

BRIDGES AND ISLANDS

Extraction from adjunct clauses
in (Danish), Swedish, and English

Christiane Müller



MINDS, April 7

LONG-DISTANCE DEPENDENCIES

- Languages can have *long-distance dependencies*:

(1) [Which book]_i did Harry think [_i that Bill bought _i]?


- Other types of long-distance dependencies are *topicalization* (2) and *relativization* (3):

(2) [That book]_i Harry thought [_i that Bill should buy _i].

(3) This is [the book]_i that Harry thought [_i that Bill should buy _i].

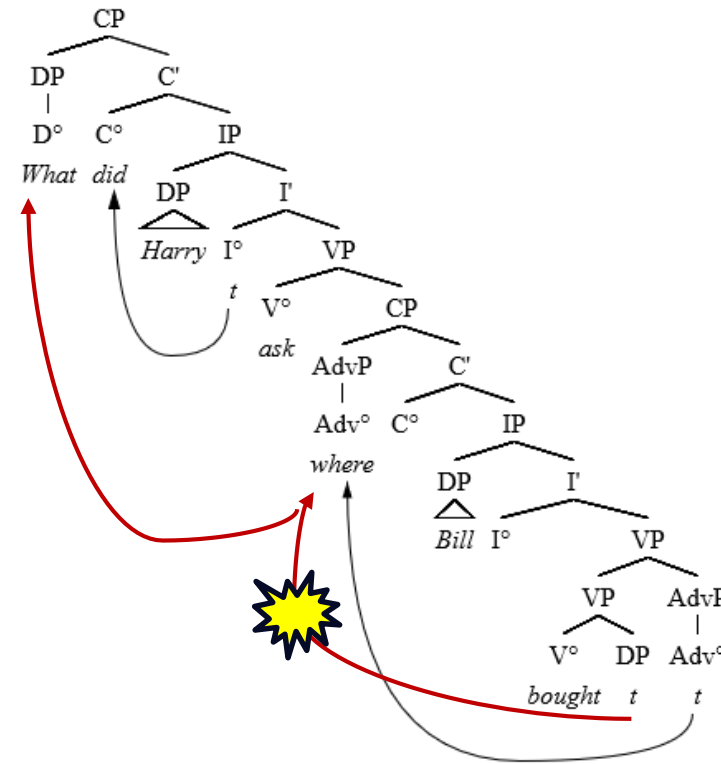
ISLANDS

- Islands are structures that block the formation of such dependencies!
 - **Embedded questions:**
(4) * $[What]_i$ did Harry ask $[where\ Bill\ bought\ _i]$?
 - **Relative clauses:**
(5) * $[Which\ book]_i$ did Harry meet $[a\ child\ who\ read\ _i]$?
 - **Adjunct clauses:**
(6) * $[Who]_i$ did Harry arrive $[when\ Bill\ kissed\ _i]$?
- What is the source of such island effects?
 - The standard account: Islands arise when long movement is blocked by the presence of something else in the intermediate CP-spec.



ISLANDS

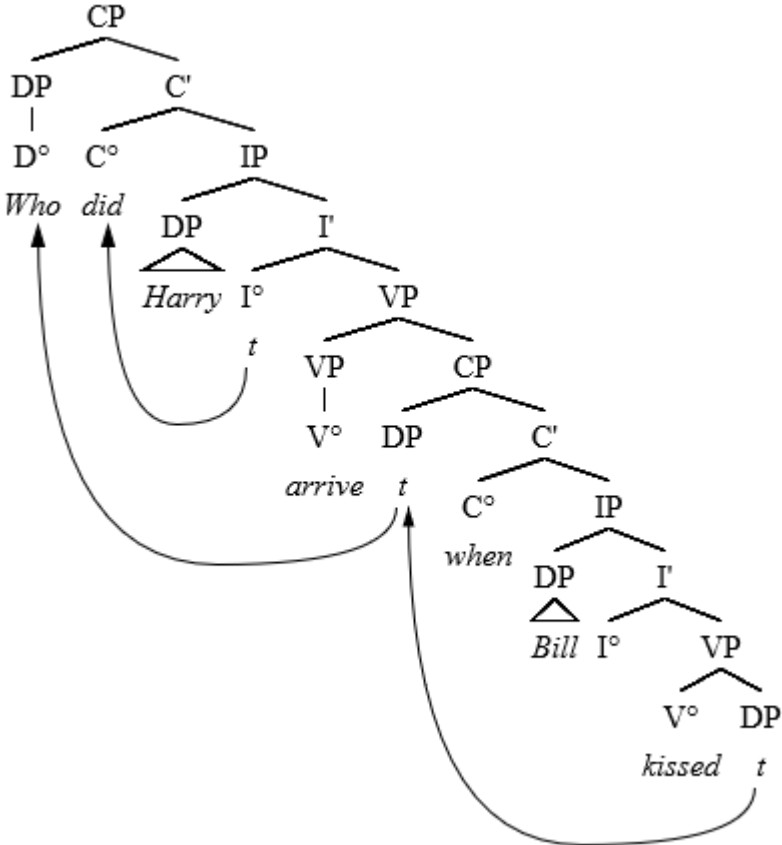
- Islands arise when long movement is blocked by the presence of something else in the intermediate CP-spec.
 - E.g. a *wh*-element in *wh*-islands:



ADJUNCT ISLANDS

- How can this account for adjunct islands?

(7) *Who_i did Harry arrive [when Bill kissed]_i?



ADJUNCT ISLANDS

- It has been suggested that some adjunct clauses involve a **silent operator** in CP-spec
 - Bhatt and Pancheva (2006): conditional adjuncts have a *possible world operator*:

(8) $[_{CP} \text{Op}_w [_{C^\circ} \text{if [John arrives late]}]]$

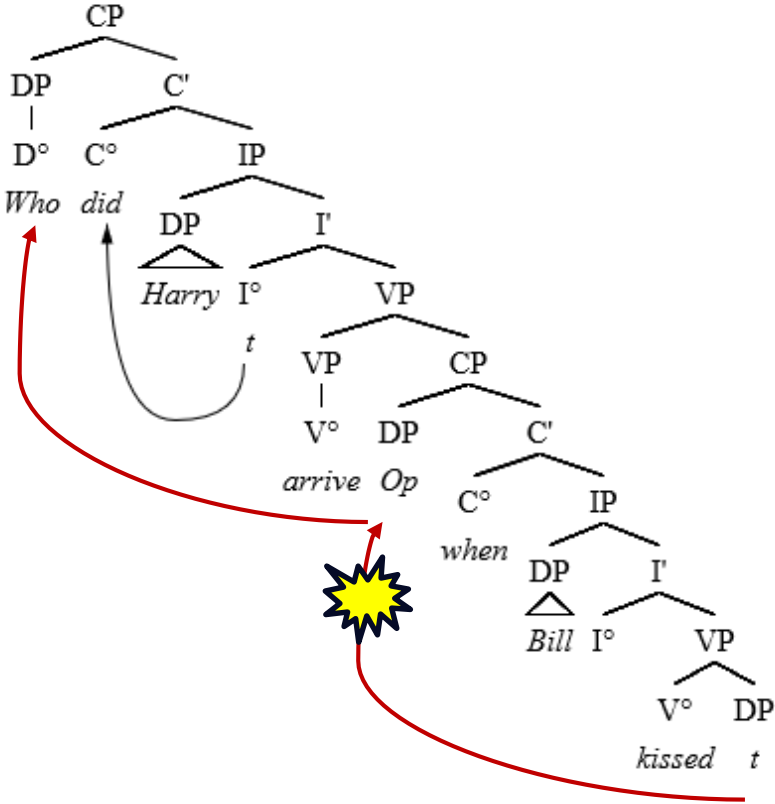
- Demirdache and Uribe-Etxebarria (2004); Haegeman (2012): temporal adjunct clauses have a *time* operator:

(9) $[_{CP} \text{Op}_{Time} [_{C^\circ} \text{after/when [Zoey arrived]}]]$

- We can assume that long movement is blocked from these adjunct clauses because the covert operator blocks the intermediate CP-spec

ADJUNCT ISLANDS

(10) *Who_i did Harry arrive [when Bill kissed _{-i}]?



- It is assumed that adjuncts are islands for extraction **universally**

ADJUNCT CLAUSE EXTRACTION

- However, this assumption has been challenged by data from the Mainland Scandinavian (MSc.) languages:

(11) *Adjunct clause extraction (by topicalization)*

- a. [Sportspegeln]_i somnar jag [när jag ser __i].
sports program.the fall.asleep I when I watch
'I fall asleep when I watch the sports program.' (Swedish; Anward 1982: 74)
- b. [Den saka]_i ventar vi her [mens de ordnar __i].
this thing wait we here while they fix
'We are waiting here while they fix this thing.' (Norwegian; Faarlund 1992: 117)
- c. [Den vase]_i får du ballade [hvis du taber __i].
this vase get you trouble if you drop
'You are in trouble if you drop this vase.' (Danish; Hansen and Heltoft 2011: 1814)

ADJUNCT CLAUSE EXTRACTION

- MSc. seems to differ from other languages, e.g. English, in allowing extraction from adjunct clauses:

(12) Sportspegeln_i somnar jag [när jag ser __i].

sports program.the fall.asleep I when I watch

'I fall asleep if/when I watch the sports program.' (Swedish; Anward 1982: 74)

(13) *Who_i did Harry arrive [when Bill kissed __i]?

- So: Is there cross-linguistic variation in adjunct islands?

ADJUNCT CLAUSE EXTRACTION

- At a closer look, MSc. and English might be more similar than previously assumed.
 - Extraction from adjunct clauses is not completely unrestricted in MSc.:

(14) a. *[Den artikel]_i; gik hun [da hun havde skrevet __i].

that article left she when she had written

‘She left when she had written this article.’ (Jensen 1998: 17)

b. *[Den fest]_i; købte hun stort ind [fordi hun skulle fejre __i].

that party bought she in bulk because she wanted to celebrate

‘She bought in bulk because she wanted to have that party.’ (Jensen 1998: 17)

- ... and not categorically impossible in English:

(15) This is [the watch]_i; that I got upset [when I lost __i]. (Truswell 2011: 175)

ADJUNCT ISLANDS IN MSC.

- The possibility of extraction in MSc. languages appears to depend, among others, on the **type of adjunct clause**:
 - Müller (2017, 2019) tested topicalization from different adjunct clauses in Swedish in a semi-formal acceptability study
 - The sentences were preceded by a supporting context, and informants rated the sentences on a scale from 1 = 'unacceptable' to 5 = 'completely fine'

ADJUNCT ISLANDS IN MSC.

- Topicalization from adjunct clauses headed by *om* ('if') and *efter* ('after') in Swedish yielded acceptability ratings on the upper end of the scale:

(15) [Den filmen]_i börjar man alltid gråta [efter att man har sett __i].
that movie start one always to-cry after that one has seen
'One always has to start crying after having seen that movie.' (Mean: 3.84)

(16) [Det där röda vinet]_i mädde jag lite illa [efter att jag hade druckit __i].
this there red wine.the felt I a.little sick after that I had drunk
'I felt a little sick after I had drunk that red wine last time.' (Mean: 4.05)

ADJUNCT ISLANDS IN MSC.

- But extraction from other types of adjuncts (e.g. **causal adjuncts**) was rated at the low end of the scale

(17) [Den där låten]; blir det alltid dålig stämning [eftersom ingen gillar _;].

this there song gets it always bad mood because nobody likes

‘The atmosphere always gets ruined because nobody likes that song.’ (Mean: 1.89)

ADJUNCT ISLANDS IN MSC.

- For **temporal** adjunct clauses, the acceptability of extraction also depended on whether the matrix and the adjunct clause event can be interpreted to be in a **causal relation** (e.g. 18a), rather than in a purely temporal one (e.g. 18b).

- (18) a. [Den filmen]_i börjar man alltid gråta [efter att man har sett _j].
that movie start one always to-cry after that one has seen
'One always has to start crying after having seen that movie.' (Mean: 3.84)
- b. [Den filmen]_i fick jag gå hem [efter att vi hade sett _j].
that movie must.past I go home after that we had seen
'I had to go home after we had seen that movie.' (Mean: 1.95)

ADJUNCT ISLANDS IN MSC.

- Bondevik et al. (2021) tested topicalization from 3 types of adjunct clauses in Norwegian
- Extraction from **conditional** and **temporal** adjuncts (*om*-clauses and *når*-clauses) yielded ratings on the upper half of the scale, whereas extraction from **causal** adjuncts (*fordi*-clauses) received ratings on the low end of the scale
- Apart from clause type, the acceptability of island extraction in MSc. **also** seems to depend on:
 - the type of extraction dependency
 - **Topicalization** from adjunct clauses appears to be easier to accept than **wh-extraction** (Kush et al. 2018, 2019)
 - presence or absence of contextual facilitation
 - The **addition of context** to stimulus sentences had a beneficial effect on ratings for at least some adjunct clause extractions in Norwegian (Kush et al. 2019)

ACCEPTABILITY EXPERIMENT IN ENGLISH

- The findings from MSc. call for a re-evaluation of the situation in English regarding the islandhood of adjunct clauses:
- **Are finite adjunct clauses in English really uniformly strong islands?**
- Nyvad, Müller, and Christensen (forthcoming) tested extraction in the form of **relativization** from three types of finite adjunct clauses in English (*if*, *when*, and *because*) in the presence of supporting context.

Why relativization?

- Topicalization is a marked structure in English
- Like topicalization, relativization from certain islands appears to be easier to accept than *wh*-extraction (Sprouse et al. 2016; Abeillé et al. 2020)

ACCEPTABILITY EXPERIMENT IN ENGLISH

(19) **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.

Non-island structure, -Extraction:

a. It's obvious that I was surprised **that** she actually completed this exercise.

Island structure, -Extraction:

b. It's obvious that I would be surprised **if** she actually completed this exercise.

c. It's obvious that I was surprised **when** she actually completed this exercise.

d. It's obvious that I was surprised **because** she actually completed this exercise.

ACCEPTABILITY EXPERIMENT IN ENGLISH

(19) **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.

Non-island structure, +Extraction:

e. This is the exercise that I was surprised **that** she actually completed ___.

Island structure, +Extraction:

f. This is the exercise that I would be surprised **if** she actually completed ___.

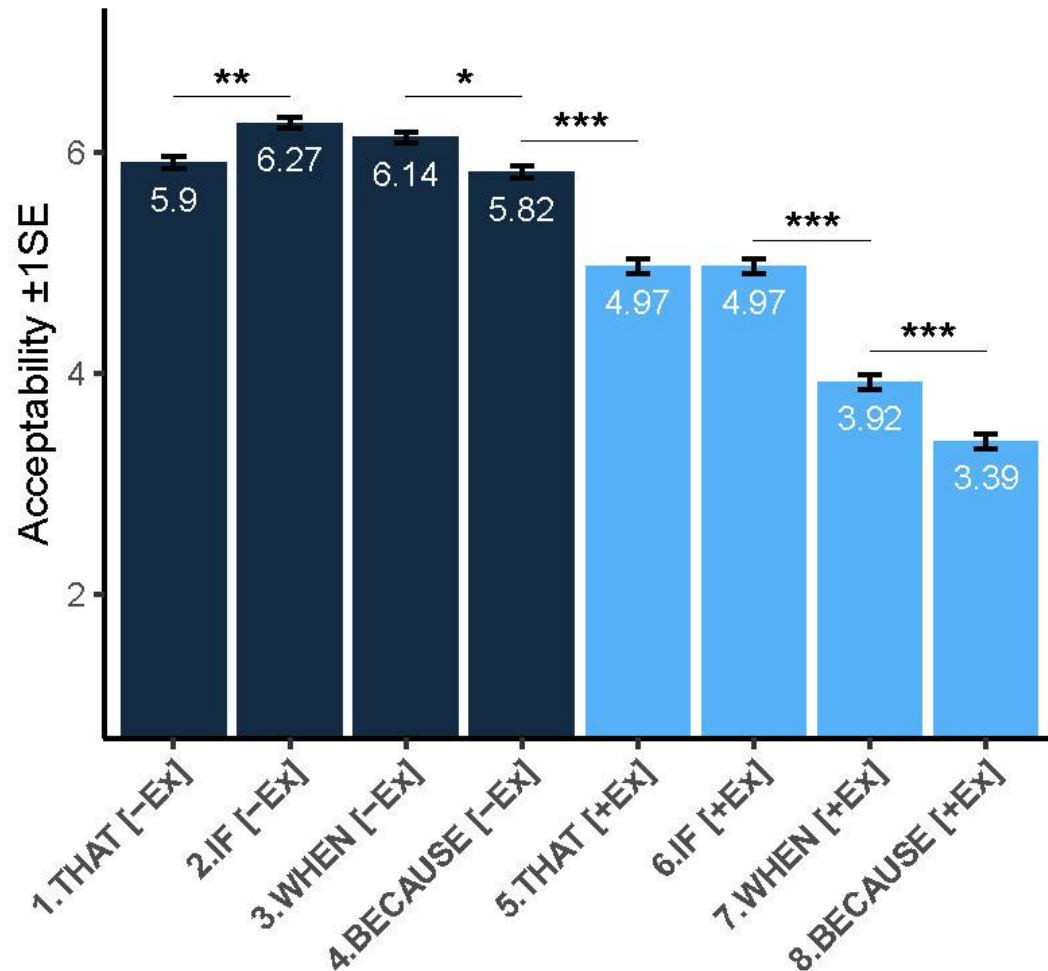
g. This is the exercise that I was surprised **when** she actually completed ___.

h. This is the exercise that I was surprised **because** she actually completed ___.

- Participants rated the sentences on a 7-point scale

ACCEPTABILITY EXPERIMENT IN ENGLISH

(A) Target: Adjunct islands



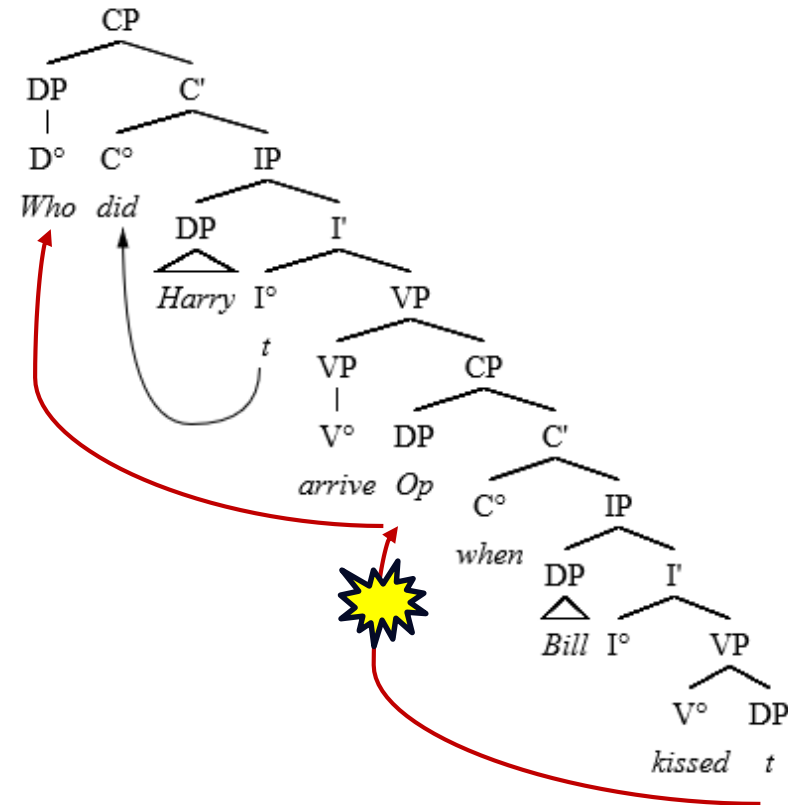
- All [+Ex] types were in the middle range
- Within the [+Ex] types:
 - The ratings for *that* and *if* did not differ from each other
 - Extraction from *if*-clauses > *when*-clauses > *because*-clauses

ENGLISH VS. MSc.

- English and MSc. might be **more similar** than previously assumed: Different adjunct clauses display a non-uniform behavior when it comes to extraction
 - The pattern in our study matches the patterns found for topicalization from the corresponding adjuncts in Swedish and Norwegian: *if* > *when* > *because*
- *if*-clauses patterned with non-island *that*-clauses – yielding ratings above the middle range
- These findings suggest that at least for relativization, *if*-adjuncts (and possibly *when*-adjuncts) are not categorical islands in English

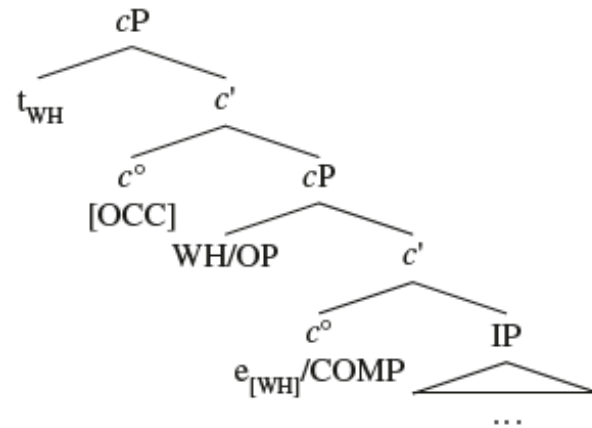
ESCAPING THE ADJUNCT CLAUSE

- How is extraction possible from *if*- or *when*-clauses?



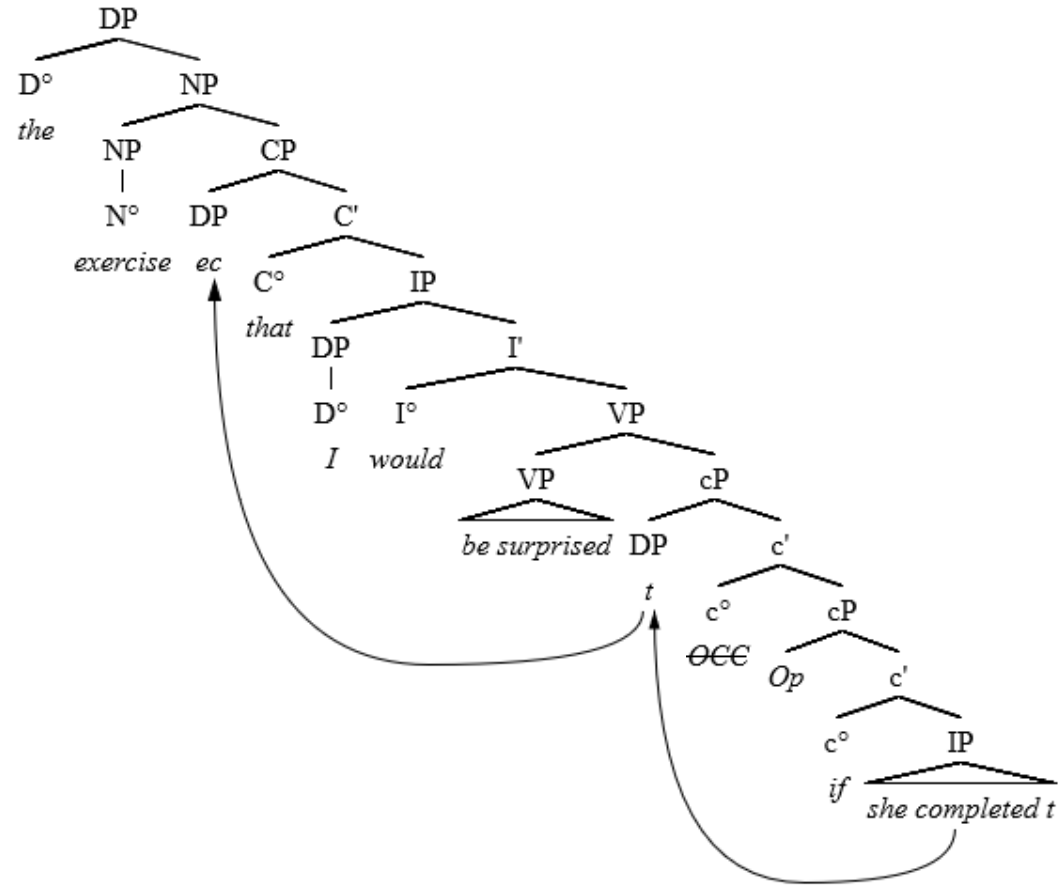
ESCAPING THE ADJUNCT CLAUSE

- CP-recursion (Nyvad et al. 2017)
 - Clauses can have more than just a single CP. Extraction from adjunct clauses e.g. in MSc. is possible because the extra CP layer provides a CP-spec that can serve as an intermediate landing site for long movement.



ESCAPING THE ADJUNCT CLAUSE

(20) This is the exercise that I would be surprised [if she completed ___]



TWO REMAINING ISSUES

1) Causal clauses

- Why do causal adjunct clauses seem to resist extraction more than e.g. conditional adjuncts?
 - see Müller (2017, 2019) for Swedish, Bondevik et al. (2021) for Norwegian, Nyvad et al. (forthcoming) for English:
conditional, temporal > causal
- Causal adjuncts explicitly describe a causal relation between matrix and adjunct clause
- Unlike with conditional or temporal adjuncts, an operator analysis has never been suggested for causal adjunct clauses

TWO REMAINING ISSUES

1) Causal clauses

- Causal clauses seem to differ from conditional and temporal adjuncts also in other regards:
 - Causal clauses are compatible with V2 word order in MSc.

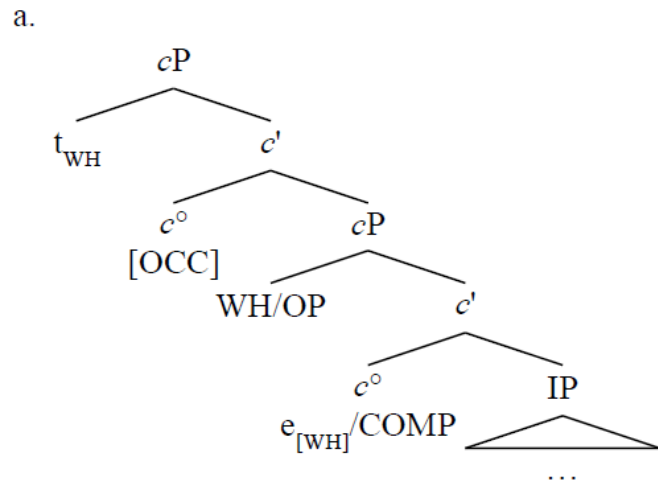
- (21) a. Jeg skal ikke gå meget ind i diskussionen her, [fordi **processen er jo ikke** færdig].
(KorpusDK; Nyvad et al. 2017: 462)
- b. ??Jeg ville blive urolig [hvis **processen var ikke** færdig inden jul].
- c. *Jeg bliver urolig [når **de er ikke** kommet hjem inden midnat].

TWO REMAINING ISSUES

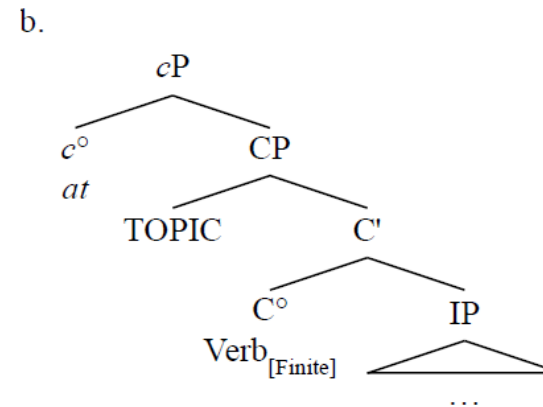
1) Causal clauses

- Nyvad et al. (2017): two types of CP-recursion

a. **cP** is involved in extraction



b. **CP** contains V2 and disallows extraction



- If causal clauses allow V2, perhaps they have a CP?
- This would explain their resistance to extraction

TWO REMAINING ISSUES

2) What about English?

- If English also allows CP-recursion, this should make it possible to extract from other islands in English, e.g. from relative clauses. But relative clauses in English seemed to behave like strong islands in Christensen and Nyvad's (2022) study.
- Maybe relative clauses and adjunct clauses are formed (and circumvented) differently?
- More data is needed!

REFERENCES

- Abeillé, Anne, Barbara Hemforth, Elodie Winckel, and Edward Gibson. 2020. "Extraction from Subjects: Differences in Acceptability Depend on the Discourse Function of the Construction." *Cognition* 204 (November): 104293. <https://doi.org/10.1016/j.cognition.2020.104293>.
- Anward, Jan. 1982. "Basic Swedish". In *Readings on unbounded dependencies in Scandinavian languages*, edited by Elisabeth Engdahl and Eva Ejerhed, 47–75. Stockholm: Almqvist & Wiksell.
- Bhatt, Rajesh, and Roumyana Pancheva. 2006. "Conditionals." In *The Blackwell Companion to Syntax*, edited by Martin Everaert and Henk van Riemsdijk, 1:638–87. Oxford: John Wiley & Sons, Ltd. <https://doi.org/10.1002/9780470996591.ch16>.
- Bondevik, Ingrid, Dave Kush, and Terje Lohndal. 2021. "Variation in Adjunct Islands: The Case of Norwegian." *Nordic Journal of Linguistics*, December, 1–32. <https://doi.org/10.1017/S0332586520000207>.
- Demirdache, Hamida, and Myriam Uribe-Etxebarria. 2004. "The Syntax of Time Adverbs." In *The Syntax of Time*, edited by Jacqueline Guéron and Jacqueline Lecarme, 143–80. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/6598.003.0008>.
- Faarlund, Jan Terje. 1992. *Norsk syntaks i funksjonelt perspektiv* [Norwegian syntax in a functional perspective]. Oslo: Universitetsforlaget.
- Haegeman, Liliane. 2012. *Adverbial Clauses, Main Clause Phenomena, and the Composition of the Left Periphery: The Cartography of Syntactic Structures, Volume 8*. Oxford Studies in Comparative Syntax. New York: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199858774.001.0001>.
- Hansen, Erik, and Lars Heltoft. 2011. *Grammatik over det danske sprog* [Danish reference grammar], vol. 3. København: Det danske Sprog- og Litteraturselskab: Syddansk universitetsforlag (kommissionær).

REFERENCES

- Jensen, Anne. 1998. Knudekonstruktioner - en syntaktisk, semantisk og pragmatisk analyse av sætningsknuder i dansk. M.A. Thesis, Københavns Universitet, Copenhagen, Denmark.
- Kush, Dave, Terje Lohndal, and Jon Sprouse. 2018. "Investigating Variation in Island Effects: A Case Study of Norwegian Wh-Extraction." *Natural Language & Linguistic Theory* 36 (3): 743–79. <https://doi.org/10.1007/s11049-017-9390-z>.
- 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. 2017. "Extraction from Adjunct Islands in Swedish." *Norsk Lingvistisk Tidsskrift* 35 (1). <http://ojs.novus.no/index.php/NLT/article/view/1399>.
- Müller, Christiane. 2019. "Permeable Islands. A Contrastive Study of Swedish and English Adjunct Clause Extractions." Lund: Lund University.
- Nyvad, Anne Mette, Ken Ramshøj Christensen, and Sten Vikner. 2017. "CP-Recursion in Danish: A CP/CP-Analysis." *The Linguistic Review* 34 (3): 449–77. <https://doi.org/10.1515/tlr-2017-0008>.
- Nyvad, Anne Mette, Christiane Müller, and Ken Ramshøj Christensen. Forthcoming. The nonuniformity of adjunct clause extraction in English.
- Ross, John R. 1967. *Constraints on variables in syntax*. Cambridge, MA: MIT Ph.D. thesis.
- Sprouse, Jon, Ivano Caponigro, Ciro Greco, and Carlo Cecchetto. 2016. "Experimental Syntax and the Variation of Island Effects in English and Italian." *Natural Language & Linguistic Theory* 34 (1): 307–44. <https://doi.org/10.1007/s11049-015-9286-8>.
- Truswell, Robert. 2011. *Events, phrases and questions*. Oxford: Oxford University Press.



AARHUS
UNIVERSITY