

Are there different representations in different phases of an action?

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BACKGROUND

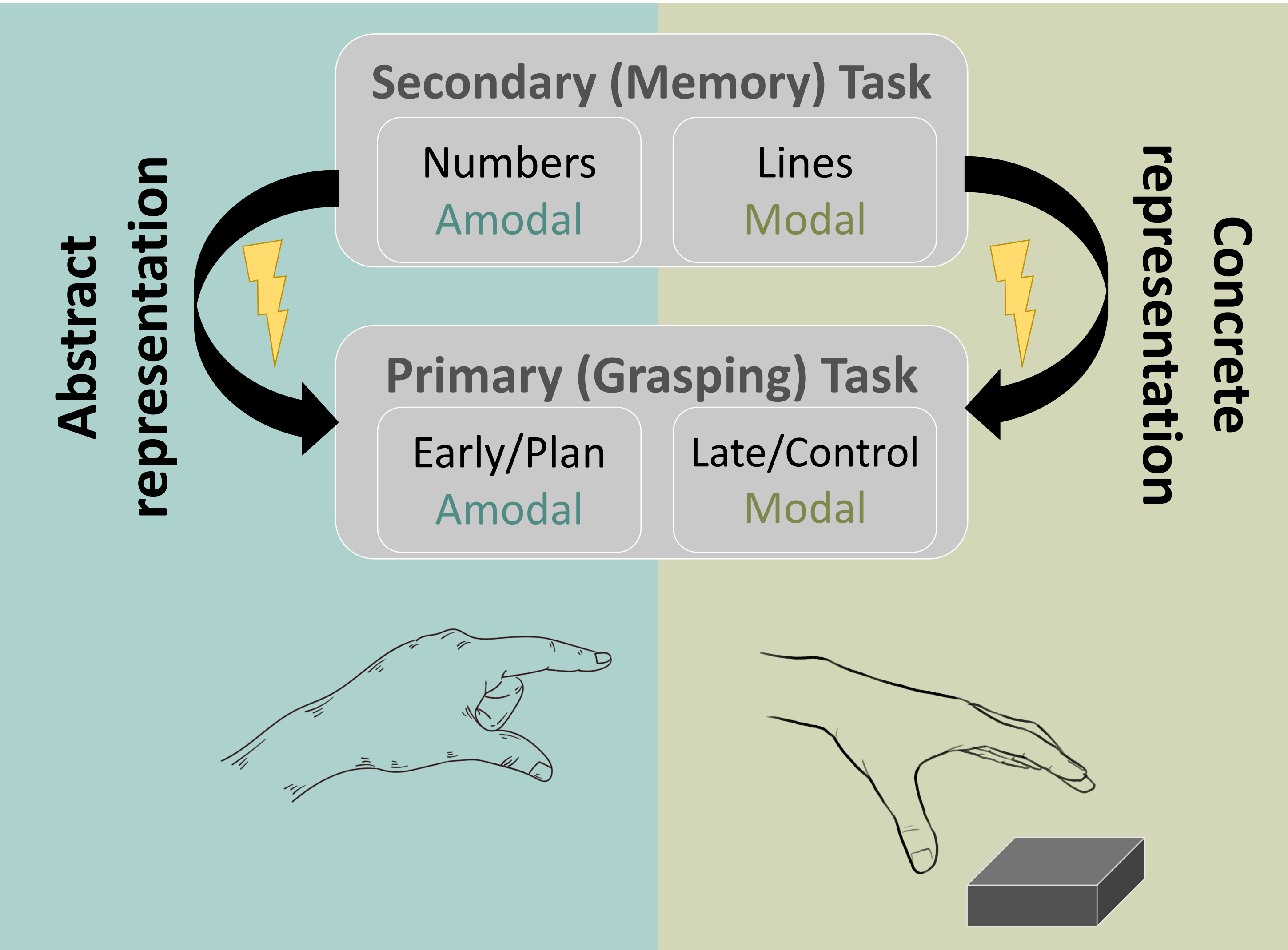
Current theories [1,2,3] on visually-guided actions assume **abstract** or **amodal** [4] representations for the **initial planning** phase of actions and **concrete** or **modal** [4] representations for the **late control** phase. We plan to directly test these assumptions in a dual-task interference experiment.

Action Planning

- Abstract motor plans based on rough estimate

Amodal Stimuli

- We use **numbers**
- Might favour a more **symbolic** representation of magnitude



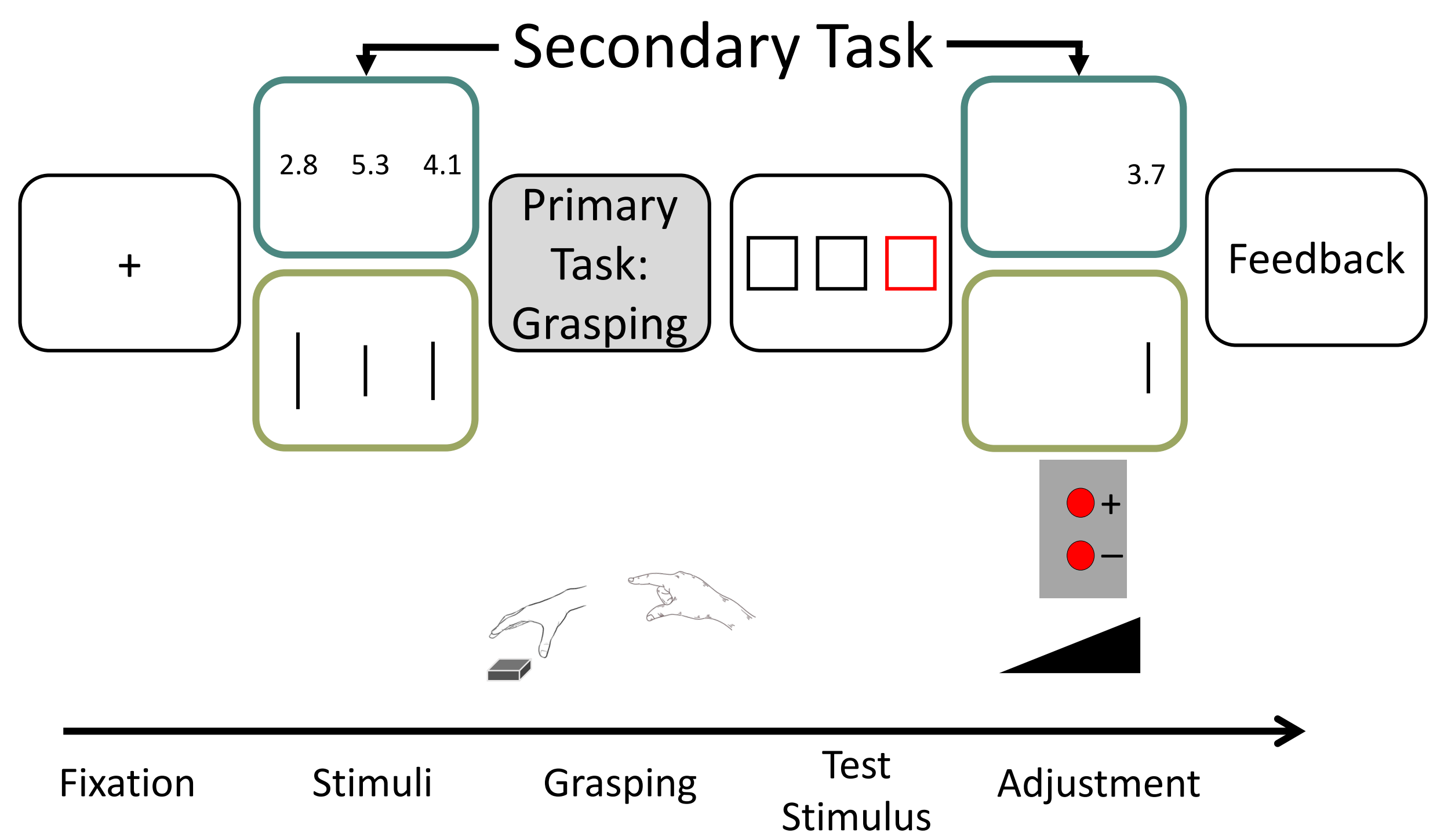
Action Control

- Fine-tuned control based on absolute metrics

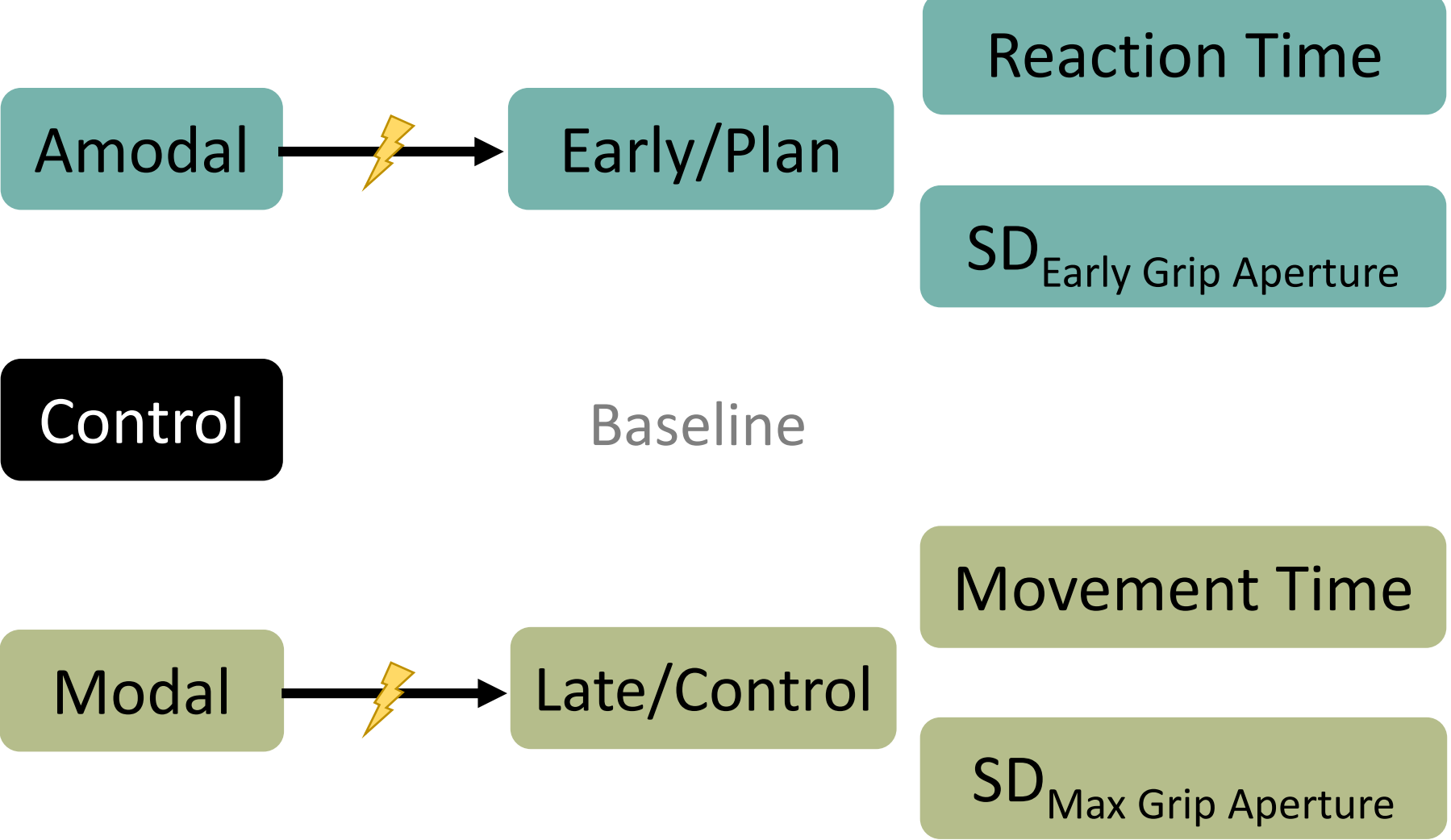
Modal stimuli

- We use **lines** of varying lengths
- Might favour a more **veridical** representation of magnitude

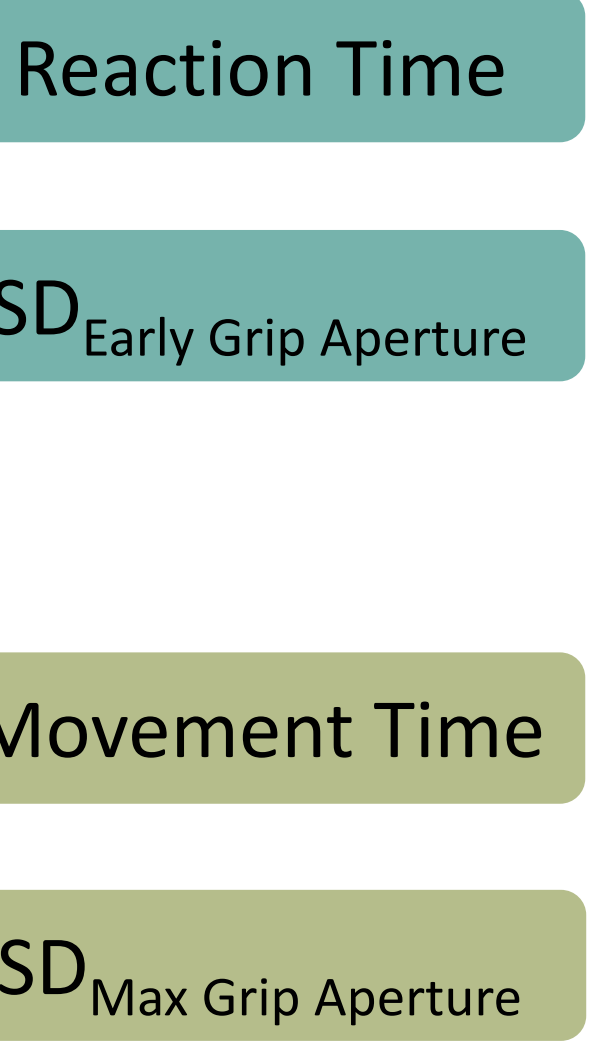
SET-UP & DESIGN



Condition



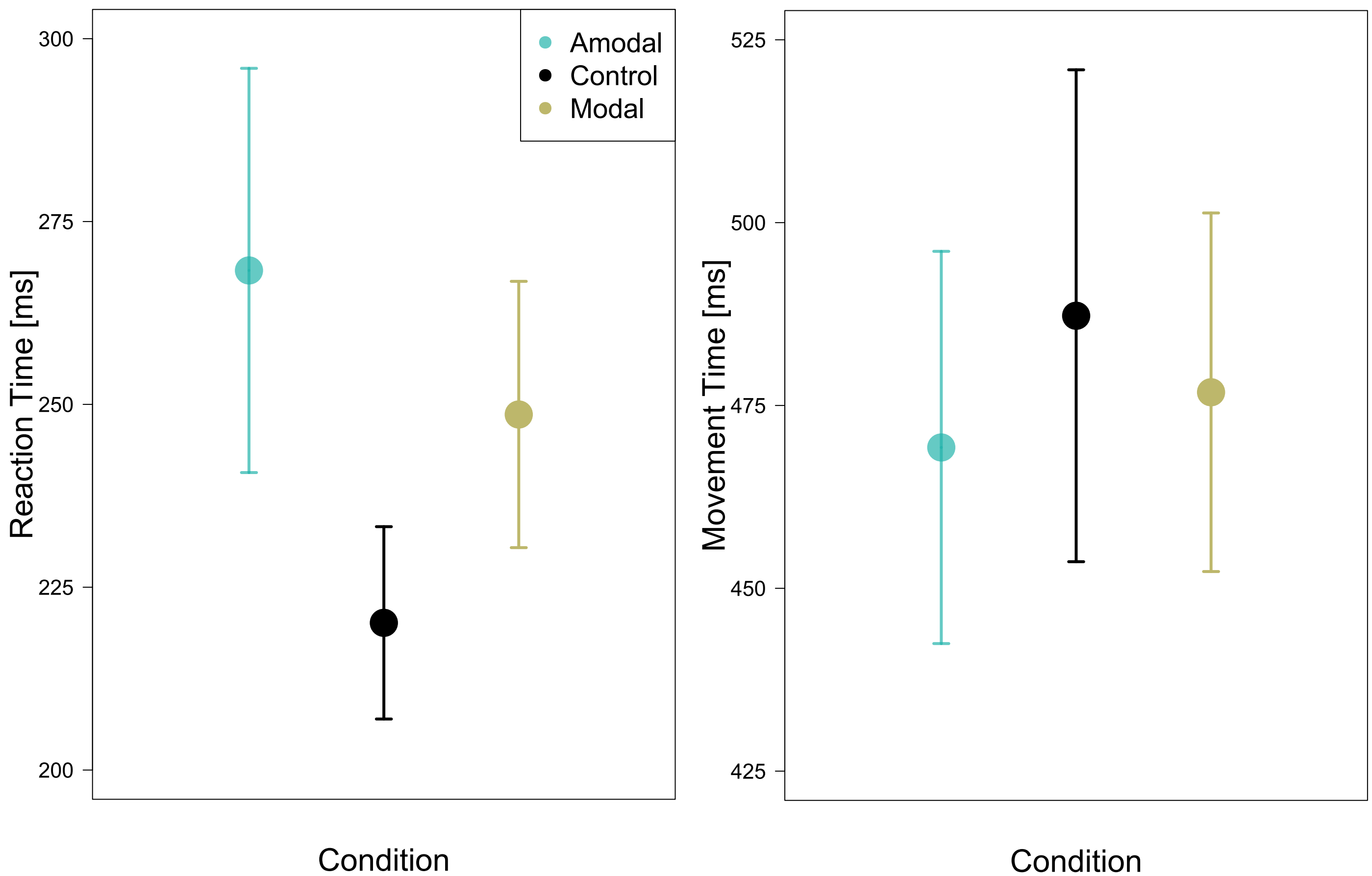
Affected Variable



Measure	Expectation
Reaction Time	Amodal > Modal
SD _{Early Grip Aperture}	Amodal > Modal
Movement Time	Modal > Amodal
SD _{Max Grip Aperture}	Modal > Amodal

- No standardised method for Early Grip Aperture
- We check aperture at 25%, 50%, 75% of movement distance (MD)

PRELIMINARY RESULTS & OUTLOOK

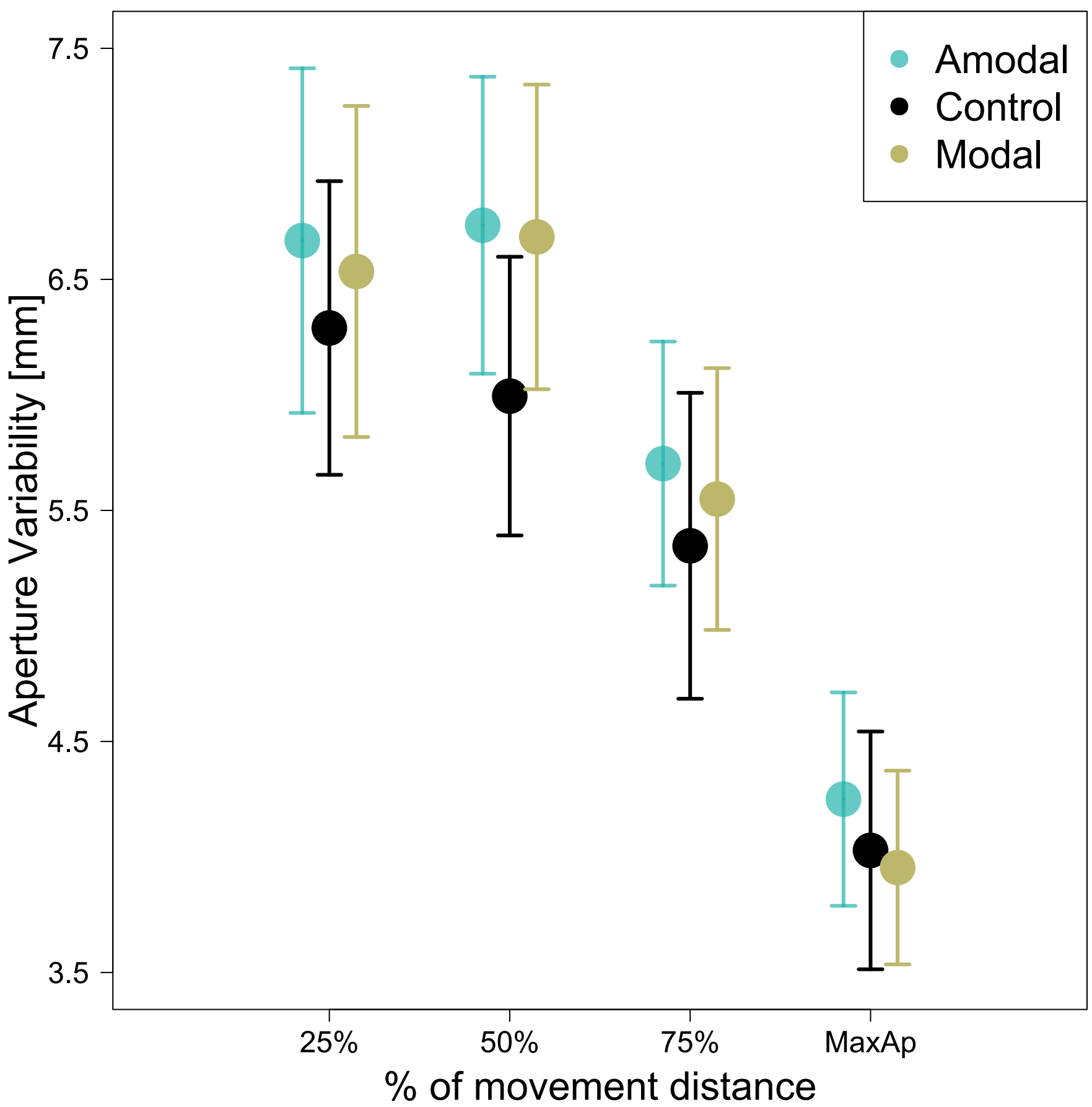


CURRENT STATUS

- Mean $\pm$ SEM from $n = 9$
- Dual-tasking costs present in RT (Control < Modal/Amodal)
- RT, MT suggest expected interference pattern
- Promising: aperture at 25% and 50% MD

OUTLOOK & NEXT STEPS

- Find effect size in most promising variables
- Use estimated effect size for pre-registration of main experiment



REFERENCES

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