

Motor Biases are Persistent and Consistent

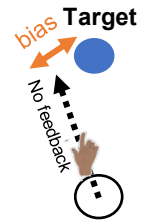
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Introduction

- When people reach to a target without visual feedback, they exhibit angular biases in their direction of reach
- Motor biases vary in direction and magnitude depending on the location of the target
- They appear to be quite consistent across individuals



PROBLEM: Previous studies exploring motor biases were limited to a controlled lab environment and right-handed participants

QUESTION: Do motor biases persist...

- across settings (lab vs online)?
- across hand used (left vs right)?
- after motor adaptation?

Methods

In-lab task



Participants made center-out reaches on a digitizing tablet

Full arm movement towards target

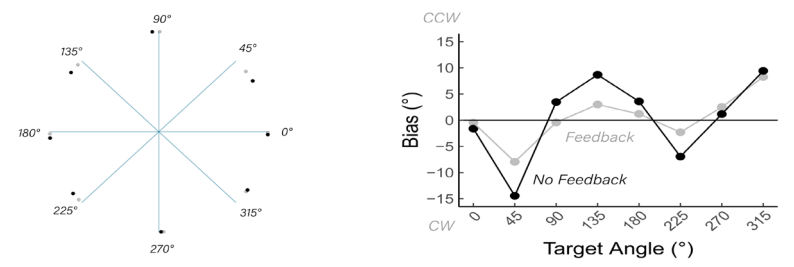
Online task



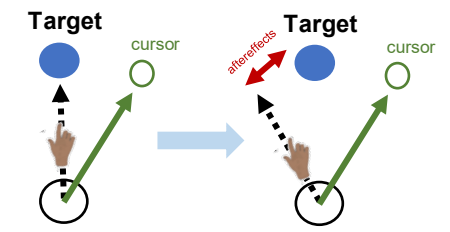
Participants used their own computer to access the online experiment using an html link

Finger movement towards target

Individual representative data

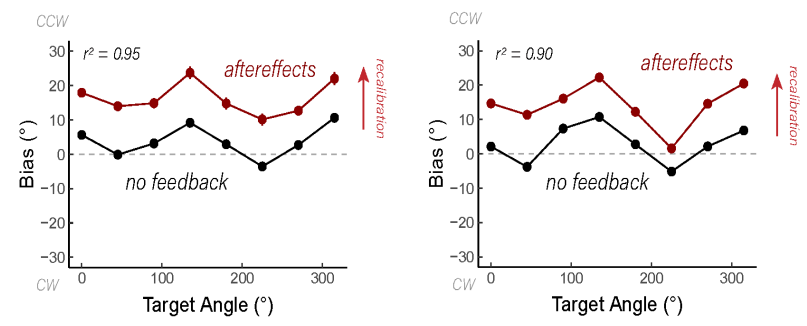
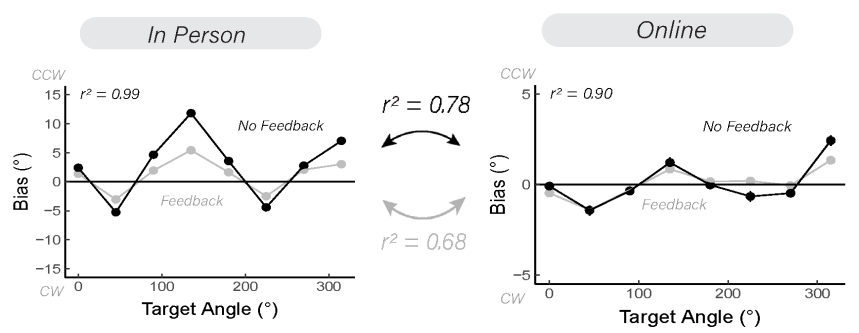


Biases persist after motor adaptation

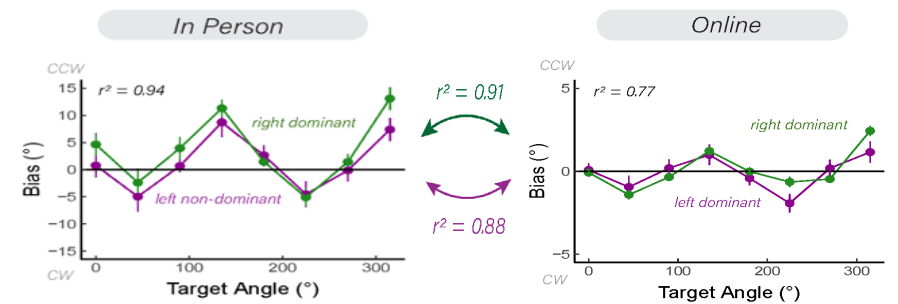


30° clamp induces implicit adaptation

Biases persist across settings



Biases persist across hand used



Bias data is equalized to account for different movements to targets between right and left handers

Discussion

Motor biases generalize across settings, hand used and adaptive states

Motor biases may arise from participant...

- mis-localization of limb
- mis-localization of visual target
- movement in the path of least resistance