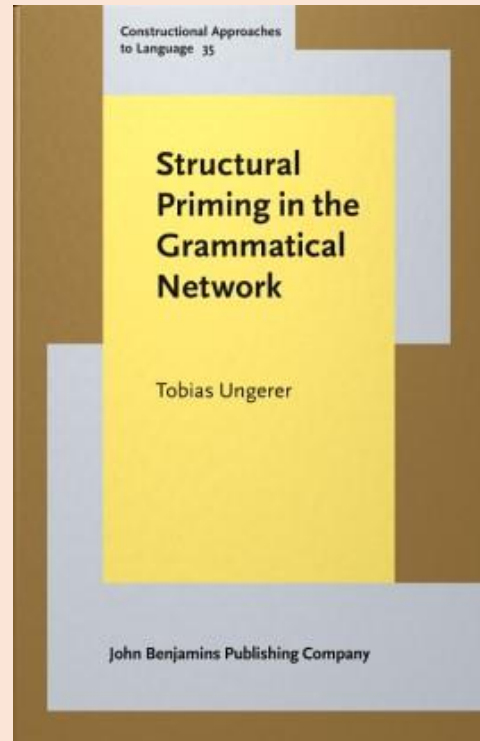
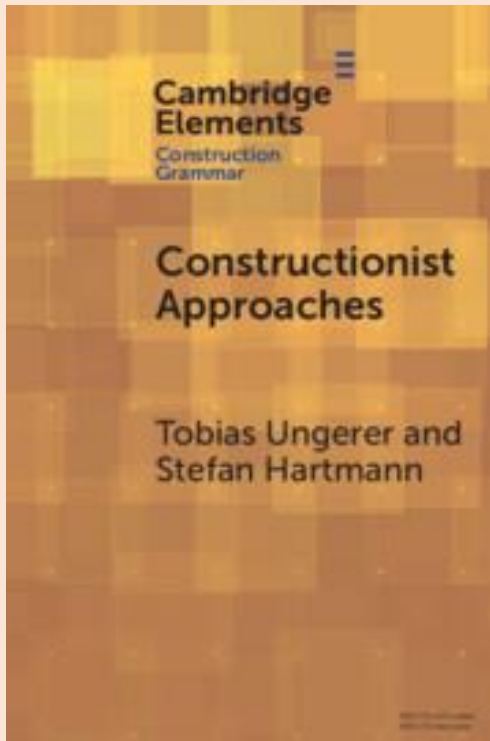


Sneezing the napkin off the table: Mechanisms of valency coercion in eye tracking

NEW BOOKS!



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ICLC16, Düsseldorf
August 7-11, 2023



Intro: Grammatical creativity

Sharon yelled her husband out of the kitchen.

'Sharon caused her husband to leave the kitchen by yelling at him'

Linda shrugged the lawyers out of her house.

Frank sneezed his napkin off the table.

QUESTION

How do speakers comprehend grammatically creative sentences (in real time)?

Roadmap



1. Valency coercion – a Construction Grammar classic



2. An eye-tracking study



3. Conclusions and next steps



Valency coercion – a Construction Grammar classic

Creative constructions

- Constructions have **meanings** (e.g., Goldberg 1995, 2006; Langacker 1987)

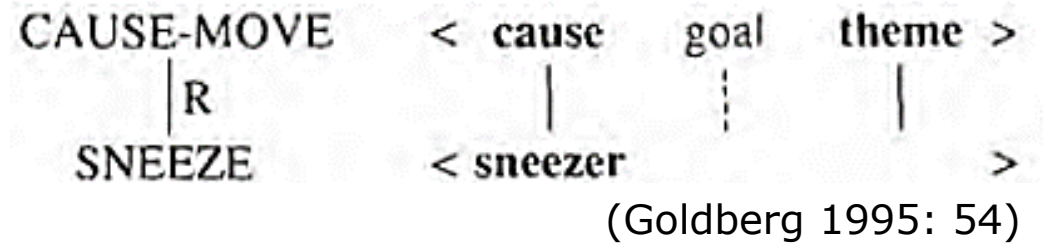
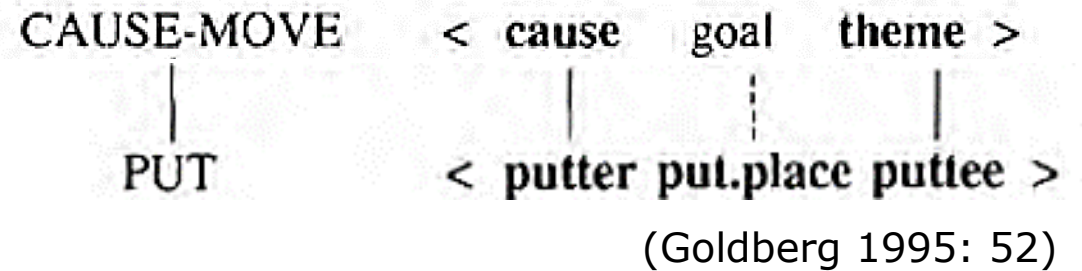
E.g., the caused-motion construction

- Verbs **fuse** with constructions

E.g., *Susan put the book on the table*

- Verbs can be **coerced** into constructions and thus acquire new argument roles

E.g., *Frank sneezed his napkin off the table*



Valency coercion

(e.g., Audring & Booij 2016;
Boas 2011; Busso et al. 2020;
Lauwers & Willems 2011)

Grammatical creativity

(e.g., Bergs 2019; Hoffmann
2020; Trousdale 2020;
Uhrig 2020)

Empirical research on valency coercion

- Focus on the **factors** that determine “coercibility”
(Busso et al. 2018, 2020, 2021; Perek & Hilpert 2014; Yoon 2013, 2016, 2019):
 - Semantic compatibility between verb and construction
 - Constructional characteristics (e.g., semantic density)
 - Language (e.g., Germanic vs. Romance)
 - Speaker characteristics (e.g., age)
- Methods: corpus analysis, acceptability judgments, lexical priming
- But: no processing account of **how** coerced sentences are understood
- Question: **How quickly** and **based on what mechanisms** do speakers integrate verbs and constructions during the real-time processing of creative sentences?
- Our approach: **eye tracking during reading**



An eye-tracking study

Methods

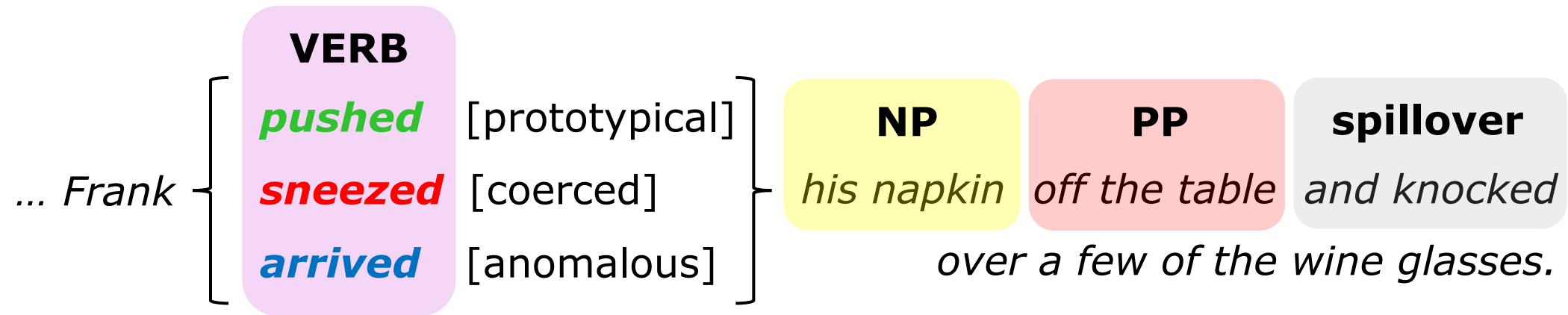
Participants (so far $N = 19$)

- Self-reported English native speakers from the Concordia University community

Materials

- 24 naturalistic context passages with caused-motion targets:

Frank swallowed a red chili pepper at the dinner table. Tears streamed from his eyes, and he reached blindly for his napkin. Unable to control himself, ...



- Coerced sentences are normed ($N = 24$) to be medium-acceptable and creative

Methods



Procedure

- Participants read the passages sentence by sentence
- Eye movements are recorded by a head-mounted EyeLink II eye tracker © SR Research
- Comprehension questions after 25% of passages

Outcome measures

Frank sneezed **his napkin** off the table

First-pass time	how long participants fixate on a region when they read it <u>for the first time</u>	} early measure
Proportion of regressions	how likely participants are to <u>look back</u> from a given region to earlier regions	
Re-reading time	how long participants regress from a given region to earlier regions	} late measures

Predictions

pushed **NP** **PP**
Frank sneezed his napkin off the table and knocked...
arrived

1. Difficulty at the NP

Slower reading and more regressions in coerced than in prototypical sentences

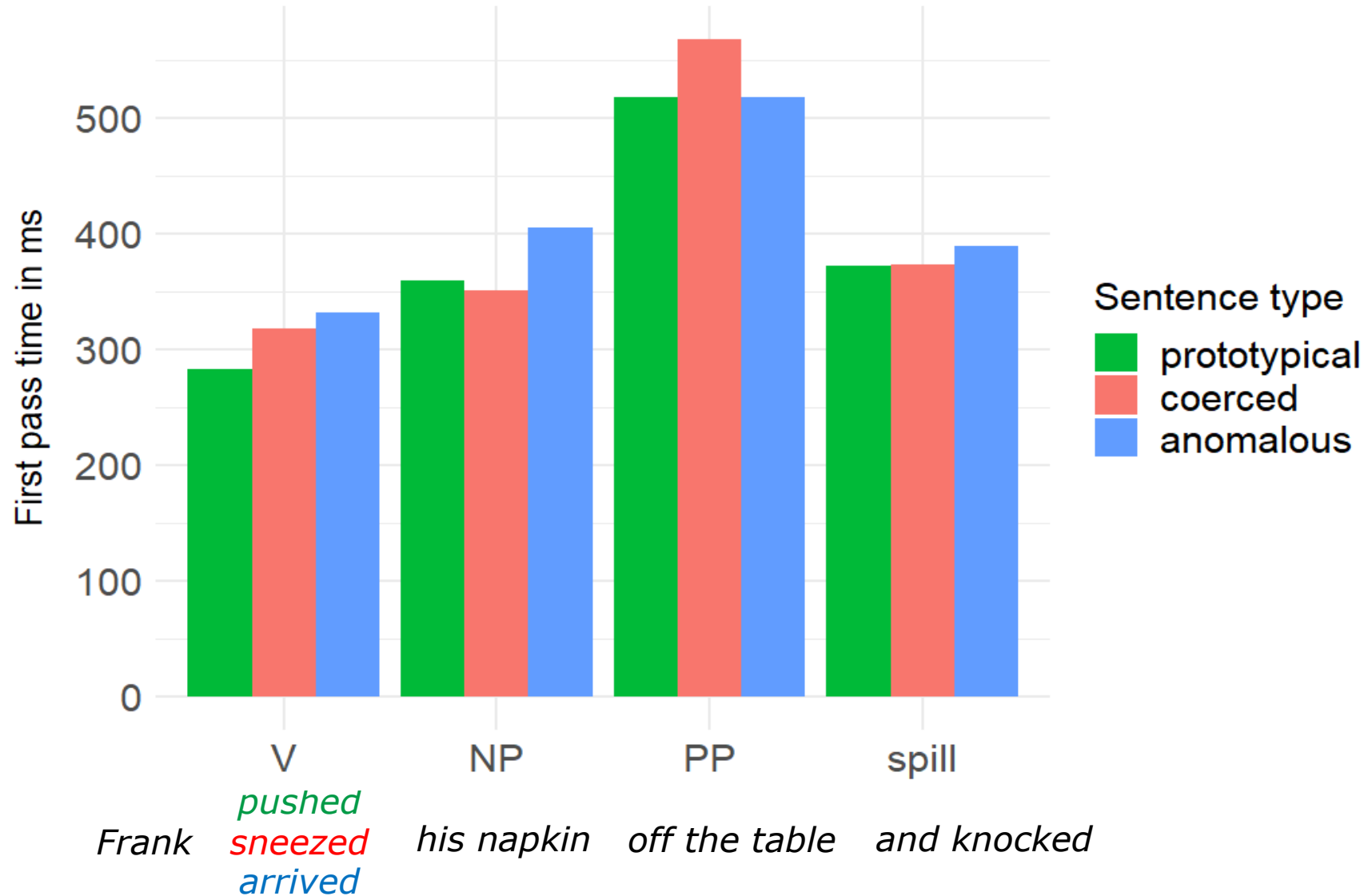
2. Integration at the PP

Faster reading and fewer regressions in coerced than in anomalous sentences

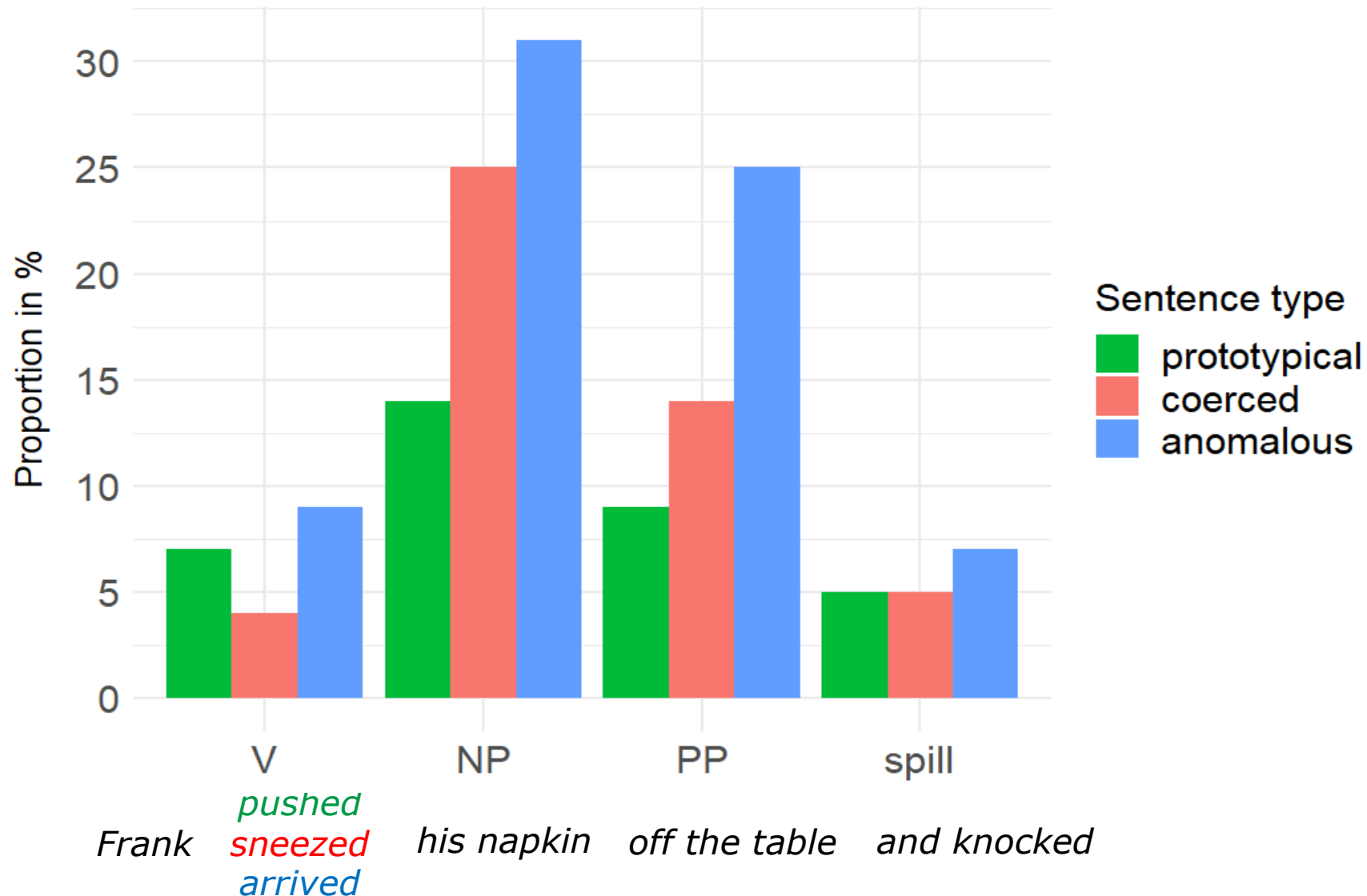
And some exploratory questions:

- Do the effects manifest themselves in early and/or late measures?
- Do the effects carry over to the spillover region?

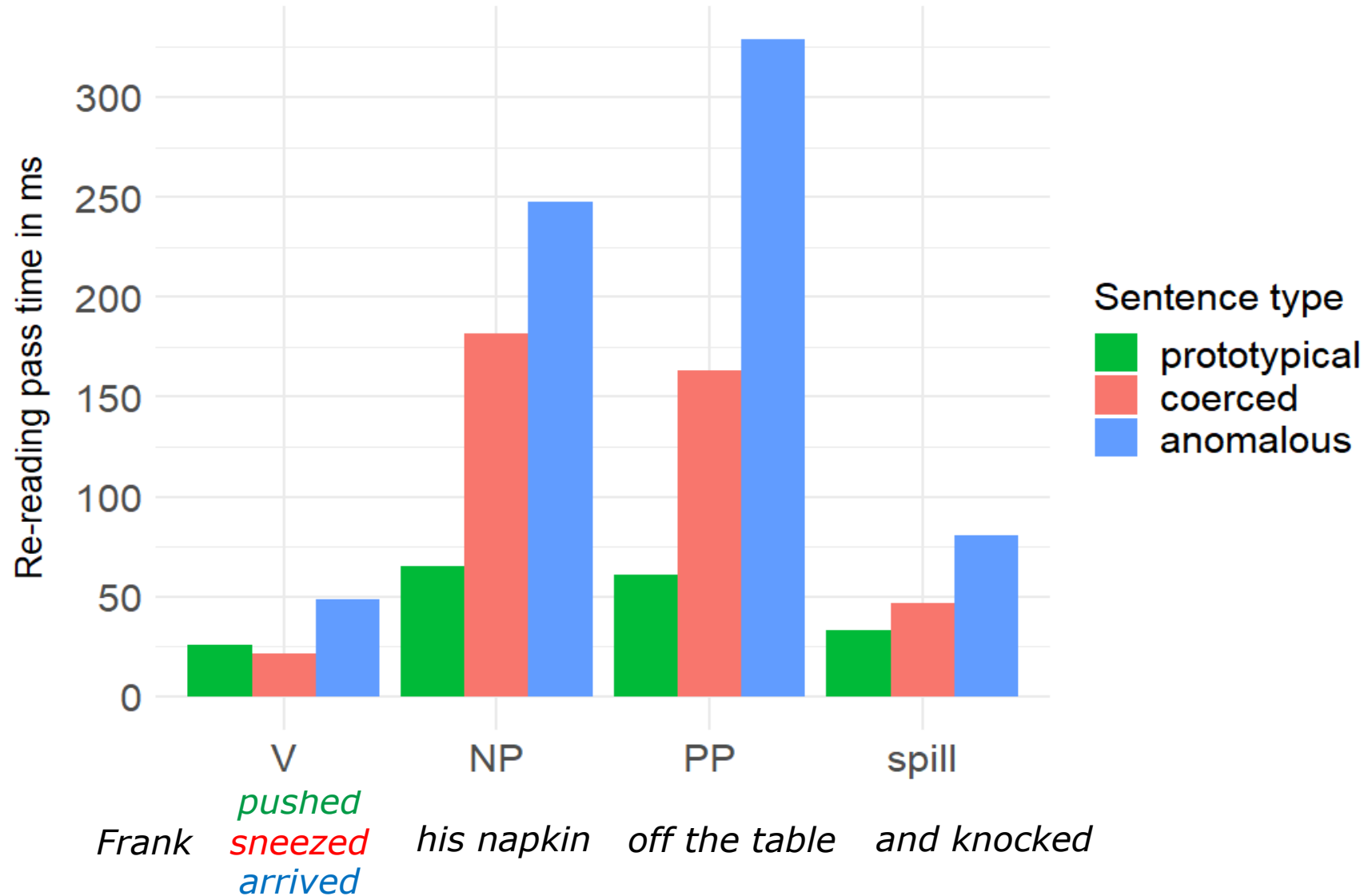
Preliminary results: first-pass time



Preliminary results: proportion of regressions



Preliminary results: re-reading time



Predictions revisited

1. Difficulty at the NP (✔)

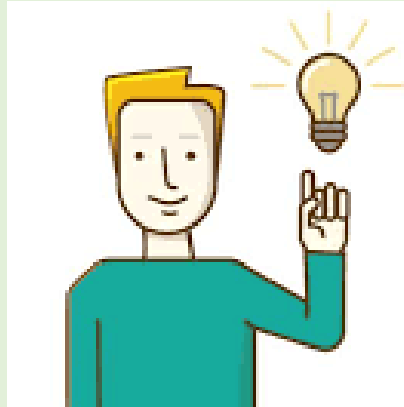
Slower reading and more regressions in coerced than in prototypical sentences

2. Integration at the PP (✔)

Faster reading and fewer regressions in coerced than in anomalous sentences

And some exploratory questions:

- Do the effects manifest themselves in early and/or late measures?
→ Only in the regressions (late effects)
- Do the effects carry over to the spillover region?
→ Not really



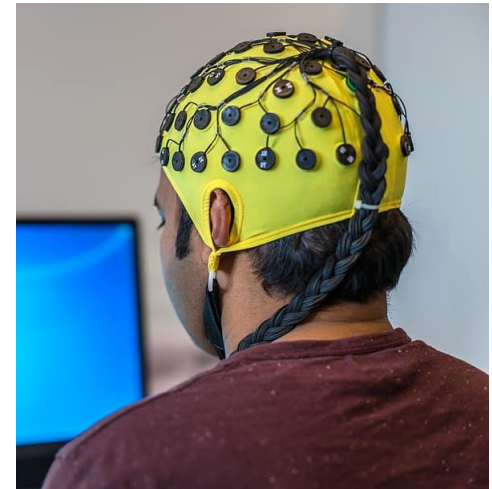
Conclusions and next steps

Key findings

- First experimental study of the real-time processing of valency coercion
- Preliminary eye-tracking results suggest that, after some initial difficulty, speakers swiftly re-integrate the verb with the construction
- Illustrates the importance of constructional frames in sentence processing
- Validates the use of eye tracking to study mechanisms of grammatical creativity

Next steps

- Other creative constructions in more diverse languages
- Manipulate context characteristics (e.g., speaker-related)
- Extend to electroencephalography (EEG) to test speakers' processing of grammatical creativity at a neural level



Looking for collaborators?

I happen to have an EEG
(or Psycholinguistics) lab
and I'm interested in
linguistic creativity.
What should I do?



Get in touch!

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@ungerer_tobias

Big thanks
to our research
assistants!



Cassandra
Didical



Cedric
Le Bouar

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