraction (e.g., "*Which servant did the queen give silverware to_?*"). The other six fillers were ungrammatical: three had a subject that-trace violation (Perlmutter, 1968: e.g., *"Which sportsperson did John think that _ won the championship?"*), and another three had a Kuroda constraint violation (Kuroda, 1968: e.g., *"Which relative did Anne give _ a book?"*). The resulting 20 items were presented in a pseudo-randomized order, with no two critical items of the same condition adjacent, and no more than two critical items adjacent.

Procedure. The procedure was the same as in Experiment 2. The experiment took approximately 10-15 minutes to complete.

4.2. Results.

Figure 3 plots the mean ratings of experimental questions in the four conditions. An inspection of this plot suggests that there was no main effect of Noun type, nor or Definiteness[6], and so we may proceed to compare the condition of interest, Definite-Functional (solid black, e.g., *Which book did Joan read the title of?*) to the conditions with a relational noun.

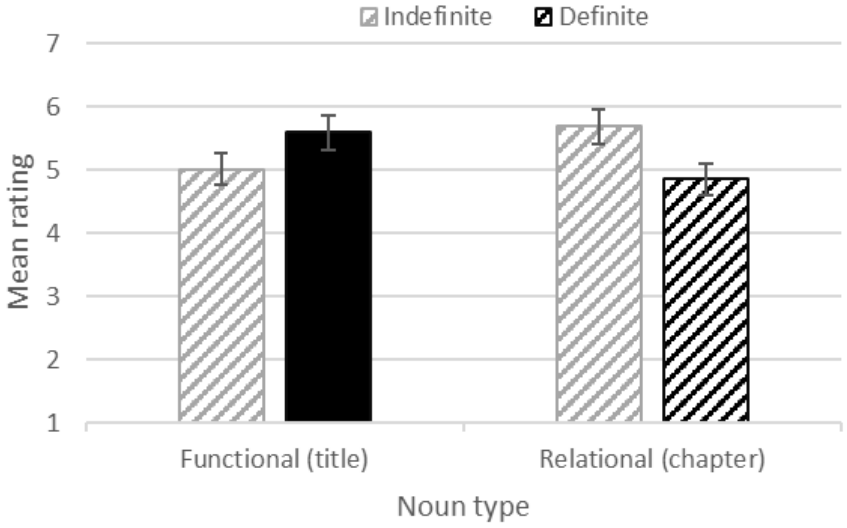

Figure 3. *Mean ratings by noun type and definiteness (indefinite in grey; definite in black). The reference level for the statistical analysis (definite-functional) is shown in a solid block, the remaining levels in striped blocks. Error bars show 95% confidence intervals.*

For purposes of statistical analysis, we again normalized the ratings for each participant by calculating the z score of the rating for each token (see Experiment 1). Z scores were then used as

[6] This was confirmed in a 2x2 regression model, where there was no evidence for a main effect of Noun type ($p = .41$) or a main effect of definiteness ($p = .34$). The *interaction* of the two factors was significant, indicating that definiteness had a different effect depending on the type of noun ($\beta = .6801$, $SE = .01647$, $t = 4.1$, $p < .0001$).

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the dependent variable in mixed-effects linear regression, with uniqueness and definiteness as predictors, and with crossed random effects for participants and items, run in *lme4* in R 4.0.2 (Baayen, Davidson, & Bates, 2008; Bates, Maechler, Bolker, & Walker, 2015).

Our goal is to create a model that tests whether Definite-Functional differs from each of Definite-Relational, and Indefinite-Relational, while still considering the variability in the complete dataset. To this end, we treated the 2 x 2 matrix as a single factor with four levels (corresponding to each of the 4 conditions), coding it using a priori dummy contrasts (Schad, Vasishth, Hohenstein & Kliegl, 2020), with Definite-Functional as the reference level. Our model thus compared the Definite-Functional condition to *each* of the other three levels. We selected the most parsimonious model supported by the data (Bates, Kliegl, Vasishth, & Baayen, 2015). The final model is summarized in Table 3.

Table 3. The three-way linear mixed effects regression model, comparing Definite-Functional to the other 3 conditions. Significant effects are bolded.

Effect	*β*	*SE*	*t*	*p*
[Intercept]	0.37	0.14	2.59	.014
Definite-Functional vs. Definite-Relational	**-0.41**	**0.12**	**-3.5**	**.0006**
Definite-Functional vs. Indefinite-Relational	0.01	0.12	0.09	0.92
Definite-Functional vs. Indefinite-Functional	**-0.26**	**0.12**	**-2.2**	**.002**

Our first question was whether a functional noun obviates the definite NP effect observed with a relational noun. The statistical model addresses this question by comparing Definite-Relational to the reference level Definite-Functional, revealed that questions with a functional noun were indeed rated higher (mean ratings: 5.6 vs. 4.9; β = -.41, *SE* = .012, *t* = -3.5, *p* = .0006). Our second question is whether Definite-functional is degraded compared to Indefinite-Relational which has been characterized in the literature as a non-island. The statistical model addresses this question by comparing Indefinite-Relational to the reference level Definite-Functional: here we find no evidence of any difference in rating (mean ratings: 5.6 vs. 5.7; β = .01, *SE* = .012, *t* = .09, *p* = .92). Our statistical model also compares Indefinite-Functional to the reference level Definite-Functional. We found that, with a functional head noun, questions with a definite object were rated as *more* acceptable than their indefinite counterparts (mean ratings: 5.6 vs. 5.0; β = -.26, *SE* = .012, *t* = -2.2, *p* = .002). We suspect that this difference is not specific to subextraction and is instead tied to functional nouns being more generally degraded when they appear with an indefinite determiner. In terms of islands, this effect provides evidence against any account of definite NP object islands that is tied to the presence of the definite determiner (e.g., D&D, 2003).

4.3. Discussion.

Experiment 3 tests our novel observation that a functional head noun obviates the definite NP object island. Results showed, first, that questions with a definite NP object with a *functional* head were rated as significantly more acceptable than questions with a definite NP object with a

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relational head, the latter have been characterized by D&D as ungrammatical. In addition, there was no evidence that these questions were rated any worse than questions with an indefinite NP object with a relational head, which have been characterized by D&D as grammatical.

Coupled with the corpus data we presented in (12), our experimental results indicate that the definiteness penalty for extraction from a result NP object can be obviated by changing the head noun from relational to functional. Importantly, because this property of the nouns is not syntactic in nature, this outcome casts doubt on the viability of pursuing a syntactic account of the definiteness asymmetry (as in D&D, 2003). Of course, the question now shifts; we need to explain why and how this aspect of the head noun affects the acceptability of subextraction – we turn to our proposal in the next section.

5. Our proposal: Semantic-pragmatic inconsistency.

We begin this section by taking stock of the empirical landscape of subextraction, which includes several novel findings from our experiments. In Experiment 1, we found that concrete nouns are like result nouns in that they are subject to the definiteness asymmetry in subextraction, contrary to D&D (but we note that they are rated lower than result nouns overall), whereas process NPs are not subject to the definiteness asymmetry, consistent with D&D. In Experiment 2, we demonstrated that this definiteness asymmetry truly *is* tied to subextraction: definite NPs are not degraded compared with indefinites when no subextraction occurs. In Experiment 3, we found that the penalty for extracting from a definite result NP is mitigated when the head noun is a functional noun rather than a relational noun. Putting these observations together, we lay out the desiderata of a successful account in (14), which we will address in this order in the rest of section 5.

(14) Ingredients of an account of definiteness effects in extraction from NP objects.

A successful account of the definiteness asymmetry should address why:

a1. Extraction from a definite **result** NP is less acceptable than an indefinite one, when the **head noun is relational**.

a2. Extraction from a definite **result** NP is acceptable when the head noun is a **functional noun**.

b. Object NPs with **concrete nouns** are subject to the same definiteness asymmetry as result NPs (they do not, in fact, behave any differently to result nouns here; recall from Expt. 2 that the *general* degradation of concrete nouns was not isolated to sub-extraction settings),

c. Object NPs with **process nouns** are not subject to the definiteness asymmetry, and extraction is always acceptable.

Our novel finding that definite object NP islands behave differently with two types of result nouns – functional and relational – would require a syntactic account such as D&D (2003) to make further

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distinctions about how the lexical-conceptual structure of the noun interacts with subextraction. We believe that this points in the direction of a semantic-pragmatic account of definite object NP islands – we present such a proposal in this section. We will consider the viability of a syntactic account in section 6.

Non-syntactic approaches to islands were pioneered by Erteschik-Shir (1973), who noticed that constituents from which extraction was degraded shared a critical commonality in terms of their discourse status. Erteschik-Shir's work opened the door to subsequent proposals about the pragmatic ramifications of extracting a *wh* phrase and how doing so might interact with the pragmatic status associated with islandhood (e.g., Kuno, 1987; Deane, 1991; Van Valin Jr., 1995; Goldberg, 2006; 2013; Chaves & Dery, 2019; Abeillé, Hemforth, Winckel & Gibson, 2020, a.o.). An influential proposal was put forth by Goldberg (2006, 2013), who argued that islandhood arises when a constituent which is backgrounded is extracted from (Goldberg, 2006). More recently, Abeillé et al. (2020) developed this approach to account for *subject* islands, such as "*Which book did [the cover of__] surprise Sharon?"* – see again 1a. They propose the "Focus-Background Conflict (FBC) Constraint", which states that "a focused element should not be part of a backgrounded constituent" (p. 3). This means that questions like (1a) are ill-formed due to a "clash" in discourse statuses of the extracted sub-constituent of the subject: While the subject is inherently *backgrounded*, formation a *wh* question signals that a sub-part of it is also *focused* (Jackendoff, 1972; Krifka, 1992). This situation creates a pragmatic anomaly where an extracted *wh* phrase is *focused* yet contrarily *background* at the same time.[7]

Going back to our cases of subextraction, Abeillé et al. (2020: 20) suggested that the Focus-Background Conflict (FBC) Constraint has the potential to account for the definiteness effect in extraction from NP objects. Their idea is that extraction from an indefinite NP is preferred because indefinites encode new information, and this is consistent with the pragmatics of *wh* extraction which involves focusing the extracted phrase. In contrast, definites encode old information, which is *inconsistent* with the focused status of the *wh* phrase. Thus, the Focus-Background Conflict constraint can account for why extraction from definite NP objects is degraded compared to indefinite ones. However, as we have seen above, extraction out of definite NP objects is not *always* degraded: with some head nouns, including process nominals (as per D&D; see also Experiment 1), and functional result nouns (see Experiment 3), subextraction is acceptable. To capture this within the focus-background conflict analysis, one would have to argue that definites with process or functional result nominals are *not* backgrounded It is unclear what could motivate such an account (i.e., why *the chapter of which book* is backgrounded while *the title of which book* is not).

[7] Some approaches to other island constraints, such as extraction out of DP-internal relative clauses argue for a syntactic locality approach (e.g., Kush, Omaki & Hornstein, 2013; Sichel, 2018). This line of reasoning contents that syntactic principles give rise to extraction restrictions, but that these principles are *themselves* sensitive to and rooted in pragmatic principles such as presupposition accommodations. To our knowledge, this type of approach has not been extended to account for the specific effects of definiteness that we consider here, so we focus our discussion of syntactic accounts primarily on the phase-based approaches like D&D.

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A different non-syntactic approach, originally due to Szabolcsi & Zwarts (1990), attributes weak island constructions to different problems in representing the semantic meaning of questions. One type of problem concerns the answer: Fox & Hackl (2007) argue that negative degree islands arise due to the absence of a unique answer, and Simonenko (2015) attributes object NP islands to the answer being trivial. A second type of problem concerns presuppositions: Oshima (2006) attributes certain cases of factive islands to presuppositions being contradictory, and Abrusán (2011) presents a unified account of factive and negative islands, arguing that degraded questions arise because of presuppositional failure in any context.

Our analysis adopts the approach that degraded questions are a result of a semantic-pragmatic inconsistency. In short, the starting point is that a speaker normally asks a question when they are ignorant about the answer (Searle, 1969), a situation that is captured in semantics as variability in the denotation of the *wh* phrase (i.e., a question denotes the set of its answers). At the same time, the definite NP object from which this *wh* phrase is extracted carries the standard presupposition associated with definite descriptions, namely the existence of a unique (or familiar) entity in the discourse context that satisfies the description. We propose that this presupposition is not consistent with the variability in the subpart of the object, resulting in a degraded question due to presupposition failure[8] (cf. Abrusán, 2011). In other words, the question "*Which book did Sharon read the chapter of?"* is degraded because the speaker, who does not know "which book", is unlikely to also be able to assume the existence of a unique chapter (of that unknown book).

Our analysis is introduced in section 5.1 by discussing result nominals, both relational and functional. We then return to the other two types of nominals originally discussed by D&D: concrete nouns (section 5.2) and process nouns (section 5.3). Finally, we demonstrate how our analysis predicts the existence of additional cases of acceptable subextraction out of definites, specifically involving plural nouns and prenominal adjectives (section 5.4).

5.1. Result nominals

We introduce our analysis by demonstrating why extraction out of a relational result NP is subject to the definiteness effect, where extraction out of a definite NP is degraded in comparison with an indefinite one. This pattern constitutes the "definite island" effect, (Fiengo & Higginbotham, 1981; Bowers, 1987; Diesing, 1990; Mahajan, 1992; Davies & Dubinsky, 2003; Jiménez-Fernandez, 2012; Simonenko, 2015; Tollan & Heller, 2016; Abeillé, et al., 2020; Chaves & Putman, 2020; Neal & Dillon, 2021; Shen & Lim, 2022, a.o.), which we have also replicated in Experiments 1 and 2. To illustrate, we return to the example pair of complex NP extraction from (2), repeated below in (15).

[8] It is of course possible to accommodate this presupposition, although the necessary contexts describe situations which are rather infrequent. Consider, for example, a seminar on famous novels, where each student is assigned a single chapter from one of the novels studied. In this case, there would be no clash between the speaker being ignorant about the identity of the book and still being able to assume a uniquely identifiable chapter. Our analysis predicts a question like "*Which book did Sharon read the chapter of*?" (15b) to be acceptable in such a context. Based on our intuitions, this seems to work. However, accommodation of infrequent situations is difficult, and further research would be necessary to confirm this quantitatively.

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(15) Result noun, adapted from D&D (2003:24)
a. *Indefinite NP:* **Which book** did Sharon read [**a** chapter of __]?
b. *Definite NP:* **Which book** did Sharon read [**the** chapter of __]?

We start by considering extraction, specifically, the type of contexts that support the asking of a question. It is long recognized that a question is asked when the speaker lacks certain information (which they assume the addressee has: Searle, 1969). Consider (16), where the object of the verb "*read*" is extracted in its entirety.

(16) **Which book** did Sharon read __ ?

This question is appropriate in a context in which the speaker is ignorant about the identity of that book. This is standardly represented in semantics as variability in the denotation of which book: the question denotes the set of answers to this question (e.g., *Sharon read Wuthering Heights*, *Sharon read Mrs. Dalloway*, *Sharon read The Color Purple*; Hamblin, 1973; Karttunen, 1977) Importantly however, questions also encode information that the speakers *does* know: here, the speaker knows that Sharon read *some* book. The question is felicitous because these two aspects of the question are consistent: one can reasonably know that Sharon read a book without knowing which book it was.

Next, let us consider the contexts that support definite descriptions, specifically in object position. The meaning of definite descriptions with "*the*" has been discussed for over a century (since Russell, 1905) with semantic accounts debating whether the referent of a definite description need to be unique (e.g., Strawson, 1950) or "familiar" (e.g., Heim, 1982, Farkas, 2002). Importantly, this unique/familiar status is presuppositional in nature, namely it is assumed as *background* information (Strawson, 1950 et seq). To illustrate, consider the (in)definite objects in the declarative sentences in (17) and (18).

(17) Sharon read [**the** book about Prince Arthur]. [cf. (2)]
(18) Sharon read [**a** book about Prince Arthur]. [cf. (2)]

When the object is definite, the context that supports uttering this sentence entails pes the existence of a unique/familiar book about Prince Arthur. Because nouns generally denote *sets* of objects– there are many books in the world – achieving unique/familiar status requires contextual support. In contrast, the indefinite object NP in (18) does not place any such restriction on the context: it may introduce a (non-unique) book about Prince Arthur to the context (Kamp, 1981, Heim, 1982, et seq.). For simplicity, in what follows our discussion will be couched in terms of uniqueness.

Having presented both ingredients – namely the meaning of questions and of the uniqueness presupposition associated with definite NPs – we can now turn to examine how these interact in cases of subextraction. In both (15a) and (15b), the speaker does not know which book; namely, there is variability in the identity of the book. But the rest of the question provides information about what the speaker *does* know. A speaker who utters (15a) assumes an event where Sharon read a chapter of some book. Because books normally have chapters, it is plausible for the speaker to assume that Sharon read *some* chapter despite not knowing which book it was. Formally, when the indefinite *a* is used, the speaker assumes the *existence* of a (non-unique) chapter, which

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is consistent with not knowing which book. In contrast, a speaker who utters (15b) signals, with the use of the definite, the presupposition of a *unique* chapter, while asking about the book. In other words, this question requires a context where the speaker does not know which book, and yet they do have a unique chapter in mind, a situation that is highly unlikely More generally, the uniqueness presupposition associated with the definite (e.g., the chapter of which book) is not consistent with the variability in the subpart of the object (e.g., *which book*), resulting in a degraded question due to presupposition failure (cf. Abrusán, 2011). This inconsistency can also be illustrated by considering possible answers for the question in (15b), which may include: *Sharon read the chapter of Wuthering Heights, Sharon read the chapter of Mrs. Dallloway, Sharon read the chapter of The Color Purple:* these answers are infelicitous, presumably because there isn't enough information to be able to find a referent for the object (i.e., there is no contextual support for a unique chapter). We argue that it is the clash between two aspects of the question that renders (15b) degraded.

However, as we have seen above, some nouns allow for extraction out of a definite NP. In section 4 (Experiment 3), we demonstrated that when the head noun of a definite NP is a functional noun in the sense of Löbner (1985) such subextraction is not degraded. A functional noun maps its complement onto a singleton entity: for example, when a noun such as *"title"* combines with a complement such as *"book"*, the result is a single title (formally: Löbner argues that title denotes a function from books to title). This is in contrast to a relational noun that maps its complement onto a *set* of entities: for example, when a noun such as *"chapter"* combines with a complement such as *"book"*, the result is the set of chapters of that book. Consider (19) which in minimally different from (15b) in that the head noun is functional:

(19) *Which book did Sharon read* [*the* ***title*** *of* _]*?*

To apply our analysis, let us consider extraction and definiteness in (19), the two components that clash in (15b). Like in (15b), the extraction calls for a context in which the speaker is ignorant about *"which book"*, creating a variability in the identity of the book, which is part of the object NP. At the same time, a speaker who utters (19) presupposes a *unique* title of a book (whose identity the speaker does not know). Because books normally have only one title (cf. a set of chapters in 15), it is not only plausible for the speaker to assume that the book they don't know has *a* title, but they are actually able to assume that whatever book it is has a *unique* title, thereby satisfying the uniqueness presupposition of the definite despite the variability in the identity of the book. We can again consider this question from the perspective of its possible answers, which may include: *Sharon read the title of Wuthering Heights, Sharon read the title of Mrs. Dallloway, Sharon read the title of The Color Purple:* but in this case the answer are felicitous, as the functional meaning of *title* allows finding a referent for the object, independent of which book is plugged in. Thus, in this case the uniqueness presupposition associated with the definite determiner does not clash with the ignorance restriction posed by the extraction.

In sum, extraction from NP objects with a functional noun is unproblematic because there is no semantic-pragmatic clash: the speaker can be ignorant about the identity of the extracted *wh* complement while simultaneously presupposing that the head noun will be mapped onto a singleton entity. Thus, the uniqueness presupposition of the definite description is satisfied. On the

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other hand, relational nouns denote a set of entities when combining with their complement, and so the uniqueness presupposition requires contextual support. However, a variability imposed by the *wh* question pragmatically disrupts this process, leading to a degraded question.

5.2. Concrete nominals

Our experiments revealed two new patterns with respect to concrete nouns. First, in Experiment 1 we found that they are like result nouns in that they exhibit the definiteness asymmetry in subextraction (contra D&D), and in Experiment 2 we discovered that the overall degradation of questions with concrete NP objects is not simply caused by subextraction. We reasoned that this more general dispreference for complex concrete nominals is connected to concrete N^0s being less compatible with complements compared to result nouns. Consider the pair in (20).

(20) Concrete vs. result NPs.

a. *Result*. The chapter [of the book]. (cf. Expt. 3)
b. *Concrete*. The café [near the church]. (cf. D&D, 2003:1)

In the case of the result NP in (20a), the complement *"book"* is part of the lexical-conceptual structure of the head noun *"chapter"*. This same relationship does not hold for the concrete NP in (20b): It is *not* true that for any church, there is a café nearby (or that the location of any café is necessarily near a church). We propose that this difference in the relationship between the head noun and its complement is responsible for the overall degradation of questions with concrete nominals compared to result (and process) nominals. Importantly, as we saw in Experiment 2, this effect is not tied to the main topic of this paper, namely subextraction.

Directly relevant to our focus here is the finding that concrete NPs – just like result NPs – are subject to the definiteness asymmetry (Experiment 1). We therefore predict that, just like with result noun, if a concrete noun is functional, namely it maps its complement onto a singleton entity, then extraction from such a definite concrete NP object should be unproblematic. To test this prediction, we searched COCA (*Corpus of Contemporary American English*; Davies, 2008) for tokens that exhibit subextraction out of a definite NP object, this time with concrete nouns as the head. Indeed, we found such examples; these are given in (21), and involved the functional nouns *top*, *bottom* and *cover*.

(21) Corpus examples of extraction from definite **concrete** NP

a. *The library was a square, flat building of yellow brick, built into the side of* ***the hill that Masters Hall sat at [the top of __].***
[COCA, FICTION: 1991]

b. *[…] there are* ***pits all around that you can't see [the bottom of__].***
[COCA, WEB: 2012]

Under our analysis, these examples are possible because the uniqueness presupposition associated with the definite is satisfied without contextual support, because the head noun maps the complement onto a single entity: a hill only has one top, a pit only has one bottom, and magazines only have one cover.

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5.3. Process nominals.

The third type of nominals discussed by D&D is process nouns. In Experiment 1, we confirmed D&D's original generalization that these nominals do not exhibit the definiteness asymmetry with respect to subextraction. Consider, for example, the pair in (22).

(22) a. ✓Which patient did the student observe [an **operation** on__]?
b. ✓Which patient did the student observe [the **operation** on __]?
(D&D, 2003: 15)

A speaker who utters (22a) doesn't know which patient, while, at the same time, know that the student observed *some* operation on that patient: because operations are normally done on patients – in fact, patient is an argument of operation – these requirements are compatible. The interesting question is why the definite does not lead to an inconsistency, specifically, how the uniqueness presupposition in (22b) is satisfied. Here, the speaker needs to be able to presuppose that a unique operation took place, despite not knowing the identity of the patient: this is possible because patients often undergo a single operation. In other words, most process nouns can be interpreted as either *relational* or *functional*, and thus extraction is consistently acceptable, whether the NP is indefinite or definite. We note that our analysis predicts that if there are process nouns that are restricted to a functional or relational meaning, these should exhibit the patterns observed for result nominals in Experiment 3; we leave this for future investigations.

5.4. Further cases: plural and adjectival modification

Our analysis makes the further prediction that any case where the uniqueness presupposition of the definite description can be satisfied in a context where the speaker is ignorant about the identity of the extracted complement would lead to an acceptable question. In this section we demonstrate that this prediction is borne out when the head noun is *plural* and when certain *adjectives* are included in the DP.

First, as already pointed out by Chaves & Putnam (2020), certain instances of otherwise degraded extraction across a definite determiner, as in (23a), are improved when the head noun is plural, as in (23b).

(23) Plurality and subextraction

a. # Which ex-boyfriend did you rip [the **picture** of__]?
b. Which ex-boyfriend did you rip [the **pictures** of _]?

(Adapted from Chaves & Putnam, 2020: 65)

Our analysis posits that (23a) is degraded because it is highly unlikely that a speaker who is ignorant about the identity of the ex-boyfriend can at the same time presuppose that there's only a unique picture. The question in (23b) is different because, in the case of plurals, uniqueness is reframed using the concept of maximality (Link, 1983; Landman, 1989 et seq), and so the plural (*the pictures of which boyfriend*) denotes the *maximal* entity that consists of all the pictures in the

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set. Therefore, while in the singular case the question requires the speaker to have a unique picture in mind despite not knowing whose picture it is, in the plural case there is only one maximal entity that consists of all the pictures of any individual, and this does not depend on knowing how many pictures are part of this plural individual.

A second case where subextraction is not degraded is when the definite object includes certain adjectives, specifically adjectives that allows for uniqueness while maintaining ignorance about the complement. Consider the bare nominal object in (24a), alongside three different adjectives: while including *long* (24b) does not alter the acceptability of (24a), adjectives like the superlative *longest* (24c) and the ordinal *second* (24d) do render the question acceptable:

(24) Prenominal adjectives and subextraction

a. #Which book did Sharon read [the chapter of __]?
b. #Which book did Sharon read [the **long** chapter of __]?
c. Which book did Sharon read [the **longest** chapter of __]?
d. Which book did Sharon read [the **second** chapter of __]?

Like (24a), (24b) is degraded because it is unlikely that a speaker who does not know which book could also presuppose a unique long chapter. In contrast, adding the superlative as in (24c) rescues this situation because one can straightforwardly assume that any book has a unique chapter that is the longest of all of them, and so the uniqueness presupposition is satisfied despite the ignorance about which book. Similarly, (24d) is not degraded because one can assume there to be a unique *second* chapter, but at the same time, still be ignorant about the identity of the book overall. In sum, any adjective that allows satisfying the uniqueness presupposition while maintaining the variability in the identity of the complement will obviate the definite NP object island.

6. Conclusion.

In this paper, we conducted three acceptability judgment experiments and considered several naturally-occurring examples in order to re-examine the definiteness asymmetry in extraction from NP objects. Our starting point was Davies & Dubinsky (2003) generalization that different kinds of nominals –concrete, result, and process – respond differently to definiteness in extraction contexts, and our results are only partially consistent with D&D's. First, while D&D argued that extraction from **concrete nominals** is unacceptable independent of definiteness, we found that (i) subextraction from concrete nominals does exhibit the definiteness asymmetry (Exp. 1 and 2), (ii) modified concrete nominals are degraded independent of subextraction (Exp. 2), and (iii) subextraction from definite concrete nominals is acceptable when that concrete noun is functional (see again 21). Second, while D&D argued that subextraction from **result nominals** is acceptable when it is indefinites and unacceptable when it is definite, we demonstrated that subextraction from definite result NP objects is acceptable (i) when the head noun is *functional* (as opposed to *relational*, Exp. 3), (ii) when the head noun is *plural* (section 5.4), and (iii) when the head noun is modified by a *superlative or ordinal adjective* (section 5.4). Finally, with respect to **process** NP objects, we found, in addordance with D&D, that subextraction is always acceptable.

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Can a syntactic account such as Davies & Dubinsky (2003) be modified to account for these new findings? One might begin by re-carving the original distinction between the three NP types – concrete, result, and process – as instead distinguishing *relational* nouns (which are degraded in subextraction construction) and *functional* nouns (which permit subextraction). However, as we have discussed, however, such an account also needs to attend to additional factors beyond NP type – such as number (i.e., plurality of the head N^0), and a subset of adjectival modifiers (i.e., specifically, only the kinds of adjectival modifiers that contribute to making a noun unique in a certain context). In D&D's framework, this would therefore require several additional stipulations.

We instead propose a semantic-pragmatic account in which degraded questions arise from an inconsistency between the question's meaning and definiteness. On the one hand, we draw on the observation that *wh* extraction requires a context in which the speaker is ignorant about the identity of the extracted complement. At the same time, the concomitant use of a definite description headed by *"the"* carries a uniqueness presupposition. Thus, extracting the complement from definite object NPs is acceptable when the uniqueness presupposition can be satisfied despite the ignorance of the speaker about the complement, or, in other words, despite the variability in the complement. We saw that this happens when the head noun is functional (Exp. 3; see also section 5.2), when it is plural (section 5.4) or when it is modified by a superlative or an ordinal adjective (section 5.4).

While our focus here has been matrix question, subextraction may also occur in relative clauses. As originally noted by Grosu (1973) and further discussed by Simonenko (2015) and Chaves & Putnam (2020), the definiteness effect on *wh* question extraction from object NPs does *not* generally hold for relative clauses. This is demonstrated in (25), where extraction out of a definite NP object in a relative clause dependency appears to be acceptable –note that the head noun here is *not* functional, which is precisely the type of extraction that is degraded in *wh* questions).

(25) The person [$_{RC}$ who you took [**the** picture of __]] is lucky.

(Chaves & Putnam, 2020: 65)

In short, while a relative clause involves extraction (parallel to a *wh* question), the meaning of a relative clause does not involve ignorance of the speaker (reflected in variability). Therefore, there is no semantic-pragmatic inconsistency with the uniqueness presupposition of the definite. However, a complete analysis of relative clauses goes beyond the scope of the current paper[9]. It is worth noting, nonetheless, that, in their investigation of subject islands (see again

[9] Shen & Lim (2022) recently looked at extraction out an indefinite NP in relative clauses and embedded *wh* questions, comparing this with extraction out of a demonstrative NP. The materials of that study differ from the ones we discuss here in two important ways. First, it examines *demonstrative* NPs, which are licensed in different contexts than the definites we discuss here (see e.g., Gundel et al., 1993; Roberts 2002; Wolter, 2006). Second, it examines *embedded* questions, which are licensed in different contexts than the matrix questions discussed here (Karttunen, 1977; cf. D&D, 2003, and Abeillé et al., 2020). Shen & Lim did not observe a significant interaction of construction type and definiteness. Because a null outcome of on a frequentist statistical analysis naturally cannot be interpreted as evidence against or in favor of any hypothesis that has been put forth, we set this study aside for our present purposes.

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1a), Abeillé et al. (2020) find that these effects hold with matrix questions but not in relative clauses.

Broadly speaking, our proposal adds to the approach advocating for the view that most island constraints are not borne out of syntactic restrictions but arise because they create ill-formed meaning (Erteschik-Shir; 1973; Szabolcsi & Zwarts, 1993; Goldberg, 2006; Oshima, 2006; Fox & Hackl 2007; Abrusán, 2011; Simonenko, 2015; Chaves & Dery, 2019; Chaves & Putnam, 2020; Abeillé et al. 2020; see Liu, Winckel, Abeillé, Hemforth & Gibson, 2022 for an overview). For syntactic theory, therefore, the emerging generalization is one in which syntactic A-bar movement itself is far less restricted than has previously been envisioned, but that the output of certain A-bar movement operations (within the context of the current study: extraction from complex NP objects) is ultimately governed by non-syntactic factors (e.g., semantic and pragmatic ones) which independently impact on the perceived well-formedness of the resulting construction.

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Appendix

Table 1. Materials for Experiment 1.

Item	Type	Token
1	concrete	Which king did the butler destroy {a/the} figurine of?
2	concrete	Which street did Pete visit {an/the} office on?
3	concrete	Which church did Ashley like {a/the} café near?
4	concrete	Which president did Anna drop {a/the} book about?
5	concrete	Which politician did Mary destroy {a/the} article about?
6	concrete	Which cathedral did Ravi see {a/the} tower of?
7	concrete	Which wood did Kim find {a/the} table of?
8	concrete	Which neighbor did Rosie walk {a/the} dog of?
9	result	Which army did the Phillies hope for {a/the} victory over?
10	result	Which pupil did the teacher hear {a/the} rumor about?
11	result	Which nation did the Vikings aim for {a/the} triumph over?
12	result	Which philosopher did Hamish read {a/the} thesis about?
13	result	Which highway did Seth read {a/the} story about?
14	result	Which friend did Laura hear {a/the} joke about?
15	result	Which animal did Aaron watch {a/the} documentary about?
16	result	Which politician did Erin criticize {an/the} essay about?
18	process	Which tree did the arborist oversee {a/the} felling of?
19	process	Which patient did Sarah oversee {an/the} examination of?
20	process	Which city did the army witness {a/the} destruction of?
21	process	Which queen did the town mayor watch {a/the} coronation of?
22	process	Which moon did NASA film {a/the} rotation of?
23	process	Which play did Michael observe {a/the} production of?
24	process	Which song did Simon judge {a/the} performance of?

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Table 2. Materials for Experiment 2.

Item	Type	Extraction	Token
1	concrete	Inside NP	Which king did the butler destroy {a/the} figurine of?
		Outside NP	When did the butler destroy {a/the} figurine of the English king?
2	concrete	Inside NP	Which street did Pete visit {an/the} office on?
		Outside NP	When did Pete visit {an/the} office on the High Street?
3	concrete	Inside NP	Which church did Ashley like {a/the} café near?
		Outside NP	Why did Ashley like {a/the} café near the old church?
4	concrete	Inside NP	Which president did Anna drop {a/the} book about?
		Outside NP	When did Anna drop {a/the} book about the president?
5	concrete	Inside NP	Which politician did Mary destroy {a/the} article about?
		Outside NP	When did Mary destroy{an/the} article about the politician?
6	concrete	Inside NP	Which cathedral did Ravi see {a/the} tower of?
		Outside NP	When did Ravi see {a/the} tower of the old cathedral?
7	concrete	Inside NP	Which wood did Kim find {a/the} table of?
		Outside NP	When did Kim find {a/the} table of the dyed wood?
8	concrete	Inside NP	Which neighbor did Rosie walk {a/the} dog of?
		Outside NP	When did Rosie walk {a/the} dog of the neighbor?
9	result	Inside NP	Which army did the Phillies hope for {a/the} victory over?
		Outside NP	Why did the Phillies hope for {a/the} victory over the Scots army?
10	result	Inside NP	Which pupil did the teacher hear {a/the} rumor about?
		Outside NP	When did the teacher hear {a/the} rumor about the pupil?
11	result	Inside NP	Which nation did the Vikings aim for {a/the} triumph over?
		Outside NP	Why did the Vikings hope for {a/the} triumph over the English?
12	result	Inside NP	Which philosopher did Hamish read {a/the} thesis about?
		Outside NP	When did Hamish read {a/the} thesis about the philosopher?
13	result	Inside NP	Which highway did Seth read {a/the} story about?
		Outside NP	When did Seth read {a/the} story about the new highway?
14	result	Inside NP	Which friend did Laura hear {a/the} joke about?
		Outside NP	When did Laura hear {a/the} joke about her best friend?
15	result	Inside NP	Which animal did Aaron watch {a/the} documentary about?
		Outside NP	When did Aaron watch {a/the} documentary about the badger?
16	result	Inside NP	Which politician did Erin criticize {an/the} essay about?
		Outside NP	Why did Erin criticize {an/the} essay about the politician?

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Table 3. Materials for Experiment 3.

Item	Uniqueness	Token
1	Non-unique	Which book did Joan read {a/the} chapter of?
1	Unique	Which book did Joan read {a/the} title of?
2	Non-unique	Which artist did Arthur admire {a/the} painting of
2	Unique	Which artist did Arthur admire {an/the} autobiography of?
3	Non-unique	Which manuscript did Laura sign {a/the} copy of
3	Unique	Which manuscript did Laura sign {a/the} copyright of?
4	Non-unique	Which movie did Juan see {a/the} repeat of?
4	Unique	Which movie did Juan see {a/the} world premiere of?
5	Non-unique	Which book did Katie read {a/the} page of?
5	Unique	Which book did Katie read {a/the} front cover of?
6	Non-unique	Which journal did Vera see {a/the} page of?
6	Unique	Which journal did Vera see {a/the} cover of?
7	Non-unique	Which novel did Marion look at {a/the} chapter of?
7	Unique	Which novel did Marion look at {a/the} title of?
8	Non-unique	Which newspaper did Michael read {a/the} paragraph of?
8	Unique	Which newspaper did Michael read {a/the} name of?