Principle C reconstruction in German and English ATB- and wh-movement

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1 Basics

1.1 Problem

- ATB-movement creates 1:many dependency where one filler is related to multiple gaps – how can this be derived?[1]
  - asymmetric approaches: only one conjunct is targeted by sub-extraction (Bošković & Franks 2000; Franks 1993, 1995; Munn 1992, 1993, 2001; Salzmann 2012; Zhang 2010)
  - symmetric approaches: all conjuncts are targeted by sub-extraction (Bachrach & Katzir 2009; Biskup 2018; Citko 2005; Hein & Murphy 2020; Ross 1967; Wilder 1994; Williams 1978)
  - sideward movement: movement launches in non-initial conjunct and has intermediate landing site in initial conjunct (Nunes 2001)

1.2 Idea

	Initial conjunct	Non-initial conjunct
Symmetric approaches	✓	✓
Asymmetric approaches (initial gap)	✓	✗
Sideward movement	✗	✓

Table 1: Predictions for principle C reconstruction.

- principle C is only evaluated at base positions (Nissenbaum 2000; Sportiche 2017)
- reported to support asymmetric pattern in English: violations only in initial conjunct (Citko 2005; Salzmann 2012)

[1] Here, the focus is on coordinate structures with two conjuncts. In asymmetric approaches there is only one launch site for movement regardless of the complexity of the coordination.

(1) a. *Which picture of John$_i$ did he$_i$ like __ and Mary dislike __?
b. Which picture of John$_i$ did Mary like __ and he$_i$ dislike __?

Citko (2005, p. 494)

- principle C reconstruction is controversial: do arguments of NPs reconstruct with them? (Barss 1988; Chomsky 1995; Freidin 1986; Lebeaux 1988; van Riemsdijk & Williams 1981; Sauerland 1998; Takahashi & Hulsey 2009; vs. Bianchi 1995; Henderson 2007; Kuno 2004; Lasnik 1998; Safir 1999)

(2) a. *Which investigation of Nixon$_i$ did he$_i$ resent __?
b. Which investigation near Nixon$_i$'s house did he$_i$ resent __? Safir (1999, p. 589)

- experimental designs differ, data interpreted in different ways (Adger et al. 2017; Bruening & Al Khalaf 2019; Stockwell et al. 2021, 2022)

1.3 Measuring coreference

(3) Which picture of John did he like?
a. *Who is this about?* 1-7 scale for John + someone else, resp. (Stockwell et al. 2021, 2022)
b. *Can 'John' and 'he' refer to the same person?* yes/no (Adger et al. 2017)

(4) Peter recounted which picture of John he liked.
a. *Who liked a picture?* Peter/John (Bruening & Al Khalaf 2019)
b. *Can this be understood such that Peter/John resp. liked a picture?* yes/no (Salzmann et al. 2023)

- mixed conclusions:
  - reconstruction of arguments not stable (Adger et al. 2017; Bruening & Al Khalaf 2019)
  - reconstruction of arguments is stable (Salzmann et al. 2023; Stockwell et al. 2021, 2022)
  - all authors agree that there is an effect of distance
- bias to resolve pronominal reference (Gordon & Hendrick 1998), preferences $\neq$ possibilities, presence and properties of alternative referent (Cowles et al. 2007; Gor & Syrett 2018; Järvikivi et al. 2005; Kaiser 2011; Varaschin et al. 2023)
- surface vs. underlying violation $\neq$ subject vs. object reconstruction
  - surface violations are strong: **He$_i$ read a paper by John$_i$.*
  - if this is due to c-command, R-expressions contained in subjects should never show this effect

(5) a. *Which paper by John$_i$ did he$_i$ find amusing __?
b. Which paper by John$_i$ __ amused him$_i$?

1.3.1 Outline

- ATB and wh-experiments with different designs and tweaks to the item structure
- conceptually most straightforward design for English experiment
- spoiler: what causes the asymmetric pattern in ATB-movement is not a principle C violation

2 Current experiments

2.1 Working assumptions

- arguments of NPs reconstruct (Salzmann et al. 2023; Stockwell et al. 2021, 2022)
- confounds inhibit coreference judgment proportions close to 0% or 100% (Salzmann et al. 2023; Stockwell et al. 2021, 2022)
- principle C holds

2.2 Research questions

- Q1: does the pattern in (1) hold across speakers?
- Q2: does it hold cross-linguistically?
- Q3: is the pattern due to an underlying principle C violation?

2.3 Experiment 1: ATB in German à la Salzmann et al. (2022)

2.3.1 Materials, participants, setup

- 277 native German participants
- 12 items, 2x2 PHRASE (subject/object) and POSITION (initial/non-initial) + 48 distractors
- items accompanied by context
- two yes/no forced choice tasks per trial, each inquiring about coreference with one of the matching referents (Salzmann et al. 2023)

(6) *Target item structure*

Ich habe Marie$_i$ gefragt, [welche Geschichte über **Laura**$_j$]…
I have Marie asked which story about Laura
'I asked Marie which story about Laura…'

a. OBJECT, INITIAL
sie$_{i/?j}$ ___ gehört und Michael ___ weitererzählt hat.
she heard and Michael retold has
'…she heard and Michael retold.'

b. OBJECT, NON-INITIAL
Michael ___ weitererzählt und **sie**$_{i/?j}$ ___ gehört hat.
Michael retold and she heard has
'…Michael retold and she heard.'

c. SUBJECT, INITIAL
___ **sie**$_{i/?j}$ entzückt und ___ Michael überrascht hat.
her delighted and Michael surprised has
'…delighted her and surprised Michael.'

d. SUBJECT, NON-INITIAL
___ Michael überrascht und ___ **sie**$_{i/?j}$ entzückt hat.
Michael surprised and her delighted has.
'…surprised Michael and delighted her.'

(7) H1: Object conditions…

a. elicit coreference rates below chance level with the embedded referent across levels of POSITION if reconstruction is symmetric, see Figure 1.

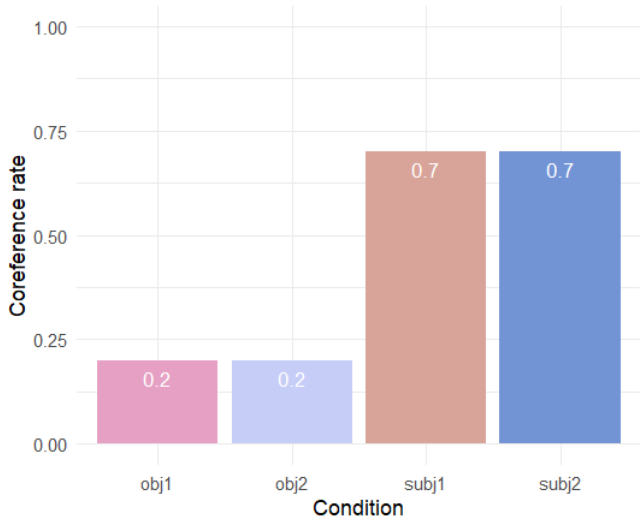

Figure 1: Predicted coreference rates with embedded referent if reconstruction is symmetric.

b. elicit coreference rates below chance level with the embedded referent in only one of the levels of POSITION if reconstruction is asymmetric, see Figure 2. There is a significant interaction between PHRASE and POSITION.

(8) H2: Subject conditions elicit coreference rates above chance level with the embedded referent if the test measures a principle C violation. There is a significant main effect of PHRASE.

2.3.2 Results

- coreference rates with embedded referent below chance across conditions

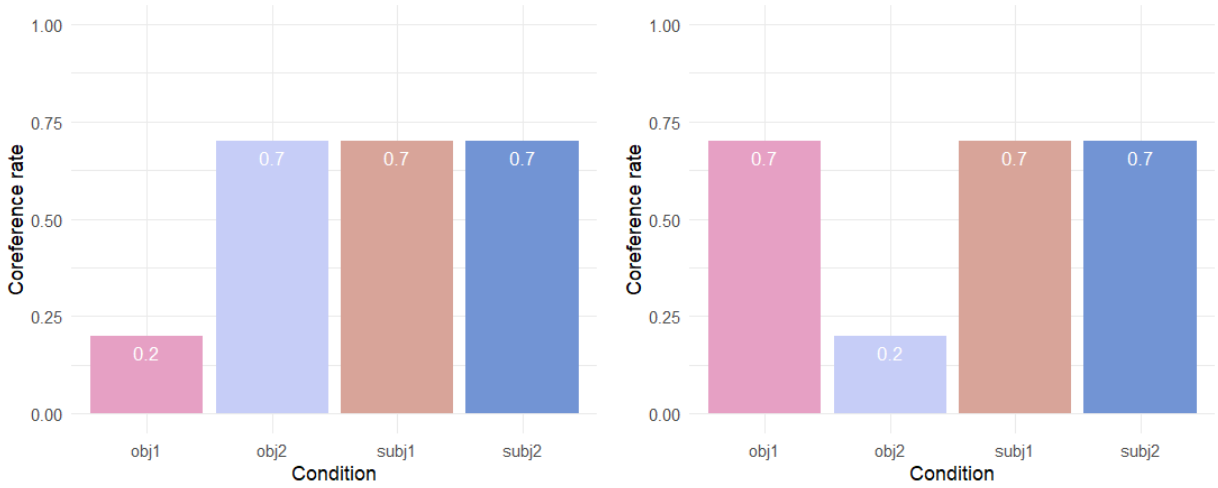

Figure 2: Predicted coreference rates with embedded referent if reconstruction is asymmetric to the initial (l) or non-initial (r) gap.

- tendency towards asymmetry reported in literature, but across levels of PHRASE
- effect of PHRASE vanishes in non-initial conditions, effect of POSITION likely due to surface order
- proximity effect: the shorter the distance between the referent and the pronoun, the lower the coreference rate (Adger et al. 2017; Bruening & Al Khalaf 2019)
- coreference with matrix referent below 90%
- no clear subject/object asymmetry in German ATB movement
- Salzmann et al. (2023) report 15% difference between subjects and objects in simple wh-dependencies (cf. 9% here)

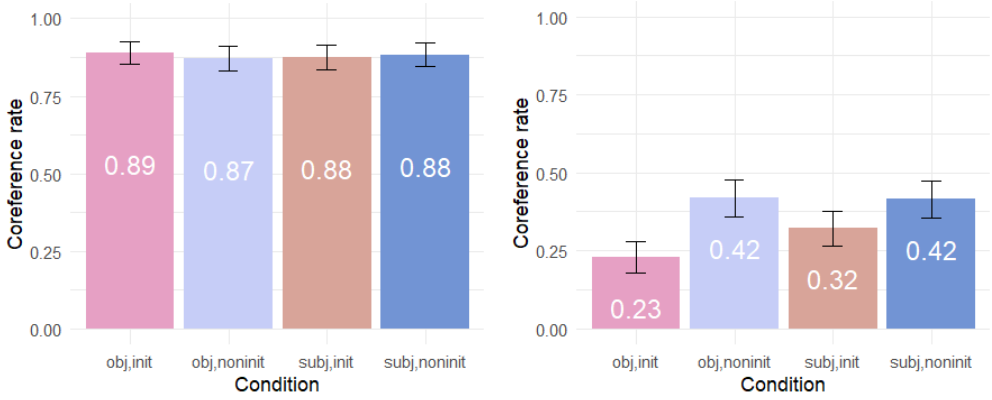

Figure 3: Observed coreference rates with matrix (l) and embedded referent (r) in ATB, experiment 1. Error bars indicate standard error.

GLMM ATB exp. 1	Estimate (SE)
(Intercept)	1.00^{***} (0.15)
phrase	0.73^{***} (0.19)
pos	-0.65^{***} (0.17)
phrase:pos	-0.77^{***} (0.19)
AIC	3157.94
Num. obs.	3048
Num. groups: participant	254
Num. groups: item	12
Var: participant (Intercept)	3.57
Var: participant phrase	0.06
Var: participant pos	1.05
Var: item (Intercept)	0.00
Var: item phrase	0.21
Var: item pos	0.06

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 2: Estimates of the GLMM for experiment 1, coreference with embedded referent.

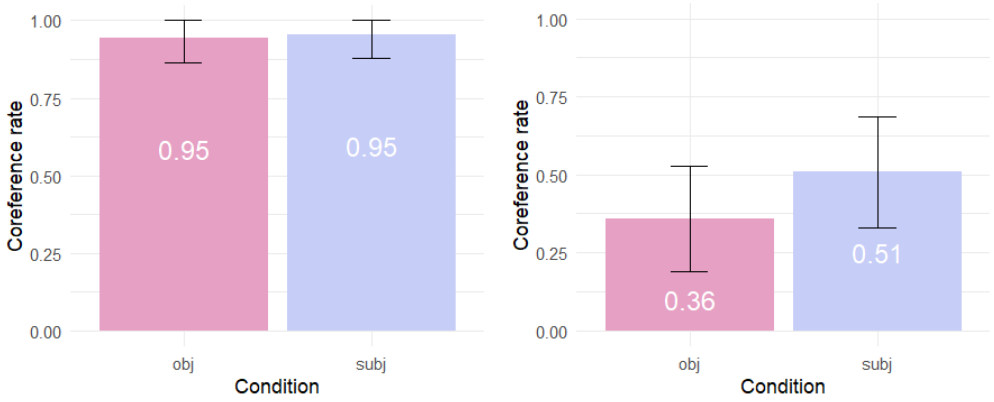

Figure 4: Observed coreference rates with matrix (l) and embedded referent (r) in simple wh-dependencies, data from Salzmann et al. (2023). Error bars indicate standard error.

2.4 Experiment 2: ATB + wh-movement in German à la Salzmann et al. (2022), simplified

2.4.1 Materials, participants, setup

- idea: simplifying the task may lead to clearer contrasts
- 60+90 German native participants
- 24 target items, 2x2 PHRASE (subject/object) and POSITION (initial/non-initial)
- 32 pseudofillers from Salzmann et al. (2023) with factor PHRASE (subject/object)

- 12 distractors
- items presented with context
- one yes/no forced choice task per trial inquiring about either one of the matching referents (balanced across materials)
- verbs matched across conditions

(9) *Target item structure*

Ich habe Marie$_i$ gefragt, [welche Geschichte über **Laura**$_j$]…
I have Marie asked which story about Laura
'I asked Marie which story about Laura…'

a. OBJECT, INITIAL
sie$_{i/?j}$ ___ entzückend und Michael ___ überraschend fand.
she delightful and Michael surprising found
'…she found delightful and Michael (found) surprising.'

b. OBJECT, NON-INITIAL
Michael ___ überraschend und **sie$_{i/?j}$** ___ entzückend fand.
Michael surprising and she delightful found
'…Michael found surprising and she (found) delightful.'

c. SUBJECT, INITIAL
___ **sie$_{i/?j}$** entzückt und ___ Michael überrascht hat.
her delighted and Michael surprised has
'…delighted her and surprised Michael.'

d. SUBJECT, NON-INITIAL
___ Michael überrascht und ___ **sie$_{i/?j}$** entzückt hat.
Michael surprised and her delighted has.
'…surprised Michael and delighted her.'

(10) *Pseudofiller structure*

Kerstin$_i$ erzählt, [welches Geschenk für Ilse$_j$]…
Kerstin recounts which present for Ilse
'Kerstin recounts which present for Ilse…'

a. OBJECT
…**sie$_{i/?j}$** ___ entzückend fand.
she delightful
'…she found delightful.'

b. SUBJECT
…___ **sie$_{i/?j}$** entzückt hat.
her delighted has
'…delighted her.'

(11) H3: Simplifying the task should enhance the 'real' contrast.

2.4.2 Results

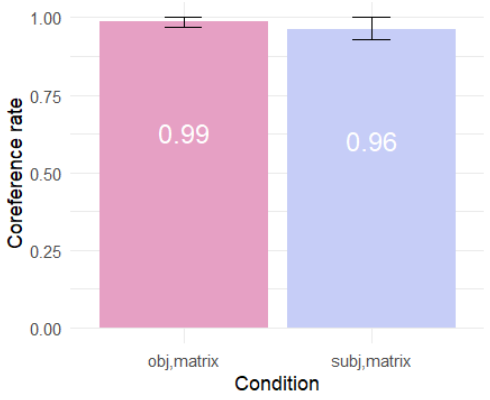

Figure 5: Observed coreference rates with matrix referent in simple wh-dependencies in experiment 2. Error bars indicate standard error.

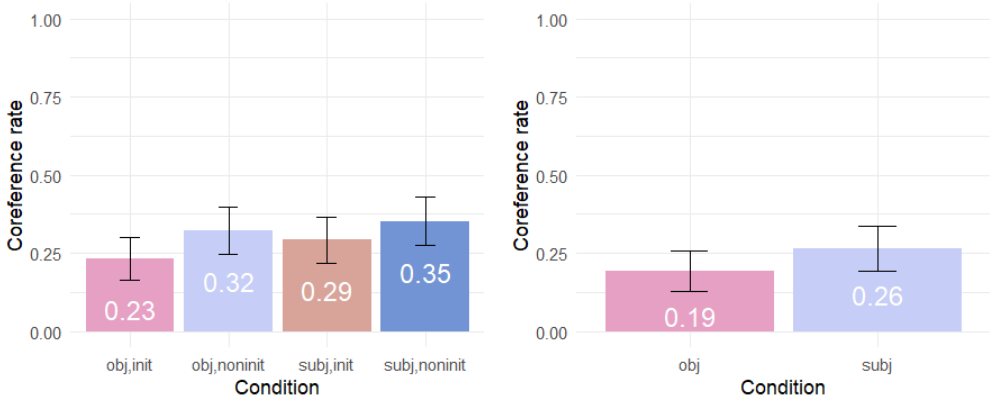

Figure 6: Observed coreference rates in ATB- (l) and simple wh-dependencies (r) in experiment 2. Error bars indicate standard error.

- task was understood, higher matrix coreference than in exp. 1, effect of PHRASE?
- coreference rates still below chance across conditions; simplifying the task made the contrasts even weaker (dropped from 9 to 6% in ATB, 7% in wh-movement)
- weakness of contrasts points to non-syntactic factors
- low coreference rates under wh-movement: difference in sample size between Salzmann et al. (2023) and this study? (32 vs. 150 participants)

GLMM ATB exp. 2	Estimate (SE)
(Intercept)	$1.48^{***}(0.31)$
phrase	$0.53^{***}(0.15)$
pos	$-0.53^{***}(0.16)$
phrase:pos	$-0.31(0.19)$
AIC	3128.91
Num. obs.	3600
Num. groups: participant	150
Num. groups: item	24
Var: participant (Intercept)	4.62
Var: participant phrase	0.10
Var: participant pos	0.15
Var: item (Intercept)	1.23
Var: item phrase	0.02
Var: item pos	0.15

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

GLMM wh exp. 2	Estimates (SE)
(Intercept)	$2.21^{***}(0.19)$
phrase	$-0.24(0.16)$
AIC	1871.64
Num. obs.	2400
Num. groups: participant	150
Num. groups: item	32
Var: participant (Intercept)	3.38
Var: participant phrase	0.54
Var: item (Intercept)	0.13
Var: item phrase	0.15

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 3: Estimates of the GLMMs for experiment 2, coreference with embedded referent in ATB (l) and wh-movement (r).

2.5 Experiment 3: ATB + wh-movement à la Stockwell et al. (2021, 2022), simplified

2.5.1 Materials, participants, setup

- idea: omitting the matrix referent may boost coreference rates
- 60 German native participants
- 24 target items, 2x2 PHRASE (subject/object) and POSITION (initial/non-initial)
- 32 pseudofillers from Salzmann et al. (2023), factor PHRASE (subject/object)
- 12 distractors
- *What is this about?* embedded referent did X/someone else did X
- global context: picking up snippets of a conversation at a party (Stockwell et al. 2021, 2022)
- verbs matched across conditions, but no balancing regarding task

(12) *Target item structure*

[Welche Geschichte über **Laura**$_j$]…
which story about Laura
'Which story about Laura…'

a. OBJECT, INITIAL
fand **sie$_{i/?j}$** ___ entzückend und Michael ___ überraschend?
found she delightful and Michael surprising
'…did she find delightful and Michael surprising?'

b. OBJECT, NON-INITIAL
fand Michael ___ überraschend und **sie$_{i/?j}$** ___ entzückend?
found Michael surprising and she delightful
'…did Michael find surprising and she delightful?'

c. SUBJECT, INITIAL
hat ___ **sie$_{i/?j}$** entzückt und ___ Michael überrascht?
has her delighted and Michael surprised
'…delighted her and surprised Michael?'

d. SUBJECT, NON-INITIAL
hat ___ Michael überrascht und ___ **sie$_{i/?j}$** entzückt?
has Michael surprised and her delighted
'…surprised Michael and delighted her?'

(13) *Pseudofiller structure*

[Welches Geschenk für Ilse$_j$]…
which present for Ilse
'Which present for Ilse…'

a. OBJECT
…fand **sie$_{i/?j}$** ___ entzückend?
found she
'…did she find delightful?'

b. SUBJECT
…hat ___ **sie$_{i/?j}$** entzückt?
has her delighted
'…delighted her?'

2.5.2 Results

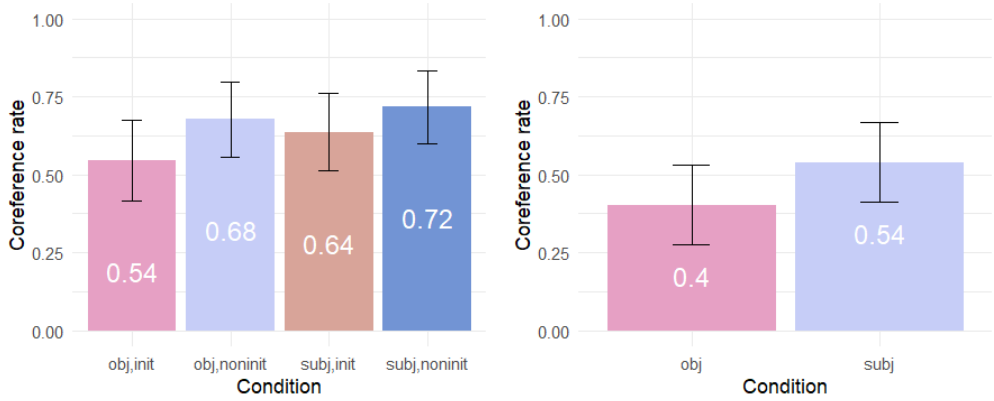

Figure 7: Observed coreference rates in ATB- (l) and simple wh-dependencies (r) in experiment 3. Error bars indicate standard error.

GLMM ATB exp. 3	Estimate (SE)
(Intercept)	$-1.03^{**}(0.39)$
phrase	$0.75^{***}(0.23)$
pos	$-0.42(0.26)$
phrase:pos	$-0.35(0.28)$
AIC	1458.45
Num. obs.	1440
Num. groups: participant	60
Num. groups: item	24
Var: participant (Intercept)	6.39
Var: participant phrase	0.10
Var: participant pos	1.38
Var: item (Intercept)	0.49
Var: item phrase	0.19
Var: item pos	0.03

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

GLMM wh exp. 3	Estimate (SE)
(Intercept)	$-0.20(0.33)$
phrase	$1.19^{***}(0.18)$
AIC	1768.23
Num. obs.	1920
Num. groups: participant	60
Num. groups: item	32
Var: participant (Intercept)	4.86
Var: participant phrase	0.72
Var: item (Intercept)	0.59
Var: item phrase	0.02

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 4: Estimates of the GLMMs for experiment 3, coreference with embedded referent in ATB (l) and wh-movement (r).

- subject-object contrast in wh-movement comparable to Salzmann et al. (2023) (15%)
- drastic boost of coreference rates through omission of matrix referent (cf. bias to resolve pronominal reference, Gordon & Hendrick 1998)
- increasing dependency complexity increases coreference

2.6 Interim discussion

- no matter how we manipulate the design, it is never only subject extraction that is affected

→ the lack of a strong contrast between subjects and objects is not related to the experimental design

- coreference rates will increase/decrease depending on the presence of an alternative referent
- arguing based on coreference rates being below/above chance level is misleading!
- comparison of extracted subjects vs. objects crucial!
- asymmetry reported in ATB-movement is merely a tendency and holds across levels of PHRASE
- but: pattern never 'flips' or changes order:

(14) Coreference rates highest to lowest
subj, initial ≻ obj, non-initial ≻ subj, initial, ≻ obj, initial

- increased coreference rate leads to increased contrasts
- Adger et al. (2017): both linear and structural distance de-stabilize reconstruction (confound: linear and structural distance overlap in structural condition, could also just be linear)
- Salzmann et al. (2023) and Stockwell et al. (2021): only structural distance, arguing for increased processing load under long movement
- this is not about reconstruction, it is about the distance between the (final) position of the referent and the pronoun → same effect under subject extraction!

2.7 Experiment 4: ATB + wh-movement in English

2.7.1 Materials, participants, setup

- is there cross-linguistic variability?
- 120 English native participants
- same design as employed in experiment 2
- 24 targets, 32 pseudofillers, 12 distractors; one forced choice task

(15) *Target item structure*

I asked Marie$_i$ [which story about **Laura$_j$**]…

a. OBJECT, INITIAL
…**she$_{i/?j}$** found delightful __ and Michael found surprising __.

b. OBJECT, NON-INITIAL
…Michael found surprising ___ and **she$_{i/?j}$** found delightful ___.

c. SUBJECT, INITIAL
…___ had delighted **her$_{i/?j}$** and ___ surprised Michael.

d. SUBJECT, NON-INITIAL
___ had surprised Michael and ___ delighted **her$_{i/?j}$**

(16) *Pseudofiller structure*

Kelly$_i$ explains [which present for **Lily$_j$**]…

a. OBJECT
…**she$_{i/?j}$** found delightful.

b. SUBJECT
___ delighted **her$_{i/?j}$**.

2.7.2 Results

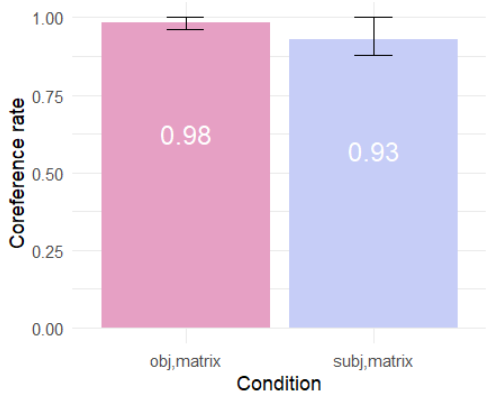

Figure 8: Observed coreference rates with matrix referent in experiment 4. Error bars indicate standard error.

- tendency even less borne out than in German
- effect in wh-movement comparable to Salzmann et al. (2023) for German (13% here for English vs. 15%)
- effects in ATB-movement barely present due to complexity of the dependency?

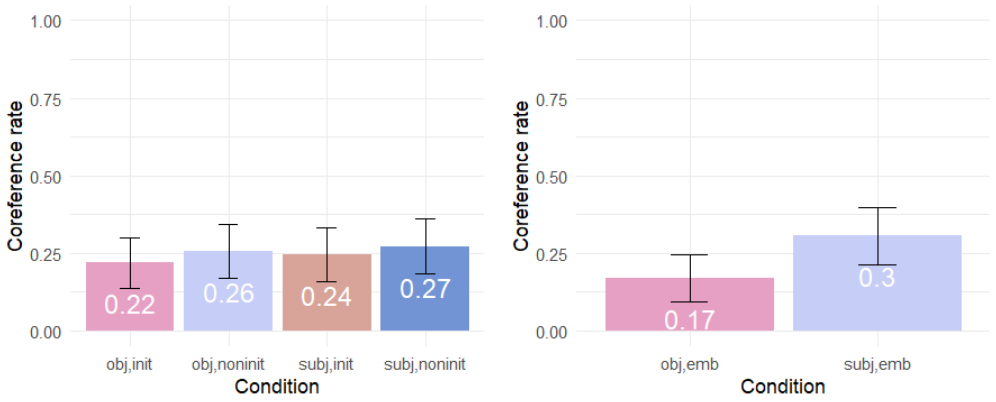

Figure 9: Observed coreference rates with embedded referent in ATB (l) and simple wh-dependencies (r) in experiment 4. Error bars indicate standard error.

GLMM ATB exp. 4	Estimate (SE)
(Intercept)	$1.80^{***}(0.38)$
phrase	$0.05(0.18)$
pos	$-0.19(0.22)$
phrase:pos	$-0.04(0.24)$
AIC	2089.25
Num. obs.	2400
Num. groups: participant	100
Num. groups: item	24
Var: participant (Intercept)	2.82
Var: participant phrase	0.15
Var: participant pos	0.47
Var: item (Intercept)	2.40
Var: item phrase	0.06
Var: item pos	0.28

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

GLMM wh exp. 4	Estimate (SE)
(Intercept)	$1.25^{***}(0.25)$
phrase	$-2.08^{***}(0.26)$
AIC	3770.16
Num. obs.	3200
Num. groups: participant	100
Num. groups: item	32
Var: participant (Intercept)	3.13
Var: participant phrase	2.27
Var: item (Intercept)	0.74
Var: item phrase	0.98

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 5: Estimates of the GLMMs for experiment 4, coreference with embedded referent in ATB (l) and wh-movement (r).

3 Discussion

- principle C reconstruction does not appear to measure underlying c-command relations
- asymmetric pattern in prior reports merely a tendency
- not due to underlying structure, see subject extraction
- mixed results of reconstruction tests in ATB-movement not due to properties of ATB but robustness reconstruction phenomena themselves? (examples below from Citko 2005)

(17) *SCO*

a. *Whose$_i$ mother did we talk to and he$_i$ never visit?

b. *Whose$_i$ mother did he$_i$ never visit and we talk to?

(18) *Variable binding*

a. Which picture of his mother did every Italian like and every Frenchman dislike?

b. *Which picture of his mother did every Italian like and Mary dislike?

c. *Which picture of his mother did Mary dislike and every Italian like?

(19) *Idiom interpretation*

a. Which picture did John take and Bill pose for?

b. Which picture did John pose for and Bill take?

(20) *Scope reconstruction*

a. How many books did every student like and every professor dislike?

b. Seven books. (*how many* $>$ *&* $>$ *every*)

c. Student A liked seven books and Prof. B disliked two books; Student C liked nine books and Prof. D disliked four books. (*&* $>$ *every* $>$ *how many*)

d. Every student liked seven books and every professor disliked three books. (*&* $>$ *how many* $>$ *every*)

(21) *WCO*

a. *Who$_i$ did his$_i$ boss fire and John hire?

b. Who$_i$ did John hire and his$_i$ boss fire?

(22) *Principle A*

a. *Which picture of himself$_i$ did Mary sell ___ and John$_i$ buy?

b. Which picture of himself$_i$ did John$_i$ sell and Mary buy?

(23) *Principle C*

a. *Which picture of John$_i$ did he$_i$ like ___ and Mary dislike ___?

b. Which picture of John$_i$ did Mary like ___ and he$_i$ dislike ___?

4 Outlook & conclusion

- effect intended to be measured through principle C test is likely a surface phenomenon due to presence in subject extraction
- lingering difference between subjects and objects increases with overall increasing coreference rates

→ no clear results about the nature of ATB-movement itself

→ methodological insights about how (not) to measure coreference

→ systematic study allows us to filter out design and item-related influences

- how robust are other reported reconstruction patterns?
- distinction of coreference vs. binding is probably relevant here (Heim & Kratzer 1998; Reinhart 1983a,b; Sag 1976)
- coreference can be specified in a discourse model (leading to strict readings)

(24) Gina called her mother. The teacher did, too.
   a. *sloppy reading:* 'The teacher called the teacher's mother.'
   b. *strict reading:* 'The teacher called Gina's mother.'

- next: how does variable binding behave in ATB-dependencies?

References

Adger, David et al. 2017. Is there Condition C reconstruction? In Andrew Lamont & Katerina Tetzloff (eds.), *Proceedings of the 47th Annual Meeting of the North East Linguistics Society (NELS)*, 21–31. Amherst, MA: GLSA.

Bachrach, Asaf & Roni Katzir. 2009. Right node raising and delayed spell-out. In Kleanthes Grohmann (ed.), *Inter-Phases: Phase-theoretic investigations of linguistic interfaces*, 283–316. Oxford, England: Oxford University Press.

Barss, Andrew. 1988. Paths, connectivity, and featureless empty categories. *Annali di Ca'Foscari. Rivista della Facoltà di Lingue e Letterature straniere dell'Università di Venezia* 27(4). 247–279.

Bianchi, Valentina. 1995. *Consequences of antisymmetry for the syntax of headed relative clauses*. Scuola Normale Superiore, Pisa dissertation. `https://www.researchgate.net/publication/245772483_Consequences_of_Antisymmetry_for_the_Syntax_of_headed_relative_Clauses`.

Biskup, Petr. 2018. Case syncretism in Russian, Polish and Czech ATB constructions. In Wayles Browne et al. (eds.), *Proceedings of the 25th meeting of formal approaches to slavic linguistics (fasl 25)*, 36–56.

Bošković, Željko & Steven Franks. 2000. Across-the-Board Movement and LF. *Lingua* 3. 107–129.

Bruening, Benjamin & Eman Al Khalaf. 2019. No argument-adjunct asymmetry in reconstruction for Binding Principle C. *Journal of Linguistics* 55. 247–276.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Citko, Barbara. 2005. On the Nature of Merge: External Merge, Internal and Parallel Merge. *Linguistic Inquiry* 36. 475–497.
Cowles, H. Wind et al. 2007. Linguistic and cognitive prominence in anaphor resolution: topic contrastive focus and pronouns. *Topoi* 26. 3–18.
Franks, Steven. 1993. On parallelism in across-the-board dependencies. *Linguistic Inquiry* 24(3). 509–529.
Franks, Steven. 1995. *Parameters of Slavic morphosyntax*. New York: Oxford University Press.
Freidin, Robert. 1986. Fundamental Issues in the Theory of Binding. In Barbara Lust (ed.), *Studies in the Aquisition of Anaphora*, 151–188. Reidel: Dordrecht.
Gor, Vera & Kristen Syrett. 2018. Beyond Principle C: (Not)-at-issueness and plausibility influence acceptability of coconstrual. In Daniel Edmiston et al. (eds.), *Proceedings of the 53rd Annual Meeting of the Chicago Linguistics Society (CLS 53)*, vol. 54, 109–123.
Gordon, Peter C. & Randall Hendrick. 1998. The representation and processing of coreference in discourse. *Cognitive Science* 22. 389–424.
Heim, Irene & Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Wiley-Blackwell.
Hein, Johannes & Andrew Murphy. 2020. Case matching and syncretism in ATB-dependencies. *Studia Linguistica* 74(2). 254–302.
Henderson, Brent. 2007. Matching and raising unified. *Lingua* 117. 202–220.
Järvikivi, Juhani et al. 2005. Ambiguous Pronoun Resolution: Contrasting the First-Mention and Subject-Preference Accounts. *Psychological Science* 16(4). 260–264.
Kaiser, Elsie. 2011. Focusing on pronouns: Consequences of subjecthood, pronominalisation, and contrastive focus. *Language and Cognitive Processes* 26(10). 1625–1666.
Kuno, Susumu. 2004. Empathy and direct discourse perspectives. In Laurence R. Horn & Gregory Ward (eds.), *The handbook of pragmatics*, 315–343. Blackwell publishing.
Lasnik, Howard. 1998. Some Reconstruction Riddles. In Christine Moisse Alexis Dimitriadis Hikyoung Lee & Alexander Williams (eds.), *Proceedings of the 22nd Annual Penn Linguistics Colloquium (PLC 22)*, 83–98.
Lebeaux, David. 1988. *Language Acquisition and the Form of Grammar*. Amherst: University of Massachussetts dissertation.
Munn, Alan. 1992. A null operator analysis of ATB gaps. *The Linguistic Review* 9(1). 1–26.
Munn, Alan. 1993. *Topics in the syntax and semantics of coordinate structures*. College Park, MD: University of Maryland dissertation. `https://www.researchgate.net/publication/35300961_Topics_in_the_syntax_and_semantics_of_coordinate_structures`.
Munn, Alan. 2001. Explaining parasitic gap restrictions. In Peter W. Culicover & Paul M. Postal (eds.), *Parasitic Gaps* (Current Studies in Linguistics 35). Cambridge, MA: MIT Press.
Nissenbaum, Jonathan. 2000. *Investigations of covert phrase movement*. Cambridge, MA: MIT dissertation. `https://dspace.mit.edu/handle/1721.1/8842`.
Nunes, Jairo. 2001. Sideward movement. *Linguistic Inquiry* 32(2). 303–344.
Reinhart, Tanya. 1983a. *Anaphora and semantic interpretation*. Chicago: University of Chicago Press.
Reinhart, Tanya. 1983b. Coreference and bound anaphora. *Linguistics and Philosophy* 6. 47–88.
van Riemsdijk, Henk & Edwin Williams. 1981. NP-structure. *The Linguistic Review* 1. 171–217.
Ross, John R. 1967. *Constraints on variables in syntax*. Cambridge, MA: MIT dissertation.
Safir, Ken. 1999. Vehicle change and reconstruction in Ā-chains. *Linguistic Inquiry* 30(4). 587–620.
Sag, Ivan A. 1976. *Deletion and Logical Form*. MIT dissertation. `https://dspace.mit.edu/handle/1721.1/16401`.

Salzmann, Martin. 2012. A derivational ellipsis approach to ATB-movement. *The Linguistic Review* 29(3). 397–438.

Salzmann, Martin et al. 2023. Condition C in German A'-movement: Tackling challenges in experimental research on reconstruction. *Journal of Linguistics* 59(3). 577–622.

Sauerland, Uli. 1998. *The meaning of chains*. MIT dissertation. `https://www.leibniz-zas.de/en/research/publications/details/publications/3384-the-meaning-of-chains`.

Sportiche, Dominique. 2017. Reconstruction, Binding, Scope. In Martin Everaert & Henk C. van Riemsdijk (eds.), *The Wiley Blackwell Companion to Syntax, Second Edition*. Hoboken, NJ: John Wiley & Sons.

Stockwell, Richard et al. 2021. There is reconstruction for Condition C in English questions. In Alessa Farinella & Angelica Hill (eds.), *Proceedings of the 51st Annual Meeting of the North Eastern Linguistic Society (NELS 51)*, 205–214. Amherst, MA: GLSA.

Stockwell, Richard et al. 2022. Experimental evidence for the Condition C argument-adjunct asymmetry in English questions. In Özge Bakay et al. (eds.), *Proceedings of the 52nd Annual Meeting of the North Eastern Linguistic Society (NELS 52)*, 145–158. Amherst, MA: GLSA.

Takahashi, Shoichi & Sarah Hulsey. 2009. Wholesale Late Merger: beyond the A/Ā-distinction. *Linguistic Inquiry* 40(3). 387–426.

Varaschin, Giuseppe et al. 2023. In pursuit of Condition C: (non-)coreference in grammar, discourse and processing. In Andreas Konietzko & Susanne Winkler (eds.), *Information Structure and Discourse in Generative Grammar: Mechanisms and Processes*. Berlin: De Gruyter.

Wilder, Chris. 1994. Coordination, ATB and ellipsis. *Groninger Arbeiten zur germanistischen Linguistik* 37. 291–329.

Williams, Edwin. 1978. Across-the-Board Rule Application. *Linguistic Inquiry* 9. 31–43.

Zhang, Niina Ning. 2010. *Coordination in Syntax*. Cambridge: Cambridge University Press.