

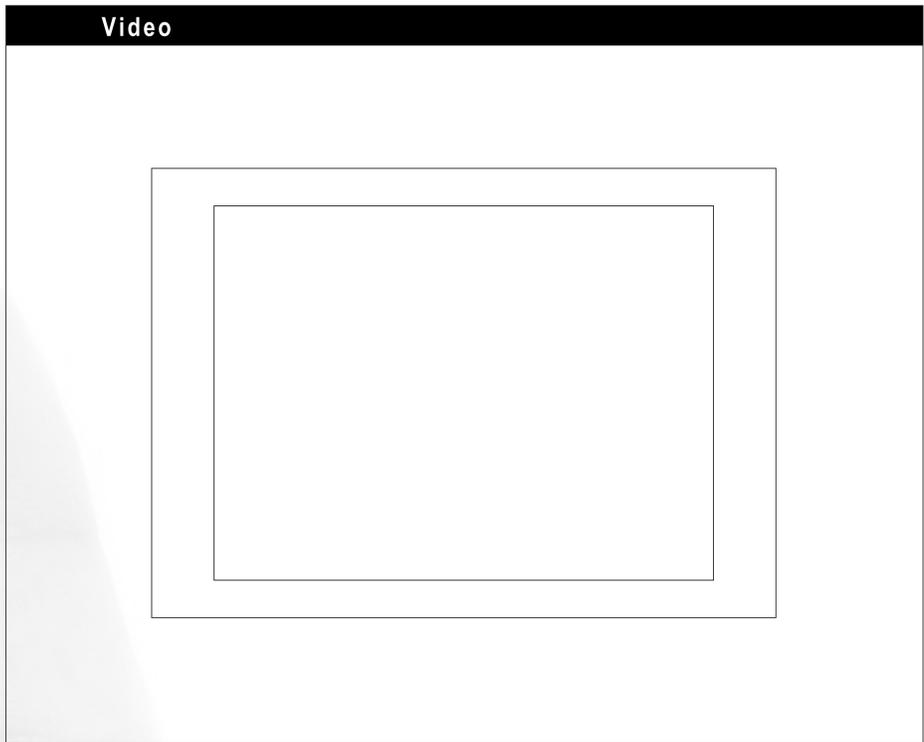
Introduction

Hypothesis:
Body ownership inferred by solving the correspondence problem between "what you see" and "what you feel"

Main measures: ownership ratings (subjective) & proprioceptive drift (objective)

Ownership ratings
"read-out" from inference of common cause

Proprioceptive drift
follows from source estimation



Apparatus and methods

Active paradigm: two reach tasks alternate 8 times per experimental condition

Induction task: induce and manipulate ownership
Virtual Hand: present
Target: green horizontal bar

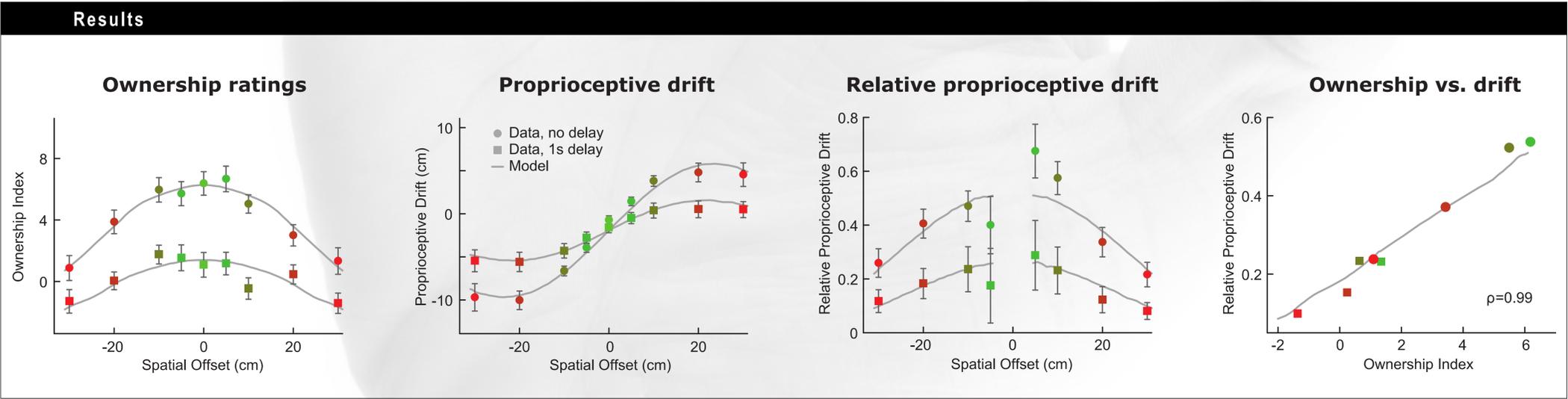
Pointing task: measure proprioceptive drift
Virtual Hand: absent
Target: 2cm red dot

After the reaching task, ownership is assessed through standard **questionnaires**

Time
Induction
Return
Pointing
Repeat 8x
Questionnaire

I felt that my hand was in the location of the virtual hand
1 2 3 4 ~~5~~ 6 7

I felt as if the virtual hand was my hand
1 2 3 4 5 6 ~~7~~



Conclusions

- Phenomenological and sensorimotor effects are strongly correlated, hence likely to emerge from same underlying process
- Body ownership results from multisensory integration
- Bayesian Causal Inference model can account for both the phenomenology and the sensorimotor effects of body ownership:
 - Sense of ownership** results from solving the causal inference problem
 - Proprioceptive drift** results from multisensory source estimation

References

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