The influence of partner-specific memory associations on picture naming: A failure to replicate Horton (2007)

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INTRODUCTION

How is joint knowledge stored in memory?

- e.g., *I know you know we can both see this poster (and vice-versa)*

ORDINARY MEMORY view (Horton & Gerrig, 2005): Associations develop between individuals and jointly-experienced information. These associations support sensitivity to common ground, even in the absence of explicit recall of the event that established the joint knowledge.

SUPPORT for ordinary-memory view comes from Horton (2007, Exp. 1): Speakers named pictures *faster* when the picture labels were associated with current partner.

THE PRESENT RESEARCH reflects attempts to replicate and extend these findings:

- Experiment 1 is a direct replication by SBS with new materials
- Experiment 2a is a direct replication by SBS & WSH with the original materials and design
- Experiment 2b is a conceptual replication by SBS & WSH with original materials and modified design

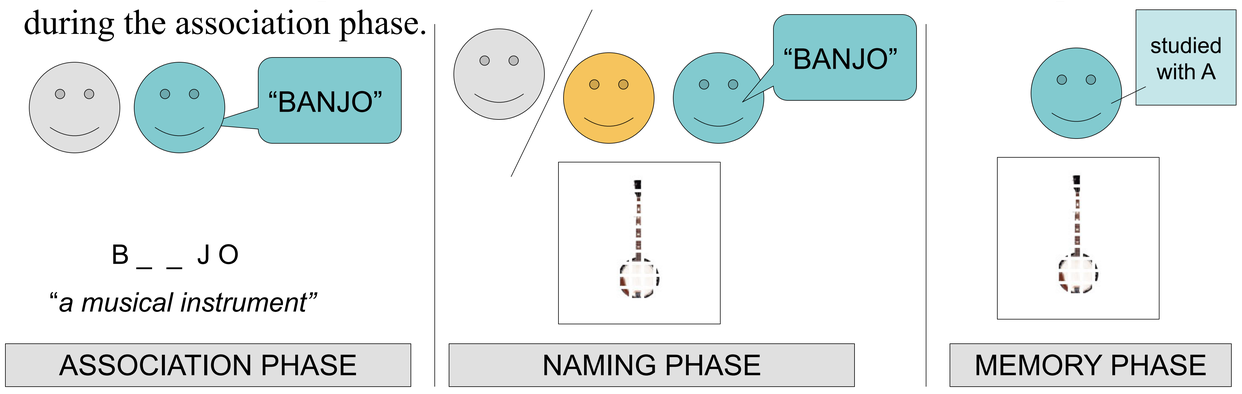
Horton (2007), Experiment 1

DESIGN: ASSOCIATION trials → NAMING trials → MEMORY trials

- ASSOCIATION trials: Speaker generates labels with partner 1 in an exemplar generation task, and different labels with partner 2.

- NAMING trials: Speaker names some pictures with partner 1, and other pictures with partner 2. Picture labels are NEW, shared with the SAME partner as in the association phase, or shared with the DIFFERENT partner as in association phase.

- MEMORY trials: Speaker identifies which labels were seen with which partner during the association phase.



RESULTS (n=16): Pictures named faster in the presence of the same partner associated with the picture label from the association phase. This did not correlate with explicit partner recall for partner-label pairings in the memory phase.

- Naming RT: same-partner 863ms; different-partner 949ms; new pictures 1088ms.

The Present Research

The original goal of the present research was to REPLICATE and EXTEND these findings. The effect size of partner effect in the Horton (2007) was estimated to be d=.68. Based on this estimate it should take…

- 12 participants to reach 80% power
- 42 participants to reach 99% power (G*Power, Faul, et al., 2009)

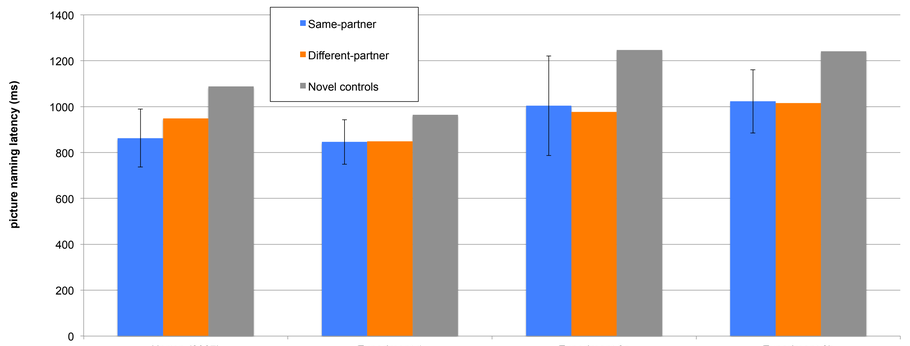
EXPERIMENTS

Experiment 1 (n = 14)
Similar design as Horton (2007), Exp. 1 with new materials developed by SBS. Key differences from original:

- NAMING phase conducted in the same room as ASSOCIATION phase; two different rooms were used in Horton (2007).
- PICTURES were less degraded as compared to Horton (2007).

Experiment 2a (n = 49): Identical design/materials as Horton (2007, E1).

Experiment 2b (n = 48): Conceptual replication run at same time as Exp. 2a with random assignment. Key difference is that partners are dolls. Goal is to maximize salience of partners, and to test if sentience matters.



Experiment results: Error bars indicate SD of the partner effect.


E1 example pic


E2a-b example pic; same as Horton (2007)


E2b partners are dolls

Experiment 1:
NAMING: Old pictures named 117ms faster than new (*t1*=4.22, *p*<.01, *t2*=1.74, *p*=.09). Partner effect (different - same = 3ms) is *ns* (*t1*= -.12, *p*=.91; *t2*= -.86, *p*=.40).
MEMORY: Partner memory 94% accurate for fillers; 90% for targets. Correlations *ns.*

Experiment 2a:
NAMING: Old pictures named 256ms faster than new (*ps.*<.01). Partner effect (different - same = -26 ms) is *ns* (*t1*= 0.85, *p*=.40; *t2*= 0.94, *p*=.36).
MEMORY: Partner memory 88% accurate for fillers; 90% for targets. Correlation between partner effect and target memory is *ns* (*r*=.21, *p*=.15); correlation with fillers is (*r*=.42, *p*<.01) but driven by outliers & inconsistent with Horton (2007).

Experiment 2b:
NAMING: Old pictures named 221ms faster than new (*ps.*<.001). Partner effect (different - same = -7 ms) is *ns* (*t1*= 0.36, *p*=.72; *t2*= 0.6, *p*=.55).
MEMORY: Partner memory 89% accurate for fillers; 93% for targets. Correlations *ns.*

CONCLUSIONS

These results call into question the possible role partner-specific associations have on the speed of lexical access in picture naming.

WHAT CAN WE CONCLUDE?

- Literature is clear that distinctiveness (Horton & Gerrig, 2005) and strength (Brown-Schmidt, 2012) of common ground representations matter. Thus, role of MEMORY PROCESSES in common ground is clear.

- Less clear what role partner-centered memory associations might have in lexical access more broadly. Associations may be too weak to reliably influence naming time. Or, the present task structure may be non-optimized to observe large effect sizes.

References

Horton, W. S., & Gerrig, R. J. (2005). Discourse Processes, 40, 1-35.
Horton, W. S. (2007). Language and Cognitive Processes, 22, 1114-1139.
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