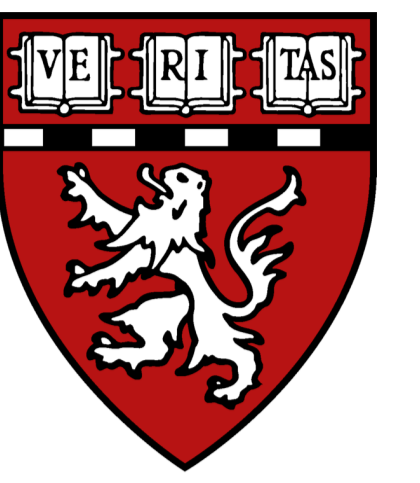




Research on re-research: Foraging in the same patch twice



Injae Hong¹, Jeremy M. Wolfe^{1,2}
Brigham and Women's Hospital¹, Harvard Medical School²

Background

Visual Foraging

- Collecting multiple targets from a series of visual patches
- What is optimal quitting rule?

Marginal Value Theorem [Charnov, 1976]

- **Instantaneous Rate (IR)** How many targets did you collect *right now*?
- **Overall Rate (OR)** How many targets did you collect *in total*?

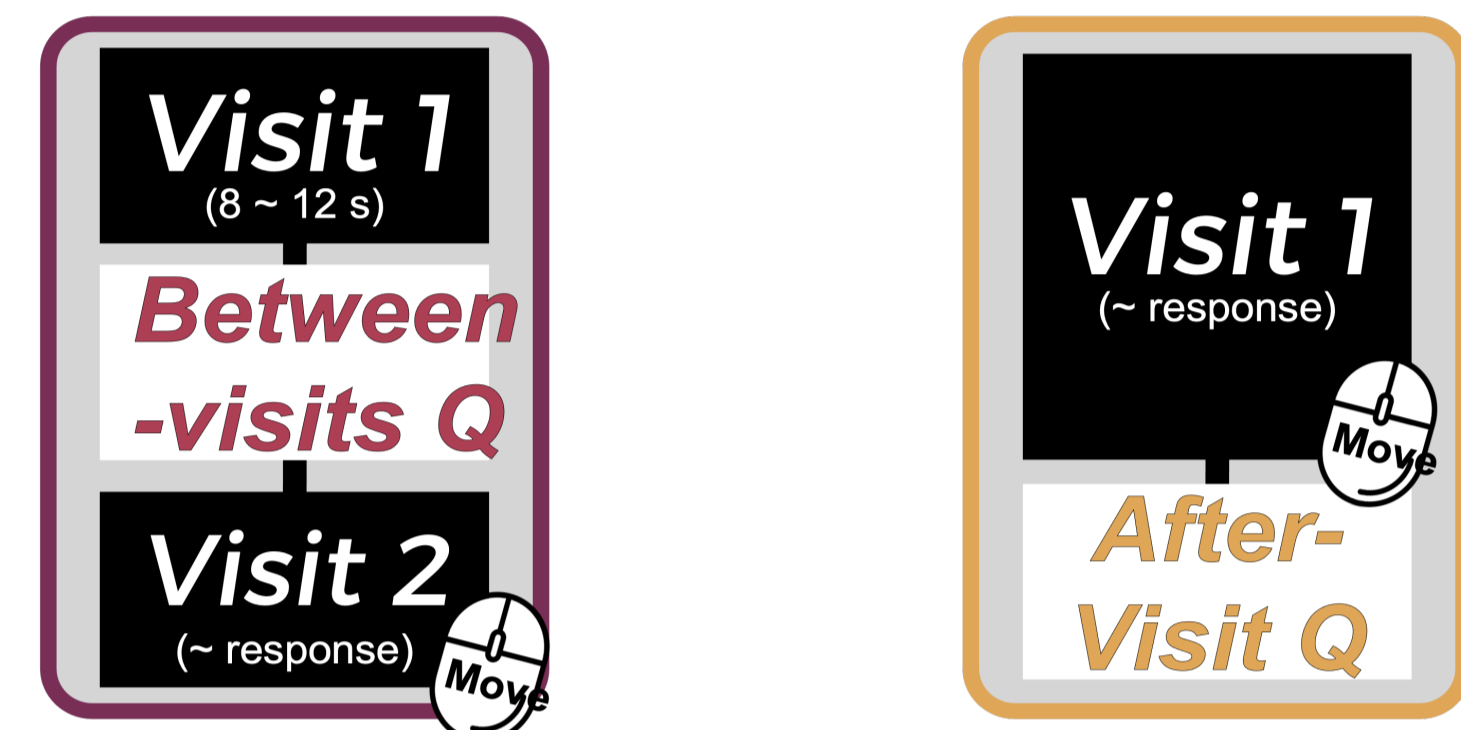
IR > OR: Stay IR < OR: Leave



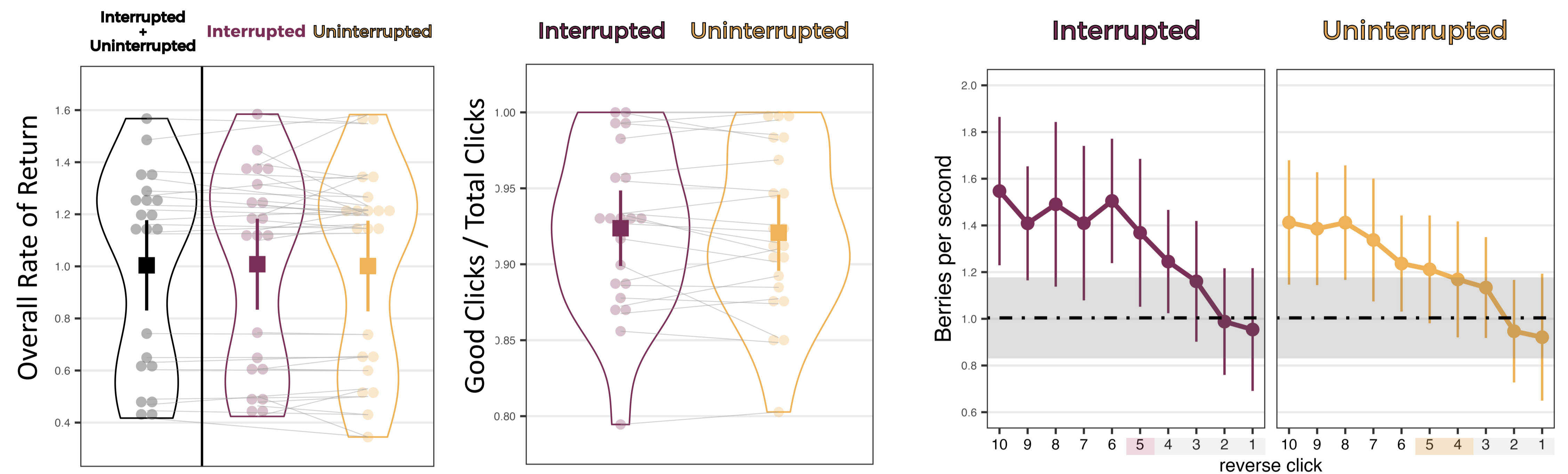
Experiment 1: Re-research after Brief Interruption

N = 21

Interrupted Uninterrupted

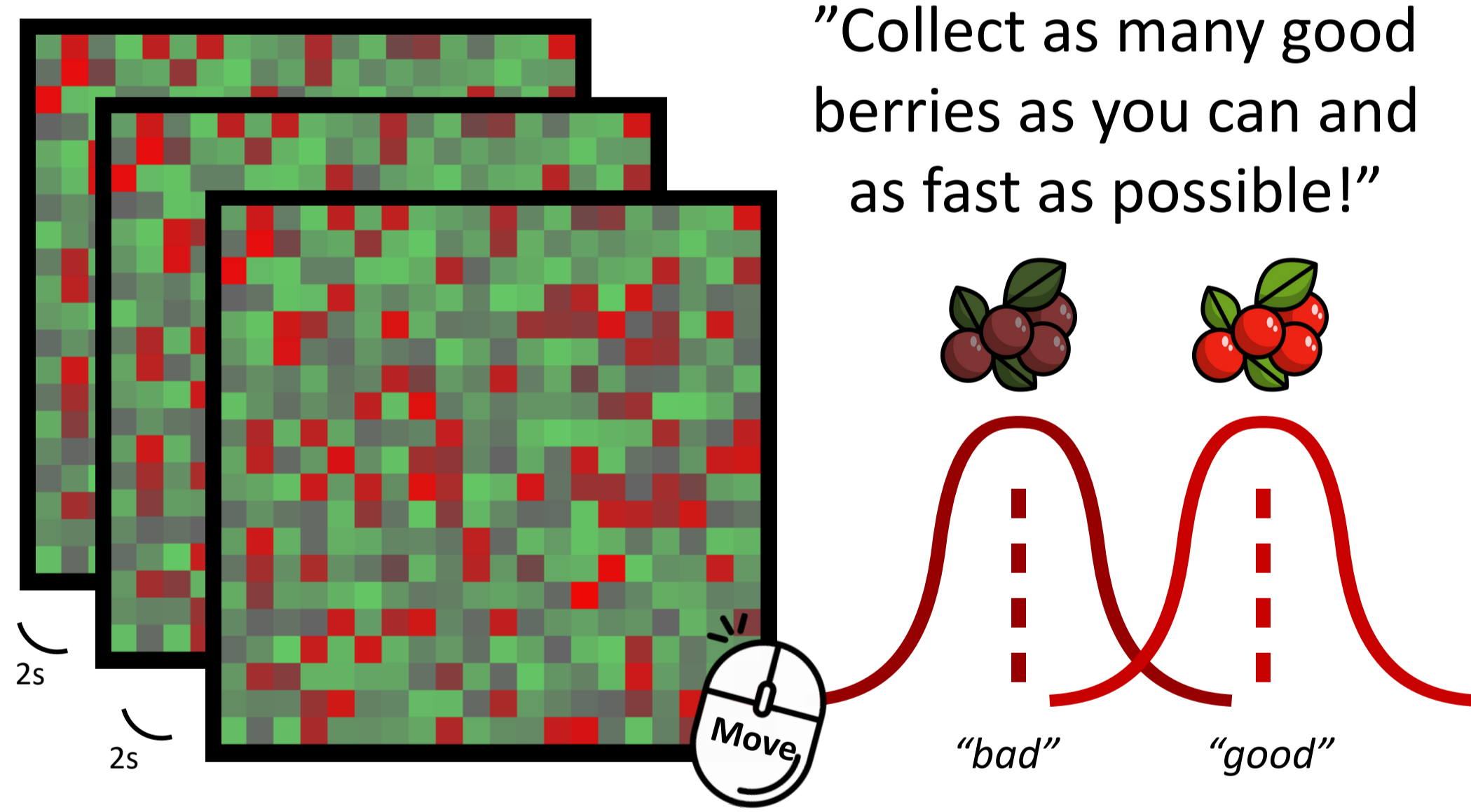


Q) How is/was your picking in this patch? 1-5



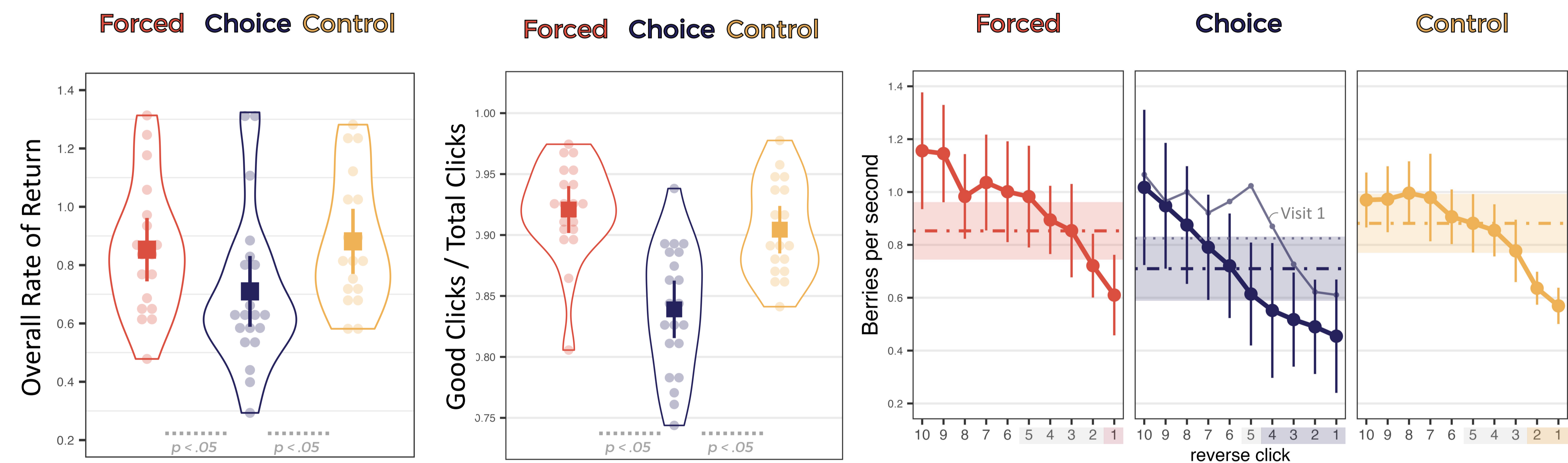
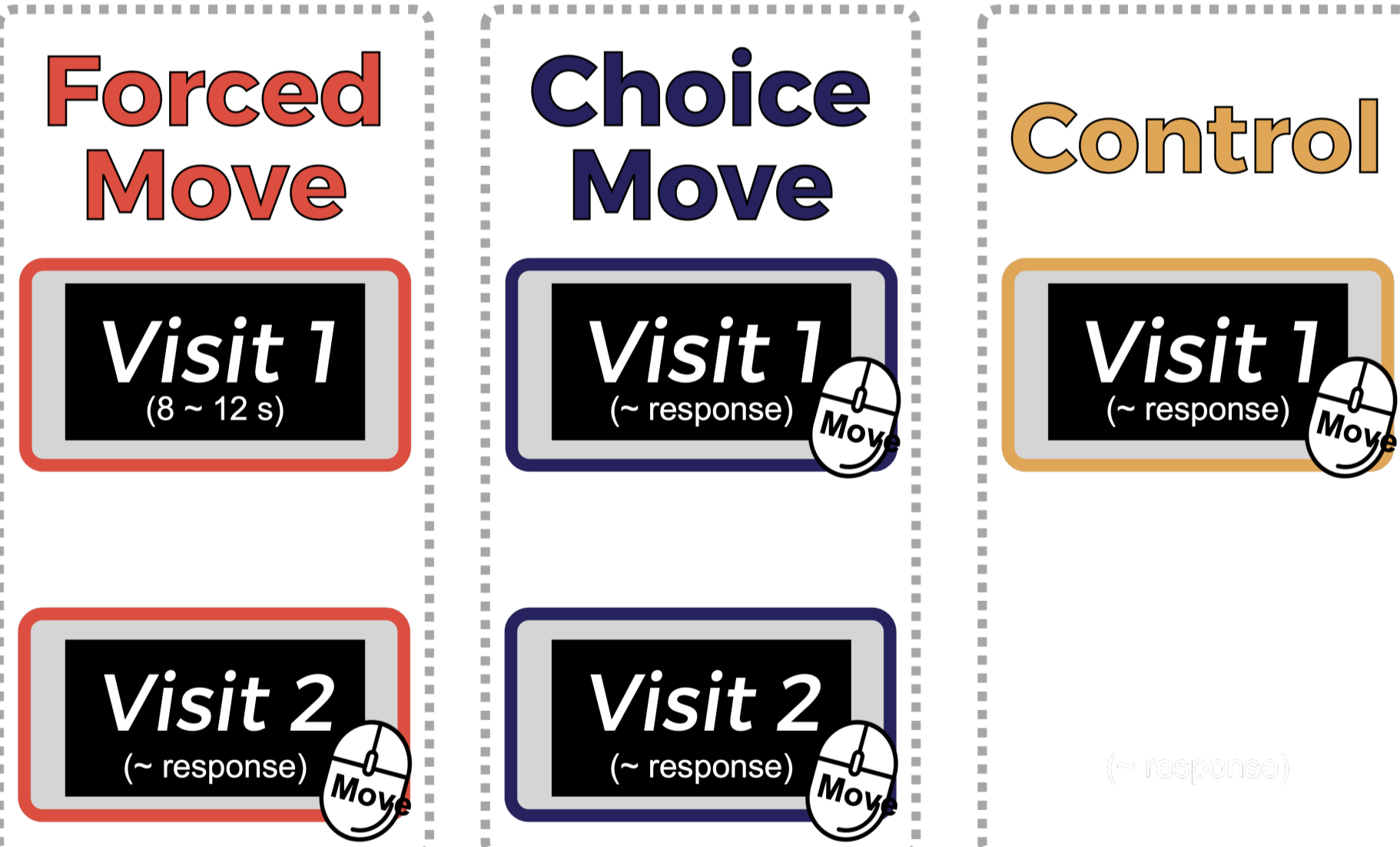
Foragers leave interrupted patches with the same strategy as in the uninterrupted patches.

Task



Experiment 2: Re-research after Forced/Voluntary Abandonment

N = 58 (19, 21, 18 per each group)



Foragers leave revisited patches with the same strategy as in the single-visited patches.

Research Question

Is patch-leaving optimal when the foraging is divided?

CONCLUSIONS

- Foragers leave patches using similar patch-leaving strategy even when foraging is divided.
- Foraging behavior is resistant and/or adaptive to the complexity of the world.
- Further Question: What caused overharvesting in Experiment 2?

Reference Charnov (1976). Optimal foraging, the marginal value theorem. *Theor. Popul. Biol.*

Acknowledgement NSF-2146617, NRF-2022R1A6A3A0363539

Contact ihong1@bwh.harvard.edu