The Free Association Game:

Individual Attitude Networks from Repeated Free Associations

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Download the poster

Play the Game

Background

Word Association Tasks are generally used to measure attitudes at the group level; what does group X think of subject Y? Across the group, relative frequencies of association-target pairs express association strength. Is it also possible to infer what person Z thinks of subject Y?

Research Objective: Infer attitudes from the association networks of individual participants.

Characteristics of the Free Association Game

1. **Repeated Associations**: Each target word is presented in multiple trials, with one association provided by the participants per trial.
2. **Valence Prompts:** We prompt participants to provide positive or negative associations; increasing the number of found associations.
3. **Response Time Measures:** We use the (repeated) response times as an estimate of association strength.
4. **Individual- & Group-Networks:** The features mentioned above potentially allow us to estimate an individuals' association network.

Pilot Research Questions

1. Do targets in the Free Association Game – at the group level – receive more/less unique associations than the targets in the Small World of Words (De Deyne et al., 2018) study?
2. How do different methods of edge weight estimation (frequencies; response times; combinations) effect group association networks?
3. Are associations – at the individual level – sufficiently varied to allow extraction of informative individual association networks?

The *Free Association Game* is a gamified *Word Association Task*:
Participants type the first association that comes to mind when reading a target word.

Gamification

1. **Moving Targets:** The target words fall down the screen, visualizing time constraints in a gamified manner.
2. **Adaptive Dropspeed:** The target falls with a step-wise adaptive drop speed. In-time responses increase drop speed on the next trial, where as out-of-time responses descrease drop speed. An optimal-RT is included where the drop speed will remain constant.
3. **Scoring System**: For each in-time response the participants gain one point; but out-of-time responses will lose them a point.

Methods

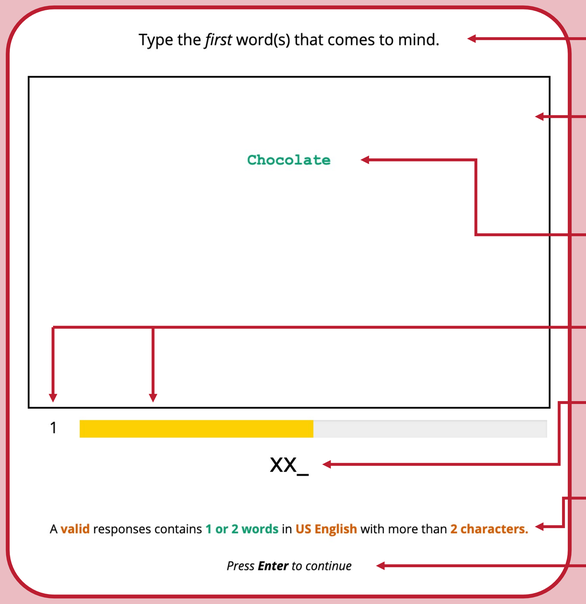
Pilot study with 50 US Citizens who participate for money via Prolific.

Informed Consent + Instructions
Ethics; anonymization; first associations; answer validation; condition prompts

Practice Trials (N = 5)
Targets: "chocolate", "bike", "balloon", "pen", "car"

Repeat Instructions

Experimental Trials (N = 400)
Targets: 10 randomly sampled job titles
Conditions: positive and negative
Repetitions: 20 reps. per target-condition
Trials: 10 targets x 2 conditions x 20 repetitions = 400 trials
Intial drop speed: 10 px / 300 ms
Adaptive staircase: - 10% ms; + 20% ms



Instruction: reminder of the purpose of the task.

Game Field: the target starts at the top (375 px) and rapidly falls towards the bottom. A response is too slow when the target hits the bottom.

Target: target word to which an association is provided.
Condition: font color indicates association valence (*positive* [green], or *negative* [red]).

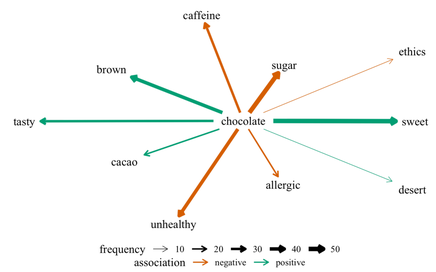
Score: a participants' score is visualized during all trials

Association: keyboard responses (*a-z; space; backspace*) show here. Each key press is registered.

Answer Validation: we show which of the validation criteria are (un)met. Note: "xxx" is a valid response indicating an unknown target word.

Instruction: reminder of how to submit a response.

Individual & Group Association Networks



Multi-method

Edge Weight estimation

Reaction times;

Frequencies;

Key Strokes

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