Probabilistic modeling of pragmatic processing and utterance production

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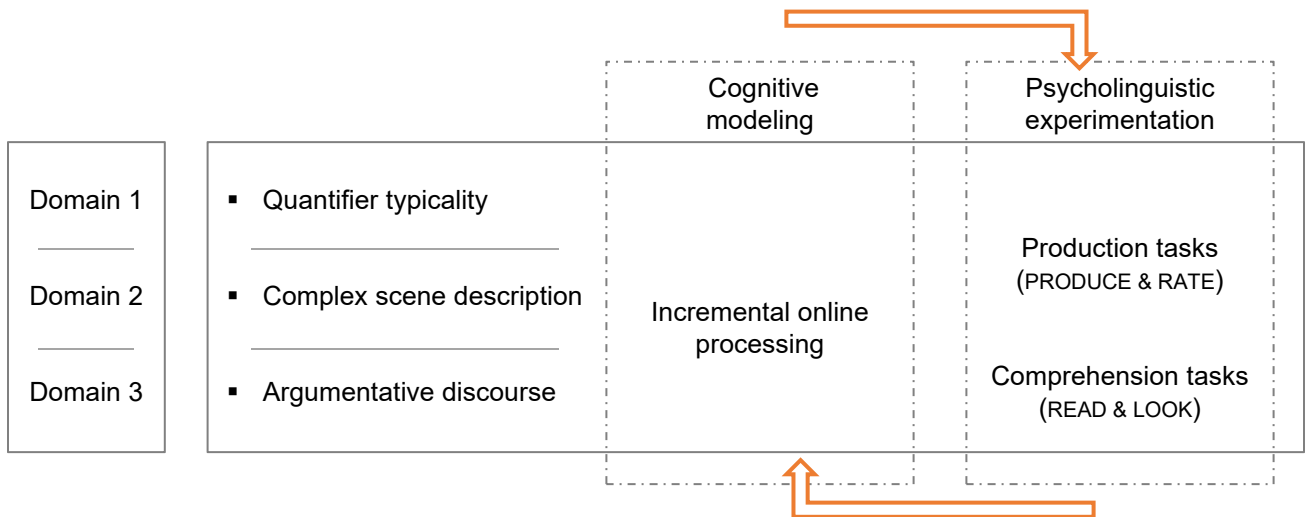
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Background

Communicative expectations + contextual information + linguistic input

- Formal theory of online pragmatic processing - probabilistic pragmatics (Franke & Jäger, 2016; Goodman & Frank, 2016)
  - Offline behavior - reference games (Franke & Degen, 2016)
- Constraint-based account of pragmatic processing (Degen & Tanenhaus, 2015) - communicative efficiency

How do contextual factors influence the production of complex referring expressions and how do these affect incremental pragmatic processing?
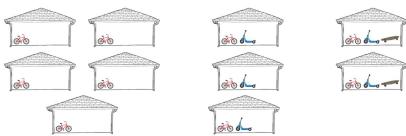
Empirical approach

Cognitive modeling

Psycholinguistic experimentation

Domain 1

- Quantifier typicality

Domain 2

- Complex scene description

Domain 3

- Argumentative discourse

Incremental online processing

Production tasks
(PRODUCE & RATE)

Comprehension tasks
(READ & LOOK)

Experimental domains

Quantifier typicality

Complex scene description

Argumentative discourse

- Degen, J., & Tanenhaus, M. K. (2015). Processing scalar implicature: A constraint- based approach. *Cognitive science*, 39(4), 667-710.
- Franke, M., & Degen, J. (2016). Reasoning in reference games: Individual-vs. population-level probabilistic modeling. *PloS one*, 11(5), e0154854.
- Franke, M., & Jäger, G. (2016). Probabilistic pragmatics, or why Bayes' rule is probably important for pragmatics. *Zeitschrift für sprachwissenschaft*, 35(1), 3-44.
- Goodman, N. D., & Frank, M. C. (2016). Pragmatic language interpretation as probabilistic inference. *Trends in cognitive sciences*, 20(11), 818-829.