Motivation

Particle Verbs and Meaning Shifts
- German particle verbs (PVs): highly productive compositions of particle prefixes and base verbs (BVs)
  - *schieben* (‘push something’) vs. *+an+schieben* (‘push something forward’)
- PVs often trigger (regular) meaning shifts with respect to their BVs
- Focus: particles that differ in their predominant spatial meaning
  - AN: horizontal directivity (→)
  - AUF: vertical directivity (↑)

Hypothesis
- **Match** between particle direction (*an* ↔) and base verb direction (*schieben* →): literal PV meaning (‘push something forward’)
- **Mismatch** between particle direction (*auf* ↓) and base verb direction (*schieben* →): meaning shift (‘postpone’)

Prediction
- Meaning shifts may be reflected in longer reaction times (inhibition process) during language comprehension

Classification of Base Verbs
- **Human annotators** (15 per BV) selected one or more directions that best represent the action described by the BV

Selection of Experimental Items
- **22 German BVs** with a strongly preferred direction
  - 11 with **horizontal** preference (e.g., *schieben*)
  - 11 with **vertical** preference (e.g., *setzen* ‘sit’)

Experimental Design: Go/No-Go Priming Study
- **Task**: go/no-go lexical decision (press a button if the target is a word)
  - Prime: particle (*an, auf, other*)
  - Target: base verb
- **3 x 2 Design** (Particle x Direction of Base)

Analysis

Regression Model

$logRT \sim Condition + (1 + Condition | Subject) + (1 + Condition | Item)$

Qualitative Analysis by Item

Horizontal Direction (AN+BV)

- **Abstractness**: matching condition (*an+schieben*, ↔ ↔) processed significantly faster than mismatching (*auf+schieben*, ↓ + →) and control (*nach+schieben*) condition
- **No significant difference** between the mismatching and control condition

Vertical Direction (AUF+BV)

- **Abstractness**: mismatch in the directionality of particles and base verbs results in longer processing time (RTs) with respect to the matching condition

Discussion

- The primary direction of the particle has an effect
- **Inhibition process**: mismatch in the directionality of particles and base verbs results in longer processing time (RTs) with respect to the matching condition

Open Issues
- **What is triggered by the mismatch?**
  - **Metaphorical shift** (increase in abstractness)
  - **Verb polisemcy** (not necessarily more abstract)
- **Need for a better understanding of the control condition**