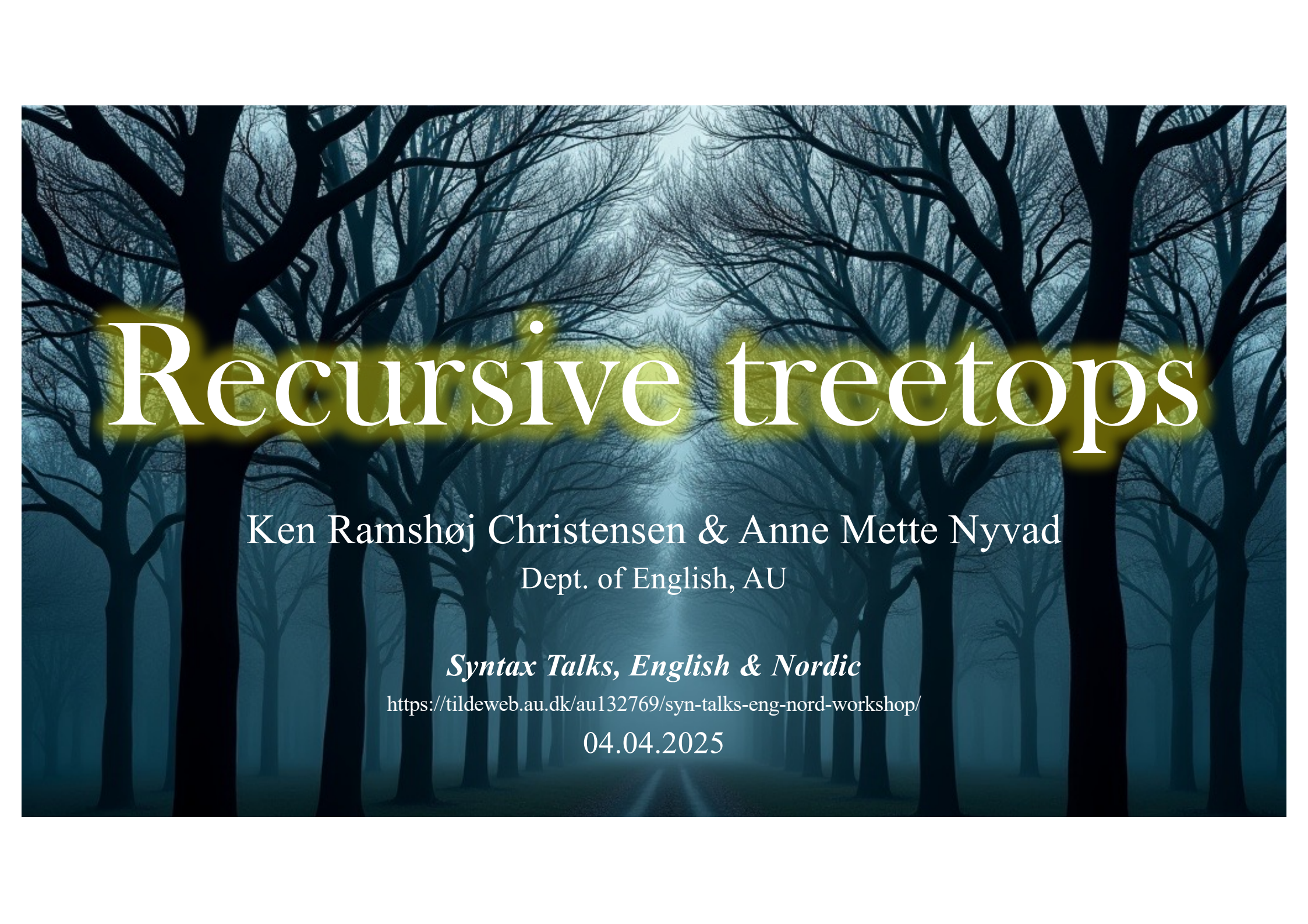




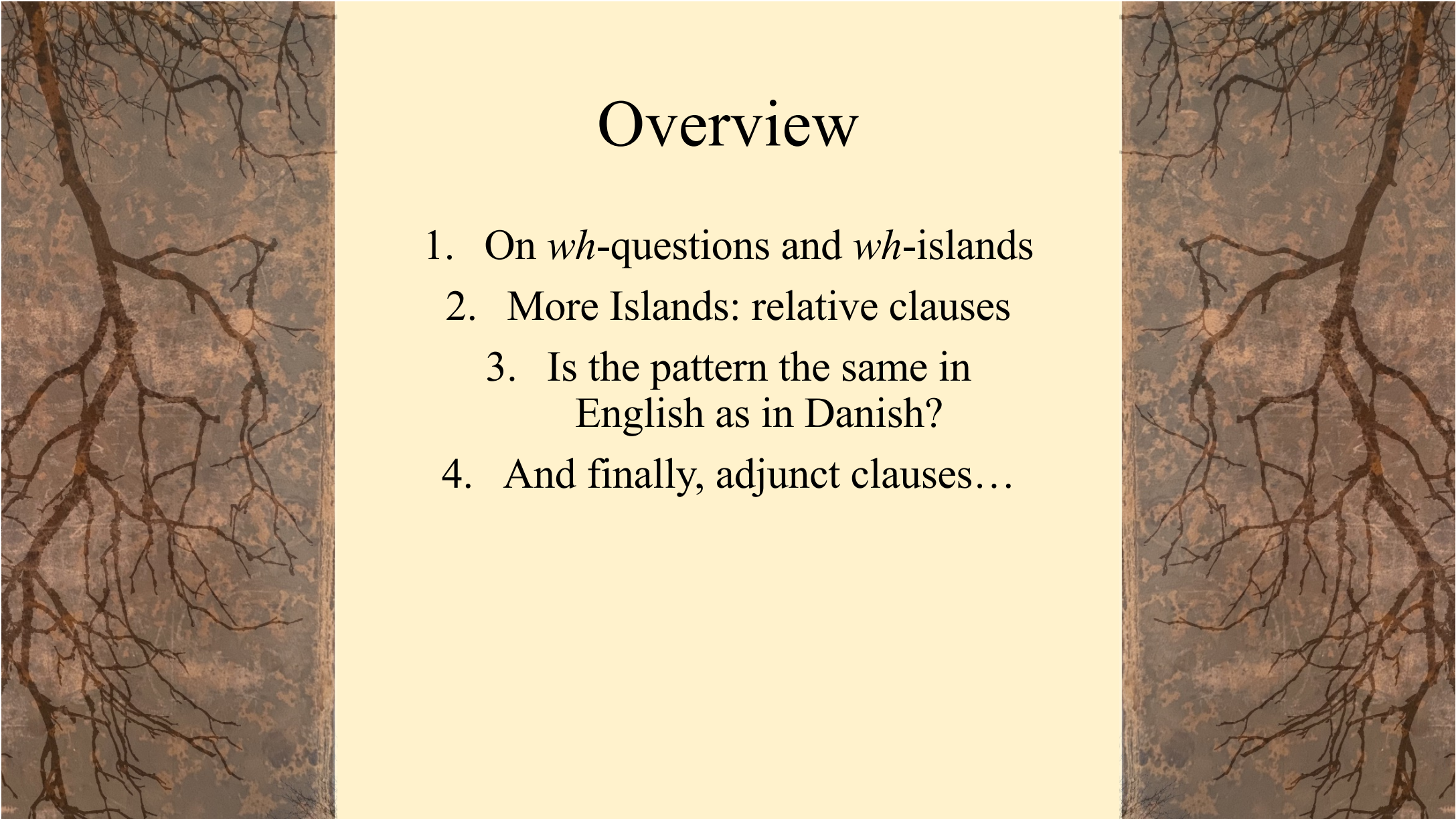
Recursive treetops

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Syntax Talks, English & Nordic

<https://tildeweb.au.dk/au132769/syn-talks-eng-nord-workshop/>

04.04.2025



Overview

1. On *wh*-questions and *wh*-islands
2. More Islands: relative clauses
3. Is the pattern the same in English as in Danish?
4. And finally, adjunct clauses...

1.
On *wh*-questions and *wh*-islands

The image is a screenshot of a web browser displaying an NPR article. The browser's address bar shows the URL www.npr.org/2018/09/28/652474958/dont-hide-money-in-the. The NPR logo is in the top left, and a red 'DONATE' button is in the top right. The article is categorized under 'STRANGE NEWS' and has the title 'Don't Hide Money In The Fridge'. It is dated 'September 28, 2018 · 4:58 AM ET' and mentions it was 'Heard on Morning Edition'. A blue audio player bar features a play button, the text '27-Second Listen', and a menu icon. Below the player, the article text reads: 'A woman in Denver returned a refrigerator. But she forgot she had hidden \$35,000 inside. The money was gone when the store checked.' A 'Transcript' link is visible below the text. At the bottom, a dark blue bar contains a play button, the text 'NPR 24 HOUR PROGRAM STREAM On Air Now', and an 'OPEN' button with an upward arrow. A small 'Display a menu' link is also present.

www.npr.org/2018/09/28/652474958/dont-hide-money-in-the

☰ npr

DONATE

STRANGE NEWS

Don't Hide Money In The Fridge

September 28, 2018 · 4:58 AM ET
Heard on [Morning Edition](#)

▶ 27-Second Listen ...

A woman in Denver returned a refrigerator. But she forgot she had hidden \$35,000 inside. The money was gone when the store checked.

☰ Transcript

▶ NPR 24 HOUR PROGRAM STREAM
On Air Now

Display a menu OPEN ^

Wh-questions and *wh*-islands:

Short + long movement → island effect

(1) She explained [that she hid the money in the fridge].

(2) She explained [what₁ she hid _____₁ in the fridge].

(Short)

(3) She explained [where₂ she hid the money _____₂].

(4) What₁ did she explain [_____₁ that she hid _____₁ in the fridge]?

(Long)

(5) Where₂ did she explain [_____₂ that she hid the money _____₂]?

(6) ??What₁ did she explain [where₂ she hid _____₁ _____₂]?

(Island effect)

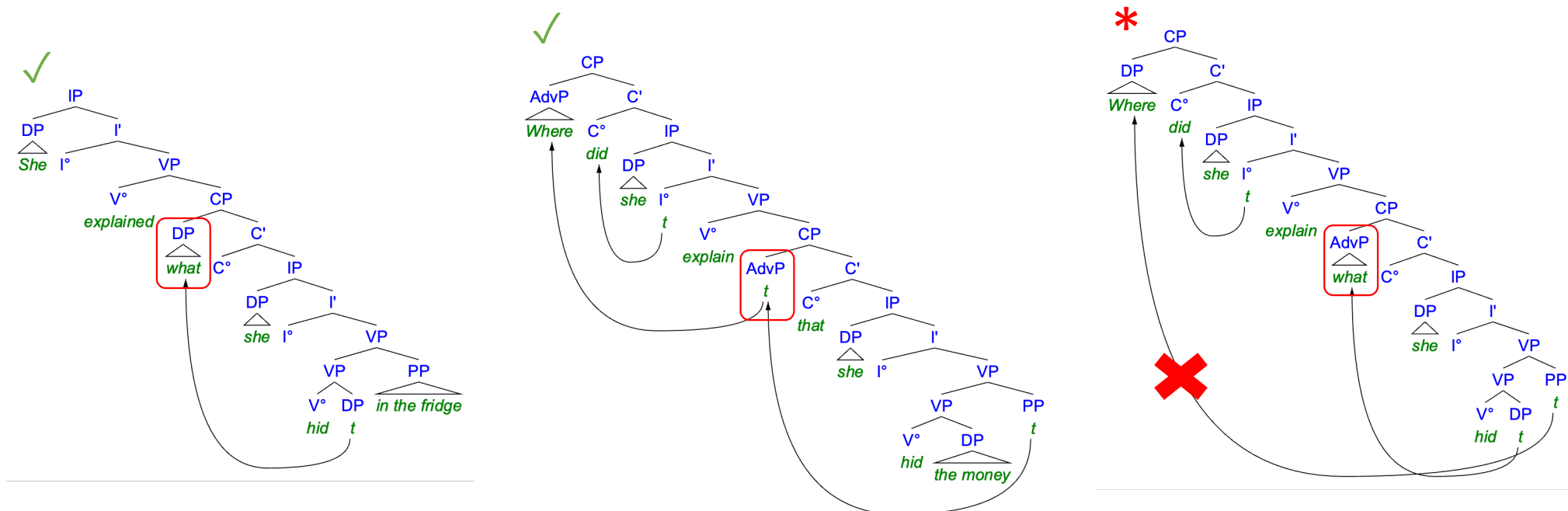
(7) *Where₂ did she explain [what she hid _____₁ _____₂]?

- The *wh*-element in CP-spec blocks further extraction.
→ The embedded *wh*-question is an island.



Wh-questions and *wh*-islands:

Short + long movement → island effect

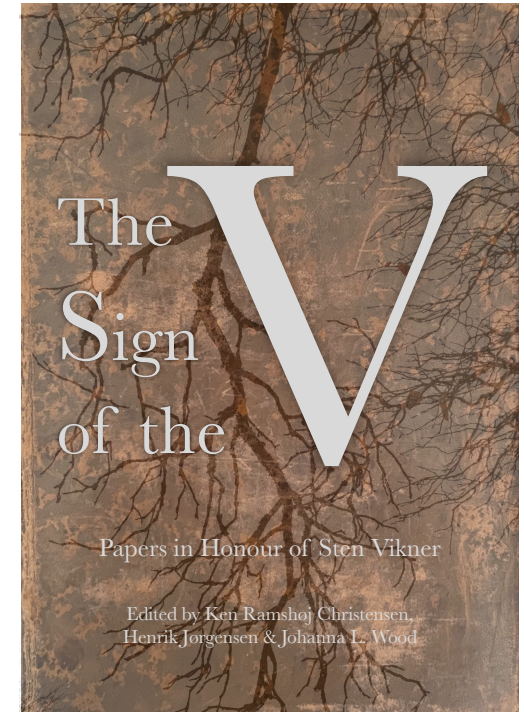
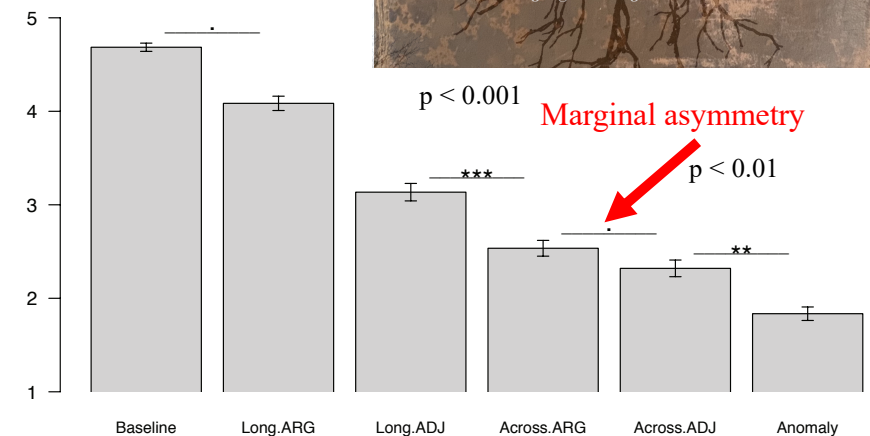


- This has also been confirmed experimentally (Christensen and Nyvad 2019)

No Escape from the Island

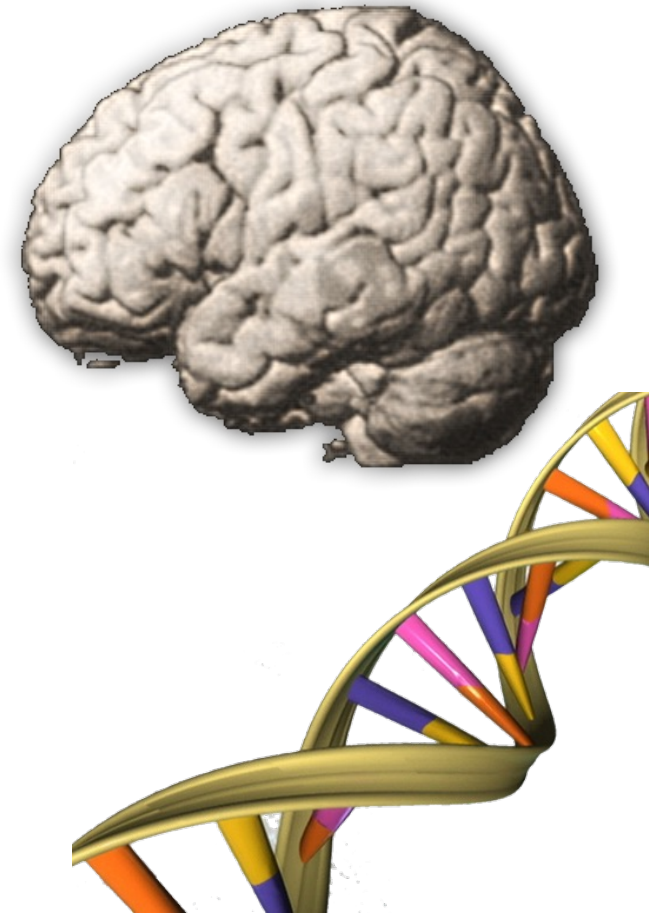
- 100 native speakers of English. 52M, 48F; linguists 57, non-linguists 43; nationality: 10% Canada, 45% UK, 45% USA.
- 12*6 target sentences (+ fillers). Acceptability rating. 5-point Likert scale.
- Significant **movement** effect. No effect of main verb freq., trial (repetition), or linguist (expertise).

Example	Type
The mother explained that they should treat the children very leniently.	Baseline
Which children did the mother explain that they should treat very leniently?	Long ARG
How leniently did the mother explain that they should treat the children?	Long ADJ
Which children did the mother explain how leniently they should treat?	Across ARG
How leniently did the mother explain which children they should treat?	Across ADJ
The mother explained how leniently which children they should treat.	Anomaly



Islands

- Island constraints are standardly assumed to be universal:
Part of Universal Grammar
 - Rules that block extraction from syntactic islands
- Part of the human genetic makeup
 - Constraints on the phase space for language development and language variation.



Wh-islands in Danish

(Christensen, Kizach, and Nyvad 2013)

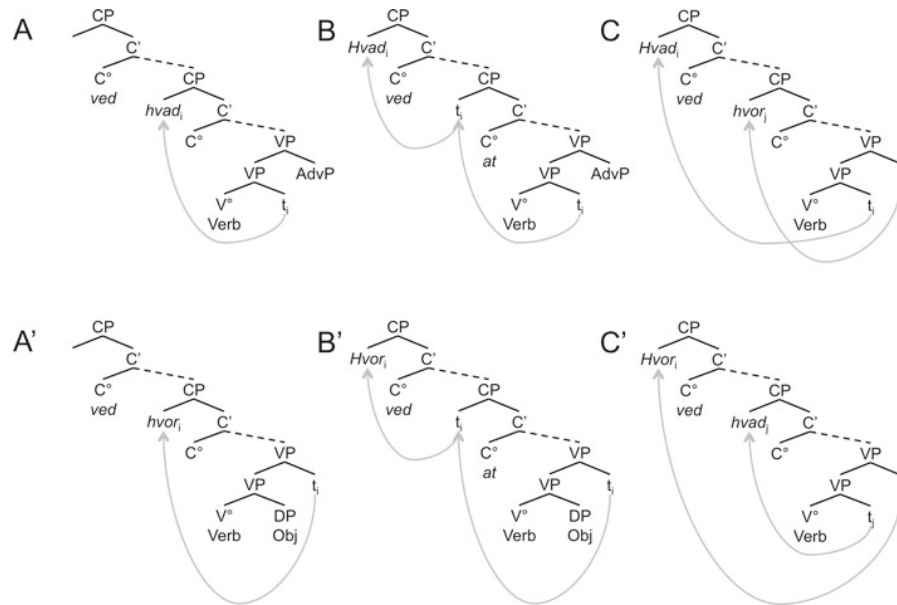


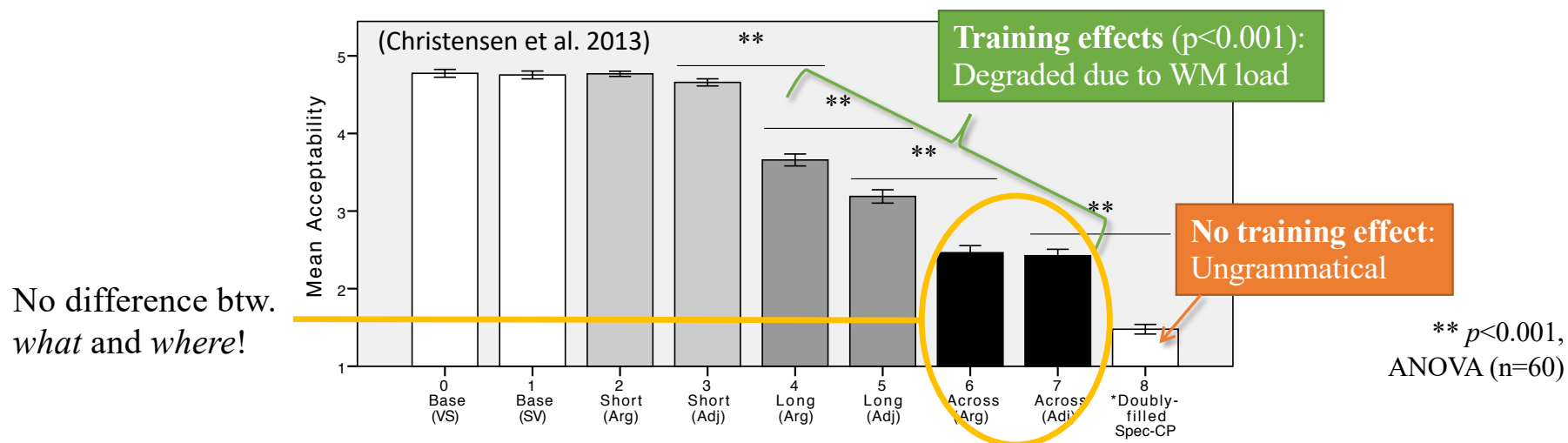
Fig. 1 Partial syntactic structures corresponding to movement-derived stimuli. Top row: argument (object) movement, bottom row: adjunct (sentence adverbial) movement. **A** SHORT (ARG), **B** LONG (ARG), **C** ACROSS (ARG). **A'** SHORT (ADJ), **B'** LONG (ADJ), **C'** ACROSS (ADJ)

Condition	Example
BASE (VS)	Ved hun godt at man kan leje noget dér? <i>Knows she well that one can rent something there?</i> “Does she know that you can rent something there?”
BASE (SV)	Hun ved godt at man kan leje noget dér. <i>She knows well that one can rent something there.</i> “She knows that you can rent something there.”
SHORT (ARG)	Ved hun godt hvad man kan leje dér? <i>Knows she well what one can rent there?</i> “Does she know what you can rent there?”
SHORT (ADJ)	Ved hun godt hvor man kan leje noget? <i>Knows she well where one can rent something?</i> “Does she know where you can rent something?”
LONG (ARG)	Hvad ved hun godt at man kan leje dér? <i>What knows she well that one can rent there?</i> “What does she know that you can rent there?”
LONG (ADJ)	Hvor ved hun godt at man kan leje noget? <i>Where knows she well that one can rent something?</i> “Where does she know that you can rent something?”
ACROSS (ARG)	Hvad ved hun godt hvor man kan leje? <i>What knows she well where one can rent?</i> “What does she know where you can rent?”
ACROSS (ADJ)	Hvor ved hun godt hvad man kan leje? <i>Where knows she well what one can rent?</i> “Where does she know what you can rent?”
*Doubly-filled Spec-CP	Ved hun godt hvor hvad man kan leje? <i>Knows she well where what one can rent?</i> “Does she know where what you can rent?”

Wh-islands in Danish

(Christensen, Kizach, and Nyvad 2013)

- Hypothesis: Priming effects (on acceptability) can only be found with degraded but grammatical sentences (Sprouse 2007, 123-124). **Hence, structural priming/training is suggestive of grammaticality.**



Christensen, Ken Ramshøj, Johannes Kizach, and Anne Mette Nyvad. 2013. "Escape from the Island: Grammaticality and (Reduced) Acceptability of Wh-Island Violations in Danish". *Journal of Psycholinguistic Research* 42 (1): 51–70. <https://doi.org/10.1007/s10936-012-9210-x>.

Sprouse, Jon. 2007. Continuous acceptability, categorical grammaticality, and experimental syntax. *Biolinguistics* 1. 123–134.

Because

(a) Movement is successive cyclic...

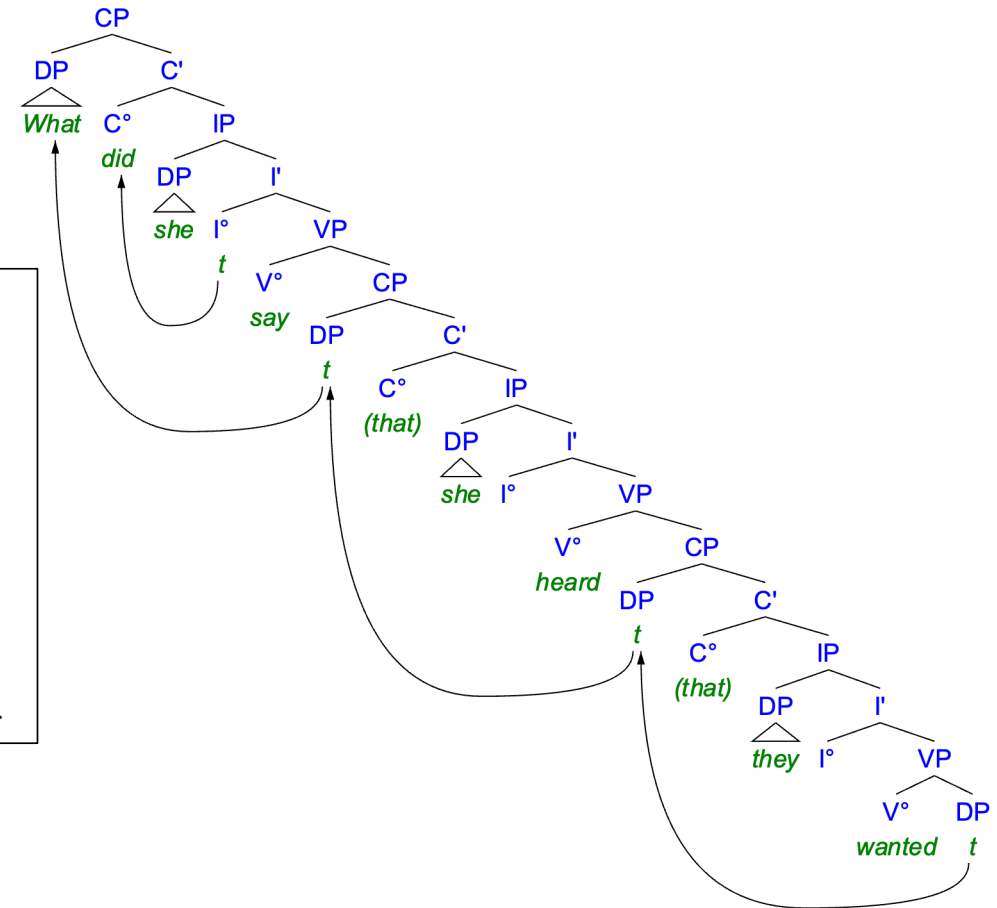
- *Wh*-movement proceeds stepwise via the local Spec-CP

Evidence for successive cyclic wh-movement

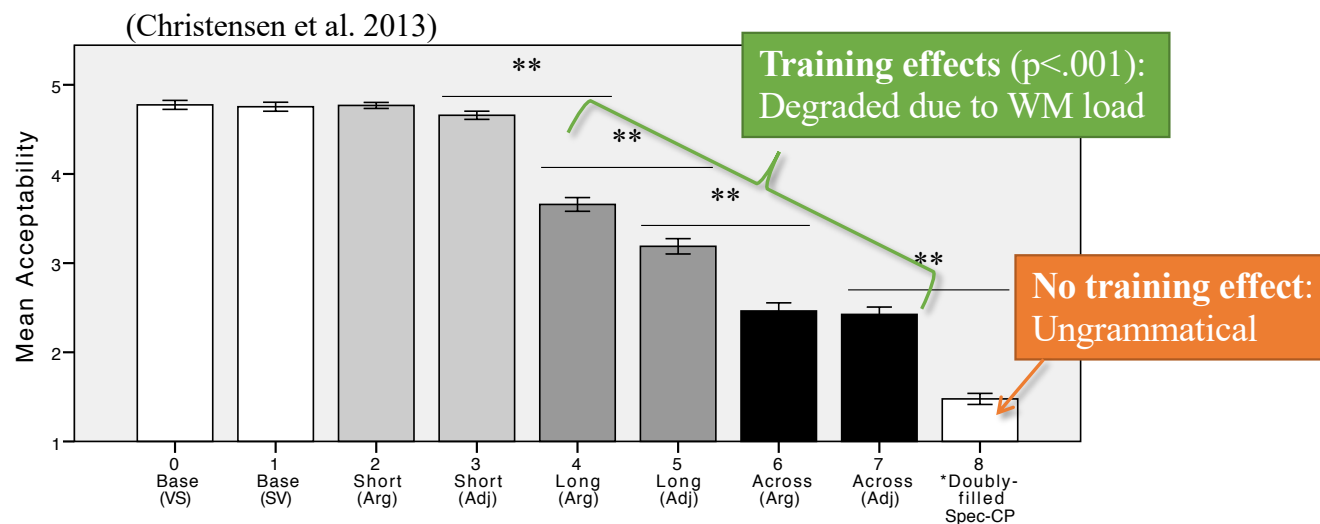
1. Languages with wh-agreement
Irish, Chamorro, Palauan, Hausa, Passamaquoddy, Coptic
2. Successive inversion phenomena
Belfast English, Spanish, French
3. Intermediate copy pronunciation
Child English, German dialects
4. Wh-scope marking ('partial wh-movement')
German, Romany, Hungarian, Hindi
5. Stranded *all* in West Ulster English
6. Intermediate reconstruction effects
7. Zaenen, Annie. 1983. On syntactic binding. *Linguistic Inquiry* 14:469-504.

(From handout by prof. Jason Merchant:

<http://home.uchicago.edu/~merchant/classes/syntax2.2005/successive.cyclic.handout.pdf>)



...and (b) ACROSS is grammatical in Danish...



Priming effects (on acceptability) can only be found with degraded but grammatical sentences (Sprouse 2007, 123-124).

Christensen, Ken Ramshøj, Johannes Kizach, and Anne Mette Nyvad. 2013. "Escape from the Island: Grammaticality and (Reduced) Acceptability of Wh-Island Violations in Danish". *Journal of Psycholinguistic Research* 42 (1): 51–70. <https://doi.org/10.1007/s10936-012-9210-x>.

Sprouse, Jon. 2007. Continuous acceptability, categorical grammaticality, and experimental syntax. *Biolinguistics* 1. 123–134.

...then

(c) *Wh*-clauses are not islands in Danish

- Cf. also grammatical extraction from embedded *y/n*-questions (Christensen, Kizach & Nyvad 2013, 248):

(8) a. Ved hun ikke [_{CP} om Lars har fundet kablet]?
Knows she not if/whether Lars has found cable-the

b. *Ved hun ikke [_{CP} hvad om Lars har fundet ___]?
Knows she not what if/whether Lars has found

c. Hvad ved hun ikke [_{CP} ___ om Lars har fundet ___]?
What knows she not if/whether Lars has found

“One might speculate that ACROSS applies via an additional specifier, licensed as Last Resort, perhaps an instance of an occurrence feature”.
 (Christensen, Kizach, and Nyvad 2013, 247)

- Priming / “satiation” effects have also been reported for *whether*-islands in English (Snyder 2000)

Christensen, Ken Ramshøj, Johannes Kizach, and Anne Mette Nyvad. 2013. “The Processing of Syntactic Islands – An fMRI Study.” *Journal of Neurolinguistics* 26 (2): 239–51.

<https://doi.org/10.1016/j.jneuroling.2012.08.002>.

Snyder, William. 2000. “An experimental investigation of syntactic satiation effects”. *Linguistic Inquiry* 31 (3): 575–582. <https://doi.org/10.1162/002438900554479>.

Some islands have bridges...



An aerial photograph of a tropical island, likely Bora Bora, featuring a large, jagged mountain peak in the background. The island is surrounded by clear, turquoise water with visible coral reefs and sandy beaches. The sky is blue with scattered white clouds. The text "2. More islands: relative clauses" is overlaid on the lower left portion of the image.

2. More islands: relative clauses

Relative clauses (RCs):

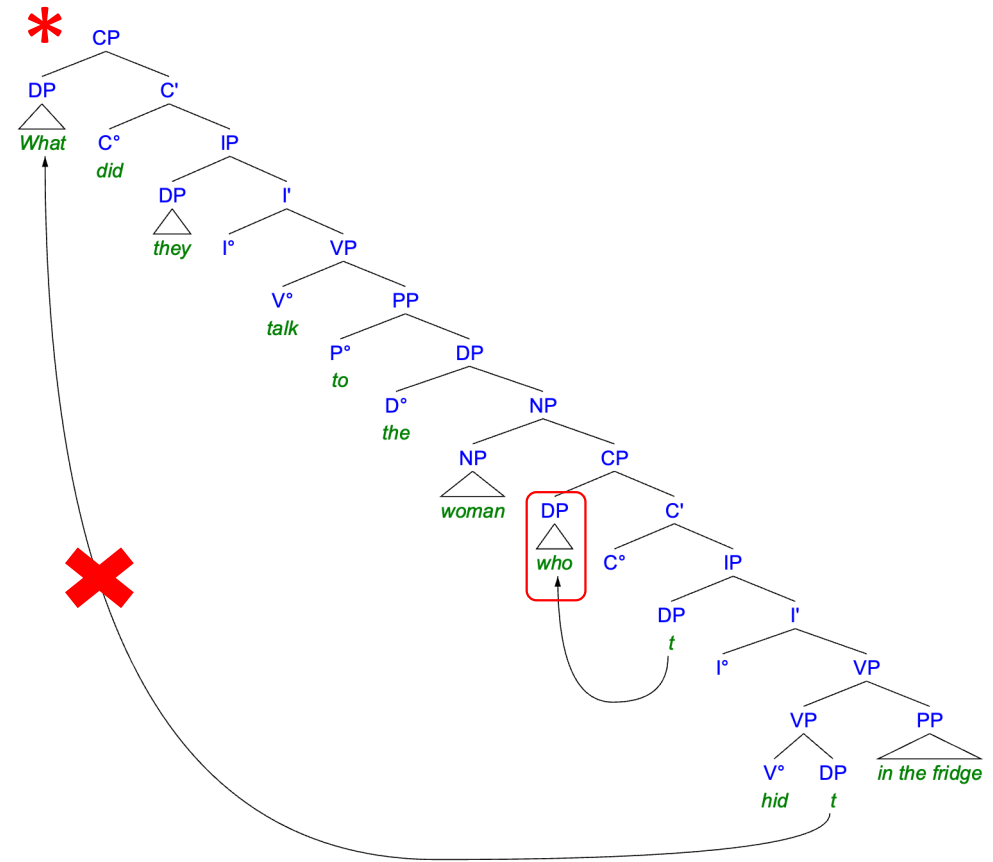
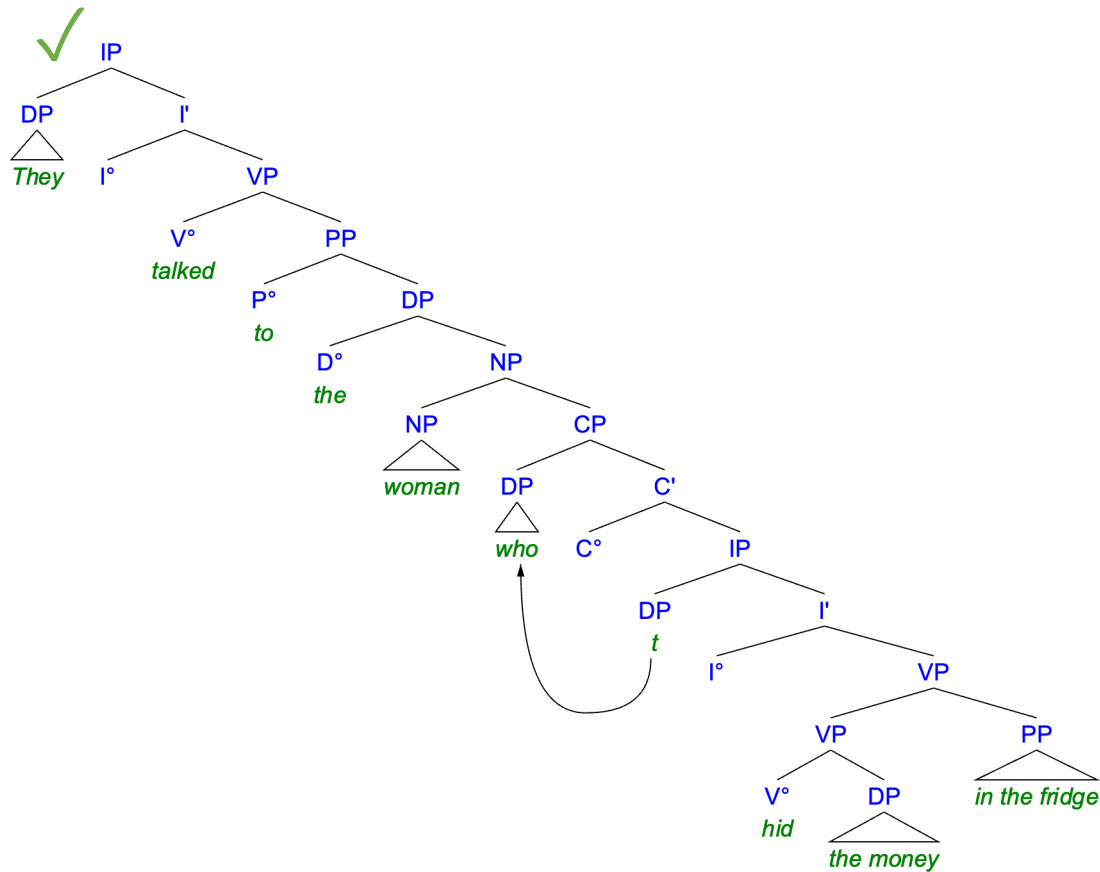
- (9) They looked for the money [which₁ the woman hid ____₁ in the fridge].
- (10) *What₂ did they look for the money [which₁ the woman hid ____₁ in ____₂]?
- (11) They looked for the money [ec₁ that the woman hid ____₁ in the fridge].
- (12) *What₂ did they look for the money [ec₂ that the woman hid ____₁ in ____₂]?
- (13) They talked to the woman [who₁ ____₁ hid the money in the fridge].
- (14) *What₂ did they talk to the woman [who₁ ____₁ hid ____₂ in the fridge]?
- (15) *What₂ did they talk to the woman [who₁ ____₁ hid the money in ____₂]?

- The *wh*-element in CP-spec blocks further extraction.
 → The RC is an island.



RCs are also islands:

Short + long movement $\rightarrow$ island effect



Extraction from RCs in Danish

Danish *som/der*

- *Som*: Ambiguous btw. SUBJ/OBJ-RC
- *Der*: Unambiguous SUBJ-RC

- Acceptability survey (Christensen & Nyvad 2014)
 - (64 items + fillers. 7-point Likert scale. Constant: Structure, Length, Tns, Asp, Animacy, Cohesion, MVC)

(16) Pia har engang **set** en pensionist [**som/der** havde sådan en hund]. [+SC, –EXTR]
*Pia has once **seen** a pensioner **COMP** had such a dog*

(17) Sådan en hund har Pia engang **set** en pensionist [**som/der** havde ____]. [+SC, +EXTR]
*Such a dog has Pia once **seen** a pensioner **COMP** had*

(18) Pia har engang **mødt** en pensionist [**som/der** havde sådan en hund]. [–SC, –EXTR]
*Pia has once **met** a pensioner **COMP** had such a dog*

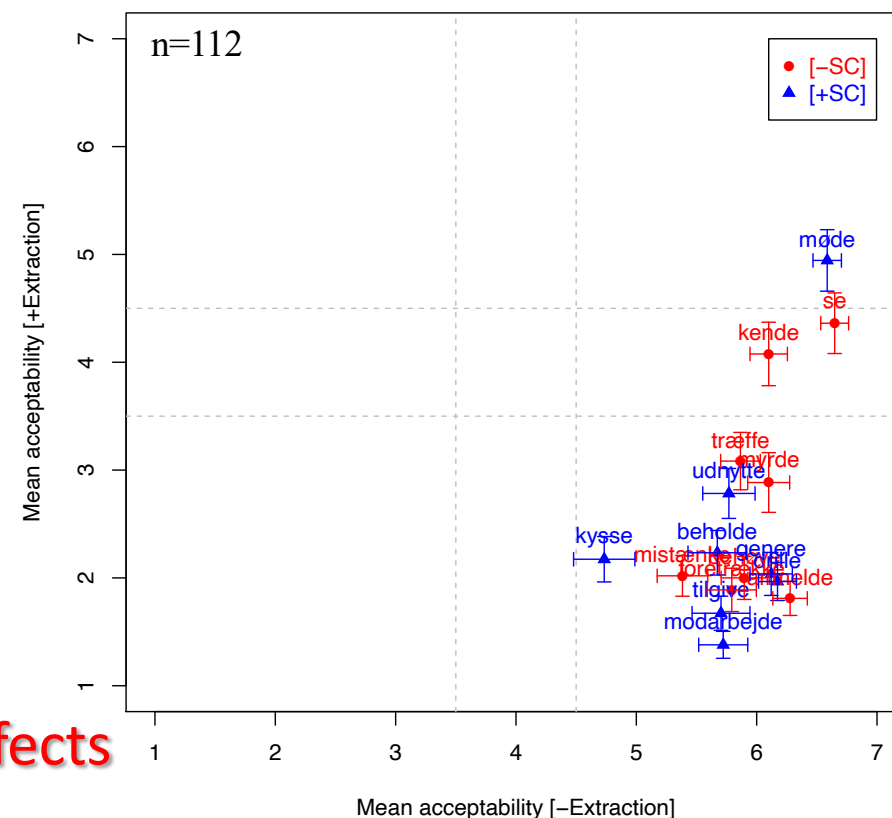
(19) Sådan en hund har Pia engang **mødt** en pensionist [**som/der** havde ____]. [–SC, +EXTR]
*Such a dog has Pia once **met** a pensioner **COMP** had*

Extraction from RCs in Danish

- **No effect of $\pm$ SC or COMP...**
- Movement effect ($p < .0001$)
 - Extraction reduces acceptability
- Frequency effect ($p < .0001$)
 - Positive correlation btw. frequency and acceptability
- And learning/priming effect (“Trial”) ($p < .0001$)
 - Suggesting that RC-extraction is indeed grammatical...
- (For replication for Swedish, see Müller 2015)

	Estimate	Std. Error	p-value	
(Intercept)	5.0989	0.2655	0.0000	***
Trial	0.0366	0.0075	0.0000	***
Frequency	0.0001	0.0000	0.0000	***
Extraction	-3.3056	0.3135	0.0000	***
SC	-0.0480	0.2941	0.8703	
COMP	0.1515	0.2908	0.6024	
Extraction x SC	-0.3340	0.4181	0.4244	
Extraction x COMP	-0.1050	0.4105	0.7982	
SC x COMP	-0.1934	0.4089	0.6363	
Extraction x SC x COMP	0.5633	0.5842	0.3349	

Table 2. Summary of fixed effects. ***Significant effect, $p < 0.001$.



Christensen, Ken Ramshøj, and Anne Mette Nyvad. 2014. “On the Nature of Escapable Relative Islands”. *Nordic Journal of Linguistics* 37 (01): 29–45.

<https://doi.org/10.1017/S0332586514000055>.

Müller, Christiane. 2015. “Against the Small Clause Hypothesis: Evidence from Swedish Relative Clause Extractions”. *Nordic Journal of Linguistics* 38 (01): 67–92.

<https://doi.org/10.1017/S0332586515000062>.

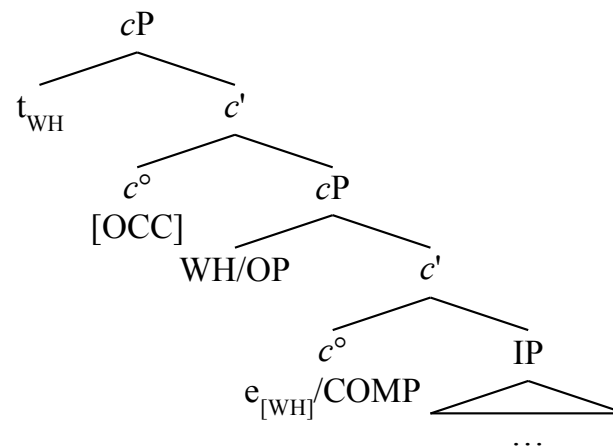
Consequence: CP-recursion

(Christensen et al. 2013, Nyvad et al. 2017, Vikner et al. 2017)

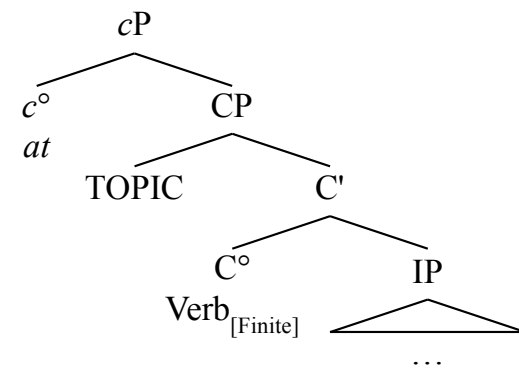
- The embedded CP_[+WH] can be RECURSIVE in Danish (and English?)
 - Outer SPEC licensed as Last Resort



a.



b.



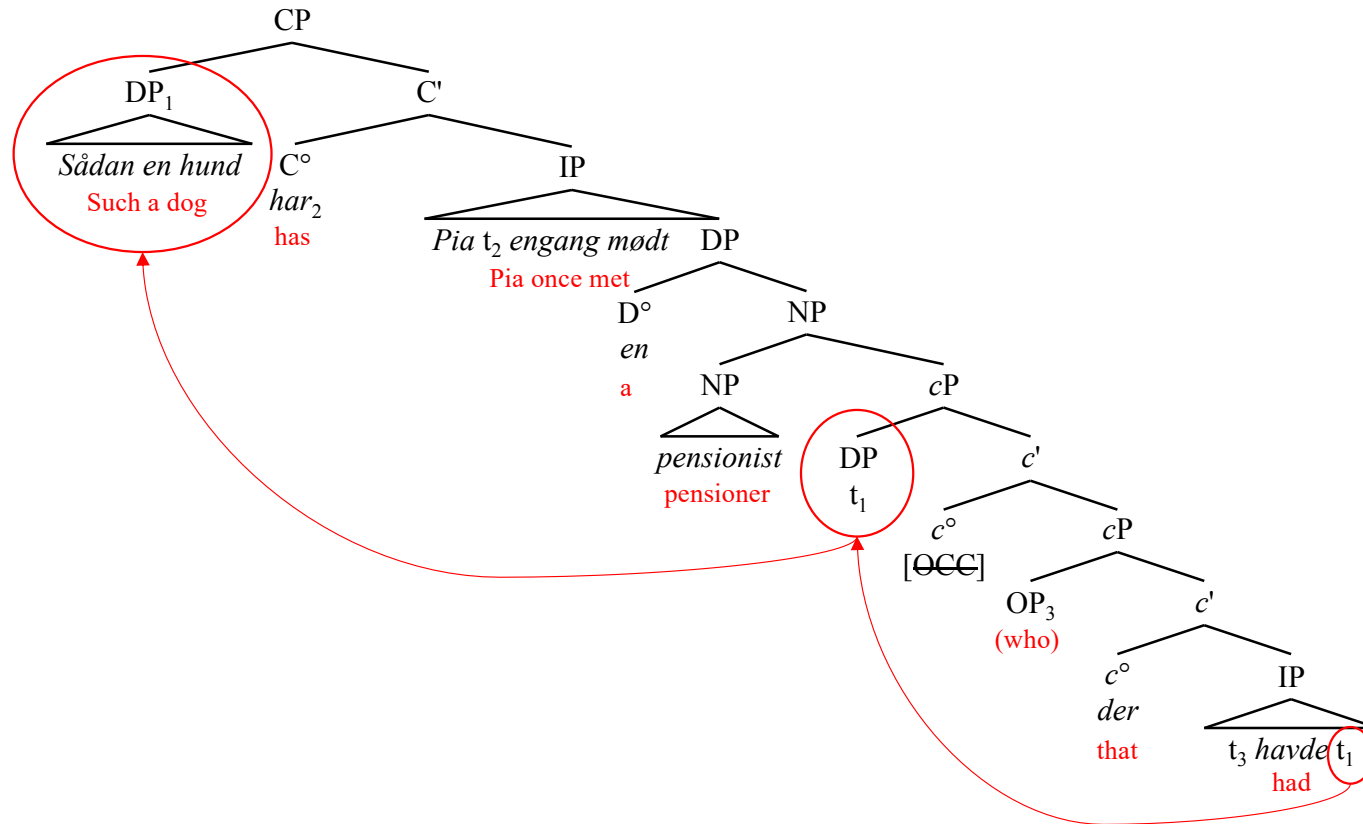
Christensen, Ken Ramshøj, Johannes Kizach, and Anne Mette Nyvad. 2013. "The Processing of Syntactic Islands – An fMRI Study." *Journal of Neurolinguistics* 26 (2): 239–51.

<https://doi.org/10.1016/j.jneuroling.2012.08.002>.

Nyvad, Anne Mette, Ken Ramshøj Christensen, and 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>.

Vikner, Sten, Ken Ramshøj Christensen, and Anne Mette Nyvad. 2017. "V2 and CP/CP." In *Order and Structure in Syntax I: Word Order and Syntactic Structure*, edited by Laura Bailey and Michelle Sheehan, 313–24. Open Generative Syntax 1. Berlin: Language Science Press. <https://doi.org/10.5281/zenodo.1117724>.

Escaping a relative clause in Danish



Nyvad, Anne Mette, Ken Ramshøj Christensen, and 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>.

Vikner, Sten, Ken Ramshøj Christensen, and Anne Mette Nyvad. 2017. "V2 and CP/CP." In *Order and Structure in Syntax I: Word Order and Syntactic Structure*, edited by Laura Bailey and Michelle Sheehan, 313–24. Open Generative Syntax 1. Berlin: Language Science Press. <https://doi.org/10.5281/zenodo.1117724>.

Formal vs. informal ratings

- **Acceptability ratings are often lower in formal experiments than in informal settings**
 - Examples in naturalistic discourse are rated low in experiments (see Müller 2019, 182, 185 for discussion and references)
- Perhaps due to misparse (structural misanalysis)?
 - (Kush et al. 2019, 24)
- Difficult to maintain naturalness while trying to control for everything else
 - Lexical material, coherence, early attachment, length, frequency, etc.
- Perhaps a supporting context would help: Supportive context facilitates comprehension of object-initial clauses (Kristensen et al. 2014; but see Nyvad et al. 2025)
- The reduction in acceptability is also predictable from the high level of structural complexity (Christensen and Nyvad 2024)

Christensen, Ken Ramshøj, and Anne Mette Nyvad. 2024. “Complexity, Frequency, and Acceptability.” *Glossa: A Journal of General Linguistics* 9 (1): 1–44.

<https://doi.org/10.16995/glossa.10618>.

Kristensen, Line Burholt, Elisabeth Engberg-Pedersen, and Mads Poulsen. 2014. “Context Improves Comprehension of Fronted Objects.” *Journal of Psycholinguistic Research* 43 (2): 125–40.

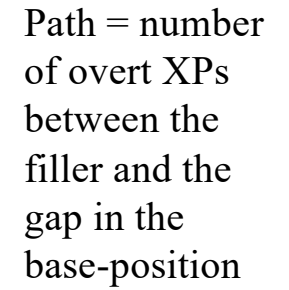
<https://doi.org/10.1007/s10936-013-9241-y>.

Kush, Dave, Terje Lohndal, and Jon Sprouse. 2019. “On the Island Sensitivity of Topicalization in Norwegian: An Experimental Investigation.” *lingbuzz/004442*.

<https://ling.auf.net/lingbuzz/004442>.

Müller, Christiane. 2019. “Permeable Islands. A Contrastive Study of Swedish and English Adjunct Clause Extractions.” Lund: Lund University.

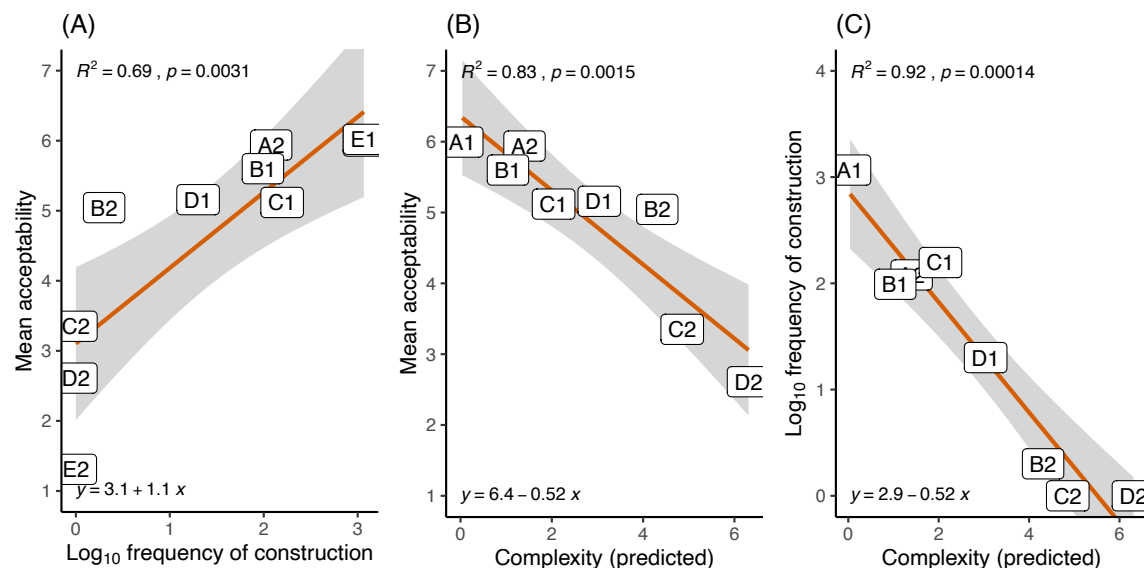
Nyvad, Anne Mette, Christiane Müller, and Ken Ramshøj Christensen. 2025. “Moving Away from the Island. Extraction from Adjunct Clauses in Danish.” Under review.



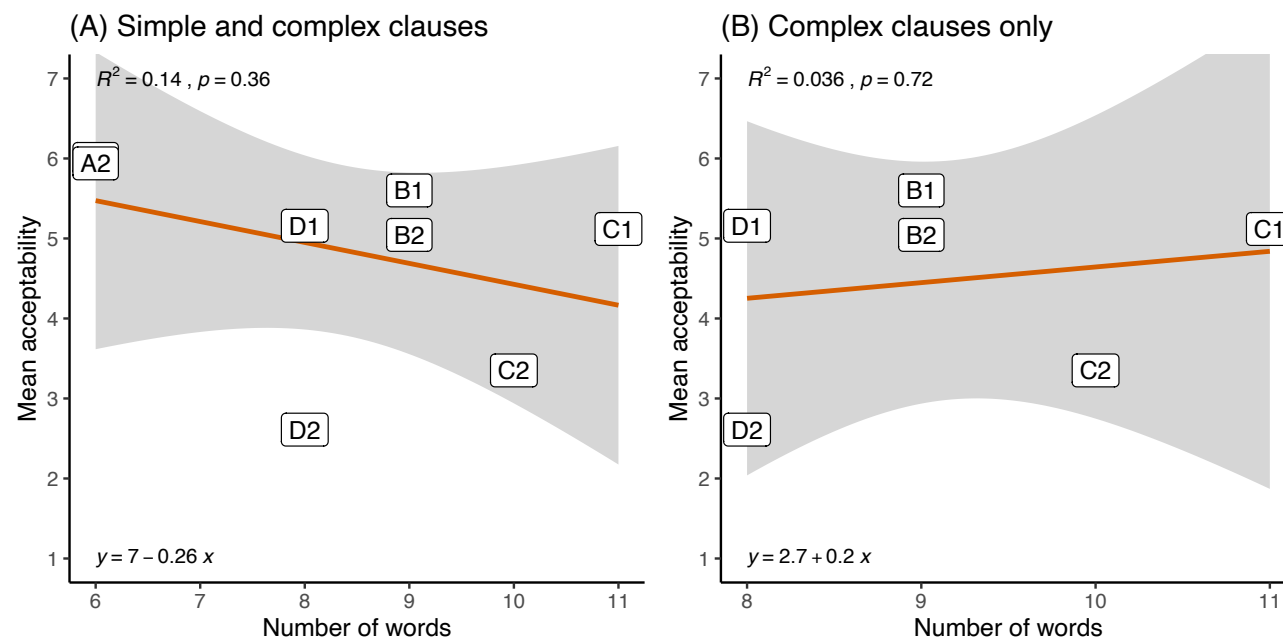
Condition	Embed.	Adjunct.	Move- Out	Fillers	Path.z	Complexity (sum)
A1: Simplex [−Ex]	0	0	0	1	−1.0 (0)	0.0
A2: Simplex [+Ex]	0	0	0	1	0.4 (6)	1.4
B1: Compl. [−Ex]	1	0	0	1	−1.0 (0)	1.0
B2: Compl. [+Ex]	1	0	1	1	1.3 (10)	4.3
C1: Adjunct [−Ex]	1	1	0	1	−1.0 (0)	2.0
C2: Adjunct [+Ex] (PG)	1	1	0	2	0.9 (8)	4.9
D1: RC [−Ex]	1	1	0	2	−1.0 (0)	3.0
D2: RC [+Ex]	1	1	1	2	1.3 (10)	6.3

Complexity, acceptability, and frequency

- **(A): Frequency → Acceptability**
Significant positive correlation btw. construction frequency, describing 69% of the variation.
- **(B): Complexity → Acceptability**
Significant negative correlation btw. complexity and acceptability, describing 83% of the variation.
- **(C): Complexity → Frequency**
Significant negative correlation btw. complexity and (log10) construction frequency, describing 92% of the variation.
- **In short, acceptability and frequency both follow from complexity.**



- ...and it can not be reduced to the number of words:





3.
Is the pattern the same
in English as in Danish?

Extraction from RCs in English

(Christensen and Nyvad 2022)

- Assuming that RCs are not strong islands in English, we made three predictions:
 - **Prediction 1:** The level of acceptability of extraction from an RC correlates with the frequency of occurrence of the matrix verb.
 - Processing effect found for Danish.
 - **Prediction 2:** The level of acceptability of extraction from an RC increases as a function of exposure over time (trial effect).
 - Processing effect found for Danish.
 - **Prediction 3:** Topicalization from an RC is more acceptable than extracting a *wh*-element.
 - Information structure effect (topicalization better than *wh*-movement) found for Swedish (Lindahl 2017) and Norwegian (Kush et al. 2019)

Christensen, Ken Ramshøj, and 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>.

Kush, Dave, Terje Lohndal, and 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>.

Lindahl, Filippa. 2017. “Extraction from Relative Clauses in Swedish.” Gothenburg: University of Gothenburg. <https://gupea.ub.gu.se/handle/2077/51985>.

Extraction from RCs in English

(Christensen and Nyvad 2022)

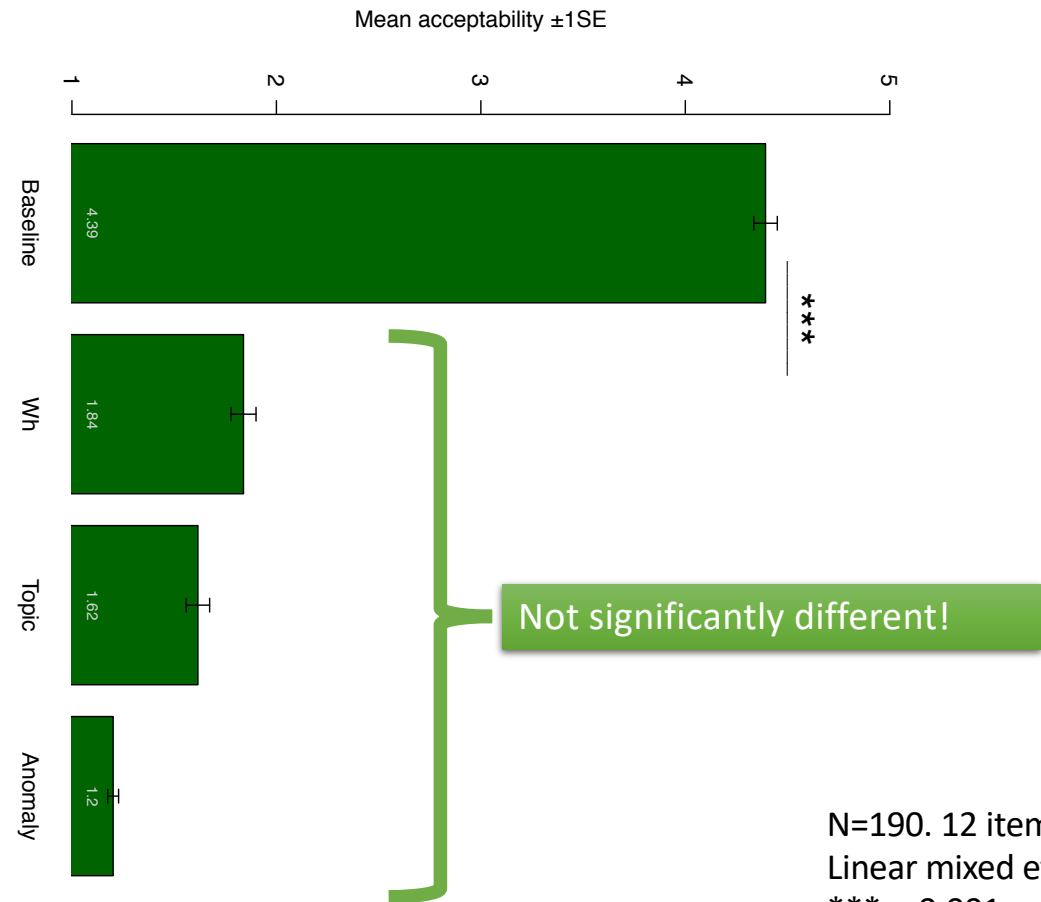
- 12*4 sentences (+ fillers). 5-point Likert scale:

(20)	Peter once kissed a girl who preferred that type of man.	(Baseline)
(21)	What type of man did Peter once kiss a girl who preferred?	(Wh)
(22)	That type of man Peter once kissed a girl who preferred.	(Topic)
(23)	*What type of man did Peter once kiss a girl who preferred men?	(Anomaly)

- 190 native speakers of English (84M, 106F), mean age 42 years (range = 16–81, SD = 16); 9% Australia, 6% Canada, 46% UK, 48% USA.

Results

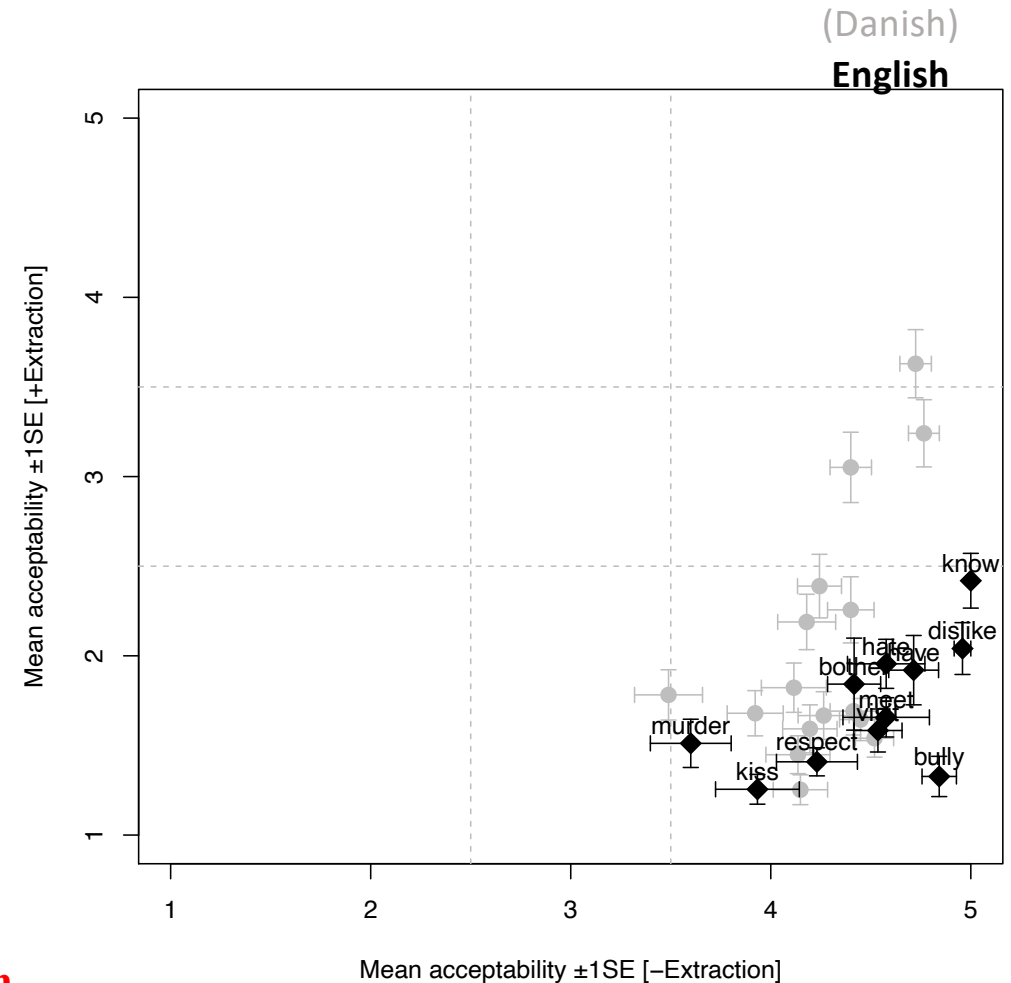
1. Emma truly disliked guys [who₁ _₁ drove that type of car].
2. *What type of car₂ did Emma truly dislike guys [who₁ _₁ drove _₂]?
3. *That type of car₂ Emma truly disliked guys [who₁ _₁ drove].
4. *What type of car_? did Emma truly dislike guys [who₁ _₁ drove cars]?



N=190. 12 items/type.
Linear mixed effects,
*** $p < 0.001$

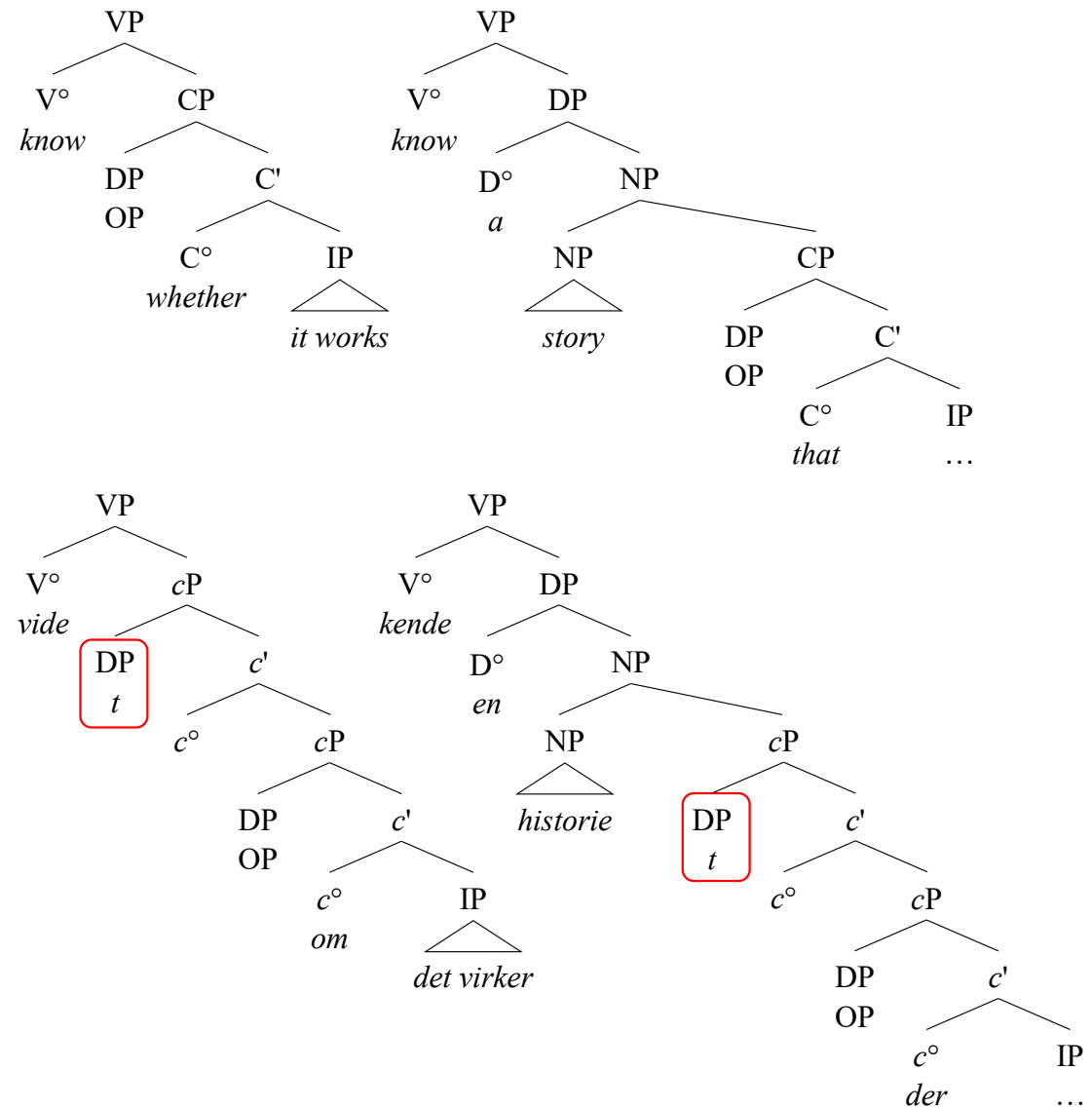
Results

- **Movement effect:** Extraction reduces acceptability ($p < 0.001$)
- **No frequency effect** (or effect of education, bilingualism, or nationality)
 - Prediction 1 not confirmed
- **No trial effect**
 - Prediction 2 not confirmed
- **No significant difference between topicalization and *wh*-movement**
 - Prediction 3 not confirmed
- **Linguist effects**
 - Small positive (!) effect on BASE ($p < 0.001$), WH ($p < 0.001$), and TOPIC ($p < 0.01$)
 - No effect on ANOM
- **Conclusion: RCs are (probably) strong islands in English – support for the standard assumption**



Parametric variation

- English RC = strong island:
 - All extraction from RC < 3 in acceptability
 - No lexical or processing effects
- Danish RC = ‘weak/non-island’:
 - Extraction ‘smeared’ from 1-4
 - Lexical effect of Freq.
 - Positive effect of Trial
- This suggests **parametric variation**
 - An ‘escape hatch’ is required in Danish
 - $\pm cP$ -recursion



Interim conclusions

- Island constraints are universal.
 - UG-based: Locality & Successive cyclicity
- The status of any particular island ‘construction’ is subject to parametric variation.
- Strong islands are ‘true’ islands: They block extraction.
- But if extraction is (sometimes) allowed, it cannot be a ‘strong’ syntactic island.
 - Acceptability is a matter of degree, depending on a range of syntactic and non-syntactic factors, such as semantics (factivity, event structure) and pragmatics (coherence, specificity), well as frequency.

4.
And finally,
adjunct clauses...



Background

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

(24) *Who did Mary cry [after John hit ___]? (Huang 1982: 503)

- The unacceptability of (24) 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.

(25) 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):

- (26) 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).

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>.

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>.

Sprouse, Jon, Ivano Caponigro, Ciro Greco & Carlo Cecchetto. 2016. Experimental syntax and the variation of island effects in English and Italian. *Natural Language & Linguistic Theory* 34(1). 307–344.
<https://doi.org/10.1007/s11049-015-9286-8>.

Stimuli in the English study

(Nyvad, Müller & Christensen 2022)

(27) 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**.*

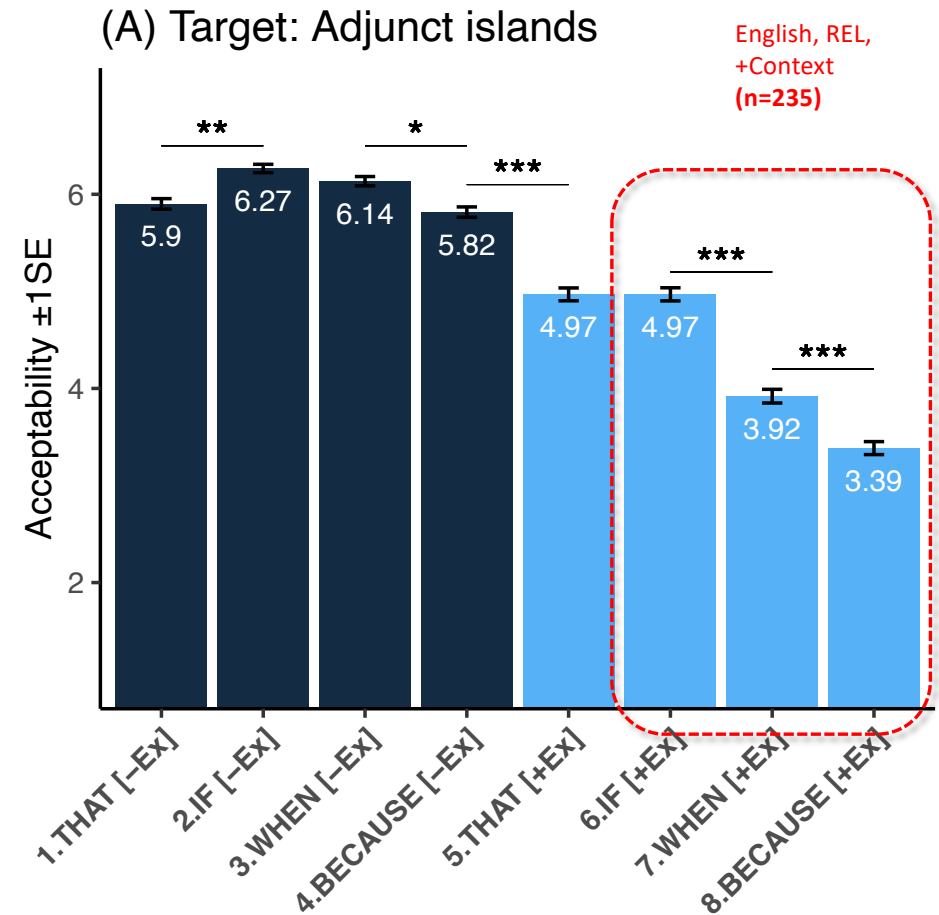
- a. It's obvious that I was surprised [**that** she actually completed **this exercise**]. [-EX, -ISL]
- b. It's obvious that I would be surprised [**if** she actually completed **this exercise**]. [-EX, +ISL]
- c. It's obvious that I was surprised [**when/because** she actually completed **this exercise**]. [-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.



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

Danish study

Nyvad, Christensen & Müller (2025)

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

(28) 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 <u>dét program</u>]. | [-EKS, -ISL] |
| b. Det er åbenlyst, at jeg ville blive overrasket, [hvis hun faktisk gennemførte <u>dét program</u>]. | [-EKS, +ISL] |
| c. Det er åbenlyst, at jeg blev overrasket, [da/fordi hun faktisk gennemførte <u>dét program</u>]. | [-EKS, +ISL] |
| d. Det er <u>dét program</u> som jeg blev overrasket over, [at hun faktisk gennemførte ____]. | [+EKS, -ISL] |
| e. Det er <u>dét program</u> som jeg ville blive overrasket, [hvis hun faktisk gennemførte ____]. | [+EKS, +ISL] |
| f. Det er <u>dét program</u> som jeg blev overrasket, [da/fordi hun faktisk gennemførte ____]. | [+EKS, +ISL] |

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>.

Nyvad, Anne Mette, Christiane Müller, and Ken Ramshøj Christensen. 2025. “Moving Away from the Island. Extraction from Adjunct Clauses in Danish.” Under review.

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):

(29) 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, and 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, and 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>.

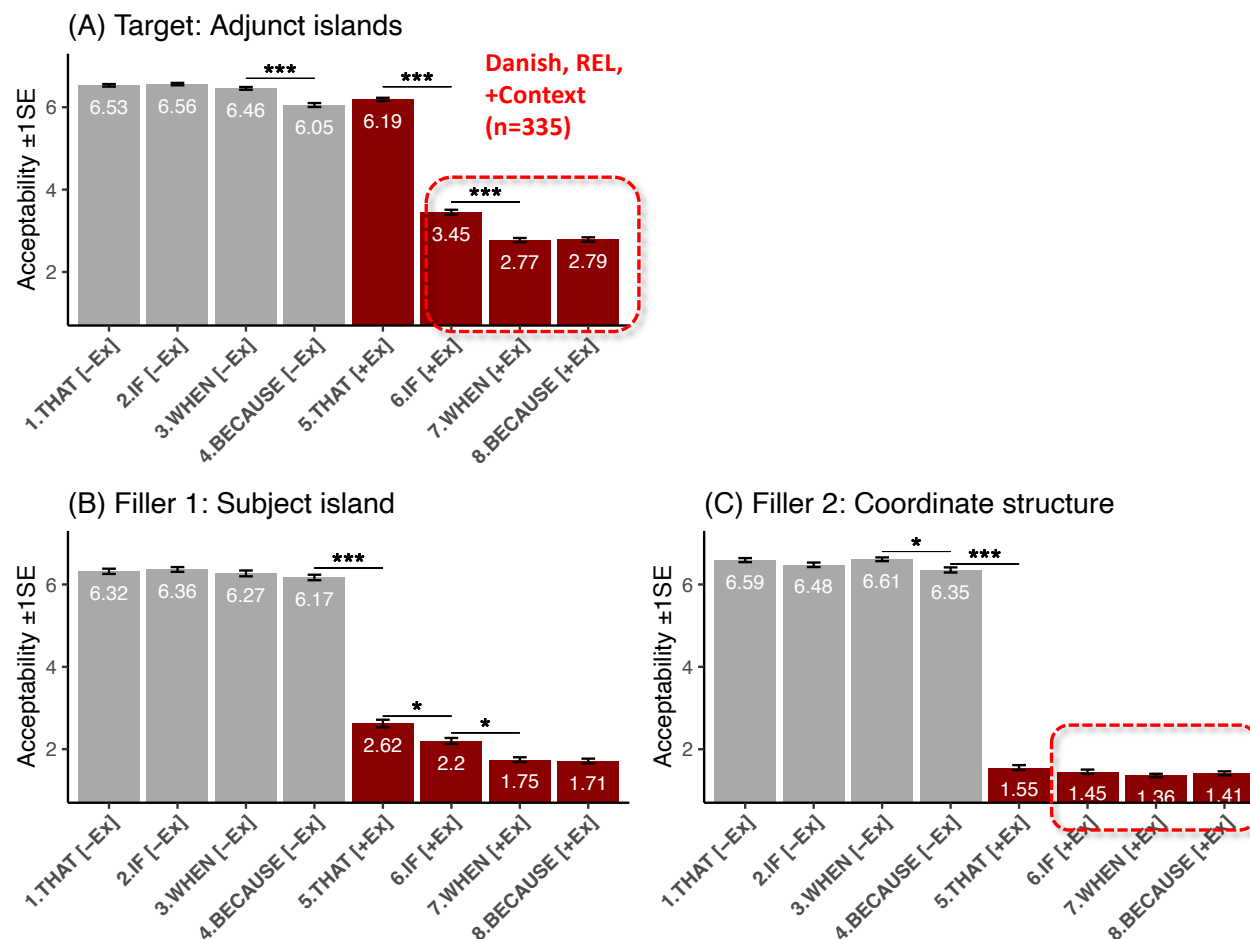
Kush, Dave, Terje Lohndal, and Jon Sprouse. 2019. On the island sensitivity of topicalization in Norwegian: An experimental investigation. *Language* 95(3). 393–420. <https://doi.org/10.1353/lan.2019.0051>.

Müller, Christiane, and 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

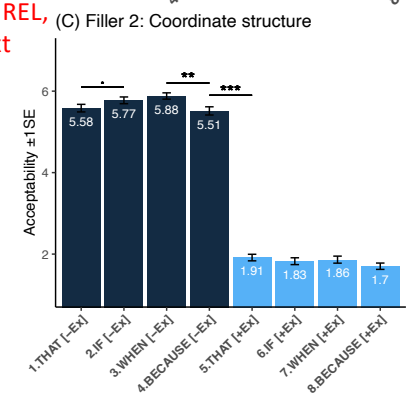
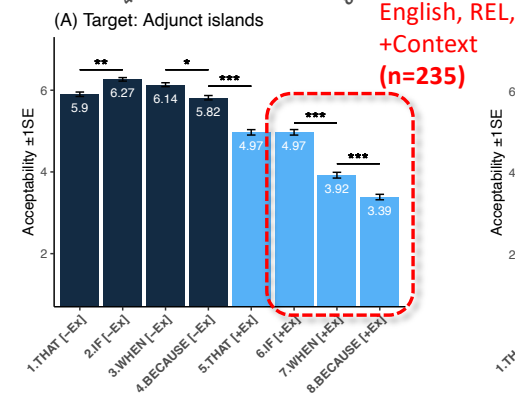
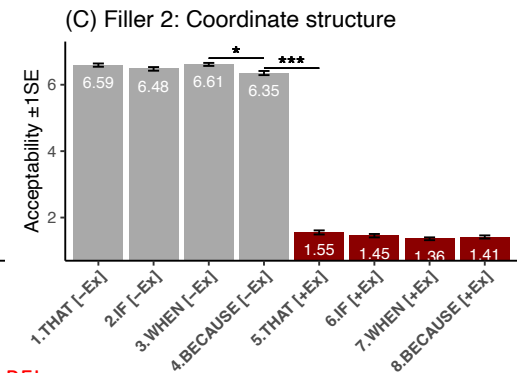
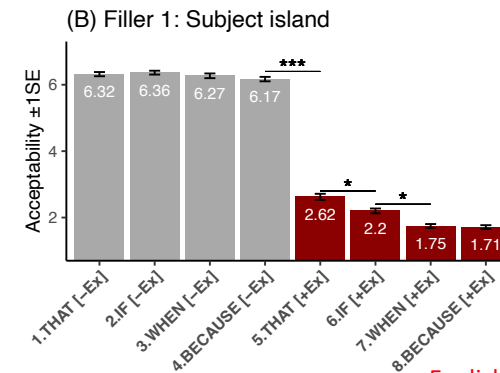
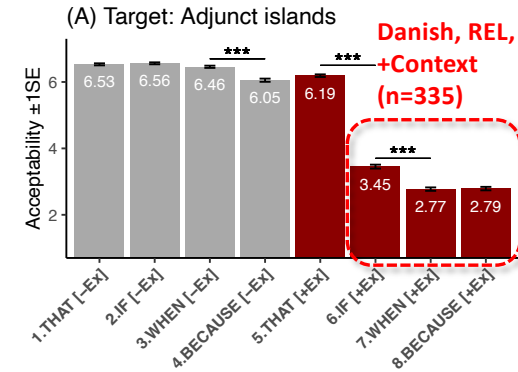
- Significant **extraction effect** across the board
 - (also for *that*-clauses, $p < 0.01$)
- Significant island effects:
 - *That* > *if* > *when*, but *when*=*because*
 - But the ratings are **not at floor**: All target extraction approx. 1.4 points higher than filler 2 (extraction from a coordinate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



Results

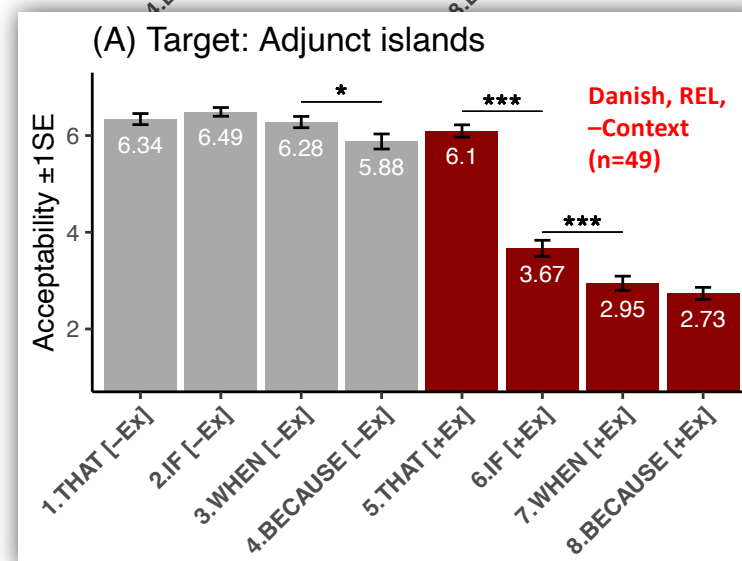
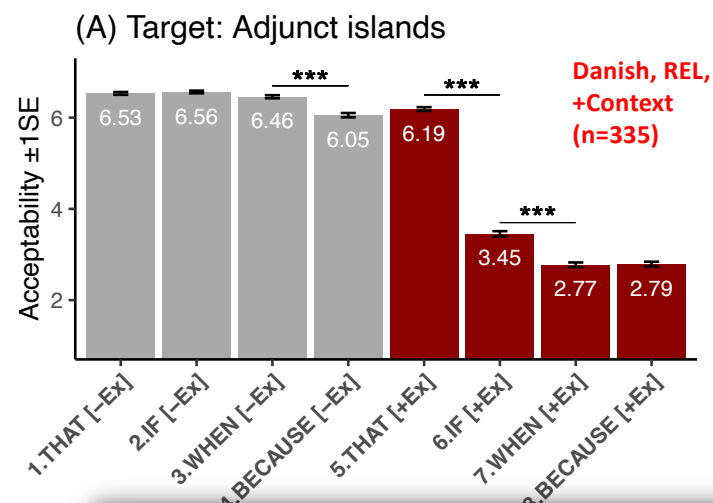
• Stronger island effects than for English!

- 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 → reduction in acceptability
 - Bad (non-supportive) context → increase in acceptability
- **Same result! No significant fixed effect of context: $p > 0.34$.**
 - no significant interaction with extraction.

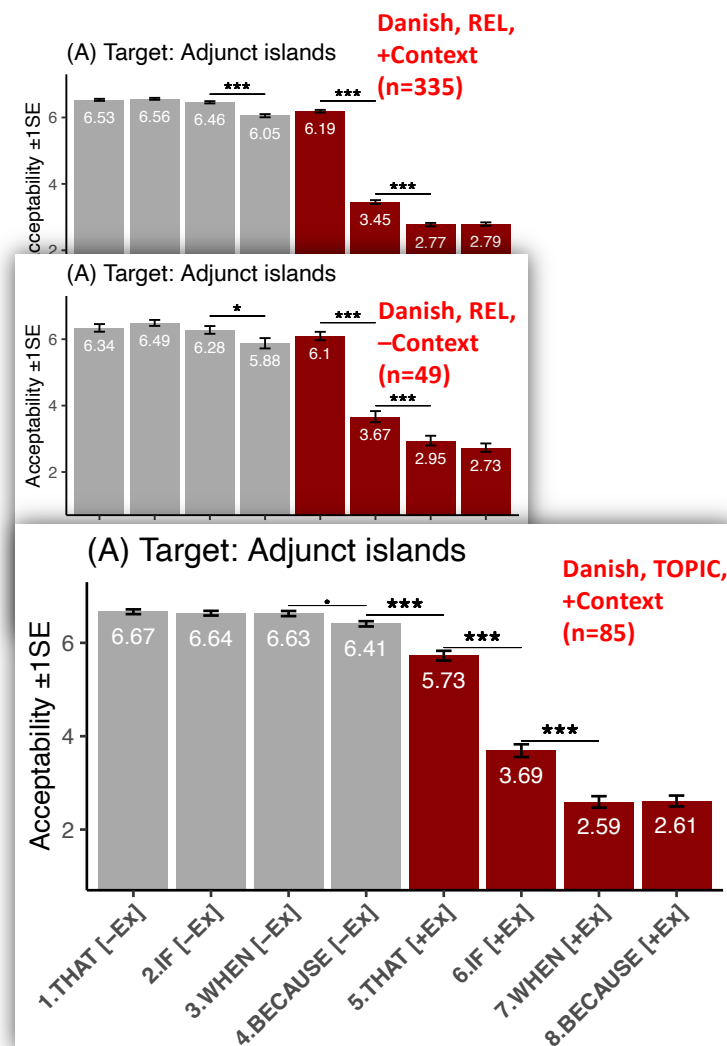


Kush, Dave, Terje Lohndal & Jon Sprouse. 2018. Investigating variation in island effects: A Case Study of Norwegian Wh-Extraction. *Natural Language & Linguistic Theory* 36(3). 743–779. <https://doi.org/10.1007/s11049-017-9390-z>.

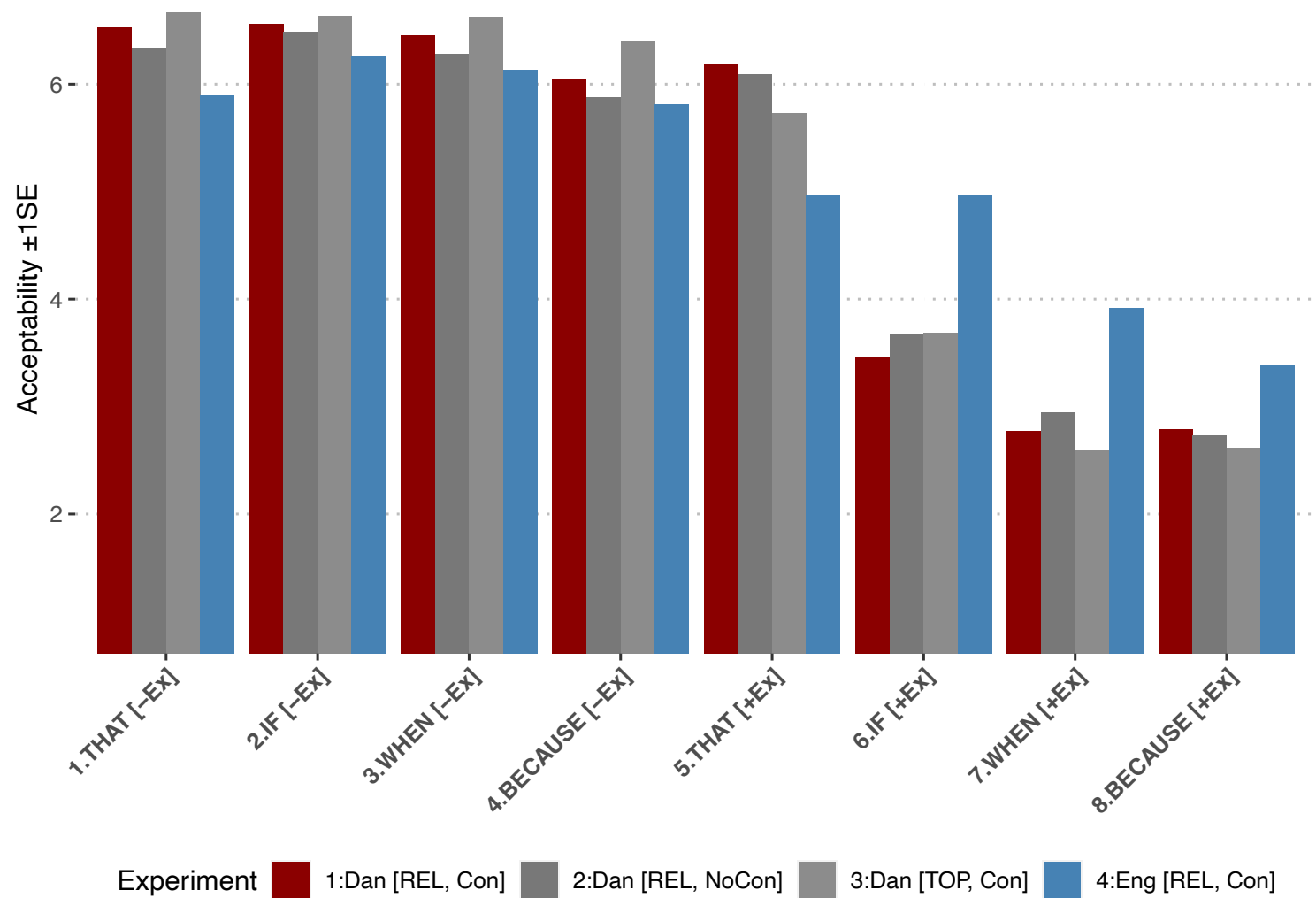
Nyvad, Anne Mette, Christiane Müller, and Ken Ramshøj Christensen. 2025. “Moving Away from the Island. Extraction from Adjunct Clauses in Danish.” Under review.

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**.

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 *c*P/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.

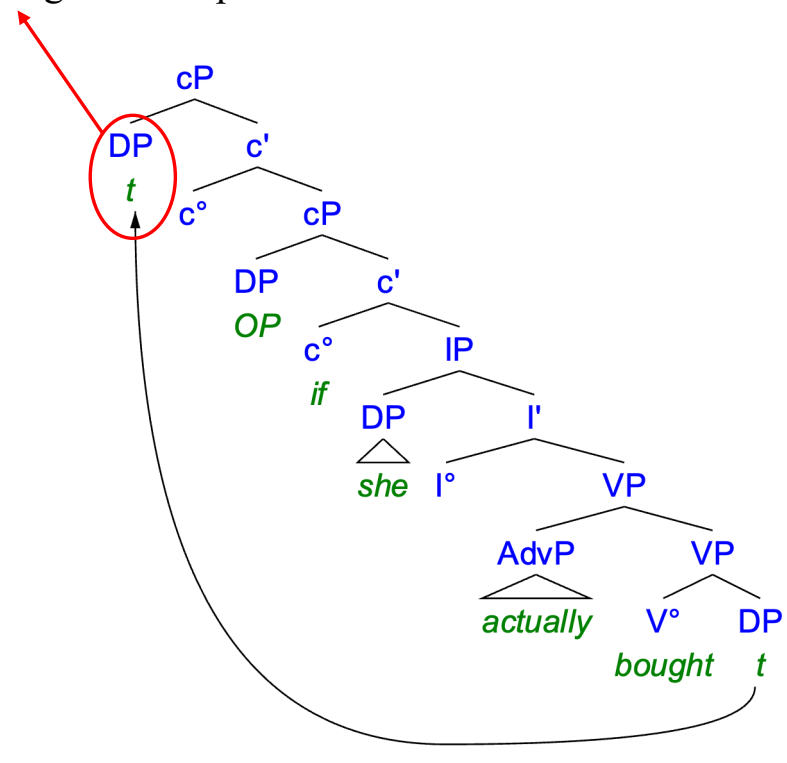
Nyvad, Anne Mette, Ken Ramshøj Christensen & Sten Vikner. 2017. CP-recursion in Danish: A *c*P/CP-analysis. *The Linguistic Review* 34(3). 449–477. <https://doi.org/10.1515/tlr-2017-0008>.

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).

Moving further up...



- 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/aui.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>.

Conclusion

- The variability in the acceptability patterns 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