

Background

Encoding Strategies: ---> schematic figure

- Require learners to form associations between pre-existing memory representations – “scaffolds”- and to-be-remembered items
- Enable memory athletes to remember vast amounts of information at first encounter (e.g., Foer 2011, Ericsson, K. A., 2003)

Mnemonic Scaffolds:

- Pre-existing memory structures with inherent sequential order
- Provide pegs/anchors for associations during study, which function as retrieval cues during recall
- Best known: navigational scaffolds (Method of Loci)
- Alternatives to the Method of Loci and individual differences in their learner-dependent usefulness have received almost no scientific attention

Main Questions:

- 1.) Do mnemonic scaffolds differ in their effectiveness in facilitating serial recall?
- 2.) Do visuospatial ability, vividness of visual imagery, and body responsiveness affect the usefulness of those mnemonic scaffolds?
- 3.) Does embodiment contribute to the success of the Body Scaffold Method?

Exp 1: Comparing 4 Mnemonic Scaffolds

Methods

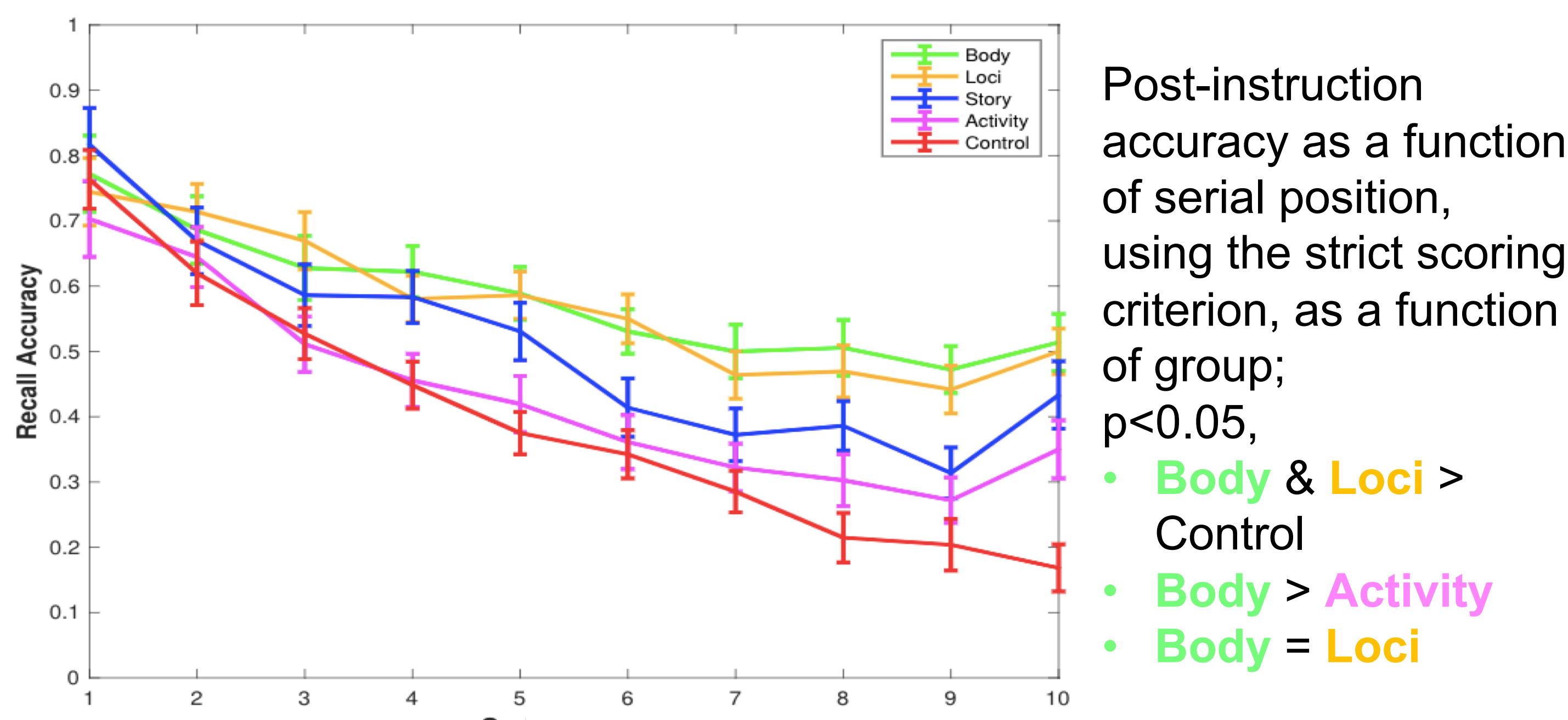
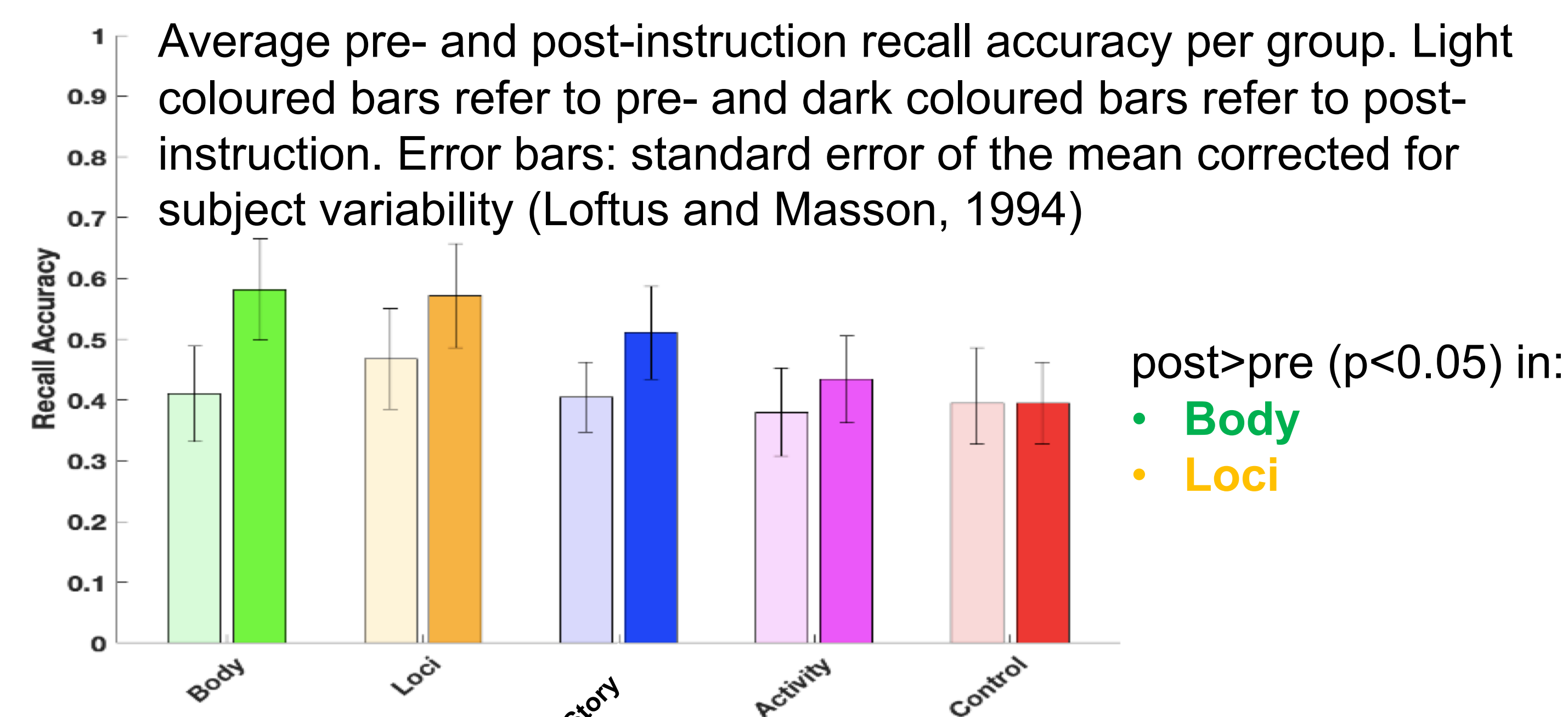
- Participants: U of A students (N=226)
- Study items: 12 (2 for baseline memory) lists of 10 nouns from Toronto Noun Pool (high and low imagery mixed)
- Individual differences: Vividness of Visual Imagery Questionnaire (VVIQ, Marks 1964), Body Responsiveness Q (BRQ, Daubenmaier 2003), Paper Folding Task (PFT French, 1963)
- 4 Scaffolds Groups used self-generated scaffolds consisting of:
 - Body Scaffold: 10 body parts from feet upward
 - Loci Scaffold: 10 locations / objects along a familiar route
 - Story Group: Autobiographical story split into ten sentences
 - Activity Group: Routine activity split into ten steps
- Control Group: studied words by reading them out aloud

Exp 1: Comparing 4 Mnemonic Scaffolds

Results

Strict scoring:

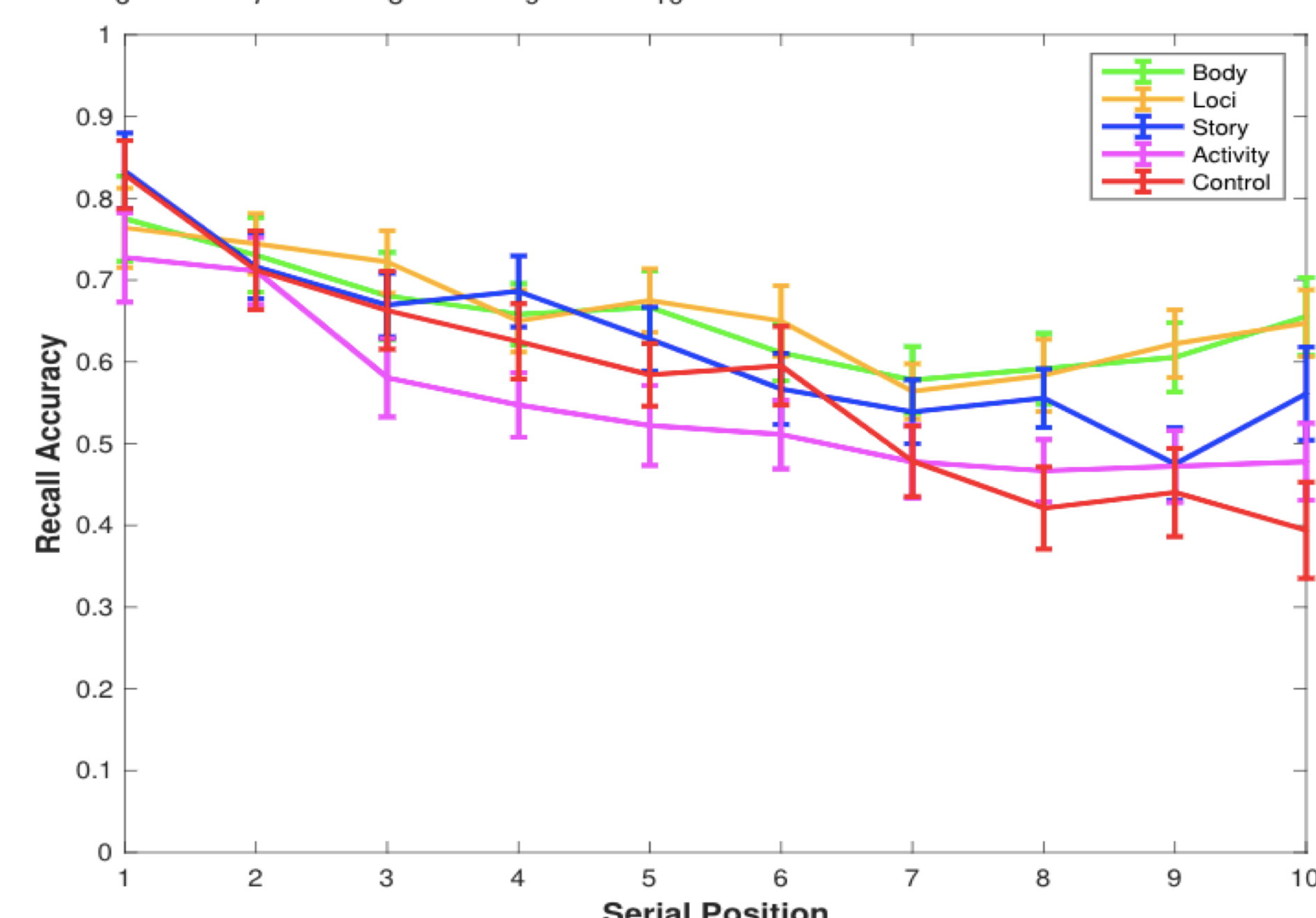
= items only scored as correct if recalled in the same position they were presented



Lenient scoring:

= items scored as correct if they were mentioned in any position

- Scaffolds > Control only in position 10



Individual differences:

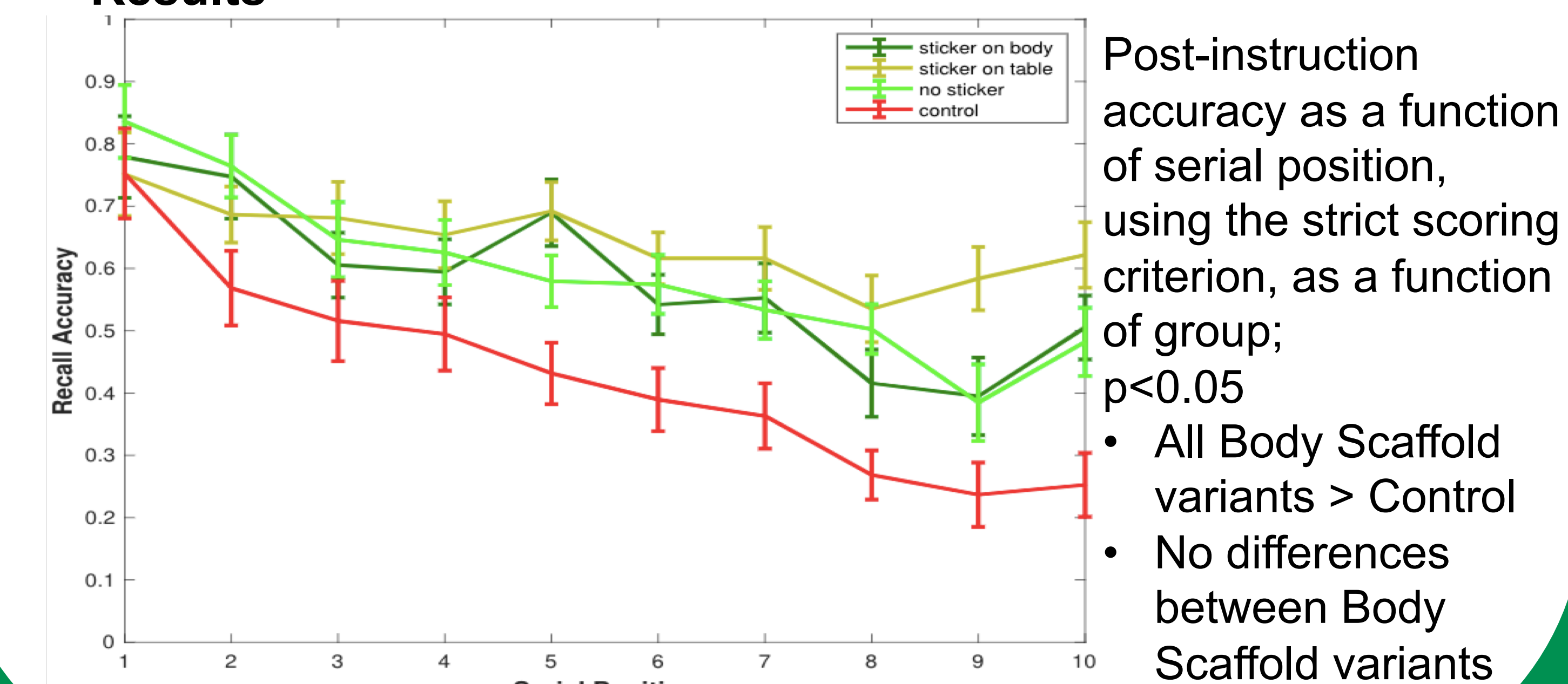
- Visual imagery (VVIQ) does not predict recall accuracy
- Body responsiveness does not predict recall accuracy
- PFT predicts pre- and post-instruction recall accuracy and study time → measures task engagement rather than predicting usefulness of mnemonic scaffolds

Exp 2: Embodiment in the Body Scaffold

Methods

- Participants: UofA students (N=152) who learned English before the age of six and were older than 17 years completed 50 min experiment in closed session rooms
- Study items: 11 (3 for baseline memory) lists of 10 nouns from Toronto Noun Pool (high and low imagery mixed)
- Three Body Scaffold Groups:
 - Sticker on Body: touched respective body parts during by attaching a sticker
 - Sticker on Table: attached sticker to table
 - No Sticker: no bodily engagement
- Control Group: studied words by reading them out aloud

Results



Discussion and Conclusion

What makes mnemonic scaffolds effective?

- Order
 - Prior knowledge
 - Imagined navigation
 - Bodily engagement
 - Visual imagery skills
 - Body responsiveness
- matter
- Do not matter

Main Answers:

1.) The Body Scaffold Method is equally effective as the Method of Loci

2.) Visuospatial ability, vividness of visual imagery, and body responsiveness do not affect the usefulness of those mnemonic scaffolds.

3.) Bodily engagement does not contribute the the success of the Body Scaffold.

References

- Daubenmier, J. J. (2005). The relationship of yoga, body awareness, and body responsiveness to self-objectification and disordered eating. *Psychology of Women Quarterly*, 29 (2), 207–219.
- Chase, W. G., & Ericsson, K. A. (1981). Skilled memory. *Cognitive skills and their acquisition*, 141–189.
- Ericsson, K. A. (2003). Exceptional memorizers: made, not born. *Trends in Cognitive Sciences*, 7(6), 233.
- Foer, J. (2011). *Moonwalking with Einstein: The art and science of remembering everything*. New York, NY: Penguin Press.
- French, J. W., Ekstrom, R. B., & Price, L. A. (1963). *Kit of reference tests for cognitive factors*. Princeton, NJ: Educational Testing Service.
- Loftus, G. R., & Masson, M. E. J. (1994). Using confidence intervals in within-subject designs. *Psychonomic Bulletin & Review*, 1(4), 1–15.
- Marks, D. F. (1972). *The Function and Nature of Imagery*. In S. P.W. (Ed.), *New York and London: Academic Press*.