



Max Planck Institute for Psycholinguistics

The production and generation effects in picture naming: How lexical access and articulation influence memory

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INTRODUCTION

People remember what they say better than what they hear [1]. Two production processes that are likely driving the observed memory advantage are:

- **lexical access**, the process through which a word form is selected after the activation of a concept
- **articulation**, the process through which a word is said out loud.

Two memory phenomena related to production processes are:

- the **generation effect** (GE) [2]
e.g. read *cat* – *dog* vs. generate *cat* – *d*__
- the **production effect** (PE) [3]
e.g. read *dog* silently vs. read *dog* aloud



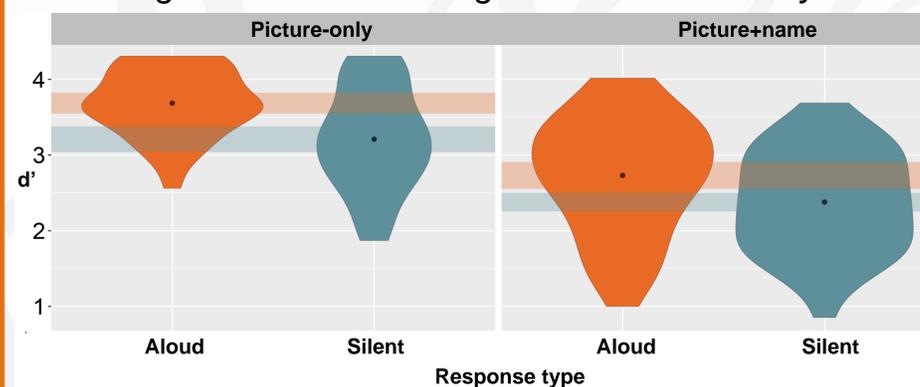
Previous work [4] has found that the production effect and the **picture superiority effect** (better memory for pictures than words; PSE) [5] contribute to the memory in picture naming. This research did not take into account the generation effect.

Research question: Does generation improve memory in picture naming?

EXPERIMENT 1

No catch trials, 43 participants

Assessing the contribution of generation to memory



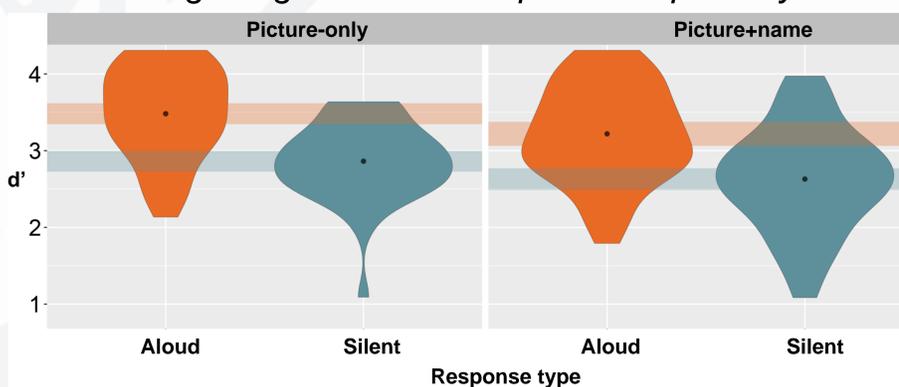
- Picture-only > Picture+name = **GE/ Lexical access**
- Aloud > Silent = **PE/ Articulation**
- **Interaction** between PE and GE

→ Both GE and PE were observed. But were participants fully processing the pictures, i.e. is PSE still a confound?

EXPERIMENT 2

With catch trials, 41 participants

Dissociating the generation and picture superiority effects

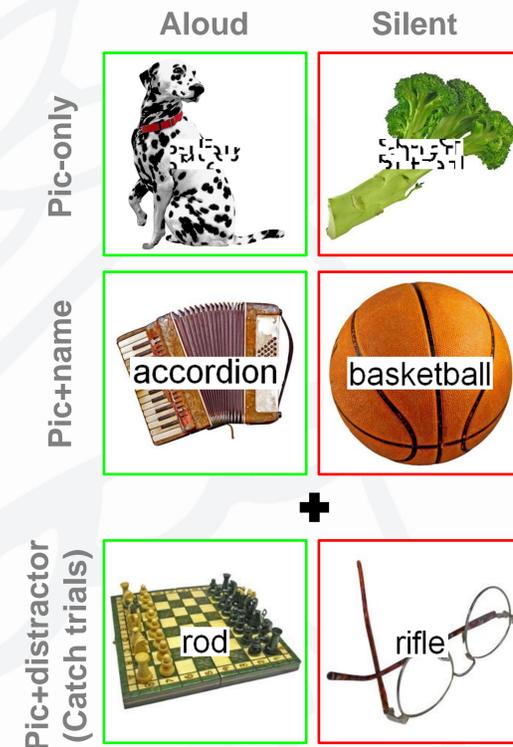


- Again, both **GE** and **PE** were observed
- **Smaller GE** than previously
- **No interaction**, unlike Experiment 1

→ The PSE did affect the results of Experiment 1. When it is controlled for, GE and PE still take place in picture naming.

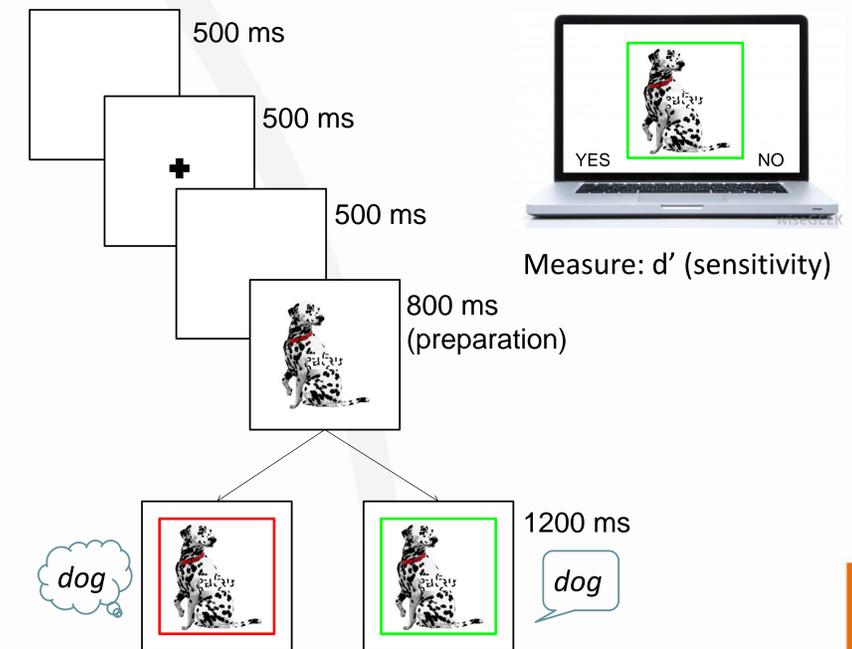
METHOD

Stimuli (256 pictures)



Procedure

Picture naming (Study phase)



Yes/no recognition (Test phase)



Measure: d' (sensitivity)

CONCLUSION

- The generation effect can be linked to lexical access and the production effect to articulation.
- Both the generation effect and the production effect boost memory retention in picture naming.

→ **Lexical access and articulation contribute to memory during word production.**

REFERENCES [1] Yoon, Benjamin, & Brown-Schmidt (2016). *Cognition*, 154. [2] Slamecka & Graf (1978). *JEP:HLM*, 4:6. [3] MacLeod, Gopie, Hourihan, Neary, & Ozubko (2010). *JEP:LMC*, 36:3. [4] Fawcett, Quinlan, & Taylor (2012). *Memory*, 20:7. [5] Paivio, Rogers, Smythe (1968). *Psychon. Sci.*, 11:4.

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