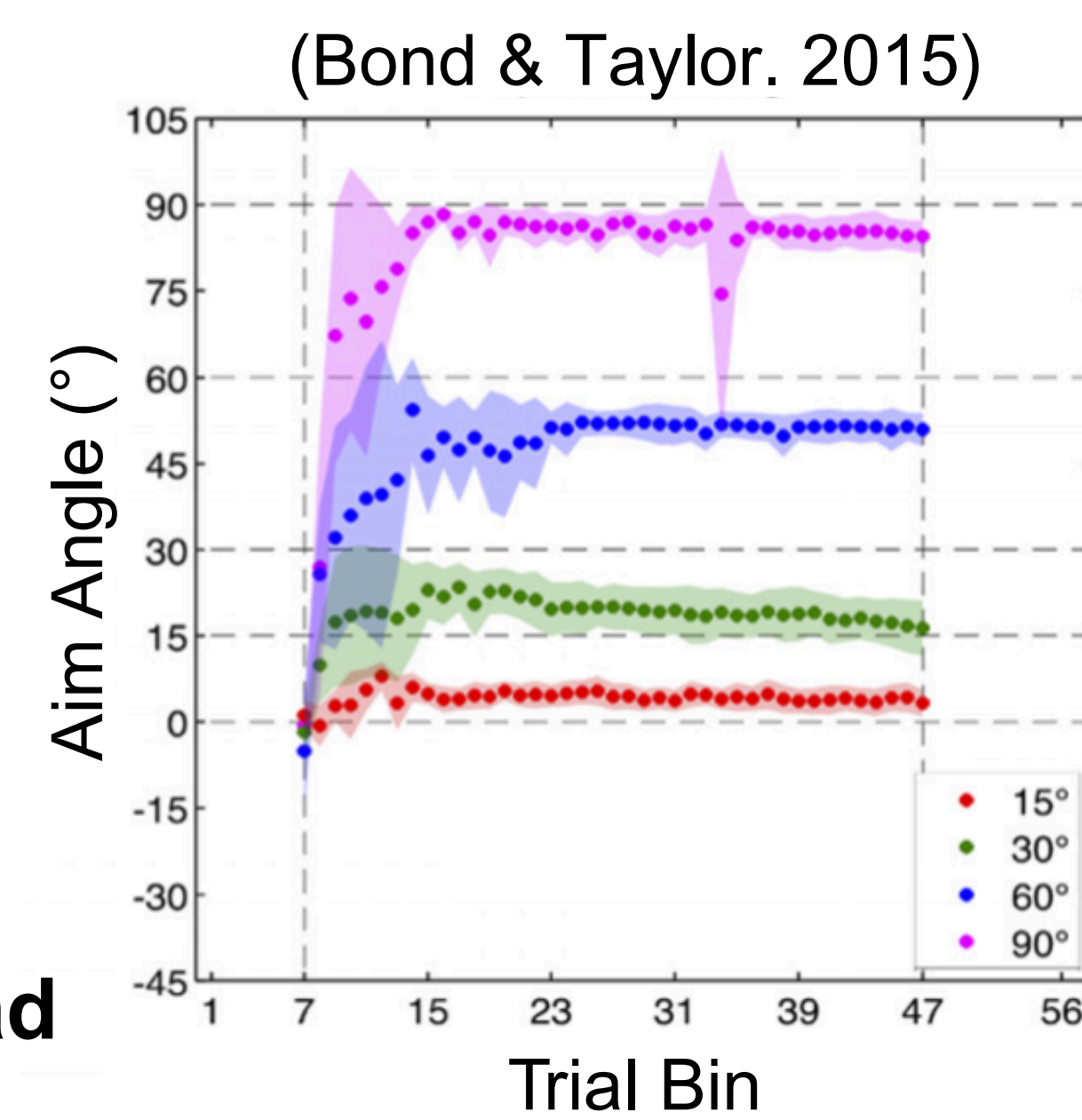


Reevaluating Strategy Development as a Single-Step Process in Visuomotor Adaptation

Elysa Eliopulos, Bernard Marius 't Hart, Denise Y. P Henriques

Strategic behaviours in motor adaptation are known to develop as a learning curve

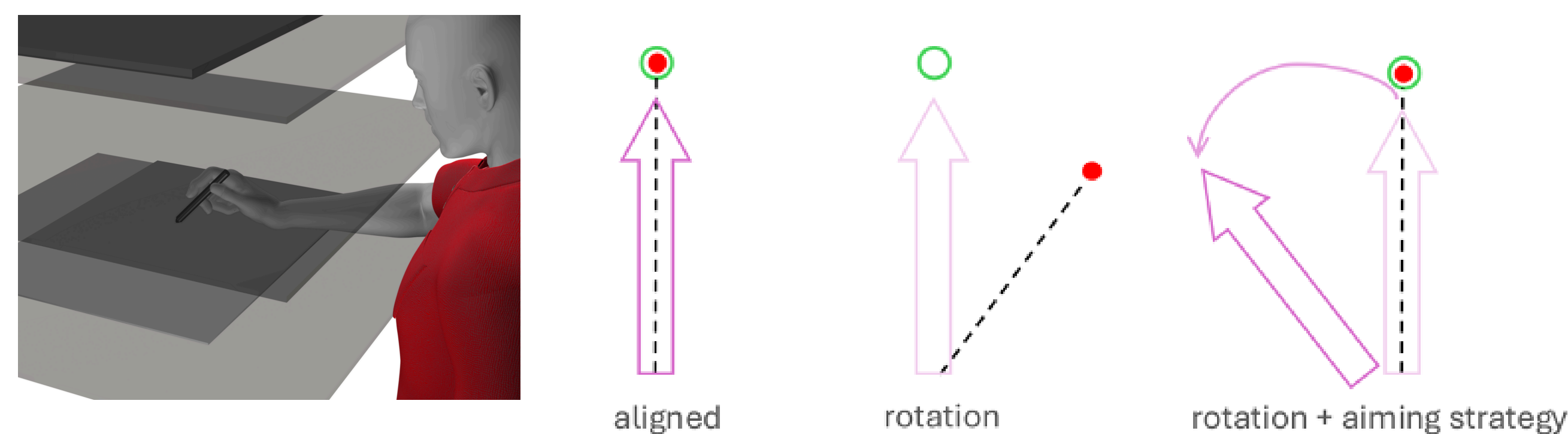
Explicit visuomotor adaptation is thought to increase **gradually** and **monotonically** until it reaches an asymptote (McDougale et al. 2015). It is believed that these patterns emerge from *averaging all participant data*.



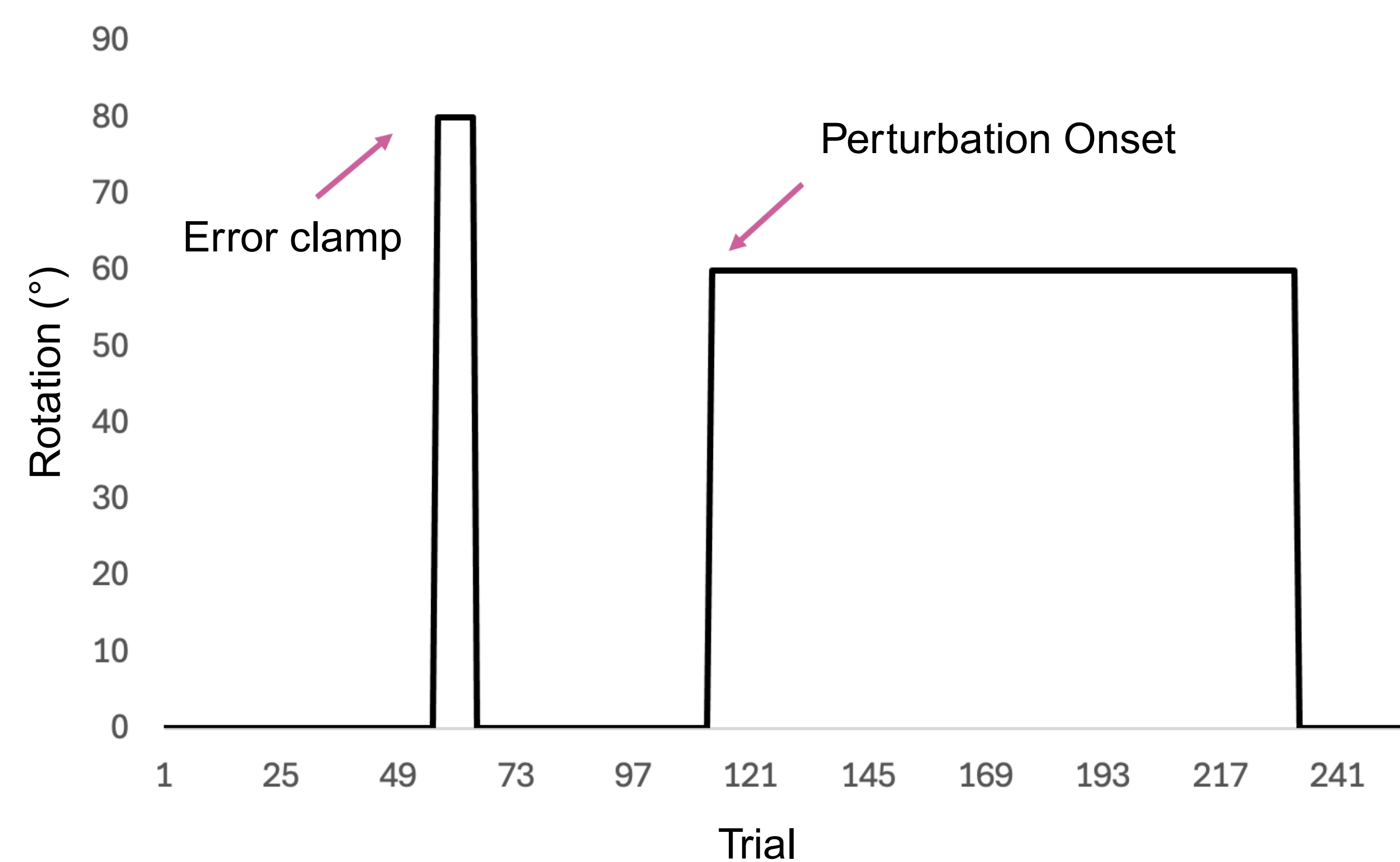
Explicit learning may instead develop as a 'step'

We aim to investigate the influence of rotation size on individual strategy development and to deepen the understanding of explicit adaptation processes in a visuomotor rotation task.

Explicit learning is measured via 'aiming'

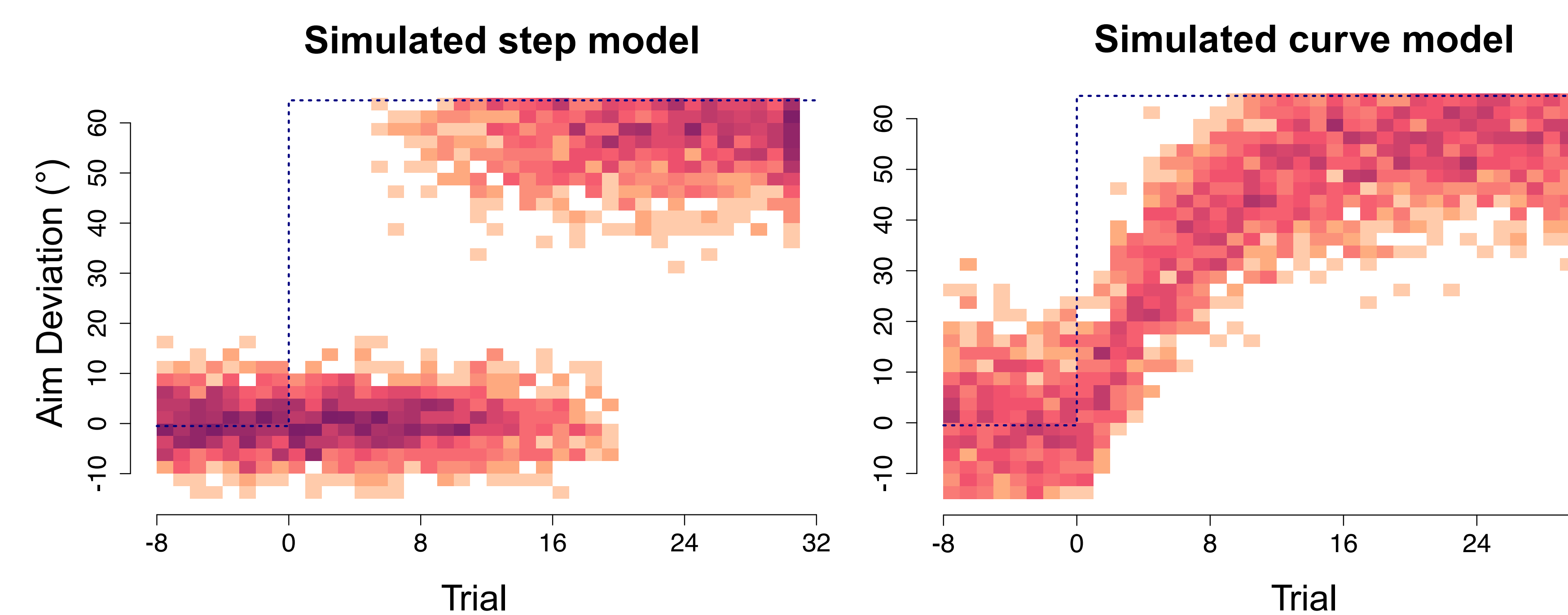
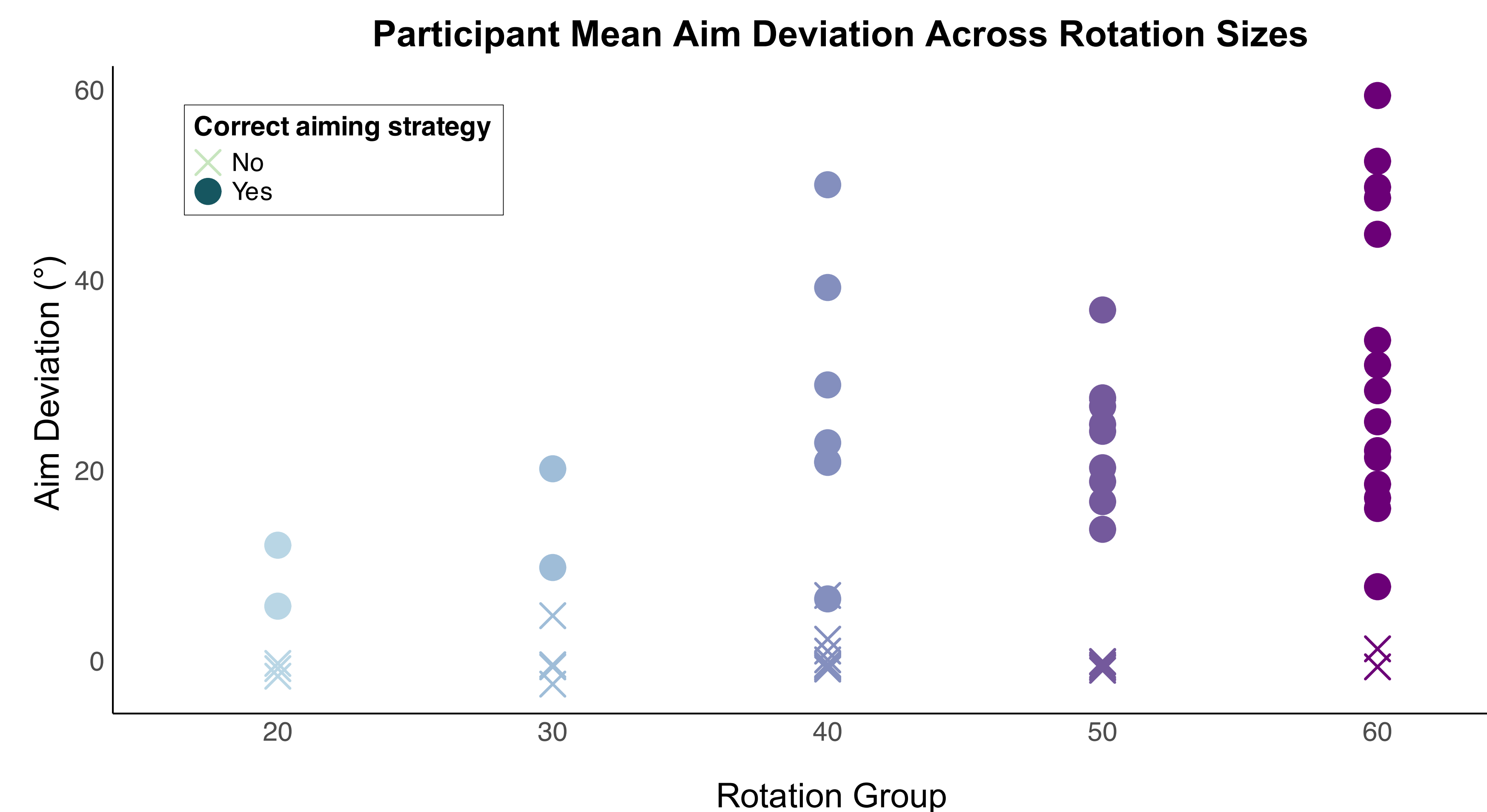
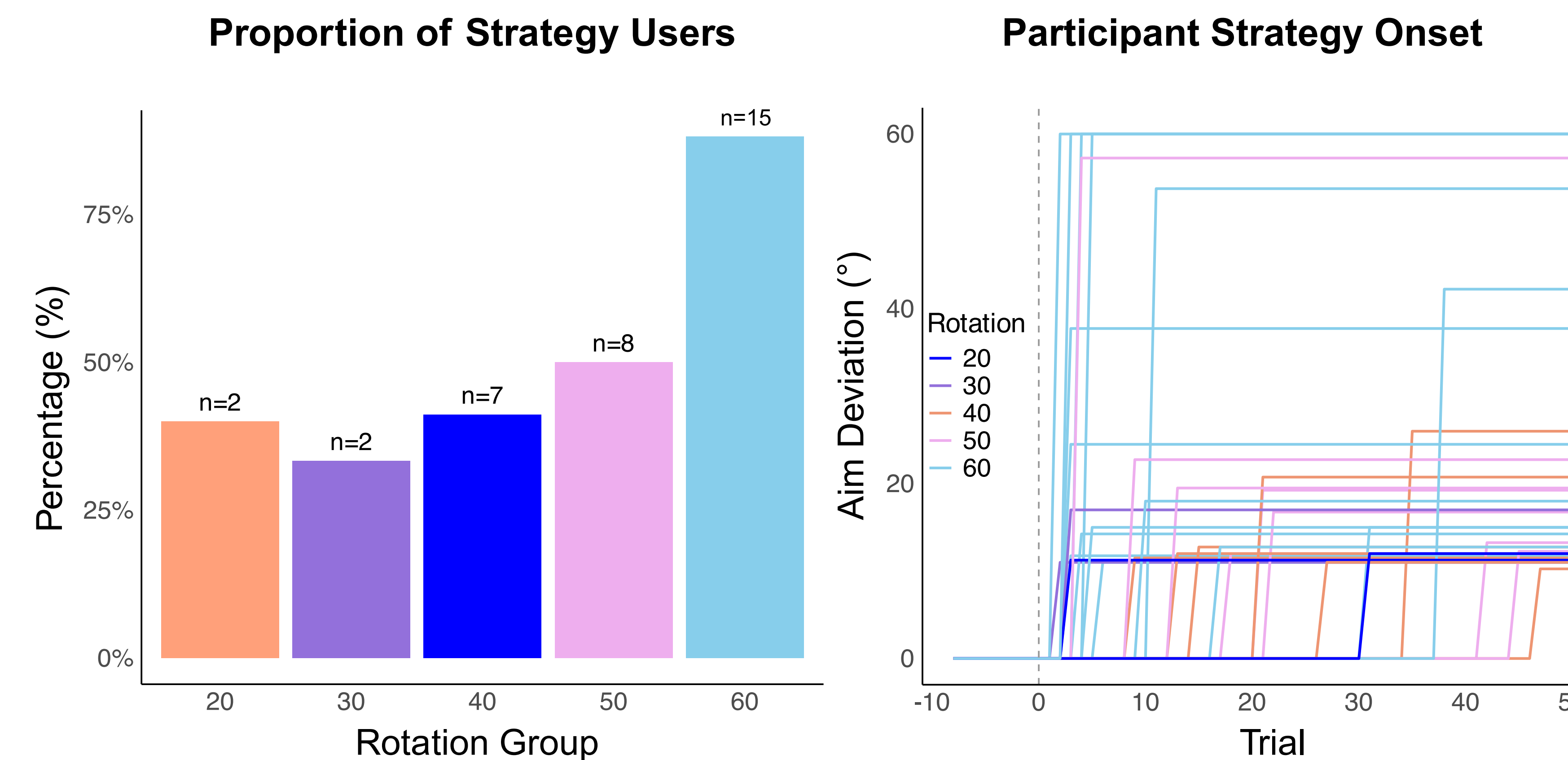


"Your goal is to move a cursor straight to a target. At some point, the cursor may move differently"

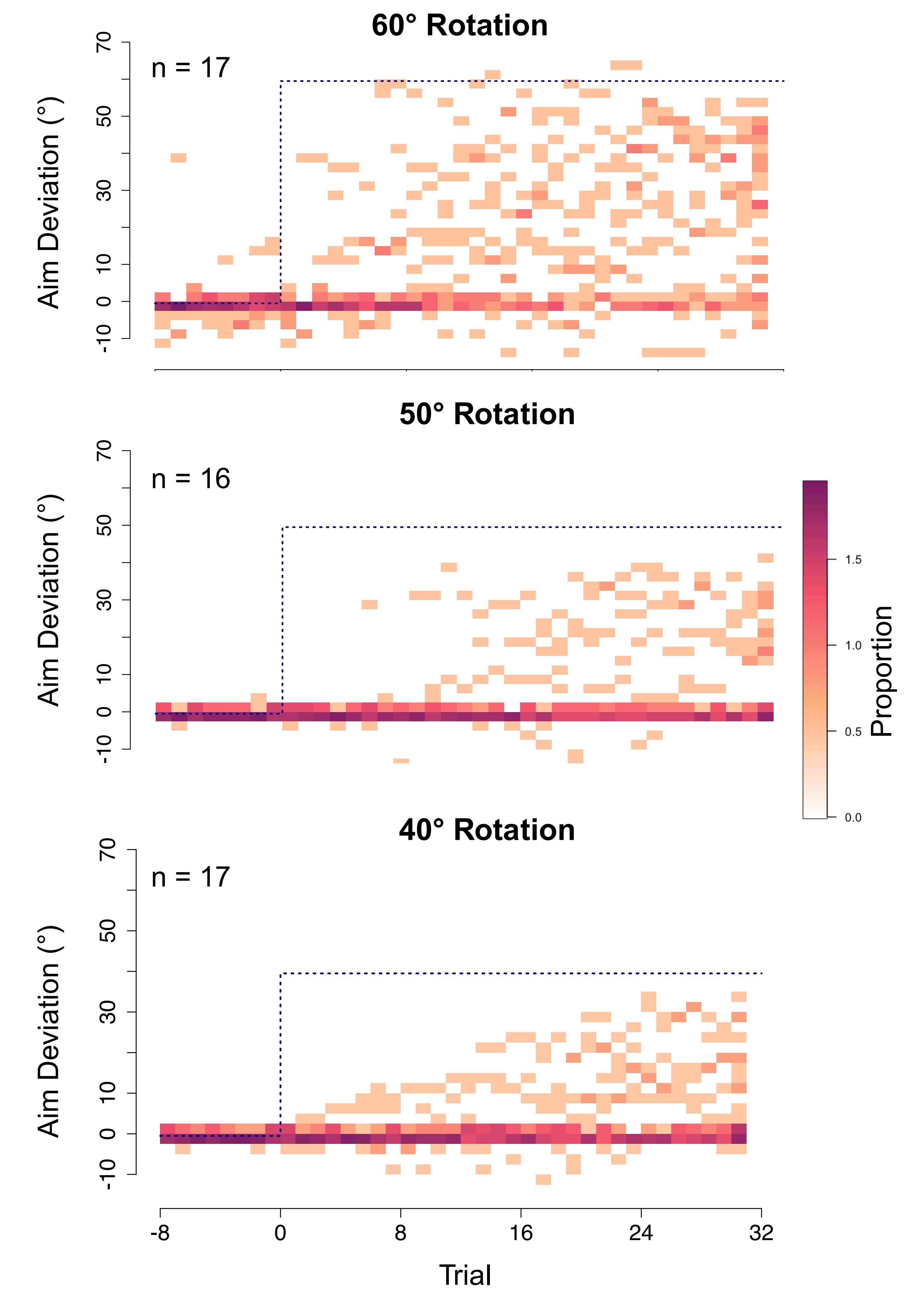


Participants experience one of 20° (n=5), 30° (n=6), 40° (n=17), 50° (n=16), or 60° (n=17) perturbations over 120 trials.

Participant Aiming Behaviour



Empirical Distribution of Aiming Responses



Main Takeaways

- Individual participant data suggests that aiming strategies may develop in one or two discrete steps.
- Rotation size may influence the development of aiming behaviour in a VMR task.
- Understanding how task features drive explicit adaptation may reveal the nature of cognition in motor learning.

Next Steps

- Empirically estimate parameters for each rotation size.
- Test and compare functions (e.g., gamma, Poisson, logarithmic, etc.) to identify which best captures the likelihood of making a step.