

Body ownership of virtual avatars



An affordance approach of
telepresence

Tiago Coelho

Our approach

- Telepresence
 - The feeling of being present at a place other than the physical location of the individual
- Ownership
 - Feeling of being something in the virtual world



Our approach

- Telepresence
- Ownership
- Affordance concept:
 - Action possibilities
 - Scaled to the organism
 - Directly perceived

Methods

- Question:
 - Do people pass through virtual apertures in the same way as they pass through real apertures?
- Hypothesis:
 - Yes, but it may depend on the morphology of the avatar

Similar avatar



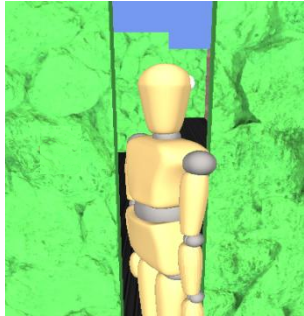
Standard avatar



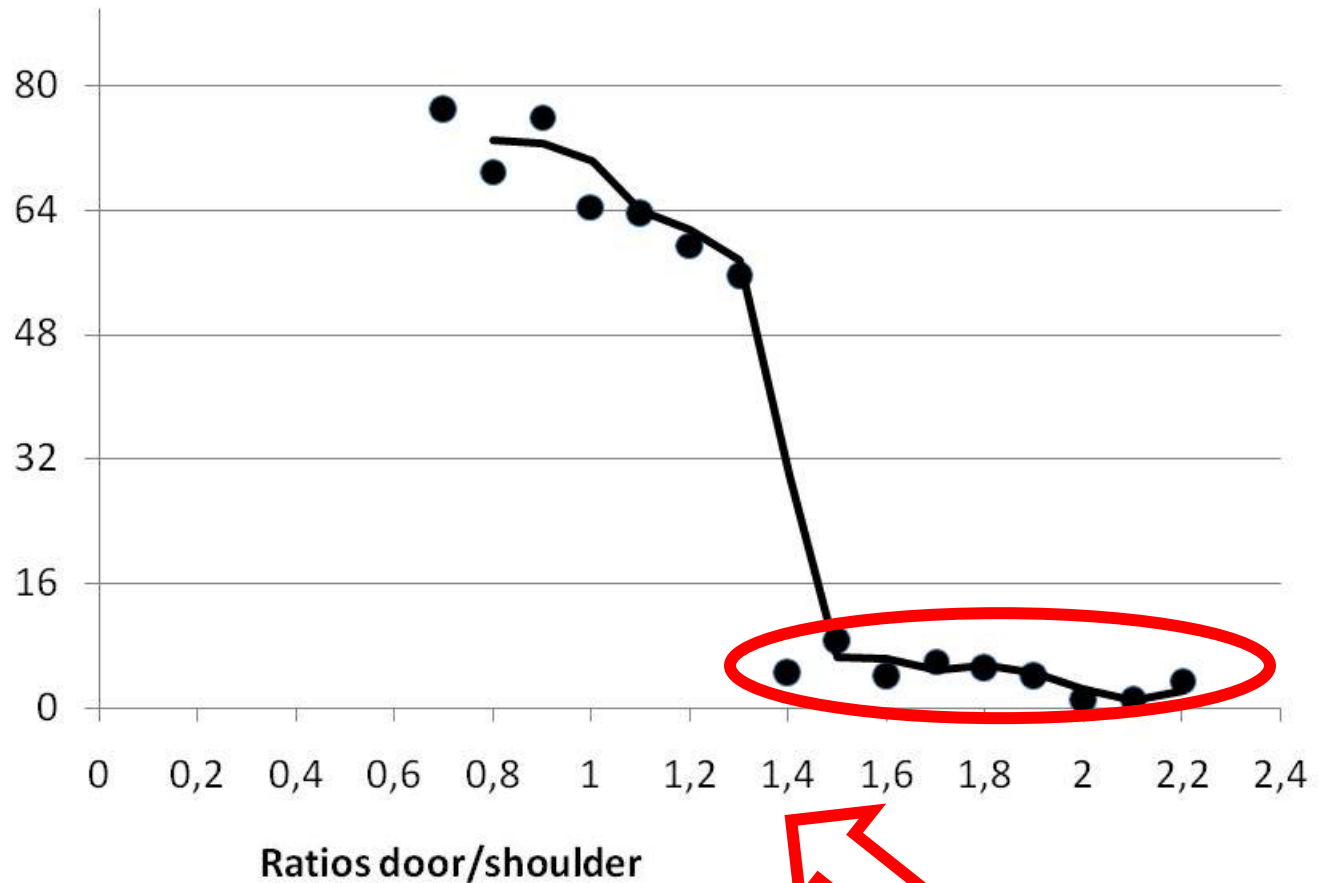
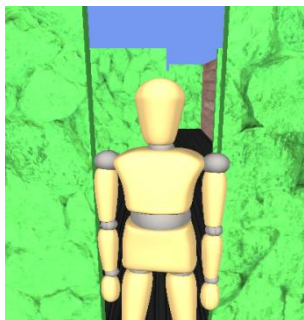
Methods

- Conditions:
 - Avatar: similar vs standard
 - Speed: slow vs fast
- Measures:
 - Questionnaire about experienced environment
 - Behavioural assessment: critical ratios

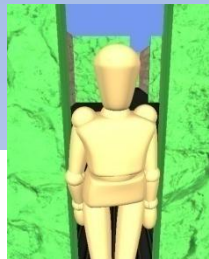
Methods: finding the critical ratios



Angle of shoulder rotation



Results: learning of critical apertures over sessions

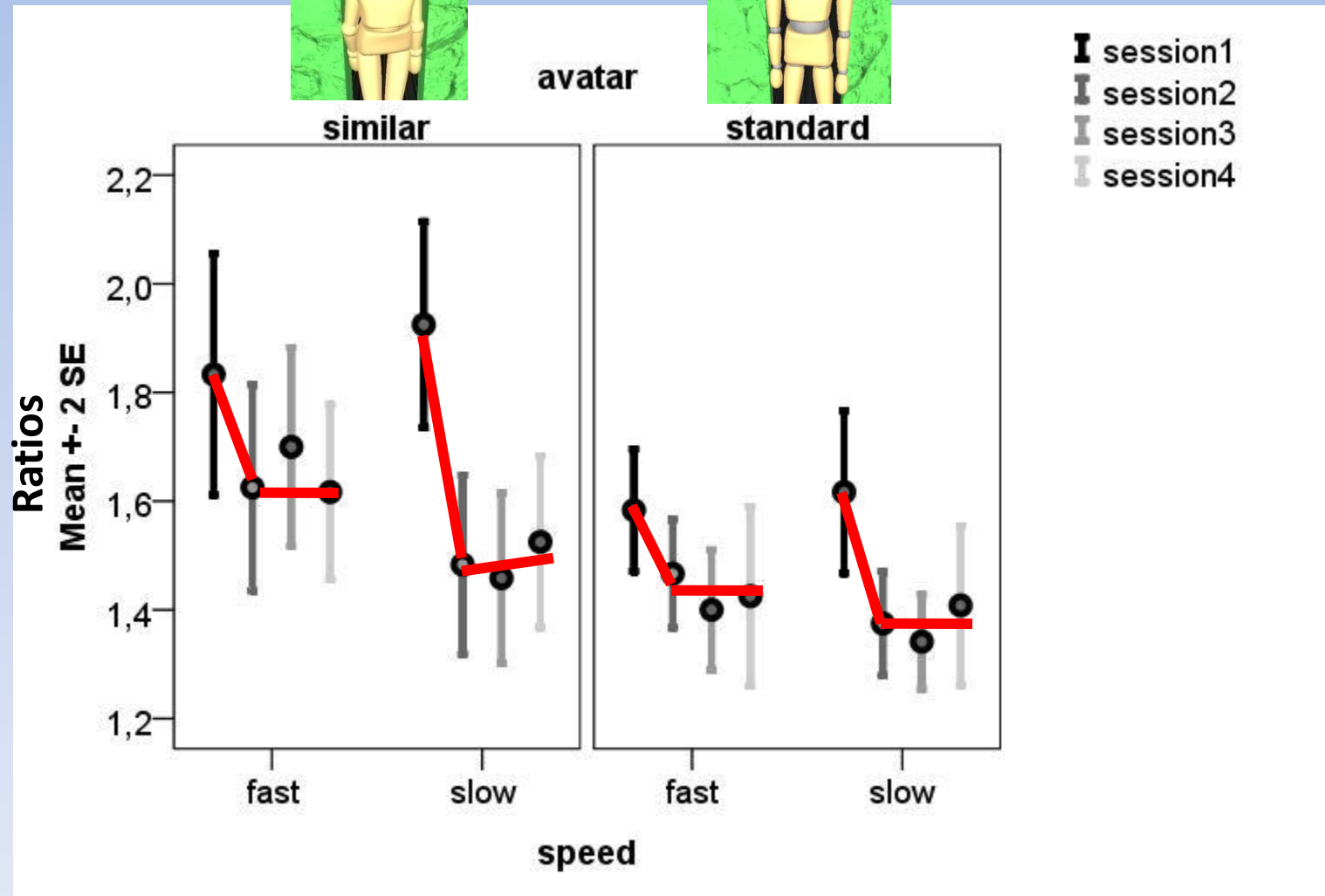


similar

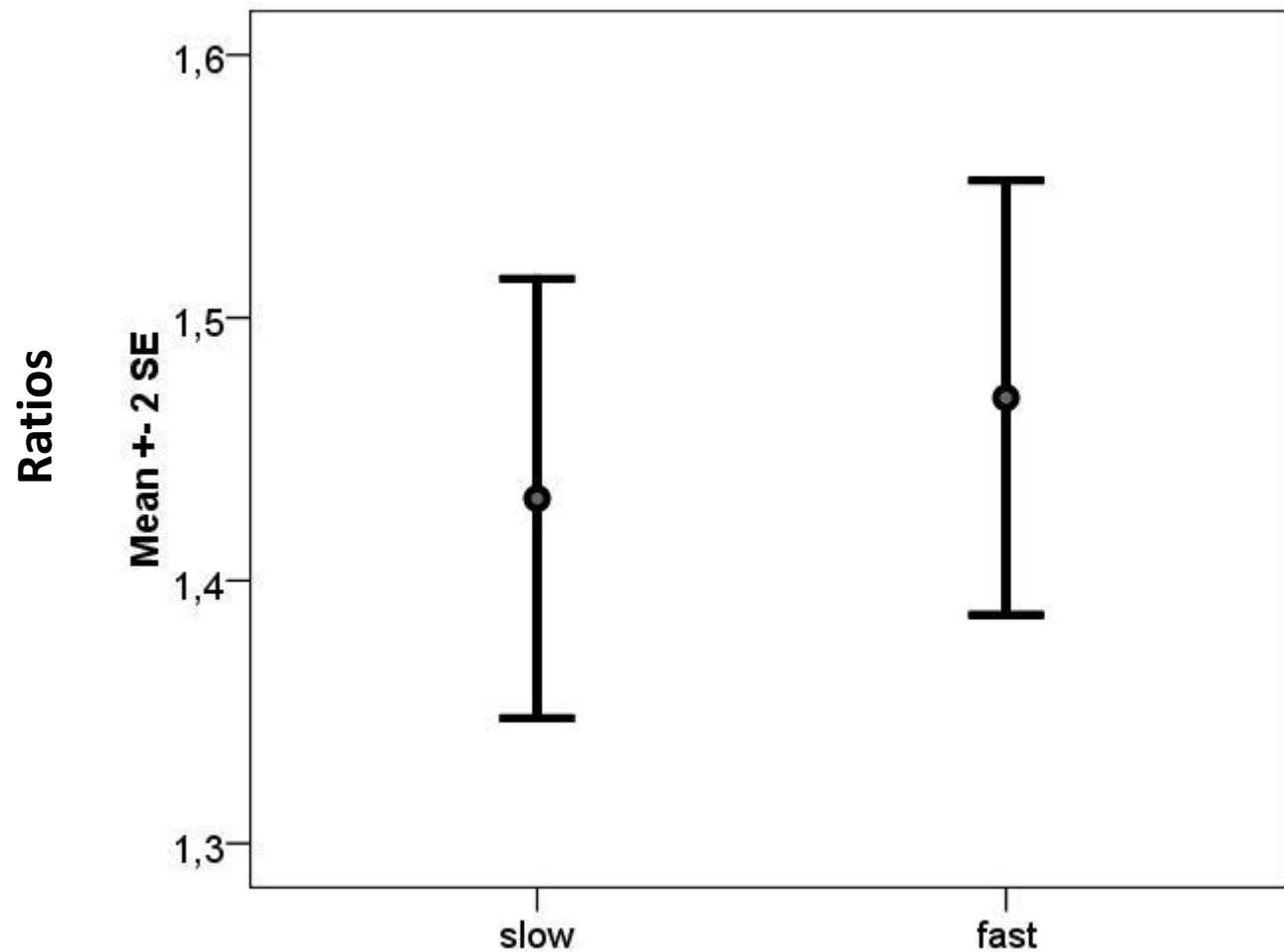
avatar



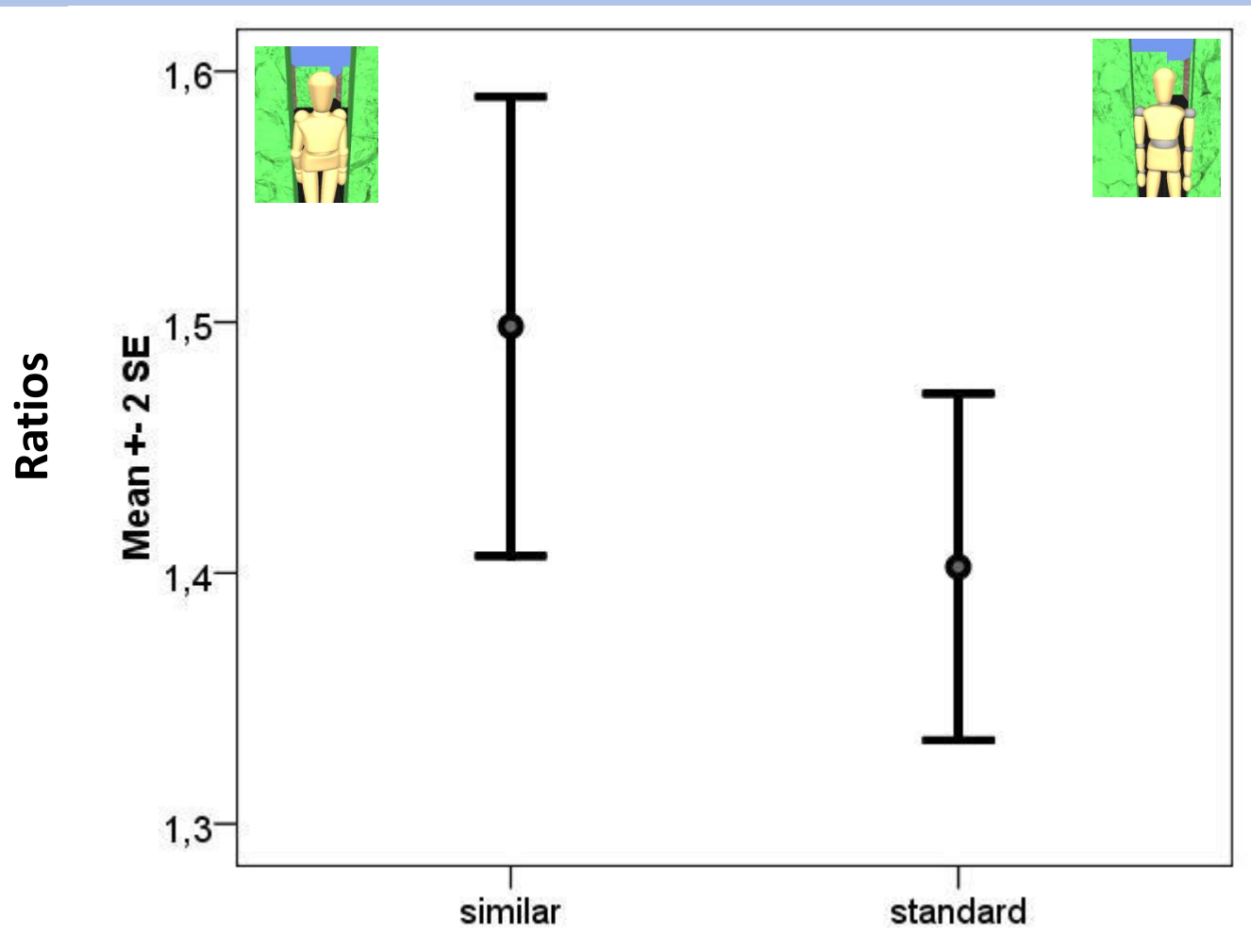
standard



Results: effect of speed on critical ratio



Results: effects of avatar on critical ratio



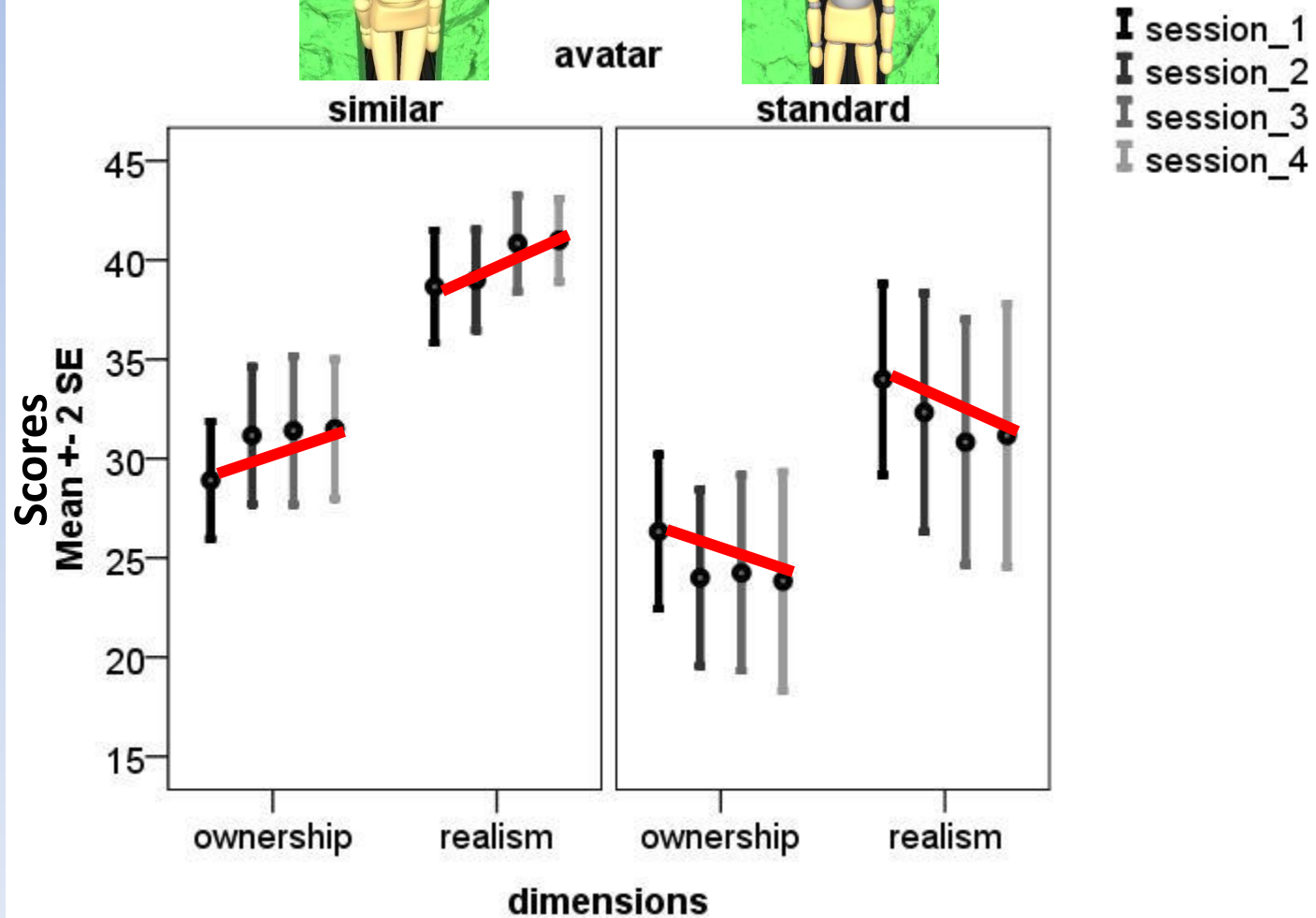
Questionnaires: improvement with similar avatars



avatar



standard



Conclusions: avatar morphology

- Larger ratios with similar avatars
 - Maybe because larger safety margin
 - or distraction with own movement
- Better feelings with similar avatars
 - Ownership larger and increasing
 - Realism larger and increasing



Conclusions: paradigm itself

- People perceived the affordances as they do in natural environments
 - Learning over sessions
 - Ratios similar to natural environments (1.4)

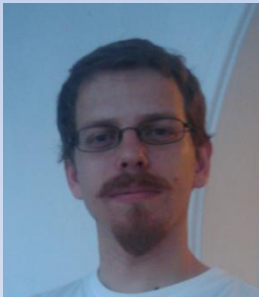
Future work

- Explore first- and third-person perspective
 - Effects on ownership and perception (under way)
 - Effects of equipment used (eg VR goggles)
- Explore different applications
 - Entertainment & exercise (treadmills in gyms)

Our thanks to you



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Critical ratios: effects of speed and avatar

