

Do expert searchers remember what they have seen?

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Question:
Does visual expertise improve visual recognition memory?

Background:

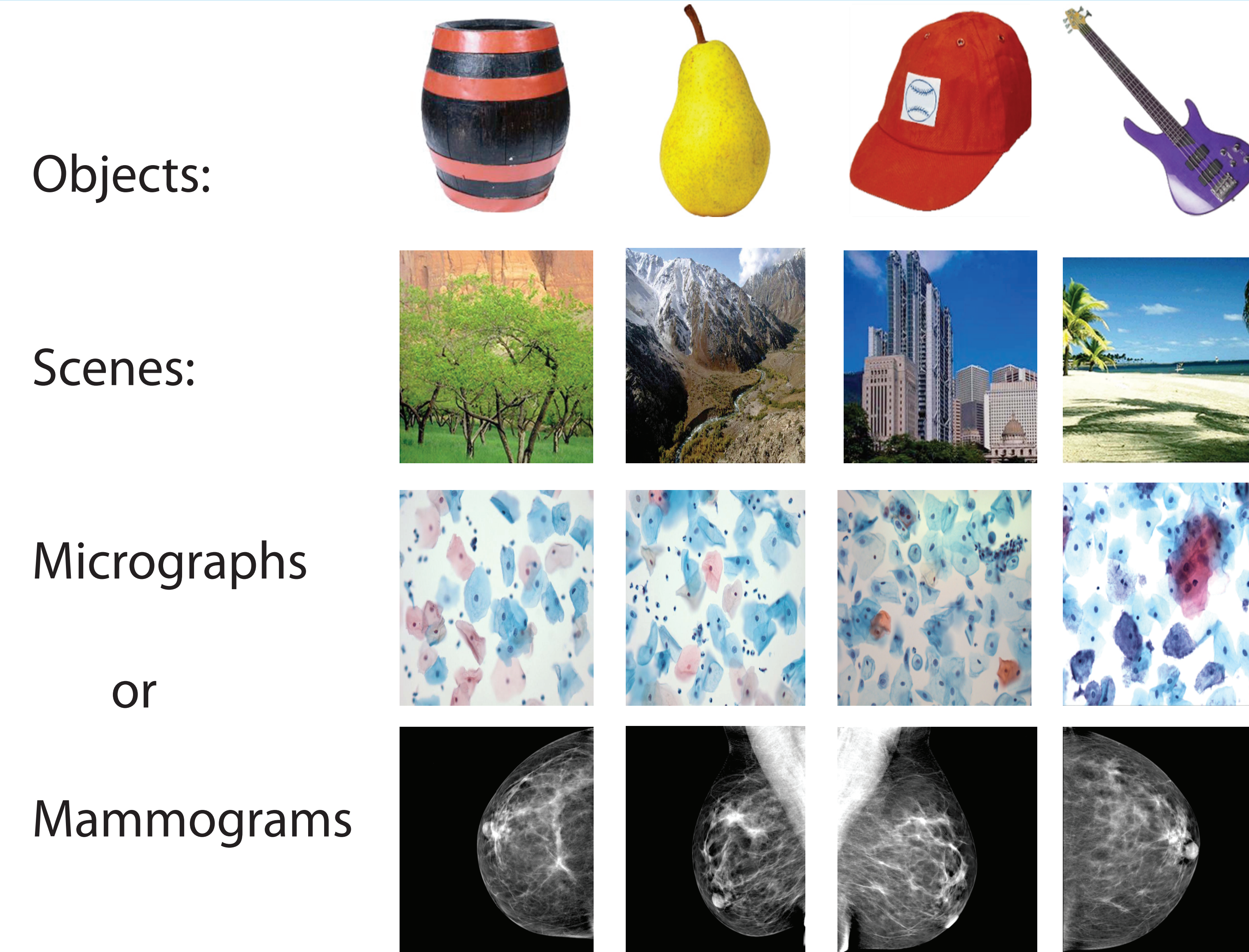
Previous research has shown that humans have a massive and robust ability to recognize objects and scenes that they have seen before (e.g. Brady, Konkle, Alvarez, and Oliva, 2008). We investigated:

- > Do expert searchers have better visual memory than naives?
- > Is this effect limited to images from their domain of expertise?

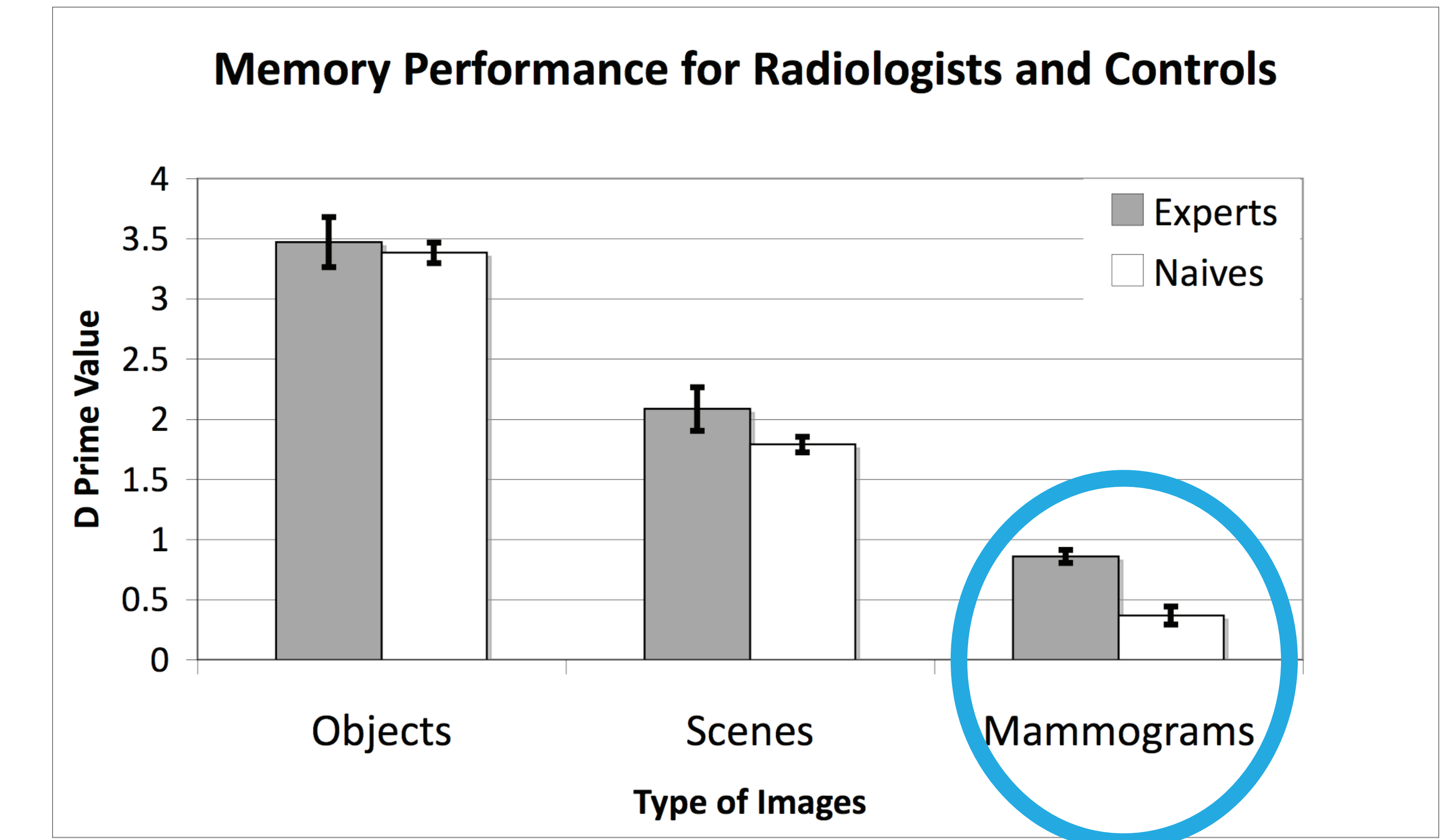
Experiment:

- > 4 groups of participants (cytologists, radiologists, and 2 medically untrained control groups)
- > Each group saw 3 stimulus sets: objects, indoor scenes, and medical images (cervical micrographs for cytologists and mammograms for radiologists)
- > Each of the 3 stimulus sets had 2 phases:
 - Study Phase: 72 images presented for 3 seconds and participants told to memorize the images
 - Test Phase: 72 images, of which 36 were new and 36 of which had been previously seen in the study phase
- > Participants labeled images in 'Test Phase' as "new" or "old"

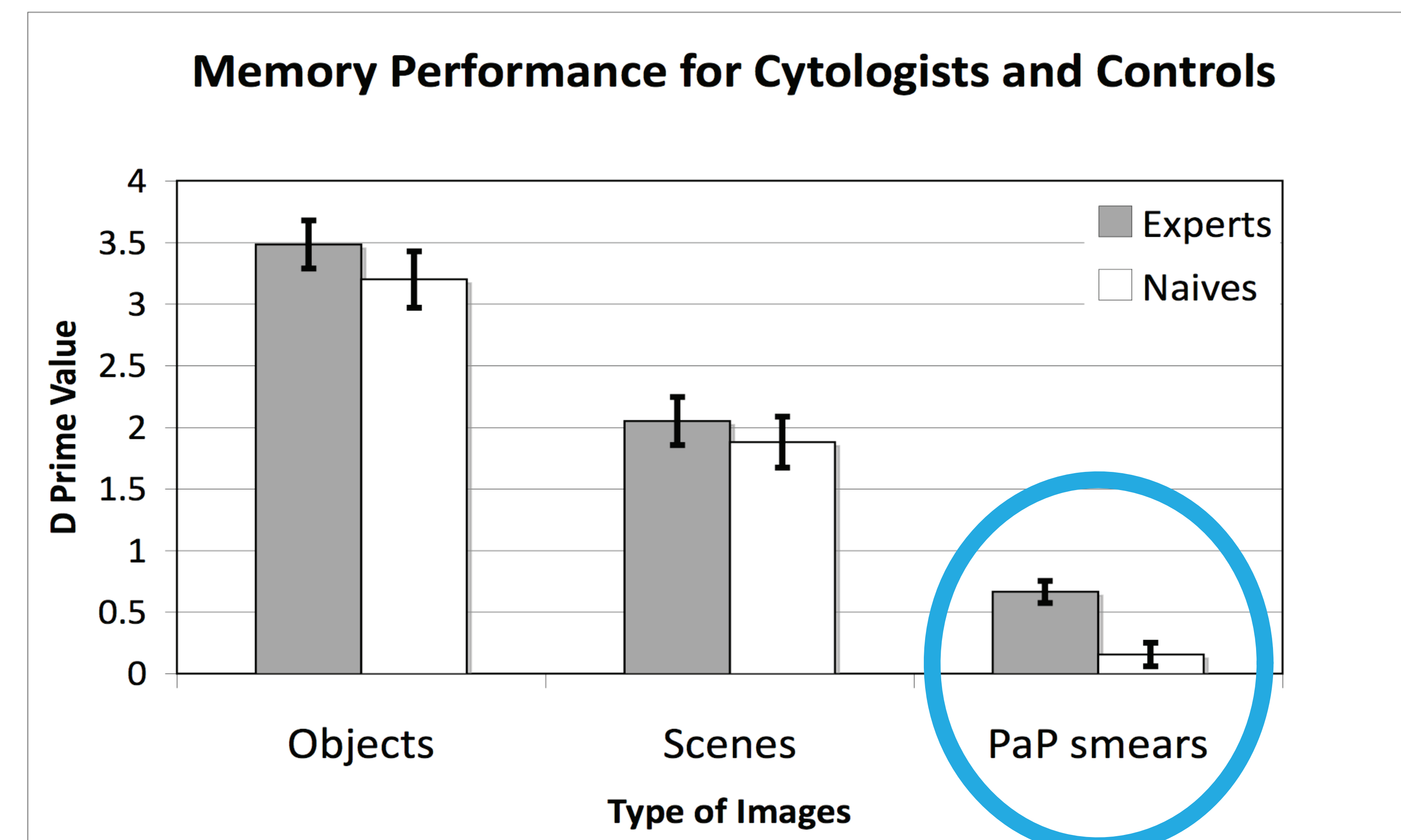
Stimuli:



Data:



Data:



Discussions:

- > Experts do have better memory than non-experts for images in their domain
 - BUT that memory is not very good ($d' = 0.86$ for Radiologists and $d' = .66$ for Cytologists.)
- > Experts' memory for scenes and objects is much better than their memory for images in their domain
 - BUT that memory is no better than the memory of non-experts for those stimuli.

Acknowledgments:

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