Recreating “Validating the paraphrase methodology”

Study Information

**Title:** Recreating “Validating the paraphrase methodology”

**Authors:** Franziska Scharf, Louis Scheu, Tallulah Jansen, Stefan Warkentin

**Description**: In this study we utilize a forced choice experiment to determine whether certain sentence frames can be used to disambiguate between a whether a predicate is interpreted in a collective or distributive meaning.

Hypotheses:

1. Without disambiguation words (sentence frame = bare), stubborn distributive predication, i.e. the predicate is either “big” or “tall”, behave distributive.
2. The collective disambiguation (sentence frame = “together”) is assigned a collective meaning in most cases.
3. The distributive disambiguation (sentence frame = “each”) is assigned a distributive meaning in most cases.

Design Plan

**Study type**: Experiment

**Blinding**: Participants are aware that they are in a certain condition but they are not aware that there are more than one condition.

**Study design**: This is a between-subject 2x3x3 factorial (scenario, predicate, sentence frames) design with the following levels for each factor:  
- Scenario (“move”, “inspect”),  
- Predicate (“big”, “heavy, ”tall”) and  
- Sentence Frames (“bare”, “each”, “together”)  
Further information can be found in the attached “Validating the paraphrase methodology experiment 1” document.

**Randomization**: In our experiment the order of stimuli and inherently the order of exposure to each condition is simply randomized on *ad hoc* subject basis.

Sampling Plan

**Existing Data**: Registration prior to creation of data: As of the date of submission of this research plan for preregistration, the data have not yet been collected, created, or realized.

**Explanation of existing data**: -

**Data collection procedures**: We will administer an online experiment via magpie to participants above the age of 18. Only other requirement is a strong command of the English language (only natives). The participation includes no financial compensation.

**Sample size**: We plan to collect data of 30 participants, but due to the deadline of this project we might have to settle for less/can achieve more.

**Sample size rationale**: --

**Manipulated variables**: We administer to each subject all possible combinations of our priori described 2x3x3 design as follows:  
 - Scenario (“move”, “inspect”),  
- Predicate (“big”, “heavy, ”tall”) and  
- Sentence Frames (“bare”, “each”, “together”)  
Further information can be found in the attached “Validating the paraphrase methodology experiment 1” document.

**Measured variables**: We will measure two variables: 1) The chosen arrangement of boxes (whether a collective or distributive meaning was assigned)((Referent Choice)) and 2) The time elapsed between stimuli onset and decision (Reaction time) in milliseconds.

**Indices**: --

Analysis Plan

**Statistical models**: We will use a multi-level mixture model using the brm package in R with Referent Choice being predicted by Sentence Frame, it’s Interaction with Predicate, as well as varying intercepts and slopes by Trial order and varying intercepts by participant. We will let the brm package initialize priors.   
  
We will use a multi-level mixture model using the brm package in R with *Referent Choice* by *Predicate, Scenario and trial.* This model will include random intercepts and slopes by participants grouped by trial. We will let the brms package initialize priors.

**Transformations**: We will dummy code the *predicate* predictor with “big” as reference. Reaction Time will be transformed to log-space.

**Inference criteria**: When using Bayesian Inference, we will report all 95%CIs.

**Data exclusion**: We will exclude answers that are performed in less than 300 ms to exclude accidental clicks and participants who randomly click an answer before reading the sentence.

**Missing data**: We will only consider subjects if they have completed all tasks. The missing data will be mentioned (as we will report number of data points used).

**Exploratory** analysis: --

Other

**Other**: --