

Sara Hurt

Eric Wu

Jonathan Schick

Naved Ahmed

Michelle Evans

Michelle Beddow

Arlo Clark-Foos

Background

- Memory is organized via a network of associations between related concepts (Anderson, 1974).
- Some concepts have more semantic associations than others (i.e., larger fans; Nelson, McKinney, & McEvoy, 2003).
- Fan effects are thought to be due to interference among competing associations (see also Radvansky, Spieler, & Zacks, 1993).
- Memory targets with larger fans often take longer to retrieve and have a greater probability of not being retrieved at all (c.f., Anderson, 1974).

Goal and Prediction:

- Extend fan effects to memory for source/contextual details.
- Source recognition (A/CSIM) should be lower for items with larger semantic fans

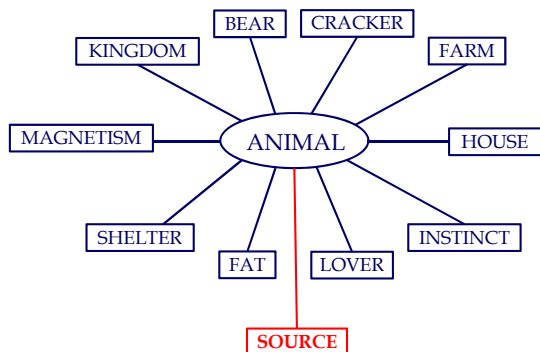
Stimuli

- All 120 words were selected from the Florida Association Norms (FAS; Nelson, McEvoy, & Schreiber, 1998).
- Words were selected that were either large (>20) or small (<5) in Cue Set Size (QSS; i.e., Fan Size), 60 of each.
- There were no differences between lists in Kučera-Francis Word Frequency, $t < 1$.

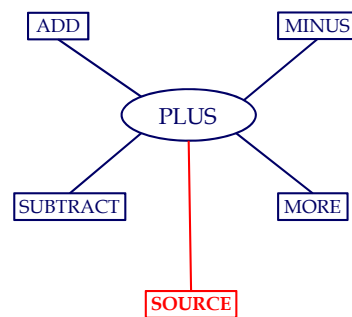
Procedure

- In Experiment 1, all 80 stimuli were presented either visually on the computer screen (SEEN) or a recording of the word was played over the computer speakers (HEARD).
- In Experiment 2 participants generated words by rearranging specific letters (GENERATE) or heard a recording over the computer speakers (HEARD).
- Presentation order and source were randomly determined anew for each participant.
- During the recognition test, all stimuli were presented visually, along with 40 new items, and participants were asked to make an OLD-NEW decision, where any OLD judgment was followed by a query about the original source of the word (i.e., SEEN or HEARD; GENERATE or HEARD).

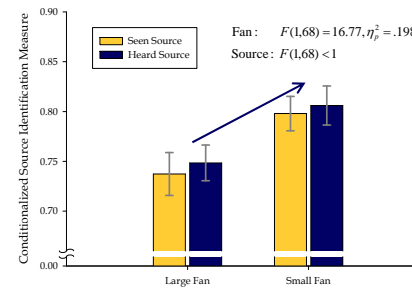
Large Fan



Small Fan



Experiment 1

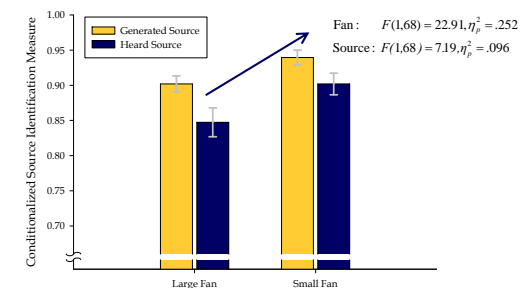


Inferred Recognition

Large Fan	Small Fan
.72 (.02)	.72 (.02)

Note: Parentheses represent standard error.
 $F(1,68) < 1$

Experiment 2



Inferred Recognition

Large Fan	Small Fan
.92 (.01)	.93 (.01)

Note: Parentheses represent standard error.
 $F(1,68) < 1$

Results

- There were no differences in inferred recognition as a function of fan size.
- There was, however, a positive generation effect in item memory.
- Both experiments show a reliable, albeit modest, effect of fan size on memory for source details.
- Experiment 1 demonstrated no differences in source memory between SEEN and HEARD sources.
- Experiment 2 supported a positive generation effect in source memory for the GENERATED source (Jurica & Shimamura, 1999; Mulligan, 2004).

Conclusions

- Previously demonstrated fan effects in recognition memory and latency (Anderson, 1974) have been extended to memory for source/contextual details.
- This finding suggests that it may be harder to remember context for information that has many existing semantic connections.
- We intend to extend this finding to materials with differences in episodic fan size as well as differences in semantic context variability (Steyvers & Malmberg, 2003).

References

- Anderson, J. R. (1974). Retrieval of propositional information from long-term memory. *Cognitive Psychology*, 5, 451-474.
- Jurica, P. J., & Shimamura, A. P. (1999). Monitoring item and source information: Evidence for a negative generation effect in source memory. *Memory & Cognition*, 27, 648-656.
- Mulligan, N. W. (2004). Generation and memory for contextual detail. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 30, 838-855. doi:10.1037/0278-7393.30.4.838.
- Nelson, D. L., McKinney, V. M., & McEvoy, C. L. (2003). Are implicitly activated associates selectively activated? *Psychonomic Bulletin & Review*, 10, 118-124.
- Radvansky, G. A., Spieler, D. H., & Zacks, R. T. (1993). Mental model organization. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 19, 95-114.
- Steyvers, M., & Malmberg, K. J. (2003). The effect of normative context variability of recognition memory. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 29, 1760-766.