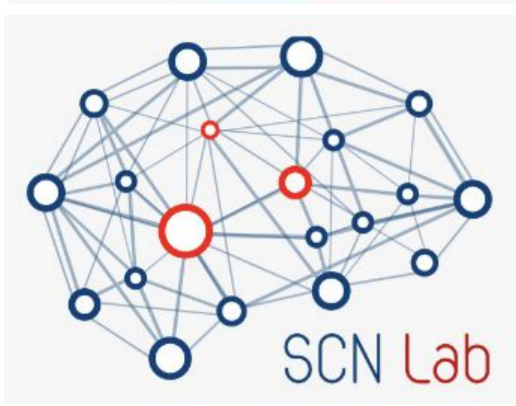




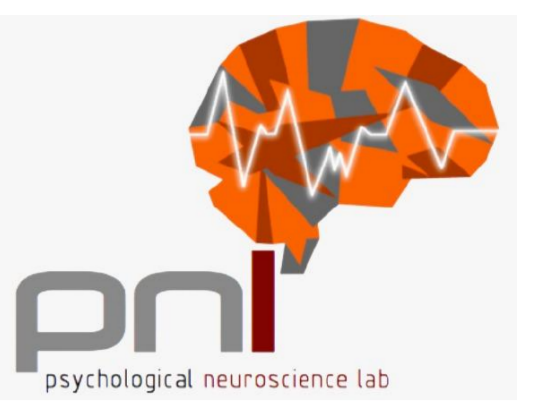
Reading Point-Light Walkers and Amorphous A TMS Study



Olivia M. Lapenta^{1,2}, Cláudia A. Valasek¹, Sofia M. G. Vieira¹, Paulo S. Boggio¹

¹ Social and Cognitive Neuroscience Lab, Center for Biological and Health Sciences, Mackenzie Presbyterian University

² Psychological Neuroscience Lab, Center for Research in Psychology, University of Minho

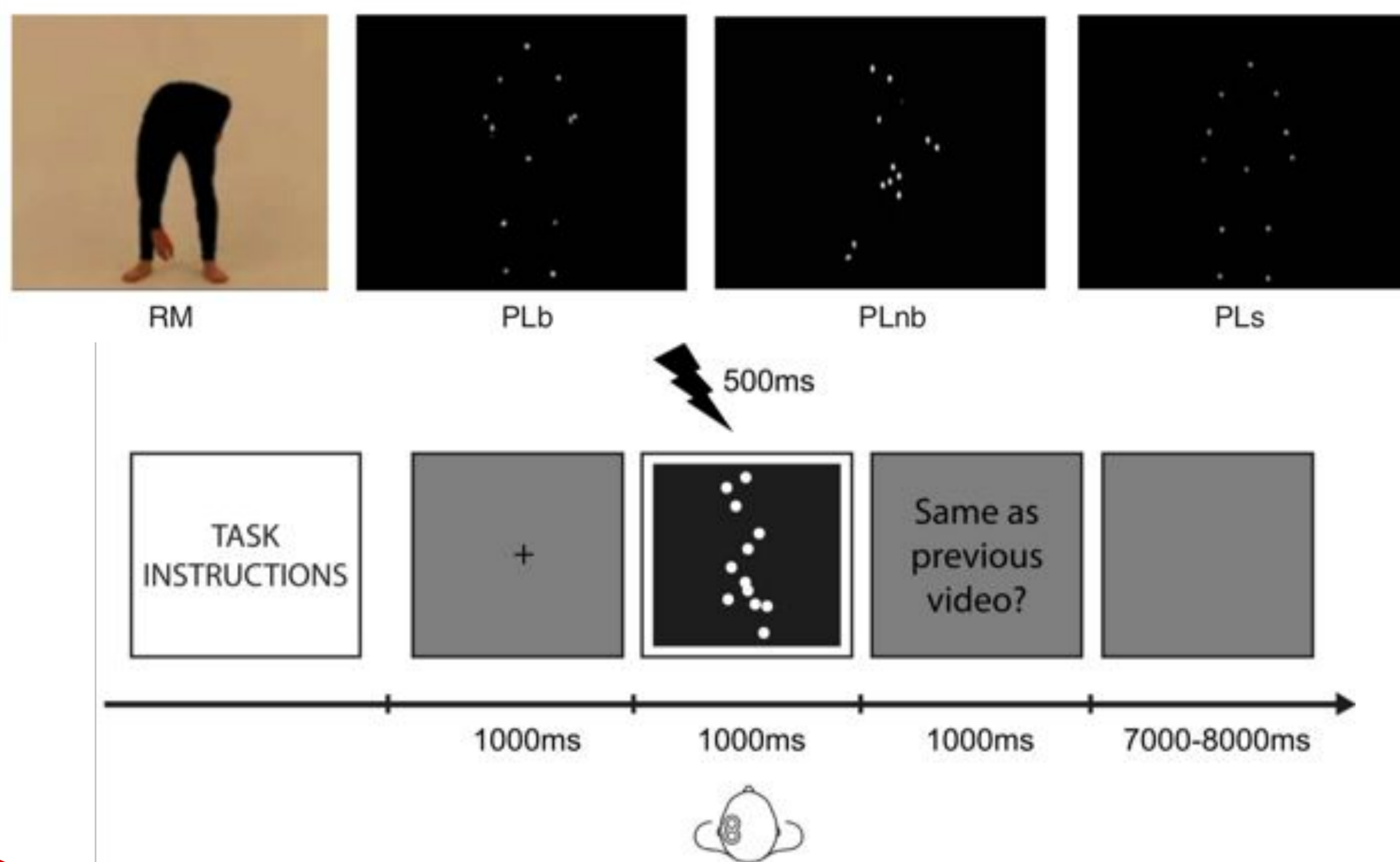


GOALS

- To evaluate if human actions with and without pictorial information result in comparable motor facilitation clarifying the adequacy of point-light (PL) human actions for motor observation and motor resonance research;
- To verify if the isolated aspects of human shape, without movement; and the isolated aspect of movement, i.e., moving PL with amorphous shape, elicit motor network response. Thus disclosing if motor facilitation is specific to human action perception involving both human motor and spatial configurations.

METHODS

Illustration of a Frame of Each Stimuli Condition



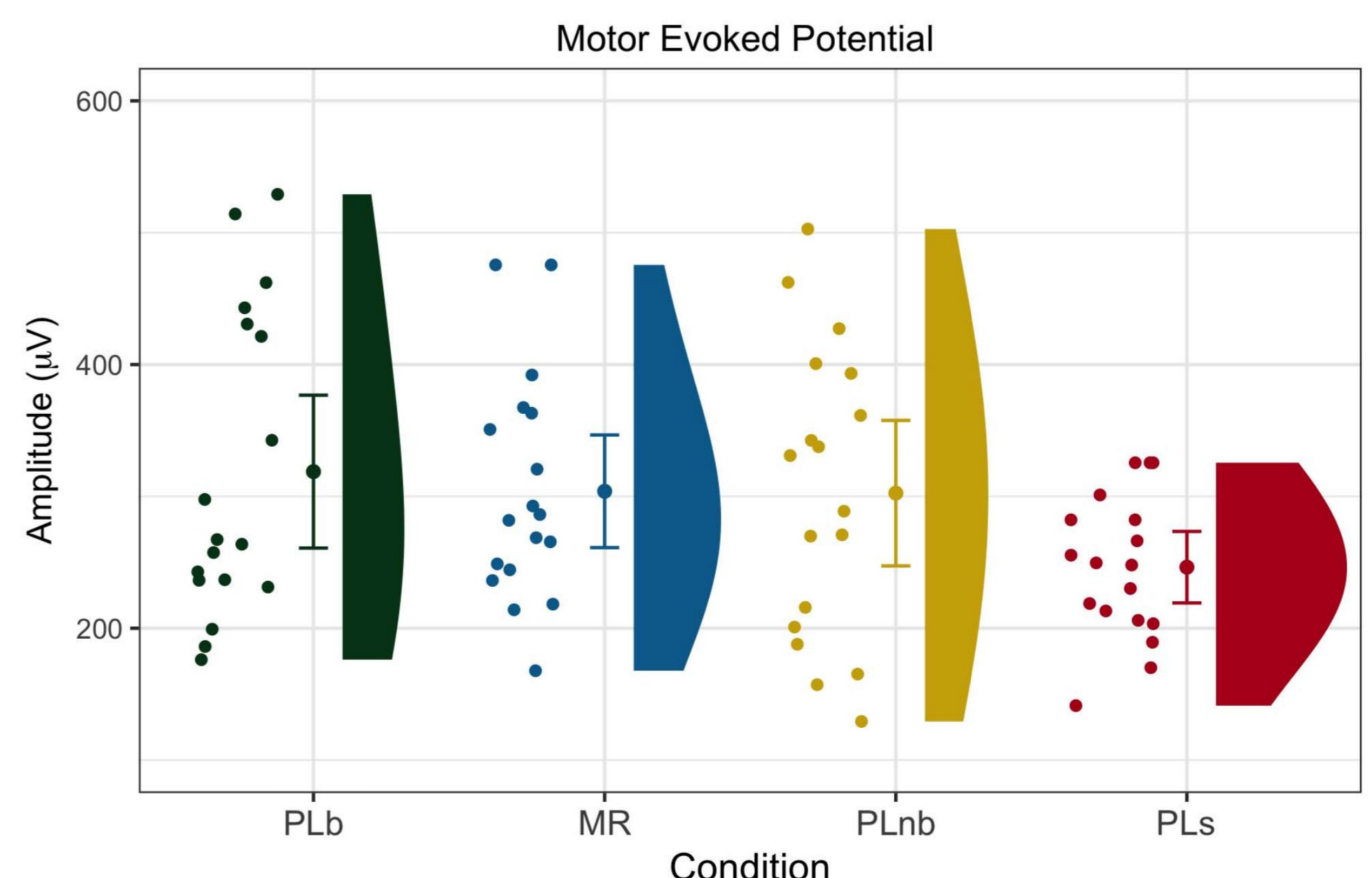
MEPs of M1 recorded during presentation of:

- RM - human actions with pictorial information;
- PLb - human actions without pictorial information
- PLnb - scrambled moving point-lights;
- PLs - static human shaped point-lights.

RESULTS

rmANOVA considering *MEPs* as dependent variable and *Stimuli type* as within-subject factor revealed a significant effect for *Stimuli* ($p=.029$; $\eta^2=.16$).

- such effect was due to inferior MEP amplitude in PLs condition when compared to RM ($p=.016$), PLbio ($p=.006$) and PLscr ($p=.047$).



CONCLUSIONS

The similar CE increase during PLbio and RM observation corroborates the use of human PL in motor resonance/action observation studies. Noteworthy, PLscr also engaged the motor network, which could be due to kinematic aspects of human velocity profile or anthropomorphism of non-biological agents. Observation of PLs resulted in significantly smaller MEPs. Therefore, M1 activation seems restrict to movement perception but not to human form. Thus, planning the control stimuli and task context is crucial when using PL displays in the study of human action perception and the activation of the action observation network.