‘Good Enough’ processing in locally case-ambiguous German long-distance *wh*-questions: evidence from self-paced reading

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The puzzle

A) German LD subject questions are less acceptable than LD object questions (Featherston 2005; Kiziak 2010)

Welch-er	Schriftsteller	denkst	du,	dass	den	Verleger	geschätzt	hat?
Which-NOM	author	think	you	that	the.ACC	publisher	appreciated	has

‘Which author do you think respected the publisher?’

Welch-en	Schriftsteller	denkst	du,	dass	der	Verleger	geschätzt	hat?
Which-ACC	author	think	you	that	the.NOM	publisher	appreciated	has

‘Which author do you think the publisher respected?’

B) Difference in acceptability becomes smaller when the embedded DP is case-ambiguous (Kiziak 2010)

Welch-er	Schriftsteller	denkst	du,	dass	die	Verleger-in	geschätzt	hat?
Which-NOM	author	think	you	that	the.?	publisher-FEM	appreciated	has

‘Which author do you think respected the publisher?’

Welch-en	Schriftsteller	denkst	du,	dass	die	Verleger-in	geschätzt	hat?
Which-ACC	author	think	you	that	the.?	publisher-FEM	appreciated	has

‘Which author do you think the publisher respected?’

Explanations

- **For A:** COMP-trace effect (well-known from English): Sequence complementizer + trace is illicit
  - ➢ Explanations: Empty Category Principle (Rizzi 1990 a.o.); Criterial Freezing (Rizzi & Shlonsky 2007); Anti-Locality (Douglas 2017 a.o)
- **For B:** Because embedded subject gaps are dispreferred, readers interpret the locally ambiguous embedded DP as the subject.
  - ➢ ‘Good-enough’ processing (Ferreira & Patson 2007)

Research questions

1. Do speakers pursue readings that are locally possible but globally incorrect → Do they misinterpret an LD subject question as an LD object question?
2. Are embedded subject gaps dispreferred?

Method

- Self-paced reading followed by comprehension task

Design

- 2 factors: ambiguity (unambiguous vs. DP-ambiguous) and argument (subject vs. object) = 4 conditions
- 8 items per condition, divided over 2 lists
- 48 filler items (+ 2 additional conditions not discussed here)

Participants & procedure

- 30 native speakers of German (23 female, mean age 22 years)
- Segments presented non-cumulatively in the centre of the screen.

Segment	1	2	3	4	5	6	7	8
Stimulus	Which X	think	you	that	the Y	VERBed	has	?

- Each question was followed by two statements corresponding to a subject or an object reading from which participants had to choose.

Example of materials

Question (DP ambiguous subject extraction)

Welch-**er**	Schriftsteller	denkst	du,	dass	**die**	Verleger-in	geschätzt	hat?
Which-NOM	author	think	you	that	the.?	publisher-FEM	appreciated	has?

‘Which author do you think respected the publisher?’

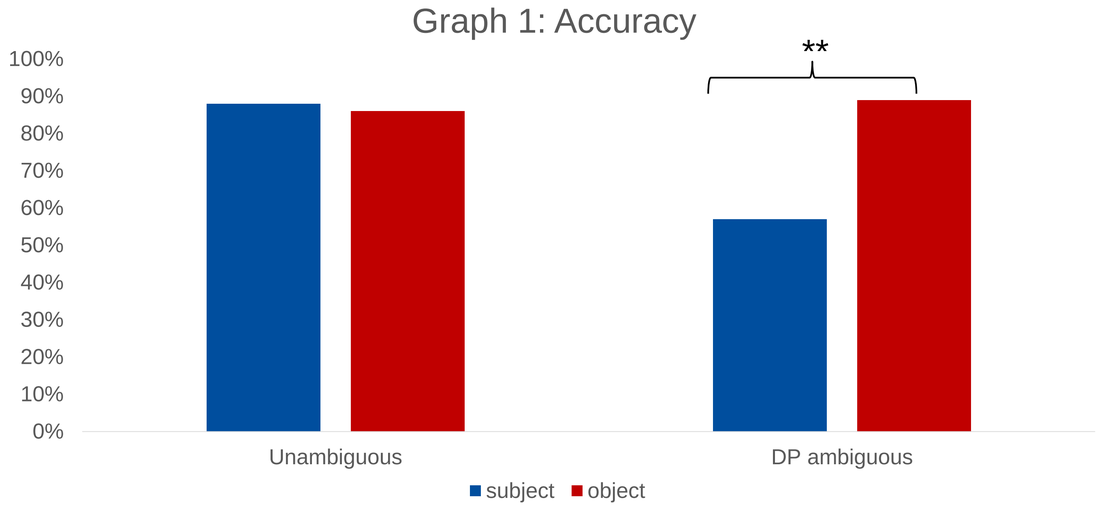
Comprehension statement

(A) Ich denke, dass der britische Schriftsteller die Verlegerin geschätzt hat — Correct
‘I think that the British author appreciated the publisher’

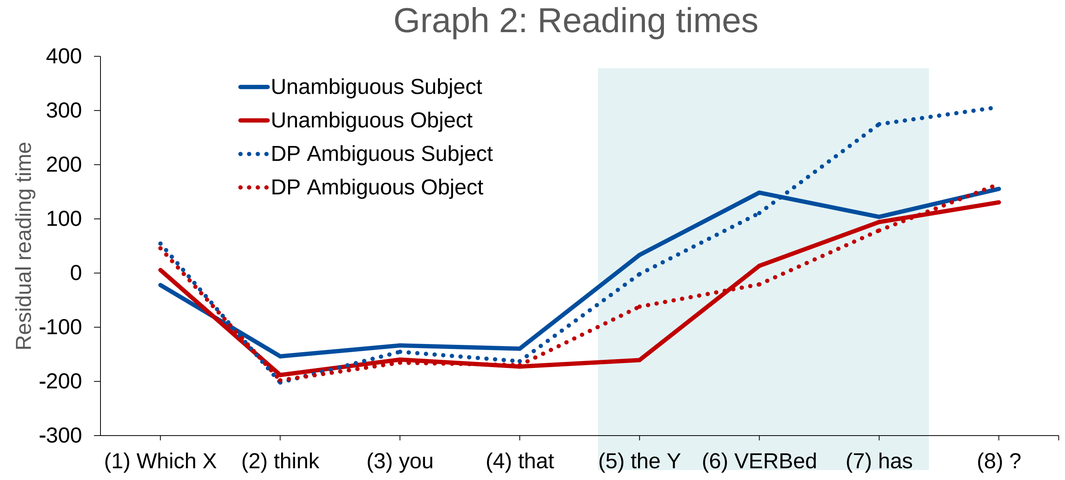
(B) Ich denke, dass die Verlegerin den britischen Schriftsteller geschätzt hat — Incorrect
‘I think that the publisher appreciated the British author’

Results

Graph 1: Accuracy



Graph 2: Reading times



- Segment 5: Main effect of argument [$p < 0.01$] and a significant interaction between argument and ambiguity [$p < 0.05$]: subject/object asymmetry only significant for unambiguous conditions [$p < 0.001$].
- Segment 6: Main effect of argument [$p < 0.01$]: subject conditions read slower than object conditions.
- Segment 7: Interaction between argument x ambiguity [$p = 0.05$]: DP ambiguous subject questions read slower than all other conditions.

Discussion

RQ 1: evidence for ‘good enough processing’:

- Comprehension data shows that participants are strongly garden-pathed in DP ambiguous subject condition.
- RT data for ambiguous conditions shows participants had problems identifying the subject gap: no significant difference between subject and object questions, contrary to unambiguous conditions.

RQ 2: online evidence for COMP-trace effect:

- On segment 5, where the subject gap is encountered, significant slowdown for unambiguous subject compared to object questions
- Segment 6: subject questions read slower than object questions.
- Segment 7: ambiguous subject questions are continued to be read slower than all other conditions.

- Case ambiguous DPs cause a slowdown in reading for object questions, due to a higher processing cost for ambiguous DPs (cf. Frisch et al. 2002)

References: ■ Douglas, J. (2017). Unifying the That-Trace and Anti-That-Trace Effects. *Glossa*, 2 (1): 60, 1-28. ■ Featherston, S. (2005). *That*-Trace in German. *Lingua*, 115, 1277-1302. ■ Frisch, S., M. Schlesewsky, D. Saddy & A. Alpermann (2002). The P600 as an Indicator of Syntactic Ambiguity. Cognition, 85, B83-B92. ■ Kiziak, T. (2010). *Extraction Asymmetries: Experimental Evidence from German.* Amsterdam & Philadelphia: John Benjamins. ■ Rizzi, L. (1990). *Relativized Minimality.* Cambridge, Mass: MIT Press. ■ Rizzi, L. & U. Shlonsky (2007). “Strategies of Subject Extraction”. In: Gärtner, H.-M. & U. Sauerland (eds.), Interfaces + Recursion = Language?. Berlin: Mouton de Gruyter, 115-160.