Focus Inhibits Free Associates
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1. Research Questions:
1) Is there a set of alternatives for utterances with a focused word?
2) Are members of the set of alternatives facilitated or inhibited?
3) Is membership into the set of alternatives determined by a relationship to the context or a relationship to the focused word or both?

2. Semantic theories have different predictions for a set of alternatives:

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<th>Alternative Semantics and Integrated Pragmatics</th>
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- The set of alternatives is required when Givenness Theory is applied.
- The set of alternatives is not required when Givenness Theory is not applied.
- The set of alternatives is required for the speaker.
- The set of alternatives is required when Givenness Theory is applied.

3. Experimental evidence for set of alternatives:

C. Kim (2012): Two Eyetracking Studies
Participants heard: “Mark has some candy and some oranges. Jane only has some APPLES.”
(Apples and Oranges are in the same semantic category)

Participants saw:
- Target
- Cohort Competitor
- Unrelated distractor
- Distractor

Result: Participants disambiguated the target faster when the prime word was focused.

The set of alternatives is facilitated.

Semantic associates are members of the set.

Participants heard: “Jill and Peter are at the [mall/shoestore].”
Jill wants to buy [some dresses and some coats/ some sneakers and some sandals].
Peter is only getting some BOOTS.”
(Boots are related to the context of a shoestore.)

Participants saw:
- Target
- Cohort Competitor
- Unrelated distractor
- Distractor

Result: Participants disambiguated the target faster when the prime word was focused and related to the context.

The set of alternatives is facilitated.

Contextual associates are members of the set?

Braun and Tagliapietra (2010): Lexical Decision Study
Participants heard: In FLORIDA he photographed a FLAMINGO.

Participants saw:
- pink
- pelican
- celebrity
- different type associate
- same type associate
- unrelated

Participants’ task: Decide if the word displayed is a real word of Dutch or a nonsense word.

Result: Participants always identified the associates (ex: pink and pelican) faster than the unrelated word (ex: celebrity), but they identified the same type associate (ex: pelican) even faster when the prime was focused.

The set of alternatives is facilitated.

Semantic associates of the focused word are in the set of alternatives.

4. Mouse tracking:

Central Logic: Activated concepts attract the mouse.
(Inhibited concepts repel the mouse.)

Advantage of mouse tracking: More fine grained than reaction times.
Continuous time course data.

Primary measurement: Maximum Deviation: The furthest distance between an ideal mouse trajectory and the actual mouse trajectory

Spivey et al. 2005:
Participants heard: “Click on the candle.”
Participants saw:
- picture of target (ex: candle) and cohort competitor (ex: candy)
or
- picture of target (ex: candle) and noncohort competitor (ex: pickle)

Results: Mouse trajectories deviated towards the competitor more (larger Maximum Deviation) when the competitor was a cohort competitor (ex: candy) than when it was a noncohort competitor (ex: shoe).

5. Current Study: Design

Mouse-tracking software by Freeman (Freeman & Ambady 2010)

STEP #1: Participants saw:

Word1
Word2

Primary measurement: Maximum Deviation: The furthest distance between an ideal mouse trajectory and the actual mouse trajectory

Semantic Associate: paperclip
Competitor: paperclip

STEP #2: After clicking the START box, participants heard:
“Tracy was organizing her desk, so she used a {STAPLE/staple}.

STEP #3: Participants clicked on “the word that best fits the end of the sentence.”
- Actual final word not used to avoid previous mention (Huettig & Altmann 2005)

Six Conditions:
- Semantic Associate w/ final word of sentence Focused/Unfocused
- Contextual Associate w/ final word Focused/Unfocused

Competition condition:
- Contextual Associates selected w/ a fill-in-the-blank norming task

6. Current Study: Results

Example mouse trajectories

Semantic Associate Mouse Trajectories
Focused
Contextual Associate Mouse Trajectories
Unfocused

Final Choice: Competition

Choose paperclip
Choose folder

Choose Semantic Associate
Choose Contextual Associate

Competition condition:
- Trend towards choosing the semantic associate over the contextual associate when the prime was focused.
- No difference in maximum deviations

7. Conclusions:
1) There is a set of alternatives for an utterance with a focused word.
2) The set of alternatives is inhibited.

Participants may be suppressing alternatives because they are not true of the utterance.
Reaction times in lexical decision tasks can only see the end product of processing: processing focus may involve both inhibition and facilitation at different time points.

3) The members of the set are semantically related to the focused word, but perhaps not related solely to the context.

This suggests that the set of alternatives is generated upon perceiving the focus, not already present in the context.

References: