



# Power Pose Perceptions: Proprioception Mediates Age-Differences in Self-Reported Power

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## INTRODUCTION

- **Embodied cognition** suggests that sensory and bodily experiences influence thoughts and feelings, with the reciprocal also applying: cognitions influence environmental perceptions (Barsalou, 2008; 2010; Rosch et al., 1991).
- The **Maturational Dualism Hypothesis** (Mendes, 2010) posits that with increasing age the connections between mind and body become weaker. Yet, this has never been directly examined.
- Older Adults (OA) typically exhibit worse **proprioception** (i.e., knowing how one's body occupies space) than young adults (YA; Manchester et al., 1989; Whipple et al., 1993).
- **Power-posing** (an embodied intervention) has been demonstrated to positively influence self-reported feelings of power and increase positive self-perceptions in YA (Cuddy et al., 2015; Cuddy et al., 2018; for an alternative perspective, see Ranehill et al., 2015). These effects have yet to be examined in older adulthood.

## Hypotheses

**Hypothesis 1:** YA's subjective feelings of power will be greatest in the "power pose" condition and lowest in the submissive pose condition following the embodied intervention.

**Hypothesis 2:** Relative to YA, OA's subjective feelings of power will be influenced less by the intervention because of maturational dualism.

**Hypothesis 3:** YA will exhibit better proprioceptive awareness than OA.

**Hypothesis 4:** Proprioceptive ability will mediate the relationship between age and subjective feelings of power.

## METHOD

- 54 YA males ( $M_{age} = 21.04$  years;  $SD = 4.64$ )
- 39 OA males ( $M_{age} = 69.26$  years;  $SD = 3.09$ )
- Participants randomly assigned to pose condition prior to presenting speech: power, submissive, or control.
- Following a modified Trier Social Stress Test (TSST; Kirschbaum et al., 1993), participants answered 5 items assessing their subjective feelings of power (i.e., "How dominant do you feel?") using a 5-point Likert-type scale.
- Participants then completed a newly created proprioceptive clock test to assess bodily awareness (see Figure 1).

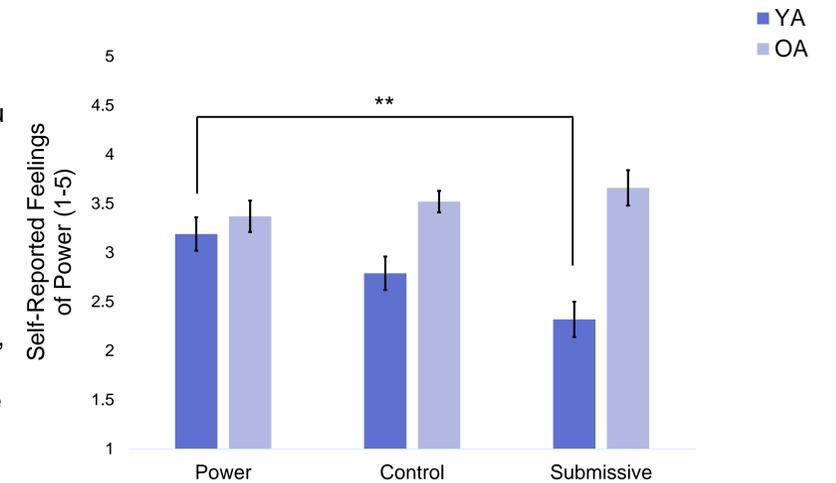


Figure 1. Example of the "clock test". Model showing the time of 10:20.

## RESULTS

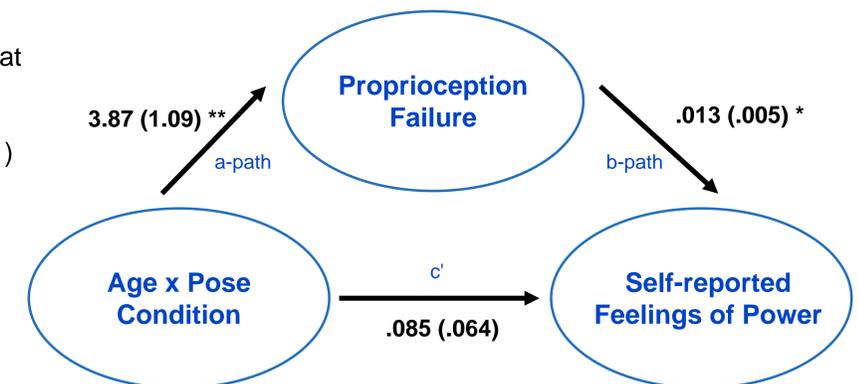
### Self-Reported Feelings of Power: H<sub>1</sub> & H<sub>2</sub>

- YA in the power pose condition reported significantly greater feelings of power than YA in the submissive pose condition following the performance of the impromptu speech ( $t(34) = 2.92, p = .006, d = .97$ ; the control condition was not significantly different from either).
- OA reported feeling significantly more powerful ( $M = 3.52, SD = .84$ ) following the speech task in comparison to YA ( $M = 2.77, SD = .91; t(91) = 4.04, p < .001, d = .85$ ). However, none of the pose conditions were significantly different from each other for OA ( $ps > .40$ ).



### Indirect Effect of Proprioception: H<sub>3</sub> & H<sub>4</sub>

- As hypothesized, OA were less accurate at the clock task (i.e., more degrees away from the target position;  $M = 35.07, SD = 5.31$ ) than YA ( $M = 23.48, SD = 8.09; t(91) = 7.80, p < .001, d = 1.69$ ).
- Evidence for a full mediation model with proprioception as the mediator between age and self-reported feelings of power was obtained ( $ab = .049, 95\% CIs [.012, .105]$ ).



## DISCUSSION

- Replicating previous findings, YA's feelings of power were increased by adopting a power pose compared to the submissive pose.
- Surprisingly, OA did not exhibit statistical differences between the pose conditions in feelings of power. Poor proprioceptive performance accounted for this relationship. Together this pattern suggests that there may be evidence for differentiated bodily awareness with age, in accordance with the maturational dualism hypothesis (Mendes, 2010).
- The OA in our study felt significantly more powerful than YA following the speech manipulation. This main effect of age may be due to OA greater life experience, familiarity with public speaking, and/or greater confidence in their speech abilities, relative to YA.
- These results suggest that with age there are reductions in bodily awareness. One possible implication is that embodied interventions may not be as effective in later life, or may require higher intensity to achieve the same effects present in YA.