

# Are adjunct clauses not real islands in English and Danish?

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based on collaborative work with  
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*Workshop on the Syntax and Morphology  
of Danish, English, and Related Languages  
on the occasion of the PhD defence of Katrine Rosendal Ehlers  
April 5 2024, Aarhus University*



# Outline

- Extraction from adjunct clauses in English
- Danish study: Replication of English study:
  - Experiment 1: Extraction (relativization) from adjunct clauses in Danish
  - Experiment 2: Replication of exp. 1 without context
  - Experiment 3: Replication of exp. 1 with topicalization
- Discussion
  - Cross-linguistic and cross-constructional variation

# Background

- Adjunct clauses are traditionally assumed to be strong islands cross-linguistically:

(1) \*Who did Mary cry [after John hit \_\_\_]? (Huang 1982: 503)

- The unacceptability of (1) has been accounted for under the *Condition on Extraction Domain* (CED, Huang 1982: 505).
  - The CED treats adjunct clauses as uniformly strong islands
  - Hence, we should expect consistent, low ratings for extractions,
  - and little or no variation in acceptability across different adjunct clause types.

# Background

- However, extraction from adjunct clauses are widely attested in Mainland Scandinavian (MSc.), e.g.

(2) Den vase får du ballade [hvis du taber \_\_\_\_ ].

*that vase get you trouble if you drop*

‘You are in trouble if you drop that vase.’

(Hansen and Heltoft 2011, 1814)

- Recent studies have similarly shown that adjunct clauses may not be strong islands in Msc. and that not all adjunct clauses are equally sensitive to extraction.

# Background

In MSc., the acceptability of extraction from adjunct clauses appears to be contingent on various factors, incl.:

- Adjunct clause type:
  - In Norwegian and Swedish, **topicalization** from **conditional** and **temporal** adjuncts is more acceptable than from **causal** ones (Bondevik et al. 2020; Müller 2017)
- Dependency type:
  - **Topicalization** is more acceptable than **wh-extraction** (Kush et al. 2018, 2019)
- Context:
  - The presence of a **facilitating context** increase acceptability of extraction (Kush et al. 2019)

Bondevik, Ingrid, Dave Kush & Terje Lohndal. 2020. Variation in adjunct islands: The case of Norwegian. *Nordic Journal of Linguistics* 1–32. <https://doi.org/10.1017/S0332586520000207>.

Kush, Dave, Terje Lohndal & Jon Sprouse. 2018. Investigating variation in island effects: A Case Study of Norwegian Wh-Extraction. *Natural Language & Linguistic Theory* 36(3). 743–779. <https://doi.org/10.1007/s11049-017-9390-z>.

Kush, Dave, Terje Lohndal & Jon Sprouse. 2019. On the island sensitivity of topicalization in Norwegian: An experimental investigation. *Language* 95(3). 393–420. <https://doi.org/10.1353/lan.2019.0051>.

Müller, Christiane. 2017. Extraction from Adjunct Islands in Swedish. *Norsk Lingvistisk Tidsskrift* 35(1). 67–85.

# Purpose of the studies

- **Goal 1: Cross-constructional comparison:**
  - Investigate whether the acceptability of adjunct clause extraction in Danish varies across different types of adjunct clauses (like in Swedish and Norwegian).
- **Goal 2: Cross-linguistic comparison:**
  - Compare the island sensitivity of different adjunct clauses between Danish (present study) and English (Nyvad et al. 2022).
- This cross-linguistic comparison is possible because both use the two studies investigate extraction **using the same design and materials.**

# Acceptability judgment experiment

We wanted to compare contextually facilitated relativization from English finite adjunct clauses headed by *if*, *when*, and *because*:

- Matrix pred.: Psych adjective, e.g., *happy*, *surprised*, *upset*, ...
- Why relativization?
  - For comparative purposes, since topicalization is a marked structure in English.
  - An exploratory corpus study on adjunct extraction in naturalistic English returned only cases of relativization (Müller & Eggers, 2022):
    - (3) a. Many of the exercises are ones that I would be surprised [if even 1 percent of healthy women can do \_\_\_\_].
    - b. Now, those are things that I feel very warm [when I look at \_\_\_\_].
- Like **topicalization**, **relativization** from certain islands appears to be more acceptable than *wh*-extraction (Sprouse et al. 2016; Abeillé et al. 2020).

# Stimuli in the English study

(Nyvad, Müller & Christensen 2022)

(4) Context: *In **the latest workout routine** I designed for Emma, I really wanted to make it impossible for her and included **another set of particularly brutal pull-ups**.*

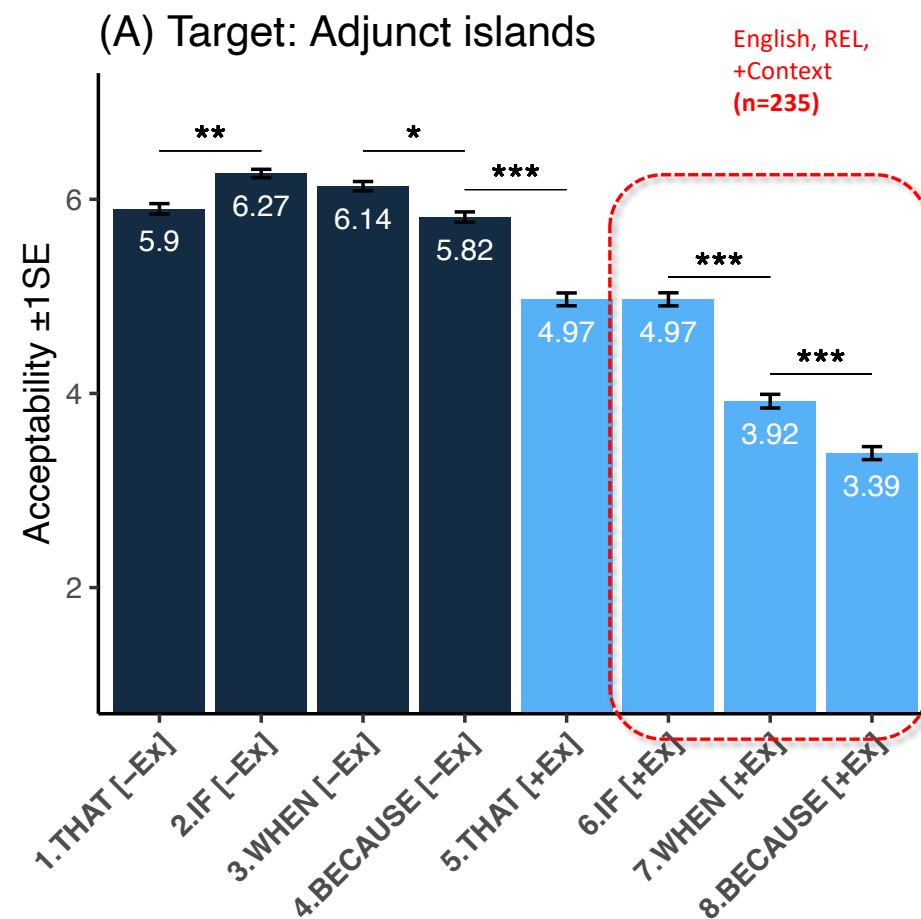
- a. It's obvious that I was surprised [**that** she actually completed **this exercise**]. [-EX, -ISL]
- b. It's obvious that I would be surprised [**if** she actually completed **this exercise**]. [-EX, +ISL]
- c. It's obvious that I was surprised [**when/because** she actually completed **this exercise**]. [-EX, +ISL]
  
- e. This is **the exercise** that I was surprised [**that** she actually completed \_\_\_\_]. [+EX, -ISL]
- f. This is **the exercise** that I would be surprised [**if** she actually completed \_\_\_\_]. [+EX, +ISL]
- g. This is **the exercise** that I was surprised [**when/because** she actually completed \_\_\_\_]. [+EX, +ISL]



# English study

(Nyvad, Müller & Christensen 2022)

- Heterogeneous pattern (Nyvad et al. 2022):
  - Different acceptability: *If* > *when* > *because*
  - Different distributions for each type
  - *If*-clauses scored relatively high and showed no significant difference from non-island *that*-clause extraction.
    - Conclusion: *if*-clauses are not strong islands in English,
    - cf. also Sprouse et al. (2016), who did not find a clear island effect for *if*-clauses.



English might thus be more similar to MSc. than previously assumed...?

# Danish study

Nyvad, Christensen & Müller (submitted)

- Follow-up study on extraction from Danish adjunct clauses.
- Same design and setup as Nyvad et al. (2022), stimuli translated into Danish.

(5) Kontekst: *I **det sidste træningsprogram** jeg udarbejdede for Emma, ville jeg gøre det så godt som umuligt for hende og inkludere derfor **endnu et sæt virkelig brutale pull-ups**.*

- a. Det er åbenlyst, at jeg blev overrasket over, [**at** hun faktisk gennemførte dét program]. [-EKS, -ISL]  
b. Det er åbenlyst, at jeg ville blive overrasket, [**hvis** hun faktisk gennemførte dét program]. [-EKS, +ISL]  
c. Det er åbenlyst, at jeg blev overrasket, [**da/fordi** hun faktisk gennemførte dét program]. [-EKS, +ISL]  
d. Det er dét program som jeg blev overrasket over, [**at** hun faktisk gennemførte \_\_\_\_]. [+EKS, -ISL]  
e. Det er dét program som jeg ville blive overrasket, [**hvis** hun faktisk gennemførte \_\_\_\_]. [+EKS, +ISL]  
f. Det er dét program som jeg blev overrasket, [**da/fordi** hun faktisk gennemførte \_\_\_\_]. [+EKS, +ISL]

# Design

- 24 sets of items, distributed across eight lists (Latin square design)
- Fillers (and points of comparison): 8 sets of subject islands (6a) and 8 sets of coordinate structure islands (6b):
  - (6) a. Det er dén virus, som vi blev glade for, at [vores vaccine mod \_\_\_] endelig fik Nobelprisen.  
*This is the virus that we were happy for that our vaccine against finally won the Nobel Prize*
  - b. Det er hunden, som jeg blev flov over, at jeg faktisk mistede [både katten og \_\_\_] samme dag.  
*This is the dog that is got embarrassed over that I actually lost both the cat and same day.*
- Participants: n=335, all native speakers of Danish.
- Task: Acceptability rating, 7-point scale
  - (1 = “completely unacceptable”, 7 = “completely acceptable”)

# Predictions

- The CED doesn't seem to hold for English adjunct clauses (cf. Nyvad et al. 2022), so it may not be universal:
- **Adjunct clauses are not strong islands in Danish.**
  - Examples with extraction are easy to find “in the wild” (Müller & Eggers 2022)
  - Danish most likely patterns with Norwegian and Swedish (cf. other island extractions, Christensen & Nyvad 2014)
- **Variation in acceptability depends on the complementizer** (as in English, Nyvad et al. 2022, and Norwegian, Bondevik et al. 2020, Kush et al. 2019).

Bondevik, Ingrid, Dave Kush & Terje Lohndal. 2020. Variation in adjunct islands: The case of Norwegian. *Nordic Journal of Linguistics* 1–32. <https://doi.org/10.1017/S0332586520000207>.

Christensen, Ken Ramshøj & Anne Mette Nyvad. 2014. On the nature of escapable relative islands. *Nordic Journal of Linguistics* 37(1). 29–45. <https://doi.org/10.1017/S0332586514000055>.

Kush, Dave, Terje Lohndal & Jon Sprouse. 2019. On the island sensitivity of topicalization in Norwegian: An experimental investigation. *Language* 95(3). 393–420. <https://doi.org/10.1353/lan.2019.0051>.

Müller, Christiane & Clara Ulrich Eggers. 2022. Island Extractions in the Wild: A Corpus Study of Adjunct and Relative Clause Islands in Danish and English. *Languages* 7(2). 125.

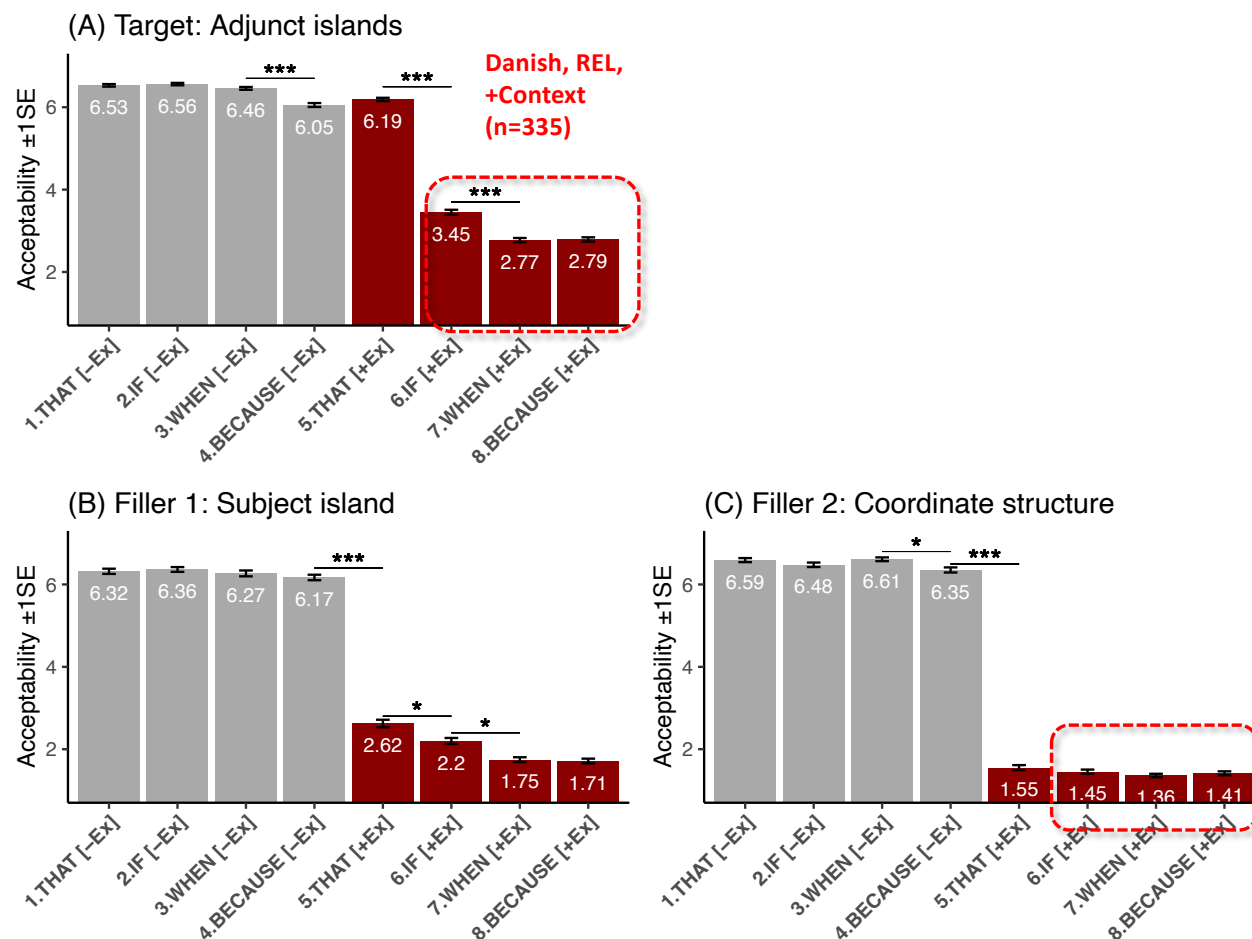
<https://doi.org/10.3390/languages7020125>.

Nyvad, Anne Mette, Christiane Müller, and Ken Ramshøj Christensen. 2022. “Too True to Be Good? The Non-Uniformity of Extraction from Adjunct Clauses in English.” *Languages* 7 (4): 244.

<https://doi.org/10.3390/languages7040244>.

# Results

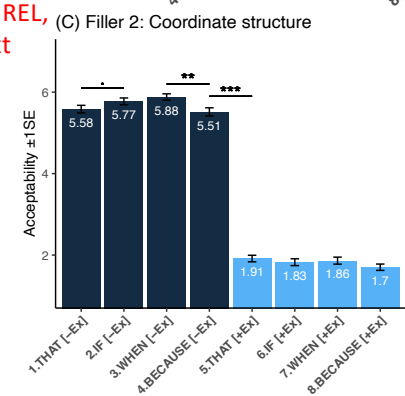
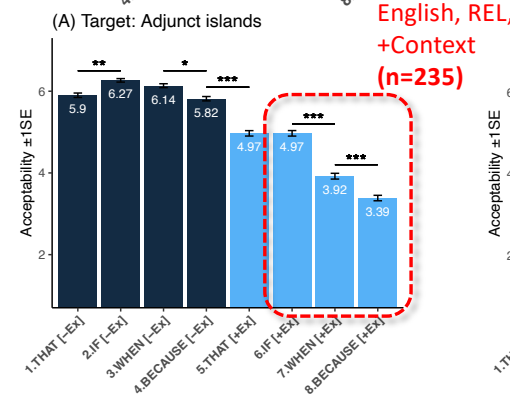
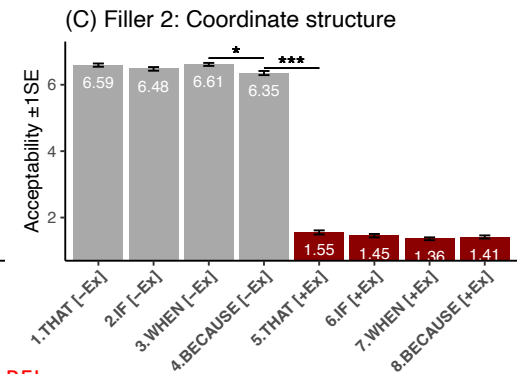
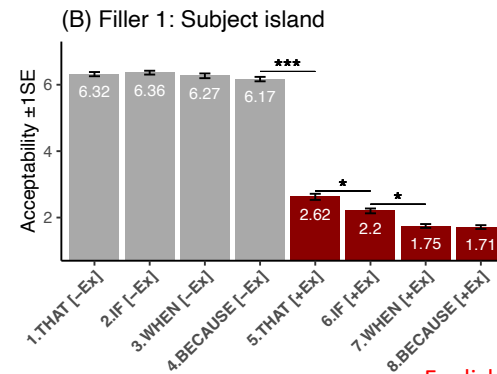
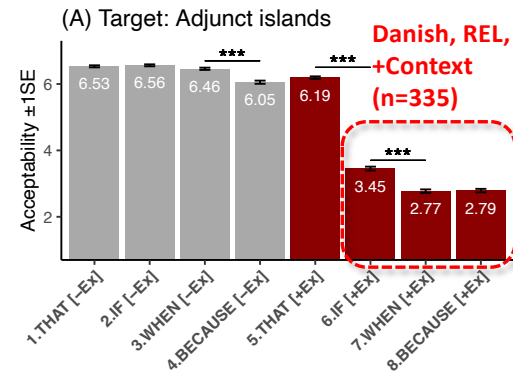
- Significant **extraction effect** across the board
  - (also for *that*-clauses,  $p < 0.01$ )
- Significant island effects:
  - *That* > *if* > *when*, but *when*=*because*
  - But the ratings are **not at floor**: All target extraction approx. 1.4 points higher than filler 2 (extraction from a coordinate structure).



# Results

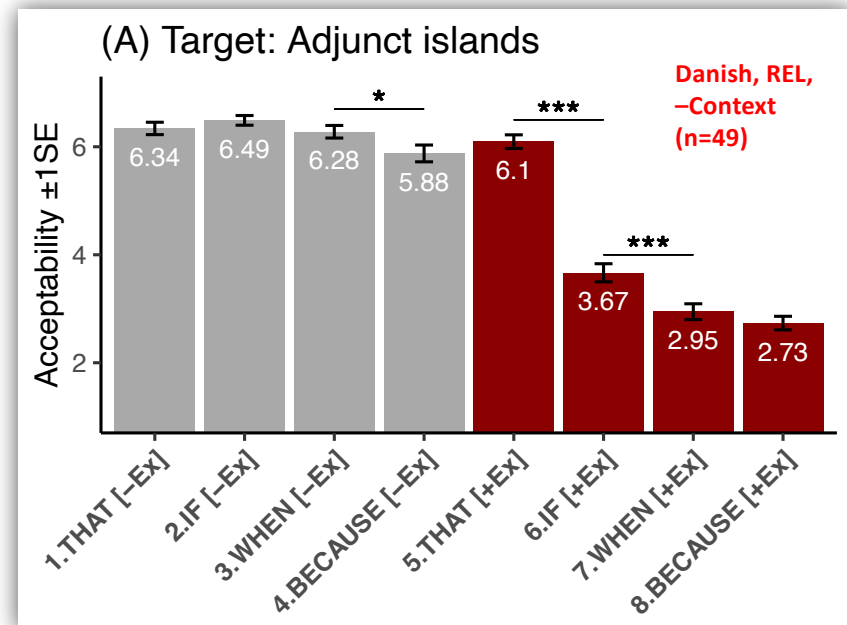
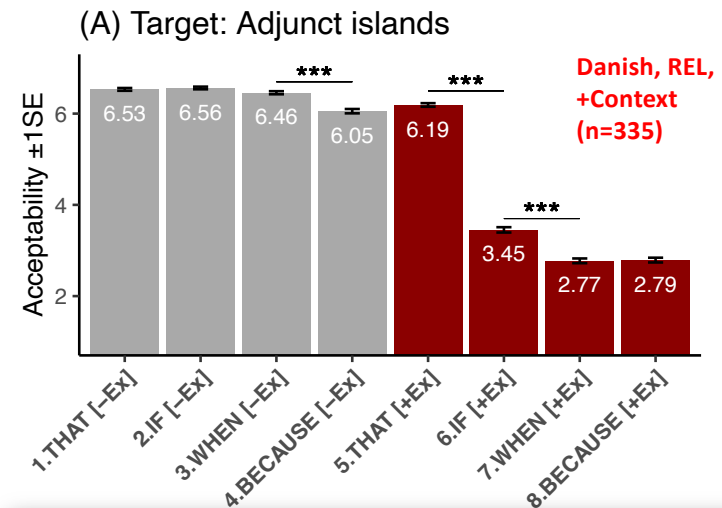
- **Stronger island effects than for English!**

- Interaction between language and extraction  $p < 0.001$ .



# Results

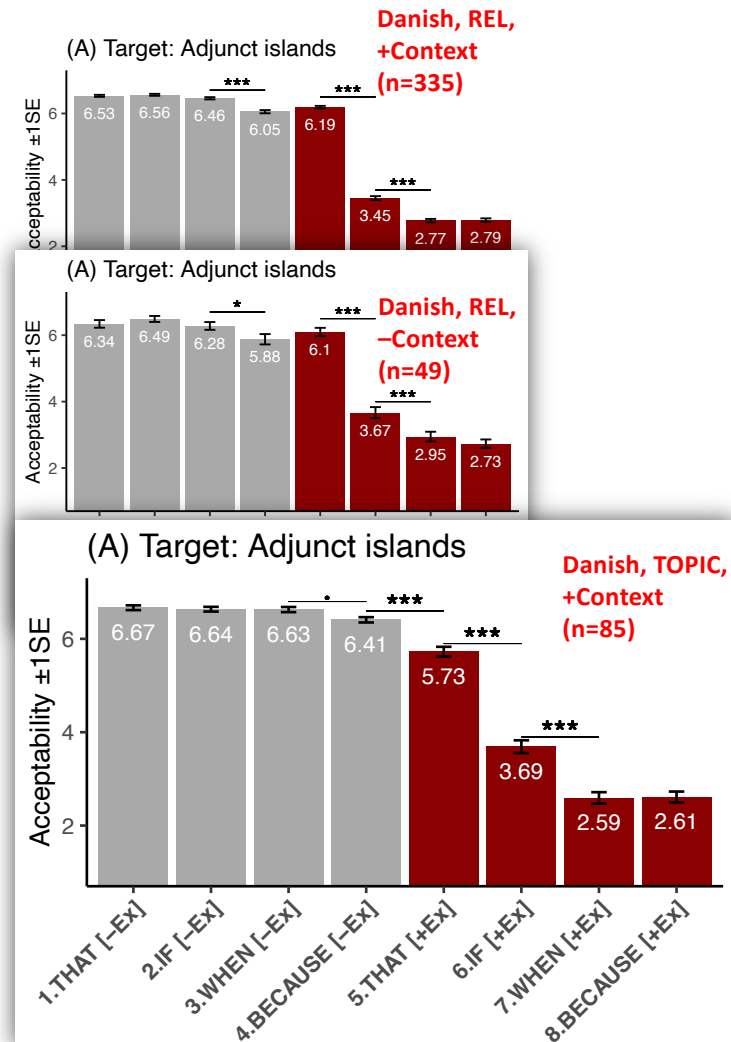
- Could the general low ratings of extraction from *if*, *when*, and *because* be due to **translation, i.e. bad context?**
  - Kush et al. (2018): Facilitating context significantly increases acceptability of extraction from adjunct islands.
- **Exp. 2: Replication of exp. 1 without context.**
  - Good (supportive) context → optimal conditions → facilitation, highest acceptability
    - Removal → reduction in acceptability
  - Bad (non-supportive) context → suboptimal conditions → reduced acceptability
    - Removal → increase in acceptability
- **Same result! No significant fixed effect of context:  $p > 0.34$ .**
  - no significant interaction with extraction.



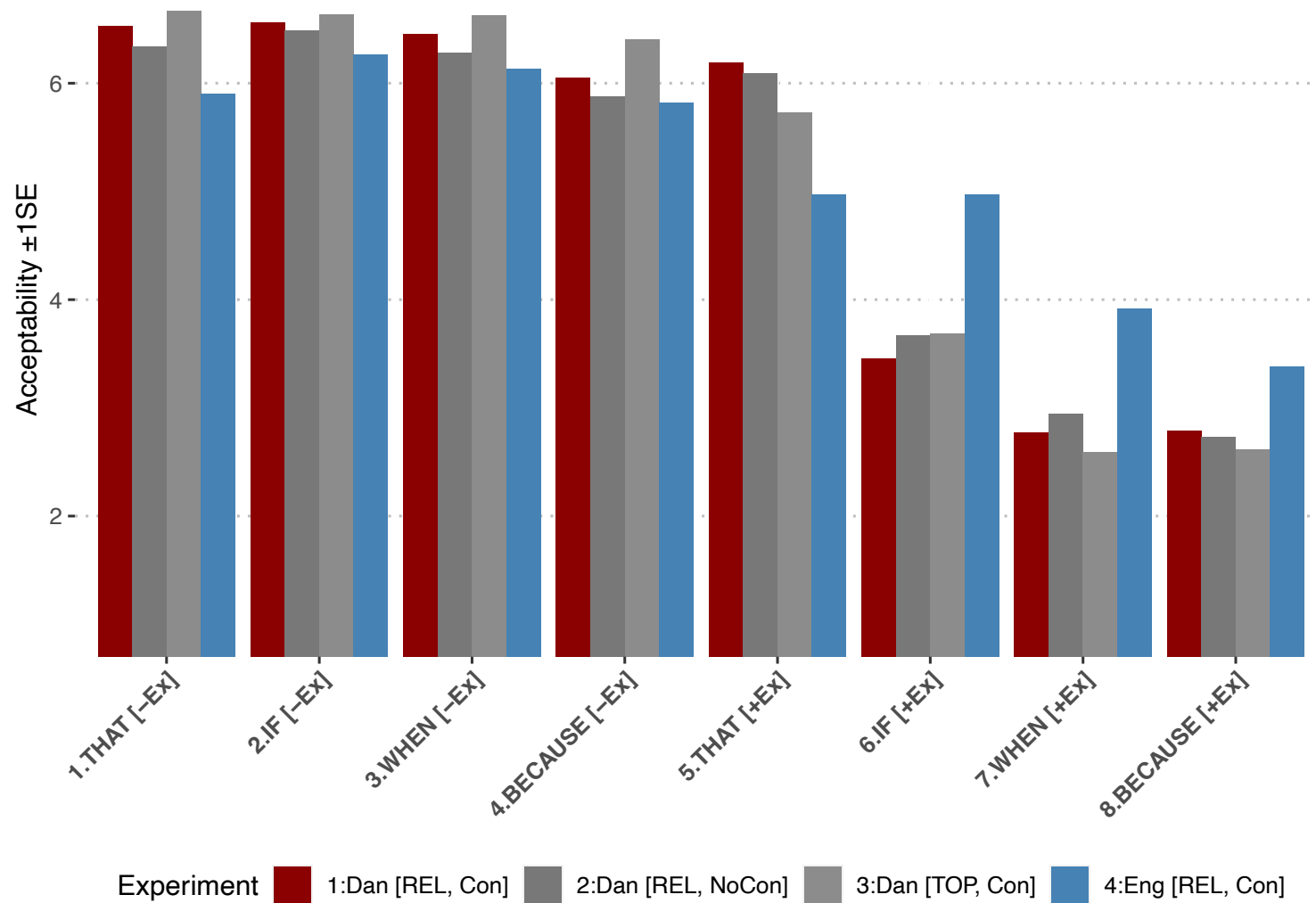


# Results

- Could the general low ratings of extraction from *if*, *when*, and *because* be due to **dependency type**?
  - REL > WH (Sprouse et al. 2016)
  - TOP > WH (Kush et al. 2019)
- **Exp. 3: Replication of exp. 1 with topicalization instead of relativization.**
  - Danish is V2. 39% X-Verb-Subj (Mikkelsen 2015)
  - Topicalization is very common and ‘unmarked’
- **Same result again! TOP ≈ REL.**
  - **No sign. fixed effect of dependency type:  $p > 0.55$ ;**
  - Only significant interaction with extraction for *that* ( $p < 0.002$ ).



# Results



# Results

- As predicted, acceptability showed a rather non-uniform pattern:
  - Extraction from *if*-clauses > extraction from *when*- and *because*-clauses.
  - But unlike in English, Danish *if*-clauses did not pattern with non-island *that*-clauses.
- Extraction from all three types of adjunct clauses was ranked remarkably low (2.5-3.7).
  - But the ratings are **not at floor**: All target extraction approx. 1.4 points higher than filler 2 (coordinate structure violation).

# Variation between complementizers

- The variation in acceptability as a function of complementizer is difficult to explain with a purely syntactic account.
  - *If/when/because*-adjunct clauses adjoined to the same structural position.
  - *If/when* often assumed to involve an (island inducing) operator in CP-spec.
  - *Because* is not standardly assumed to have such an operator.
  - *Because*-clauses arguably have more elaborate, root-like structures, but they are as (un)acceptable as *when* in the Danish study.

# Cross-linguistic variation

- The claims of crosslinguistic variation in adjunct islands are based on **comparisons of rather different structures** in English and Scandinavian.
- Once we consider the (variation of the) impact of different extraction dependencies on extractability, the emerging picture is that the crosslinguistic variation between these languages may have been **exaggerated**.
- Different adjunct clauses display a non-uniform behavior when it comes to extraction, with some of them (i.e. *if*-clauses) **not** behaving like **categorical islands**.

# Discourse-functional explanation?

Difference in extraction dependencies is unexpected under traditional syntactic accounts of adjunct islands (such as the CED), but might be derived from a discourse-functional account of islands?

Extraction places a discourse element in a “prominent” position. Focalising an extracted element clashes with a base position in a backgrounded constituent  
→ Hence, island effects, according to Erteschik-Shir (1973) and Goldberg (2006).

Focus-Background Conflict (FBC) Constraint (Abeillé et al. 2020):

*A focused element should not be part of a backgrounded constituent*

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.

<https://doi.org/10.1016/j.cognition.2020.104293>.

Erteschik-Shir, Nomi. 1973. *On the nature of island constraints*. MIT PhD dissertation.

Goldberg, Adele. 2006. *Constructions at Work: The Nature of Generalization in Language*. Oxford: Oxford University Press.

# Discourse-functional explanation?

Adverbial clauses are typically not focused:

(7a) This is the exercise that I would be surprised [if she actually completed \_\_\_].

(7b) Det er dét program som jeg ville blive overrasket, [hvis hun faktisk gennemførte \_\_\_].

Relativization as such does not focalize the associate, as it simply adds extra information about a given element → no substantial discourse-functional ‘clash’. But:

- English stimuli: Demonstrative, ‘existential’ structure.
- Danish stimuli: Clefts (with stress accent).

However, does the topicalization structure focalize as much as the cleft? In the context, the topicalization is contrastive, so maybe...?

(8) Det program ville jeg blive overrasket, [hvis hun faktisk gennemførte \_\_\_].

# Syntactic parameter?

- Given the (variable) **acceptability of extracting** from adjunct clauses, the syntax must be able to generate the constructions.
- **Syntax provides a licit hierarchical representation.**
- Then, given the **successive-cyclicity** of movement (e.g. Chomsky 1973, van Urk 2020), there must be an “**escape hatch**” at the left edge of the embedded clause.
  - (e.g. CP-recursion with a *cP*/CP distinction, Nyvad, Christensen and Vikner 2017.)

Chomsky, Noam. 1973. Conditions on Transformation. In Stephen R. Anderson & Paul Kiparsky (eds.), *A Festschrift for Morris Halle*, 232–286. New York: Holt, Rinehart and Winston.

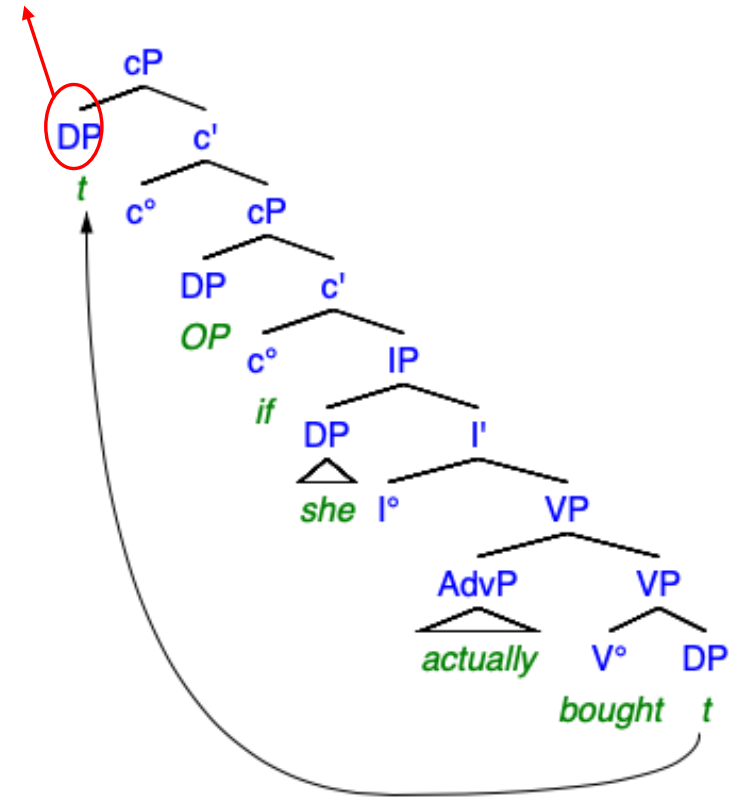
Nyvad, Anne Mette, Ken Ramshøj Christensen & Sten Vikner. 2017. CP-recursion in Danish: A *cP*/CP-analysis. *The Linguistic Review* 34(3). 449–477. <https://doi.org/10.1515/tlr-2017-0008>.

Urk, Coppe van. 2020. Successive Cyclicity and the Syntax of Long-Distance Dependencies. *Annual Review of Linguistics. Annual Reviews* 6(1). 111–130. <https://doi.org/10.1146/annurev-linguistics-011718-012318>.



# Syntactic parameter?

- Our data from English and Danish suggest that there may be a **language-specific variation** in the **interaction** between processing/discourse-functional factors and syntactic structure.
  - Extraction from adjunct clauses appears to be more acceptable in English than in Danish (Nyvad, Christensen and Müller 2022).
  - English is otherwise not very lenient wrt. extraction from RCs (Christensen & Nyvad 2022) or *wh*-questions (Christensen & Nyvad 2019).



Christensen, Ken Ramshøj & Anne Mette Nyvad. 2019. No escape from the island: On extraction from complement *wh*-clauses in English. In Ken Ramshøj Christensen, Henrik Jørgensen & Johanna L. Wood (eds.), *The Sign of the V – Papers in Honour of Sten Vikner*, 95–112. Aarhus: Dept. of English, School of Communication & Culture, Aarhus University. <https://doi.org/10.7146/aul.348.91>.

Christensen, Ken Ramshøj & Anne Mette Nyvad. 2022. The Island Is Still There: Experimental Evidence For The Inescapability Of Relative Clauses In English. *Studia Linguistica* 1–25. <https://doi.org/10.1111/stul.12192>.

Nyvad, Anne Mette, Christiane Müller & Ken Ramshøj Christensen. 2022. Too True to Be Good? The Non-Uniformity of Extraction from Adjunct Clauses in English. *Languages* 7(4). 244. <https://doi.org/10.3390/languages7040244>.

# In sum...

- **Cross-linguistic variation** speaks against a processing account (Liu et al. 2022).
  - And in our data, Danish  $\neq$  English ( $p < 0.0001$ ).
  - The results cannot be reduced to processing alone.
  - The differences may suggest **parametric variation**
- **Cross-constructional variation** difficult to explain under a discourse account (Liu et al. 2022).
  - In our data, **there's no sign. diff. btw. REL and TOP** ( $p > 0.55$ ) (dependency type)
  - *If > when/because* (adjunct clause type)
- **Same effect across constructions/functions** suggest a syntactic constraint (Newmeyer 2010)
  - Cf. also that there was **no sign. effect of context** ( $p > 0.34$ ).

# Conclusion

- The variability in the acceptability patterns observed in adjunct island violations suggests that syntax alone cannot explain the data.
  - It is, however, clearly crucially involved...
- Semantic-pragmatic factors (relating to event structure, relevance and discourse status) may be key in understanding island structures traditionally assumed to be purely syntactic in nature but cannot explain the data alone either. They still need to be operationalized in order to capture the data.

# Thank you!

