

Who's in control?

Time to Compile: A **performance installation** as **human-robot interaction** study examining **self-evaluation** and **perceived control***

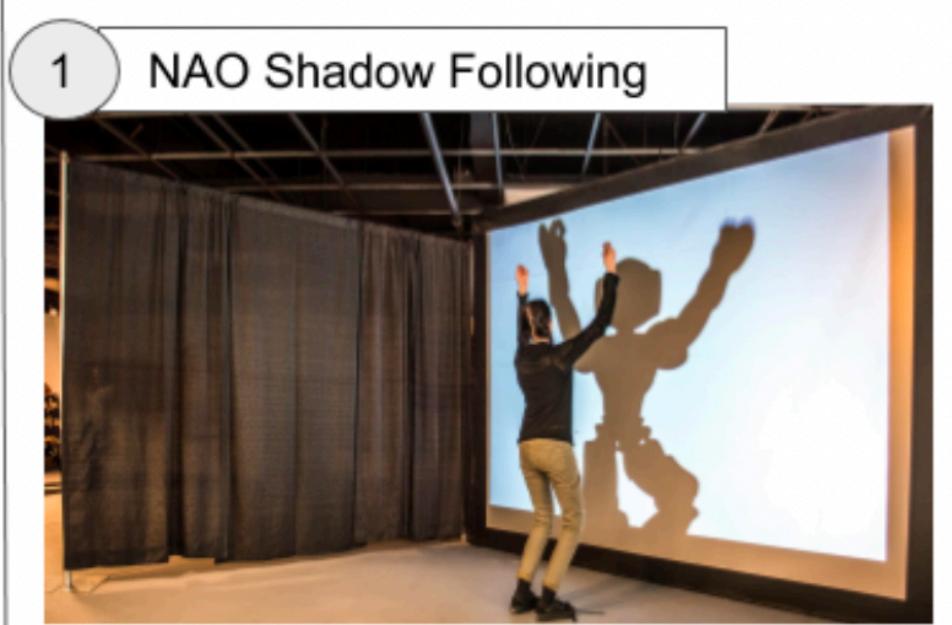
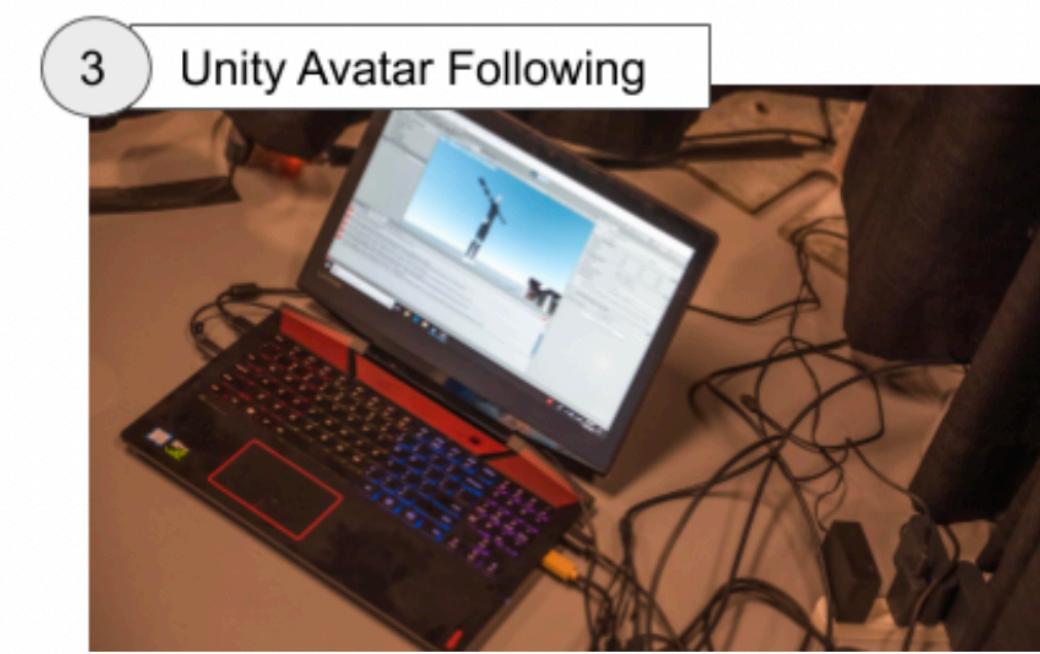
Oct 2022 Eadin Wang

*Cuan, Catie, Berl, Erin and LaViers, Amy. "Time to compile: A performance installation as human-robot interaction study examining self-evaluation and perceived control" *Paladyn, Journal of Behavioral Robotics*, vol. 10, no. 1, 2019, pp. 267-285. <https://doi.org/10.1515/pjbr-2019-0024>

Overview

The Performance Installation

- Time to Compile
- Collaboration between an artist-in-residence and the research group, “Catie Cuan x RAD Lab”
- 2017-2018
- Explores human perceptions of robot and human capabilities



The Mirror Game

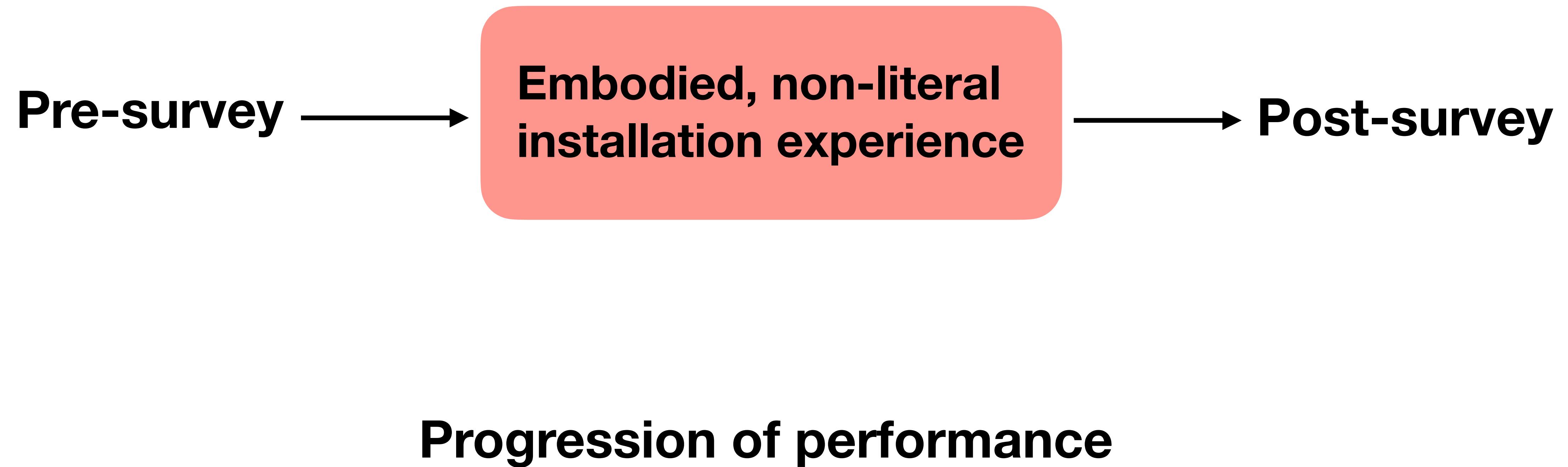
The Mirror Game

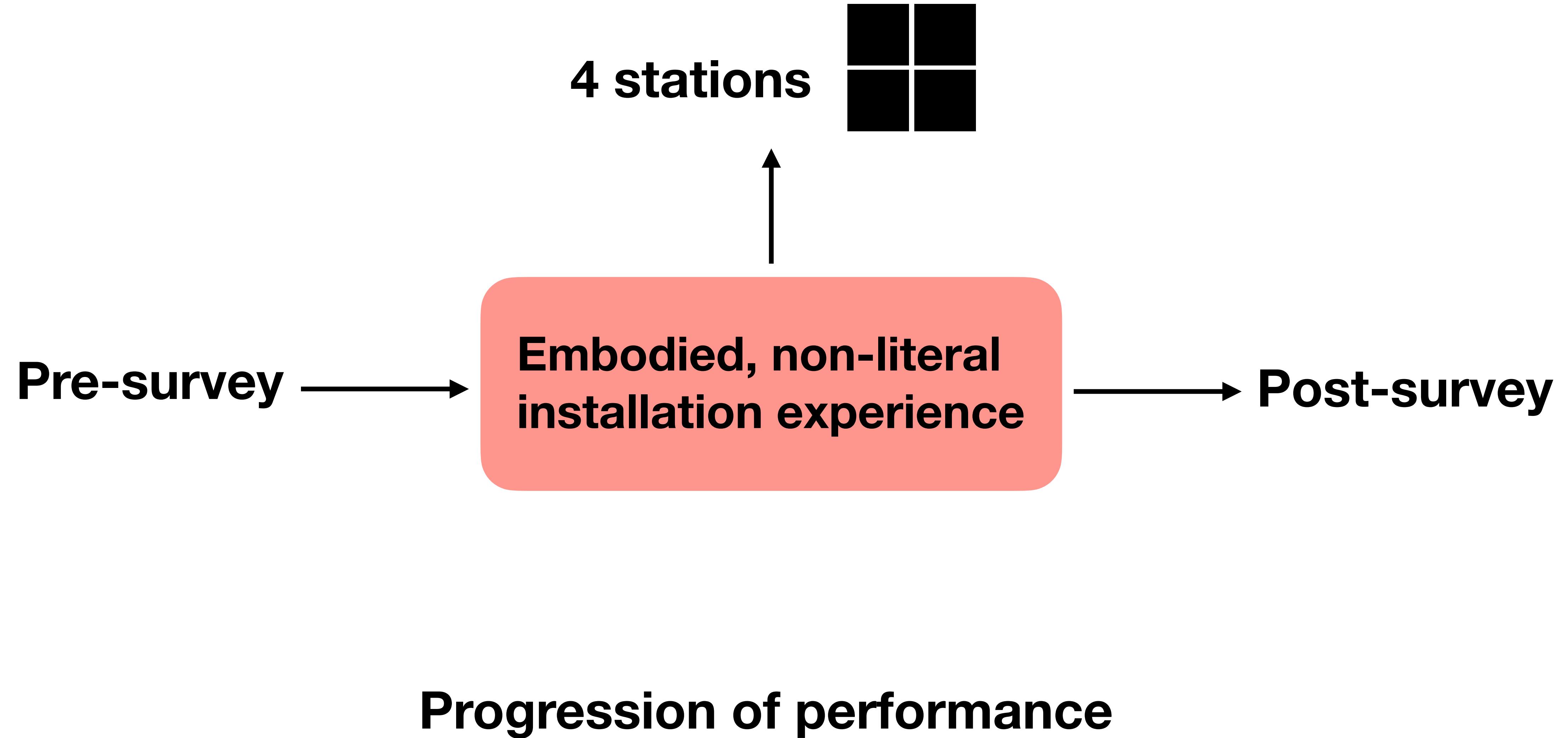
- 2 individuals begin moving together and attempt to replicate the other person's movement
- With/Without a clear leader
- dance, movement therapy, and improvisational theater
- kinematics -> VR characters
- Frame to drive the action

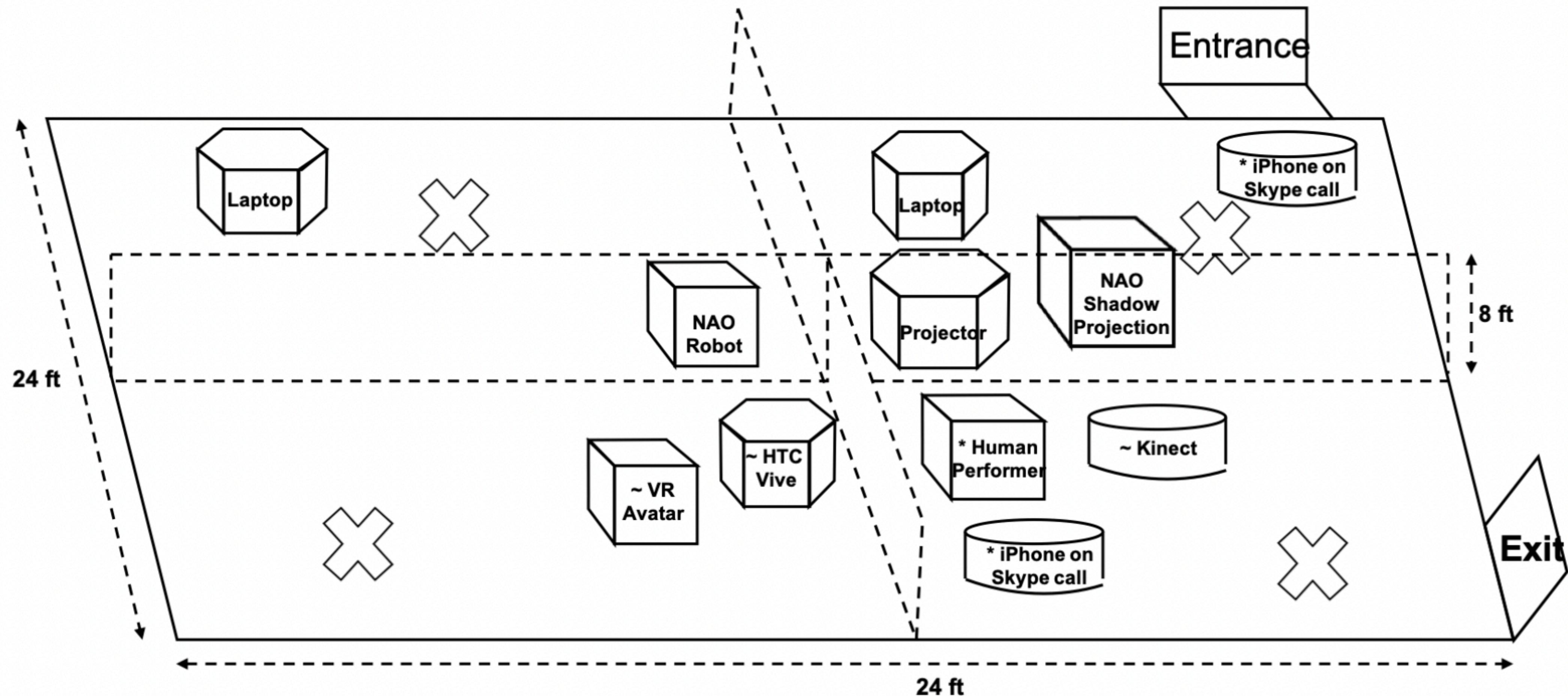


Installation + Performance

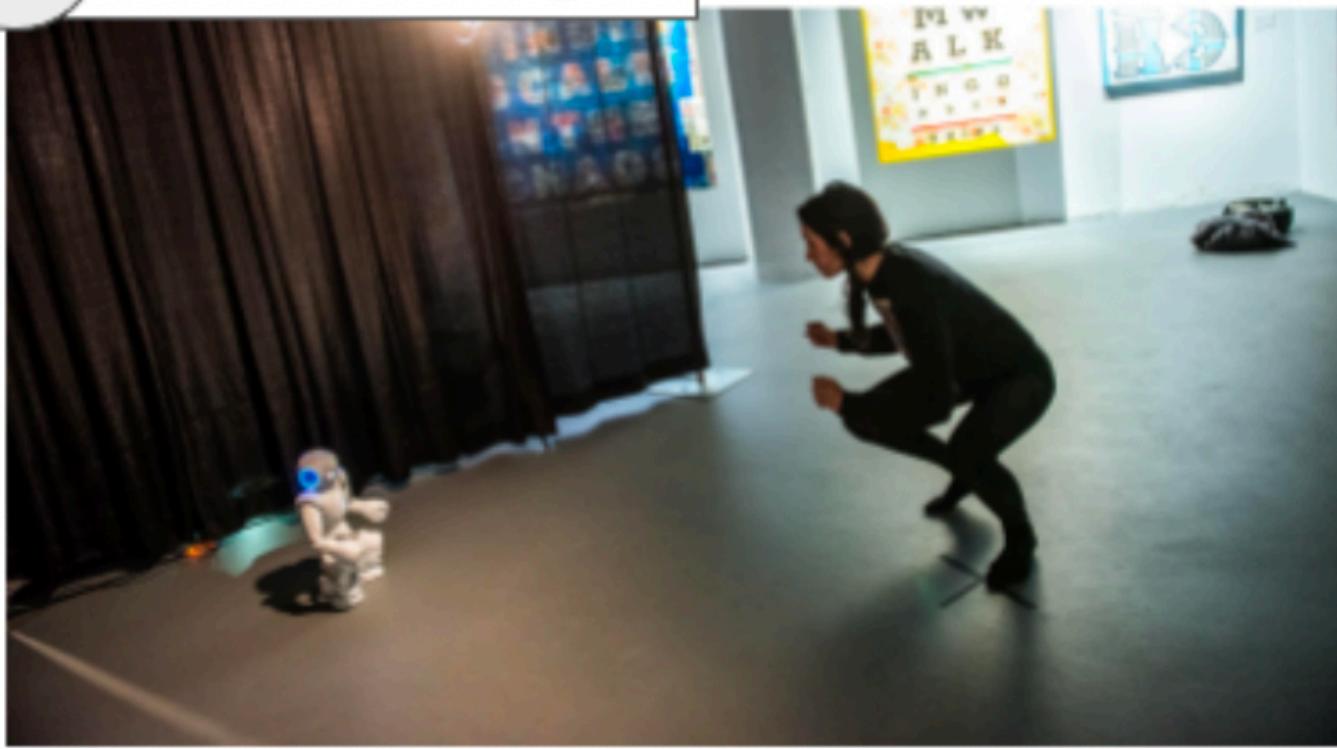
i.e. The Experiment







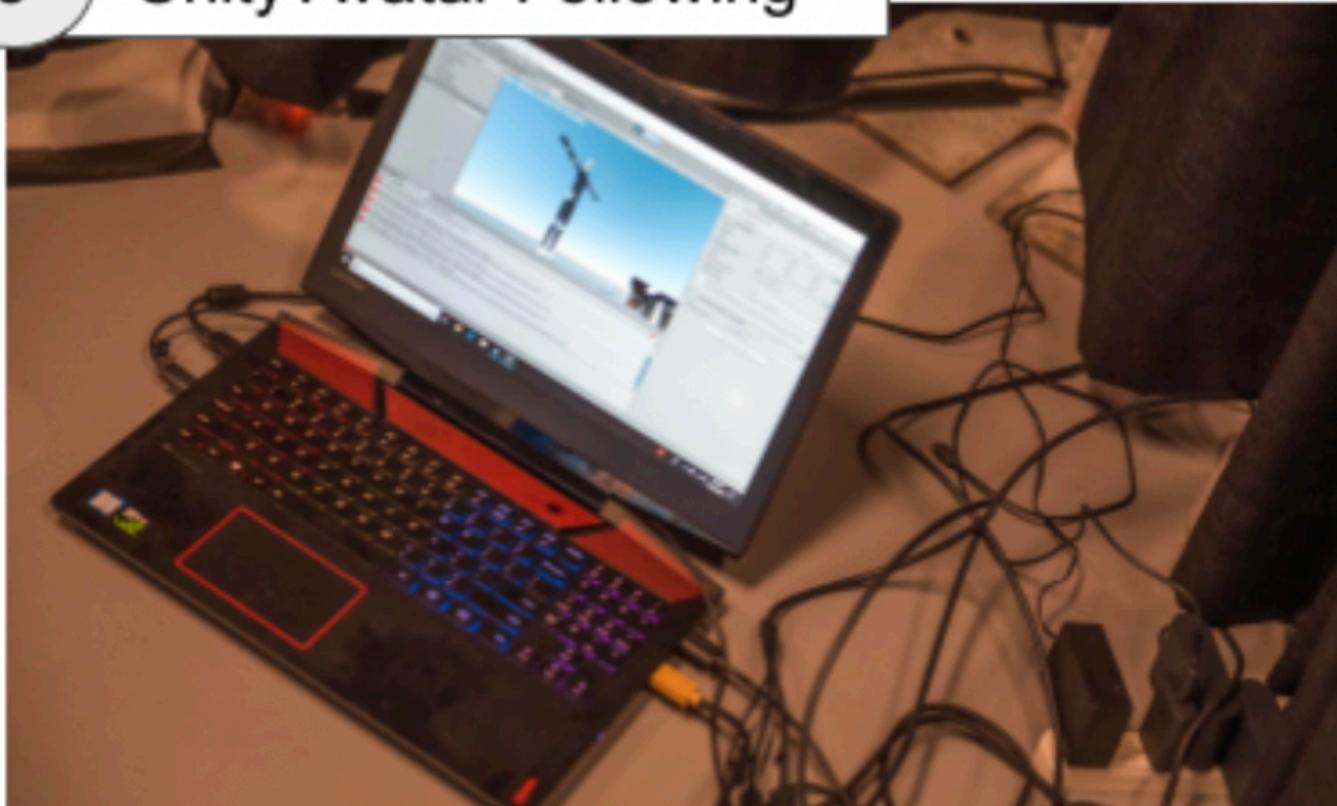
2 NAO Following



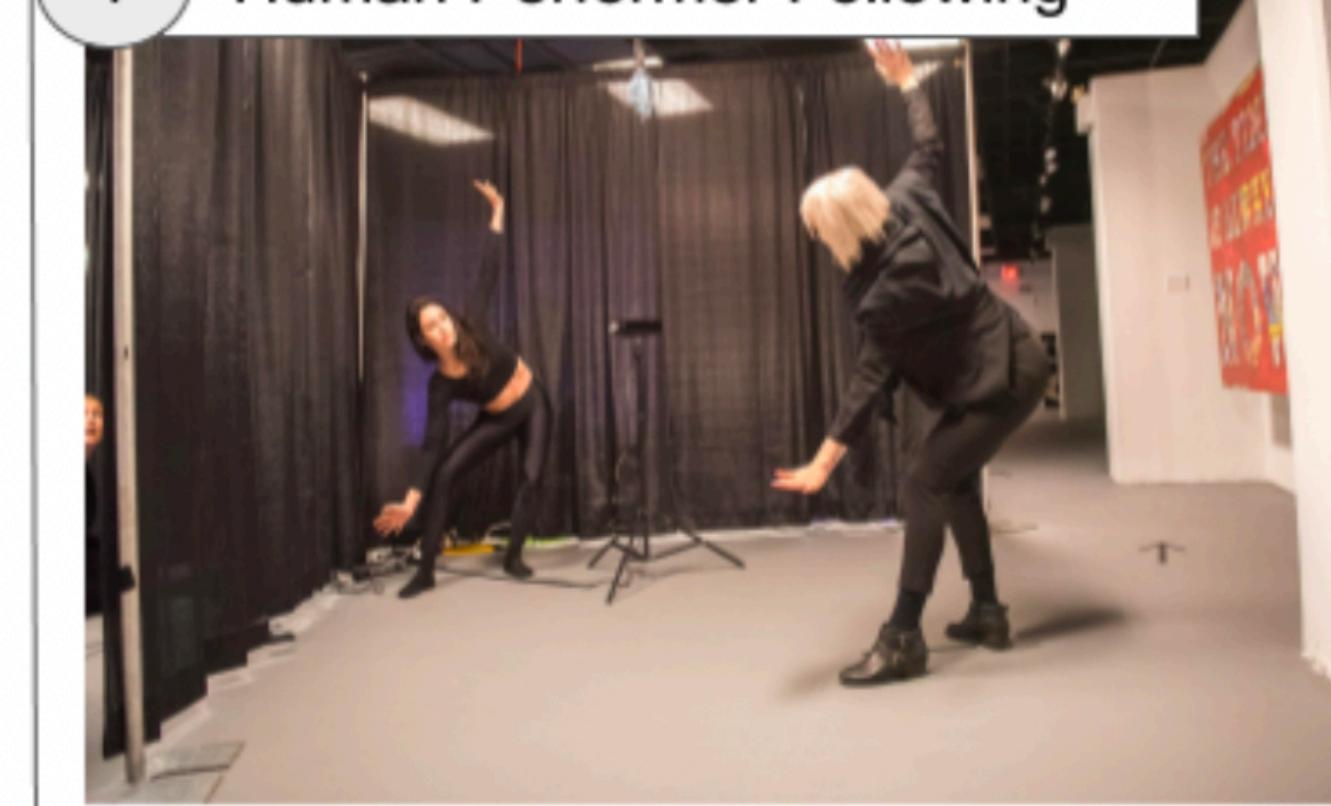
1 NAO Shadow Following



3 Unity Avatar Following



4 Human Performer Following



Projection of NAO robot -> NAO robot -> VR avatar -> Human performer

2

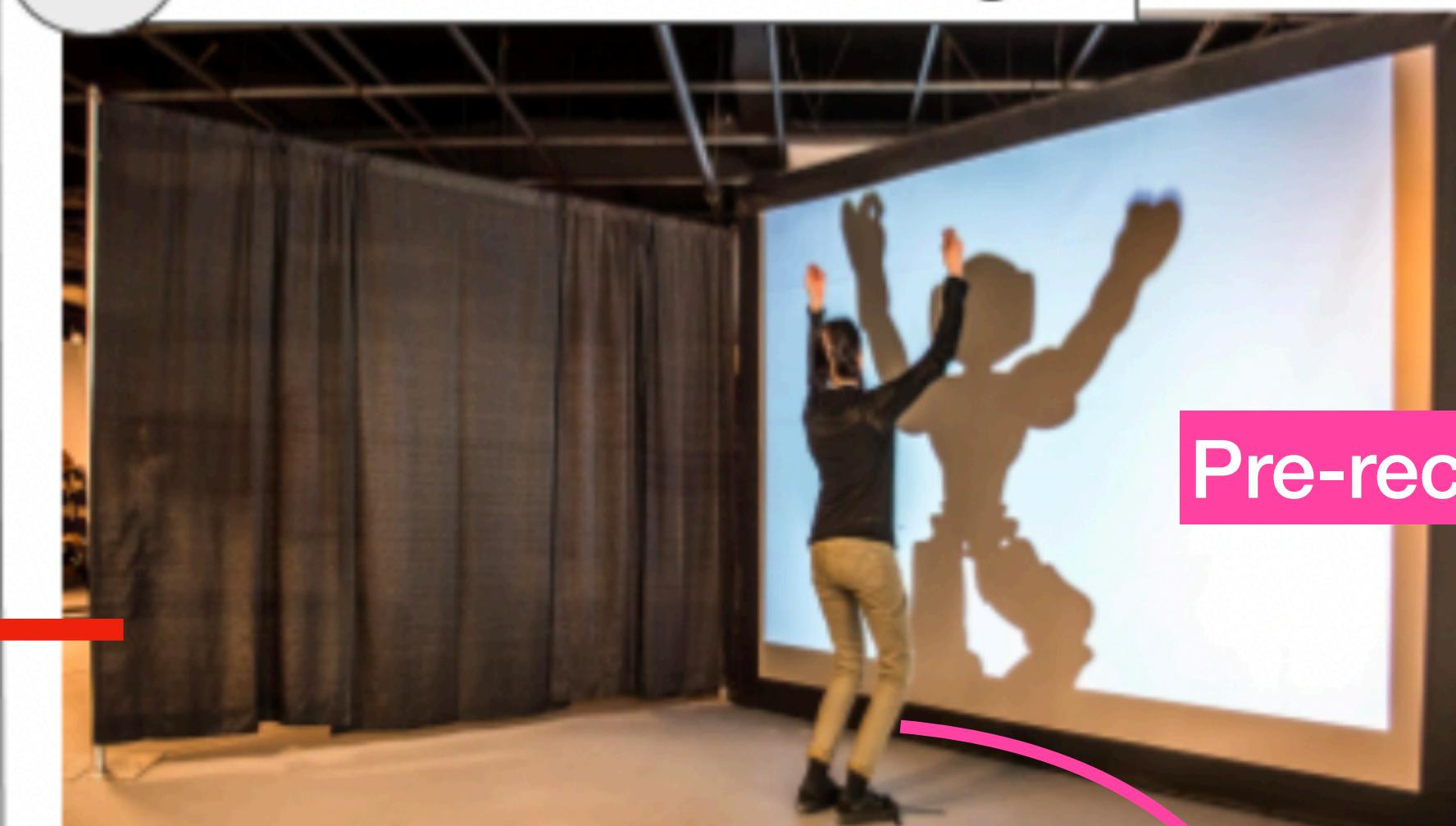
NAO Following



Pre-set

1

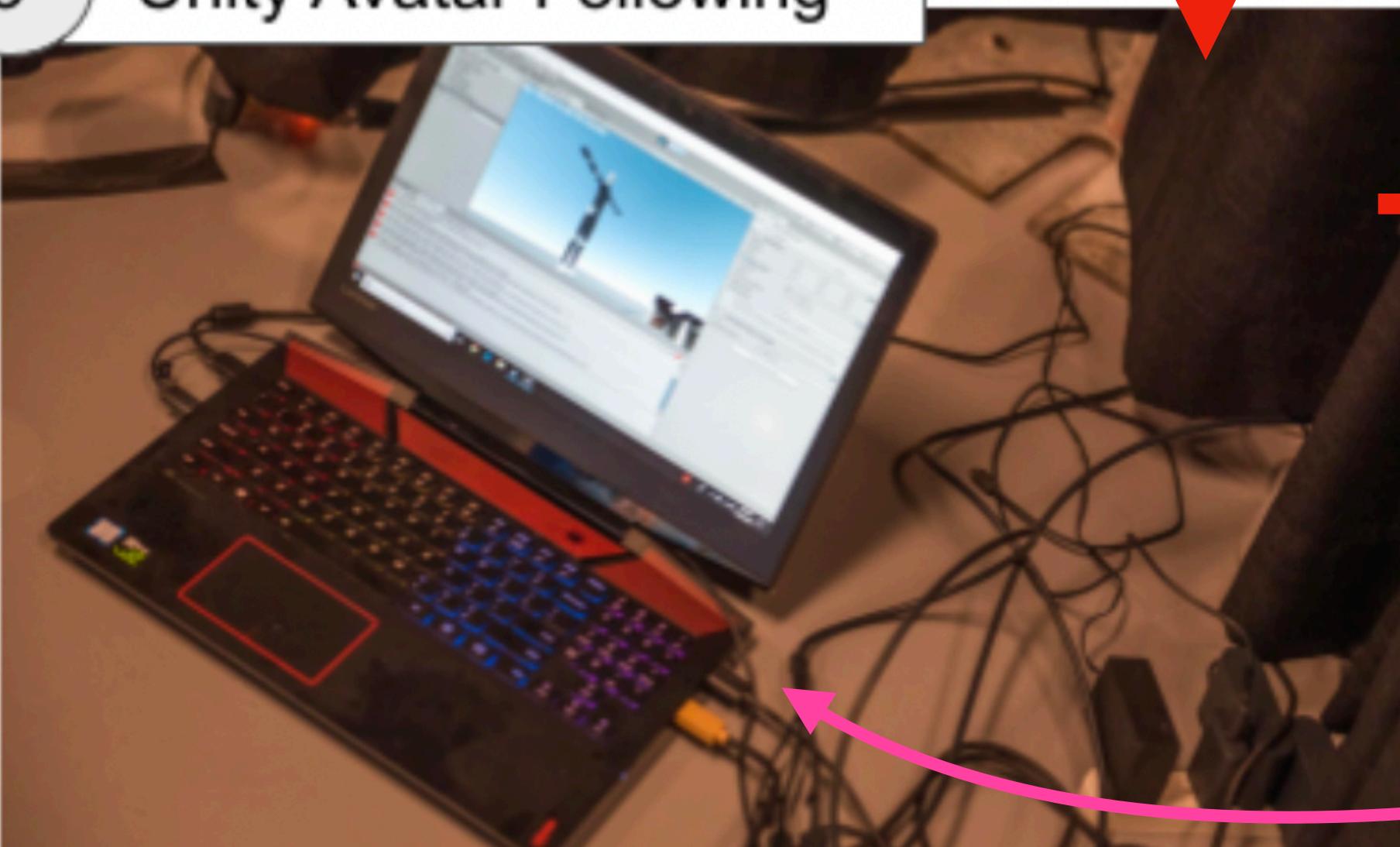
NAO Shadow Following



Pre-recorded

3

Unity Avatar Following



4

Human Performer Following



Sensor

In Surveys

- Background/Emotion/Qualitative...
- Pairings
 - Male vs Phone/Wooden hand vs NAO robot...
- Motivation and performance
 - What they believed was motivating the movement of the system
 - Anticipated success, difficulty of the task

Yes, and?

Some Insights

- Perception changes after exposure
 -  attribute humanoid systems' action to human activity (VR avatar)
 - Items appeared  expressive
- Perceptions vary based on tech/movement background
 - E.g. High tech literacy: male > phone (powerful)

Okay, and?

Values/Takeaways

- The transference of human-like/robot-like qualities between humans/robots
- A Movement-based Turing Test
 - “What controls this agent?” “Is it human?”
- Possibility of
 - Performance being testbeds for HRI studies
 - Influencing perceptions (away from the true structure)
 - Improving attitude by exposure

But,

- Perceived control -> Human-robot relationship?
- Manipulation of perception - positive/dystopia?

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Answers/Comments/Questions 🤔

