On the Persistence of a Primed Meaning in Lexical Ambiguity Processing

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Focus of the Lexical Ambiguity Literature

• Structure of the internal lexicon.
• Selection of appropriate meaning: role of local semantic, syntactic, and environmental context.
• Short-term effects of meaning change: activation of appropriate meaning and suppression or temporary inhibition of inappropriate meaning(s).
Theories Include

- Gernsbacher and St. John’s (2001) model of the role of suppression in lexical access.
- The post-selection inhibition of the non-selected meaning of ambiguous words (Simpson & Kang, 1994).
Non-suppression Theories

- Effects of global and local context, the constraint-satisfaction model of Duffy, Kambe, and Rayner (2001).
- The activation-selection model of Gorfein, quantified by Brown (Gorfein, Brown, & DeBiasi, 2007).
Gorfein & Walters, 1989

• Homophones: words with same pronunciation but different spellings, e.g. night-knight.

• Three phase study of homophone priming.

• Homophones relatively balanced (mean= .67 dominant based on previous norming at Adelphi University.)
Phase 1: Sentence Completion: Three conditions

- Dominant: “The earth revolves around the s__.”
- Secondary: “Like father, like s__.”
- Control: No sentences for that homophone.
Phase 2: Picture Location - Two Conditions

Homophones: pictured secondary or not shown.
Phase 3: Homophones Included in an Auditory Spelling Test: Two Conditions

» Day 1

» or

» Day 2
Baseline = Control Item Performance by Day:
Proportion Secondary

Day of Testing

Proportion Secondary

Day 1

Day 2
Effect of Prime (Condition-Control) In Secondary Direction

Day 1
Day 2

No Picture
No picture
Picture
Picture

Condition

Dominant
Secondary

Difference from Baseline

No Picture
Day 1
No picture
Day 2
Picture
Day 1
Picture
Day 2
Current Studies

• Homographs: selected to be unbalanced.
Task 1: Picture Priming

• Picture set 1: Test page 1: 4 primacy fillers
• Pages 2-8: 4 pictures/page unbalanced homographs
• Picture location test
Task 2: Second Picture Book

- Picture set 2: Test page 1: 4 primacy fillers
- Pages 2-8: 4 pictures/page unbalanced homographs
- Picture location test
Task 3: Filler- Relatedness Judgments Balanced Homographs
Task 4: Word Association

• Materials: 14 critical words from picture set 1 and 14 words from picture set 2.
Day 2-1 One week later: Test 1

• Sentence sensibility judgment for balanced homographs.
Week 2: Task 2, Word Association

• Items:
  • homographs pictured and tested day 1,
  • homographs pictured but not tested day 1,
  • baseline of homographs not seen on day 1.
Word Association Days 1 & 2

Baseline | Day 1 Score | Day 2 Rep | Day 2 New
---|---|---|---
0 | Proportion Secondary
0.05
0.1
0.15
0.2
0.25
0.3

Conditions

Proportion Secondary
Replication

- Two items changed:
  - “Rose” pictured as a rising balloon in study 1 replaced by “Cricket” as a sport.
  - “Horn” pictured as a trumpet replaced by “Horn” pictured as antlers.
Day 2 Test 3: Picture Memory

• Materials:
• Names of 48 homographs seen on day 1.
• Names of 24 homographs from baseline group.
• Names of 24 homographs from sentence task.
• Participant judges whether they saw that item pictured.
What may we conclude?

- Effect of Picture Task persists over an intervening week.
- Larger effect for items tested in week 1.
- Small effect for pictured items tested only in week 2.
Theory

• Results consistent with activation-selection model of Gorfein and Brown.

• Need to explain differences between pictured and tested, vs. picture alone:
  1. “testing effect”? e.g. Roediger
  2. “additional encoding opportunity”? e.g. Gorfein & Brown.

• Need to explain loss over time: subsequent encounters with homograph?
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• **Laboratory Pet:**
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Questions?