

Retrieval in the Information Age: How interface design can affect long-term memory

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The mnemonic benefit of retrieval is not widely appreciated, and is often underutilized (Karpicke et al., 2009; Tullis et al., 2013)

Smart phones make a great deal of information readily accessible.

Current motivation

- To examine how access cost influences lookup behavior
- To examine the downstream consequences of this access cost

General procedure

Participants were shown a grid with word cues.

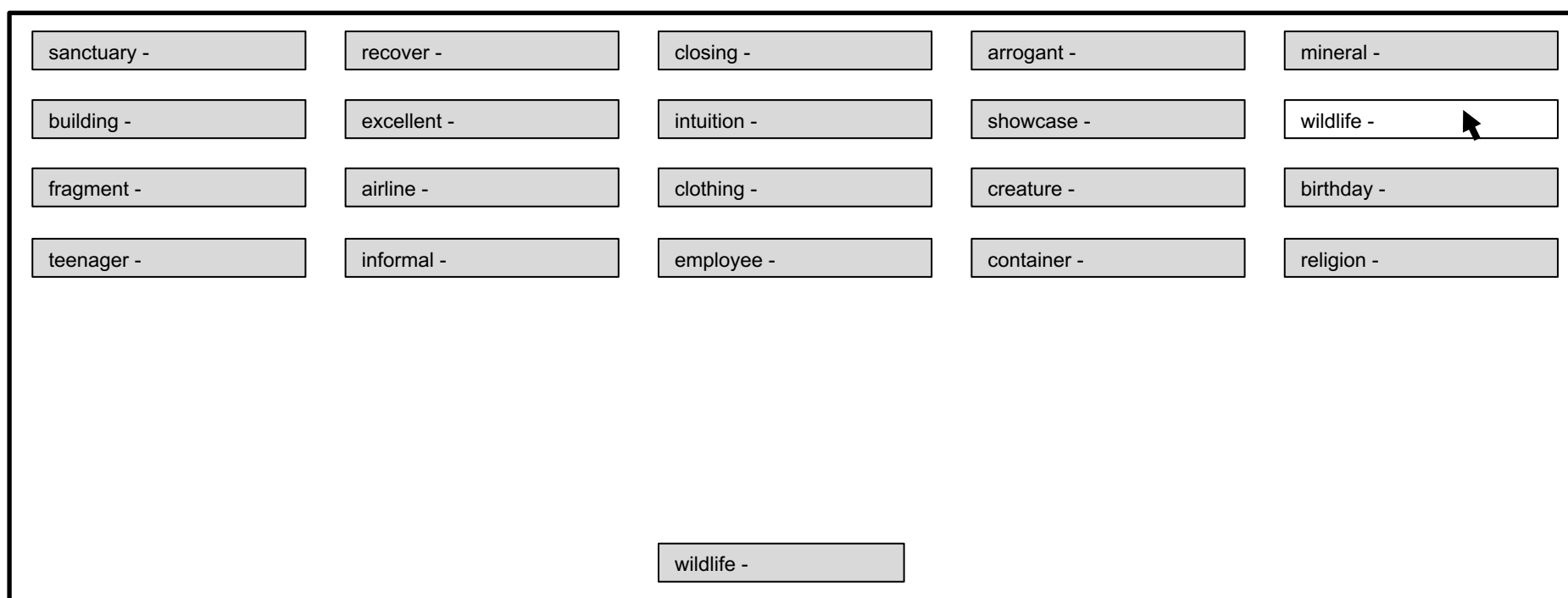
On each trial, participants were shown cues in the bottom center box and asked to type in the target.

In the first block, they had to look the target up in the grid, but after multiple blocks they could choose to retrieve the target from memory.

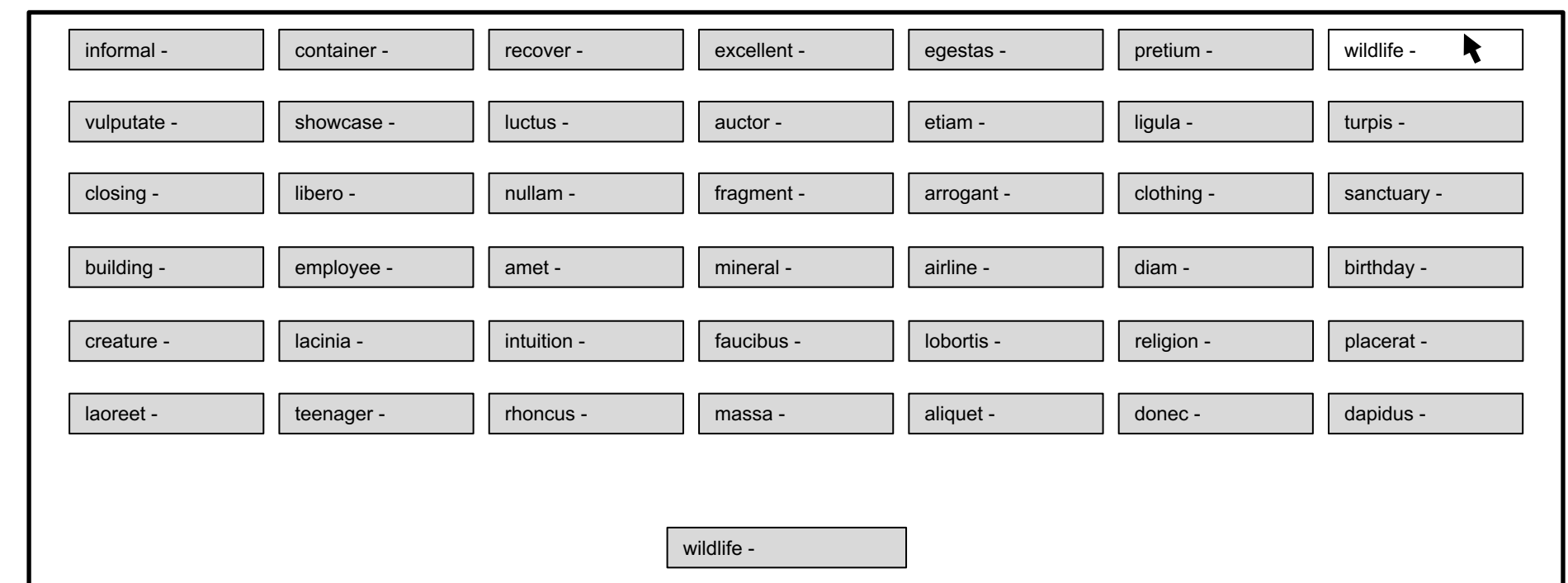
Each pair was queried in each of the 5 blocks.

After a 1-day retention interval, participants were given a cued-recall test.

Experiment 1: Time access cost

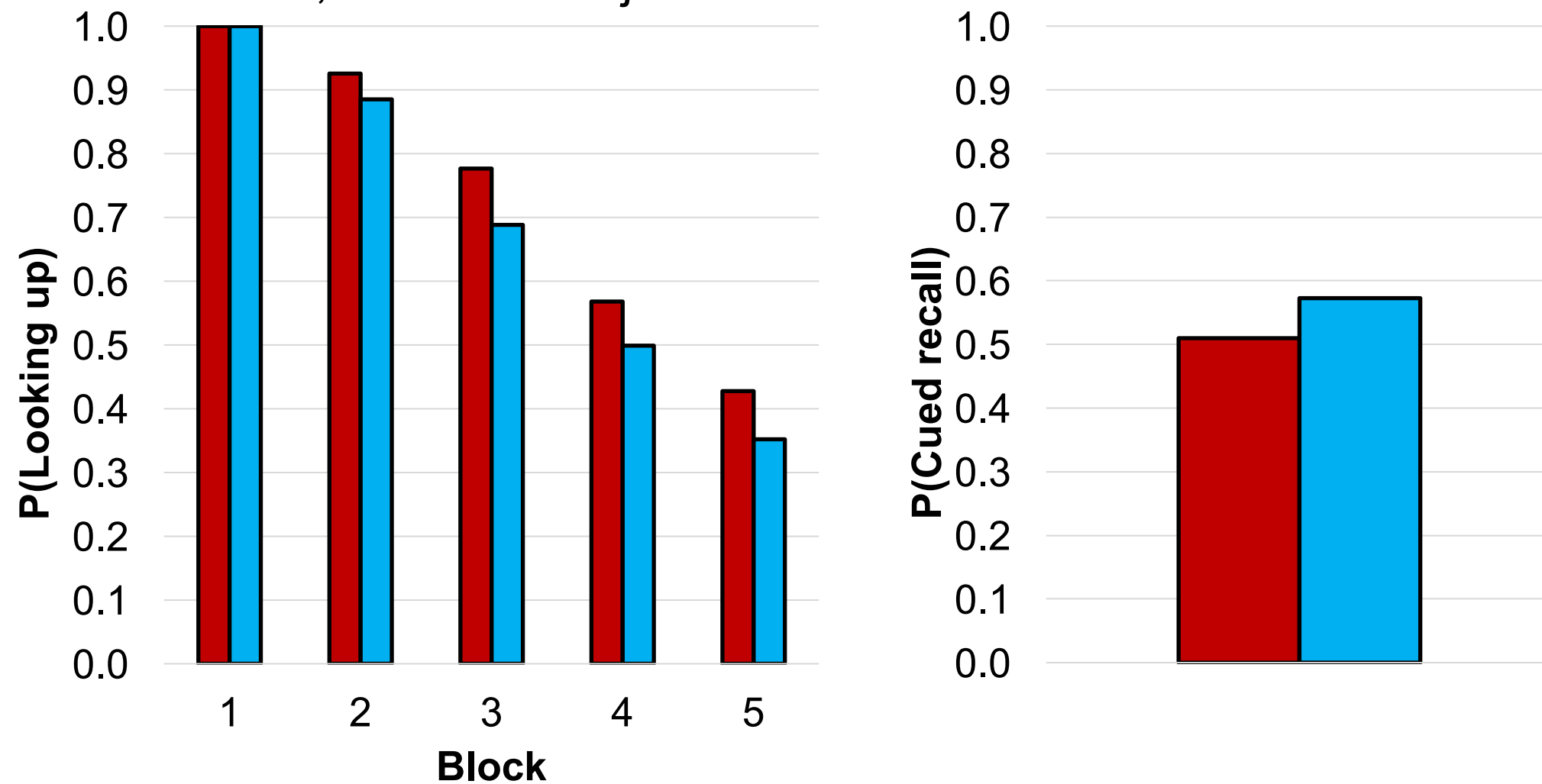


Experiment 2: Perceptual access cost



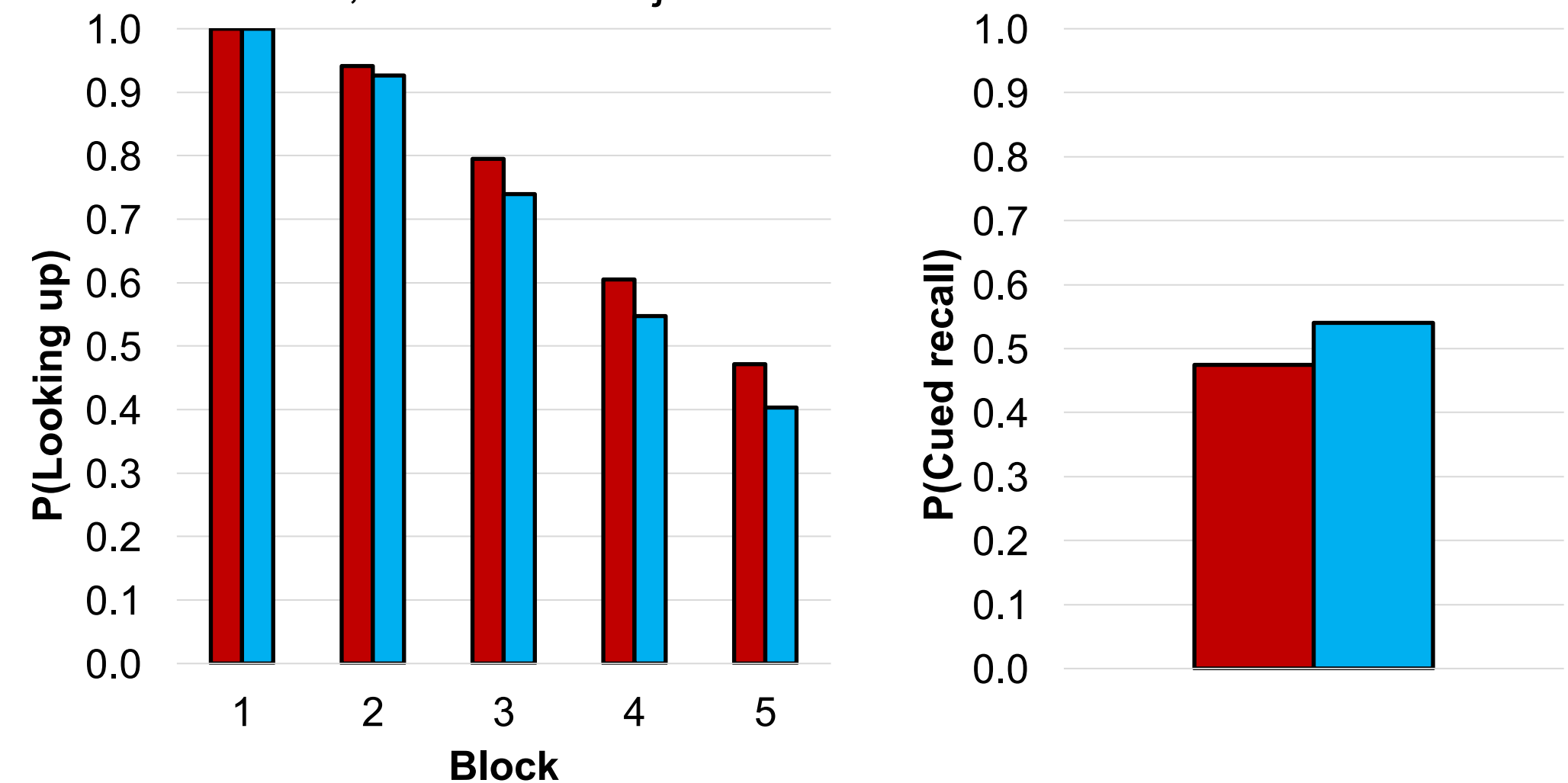
Target appeared after a 0 s (cheap) or 1.5 s (costly) delay

N = 150, between-subjects



Display density was either low (cheap) or high (costly)

N = 129, between-subjects



In both experiments, participants in the costly condition looked up words less often than in the cheap condition, which resulted in better memory. These effects were significant only when the data from the two experiments were combined.