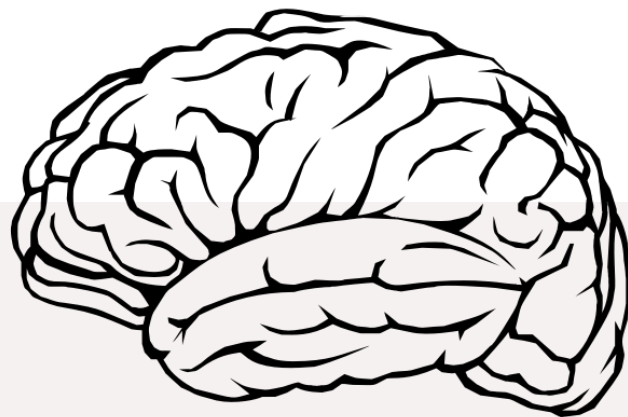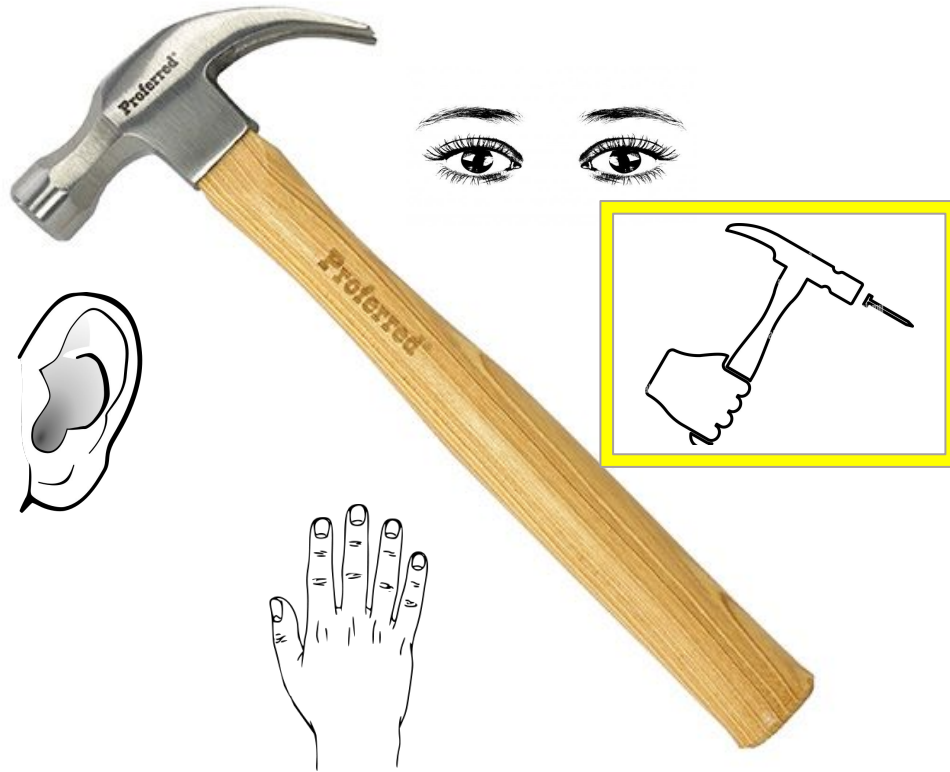# Are objects oriented towards your dominant hand easier to recognize?

Lauren Miller[1], Nathan Lautz[1,2], Wesley Leong[1,2], Eiling Yee[1,2]

[1]University of Connecticut; [2]Connecticut Institute for the Brain and Cognitive Sciences

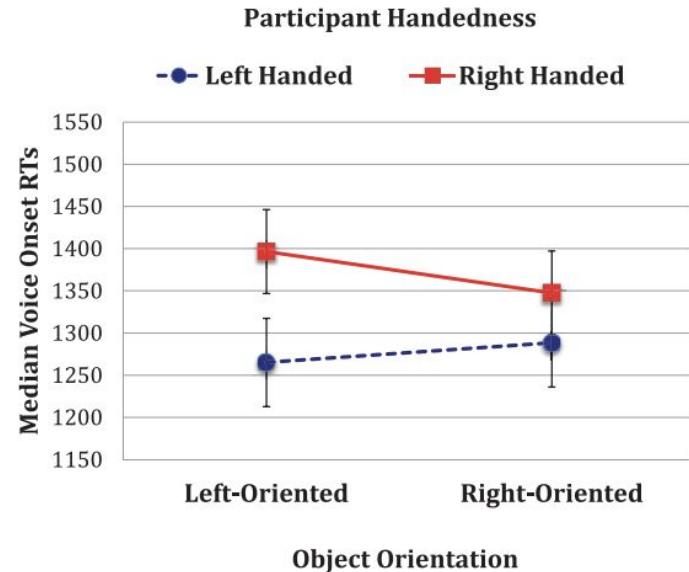# How do we know what this is?

Handedness!

□ *Motor Experiences Influences Object Knowledge* (Chrysikou et al., 2017)

  ▪ Oral responses about how they would *grasp* the object
    □ Clench or pinch
    □ *Not identifying the concept*

  ▪ Handedness & orientation influenced RTs
    □ RH faster for right-oriented objects
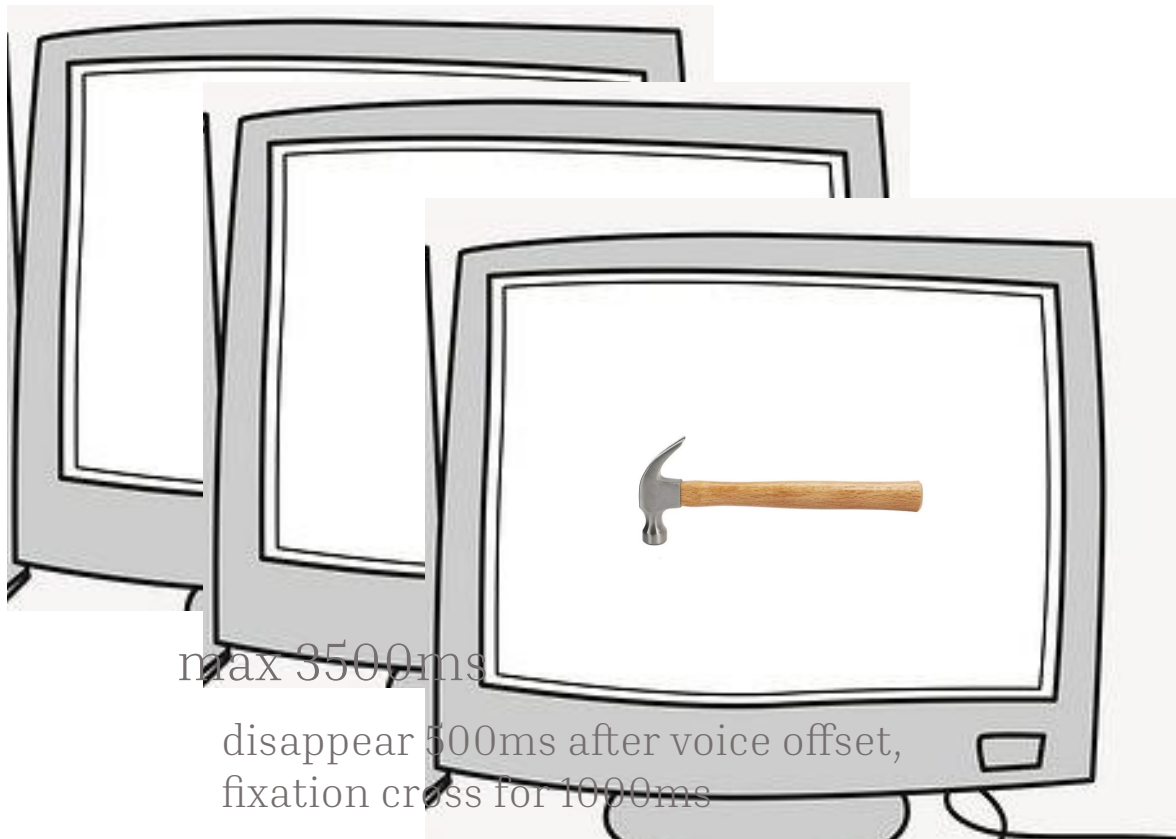   □ LH faster for left-oriented objects

Do motor experiences (through handedness) with an object influence our ability to conceptually identify that object?
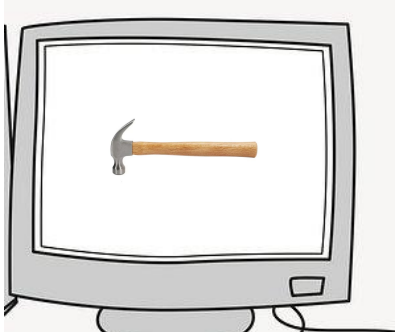
(Chrysikou et al., 2017)

Participant Handedness

- - ● - Left Handed   — ■ — Right Handed

Median Voice Onset RTs

Object Orientation: Left-Oriented, Right-Oriented

(Chrysikou et al., 2017)

Methods

max 3500ms

disappear 500ms after voice offset,
fixation cross for 1000ms

hammer

Methods

Example:

List 1

List 2

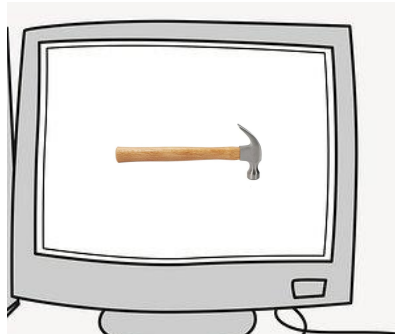2 fixed random order lists, opposite orientations in each list

2 blocks with 50 trials per block

4 Questionnaires
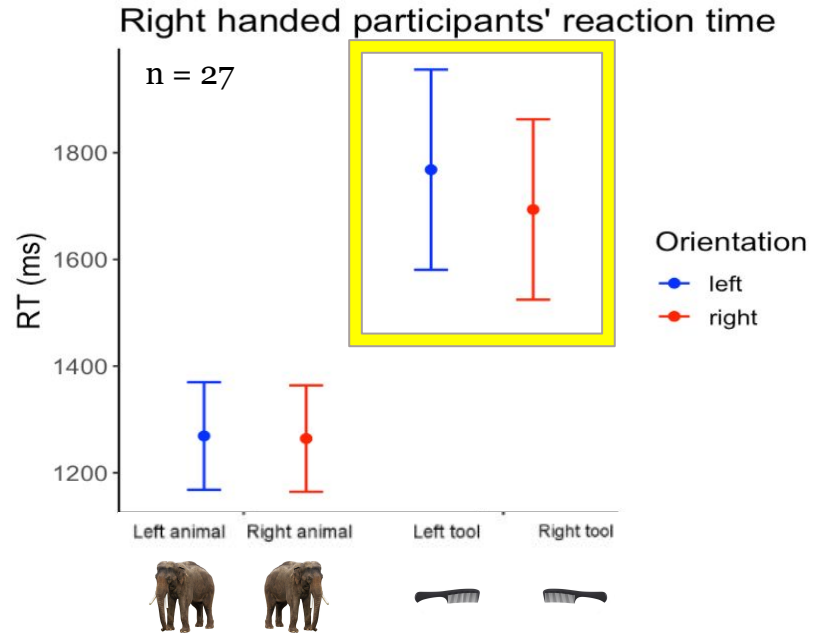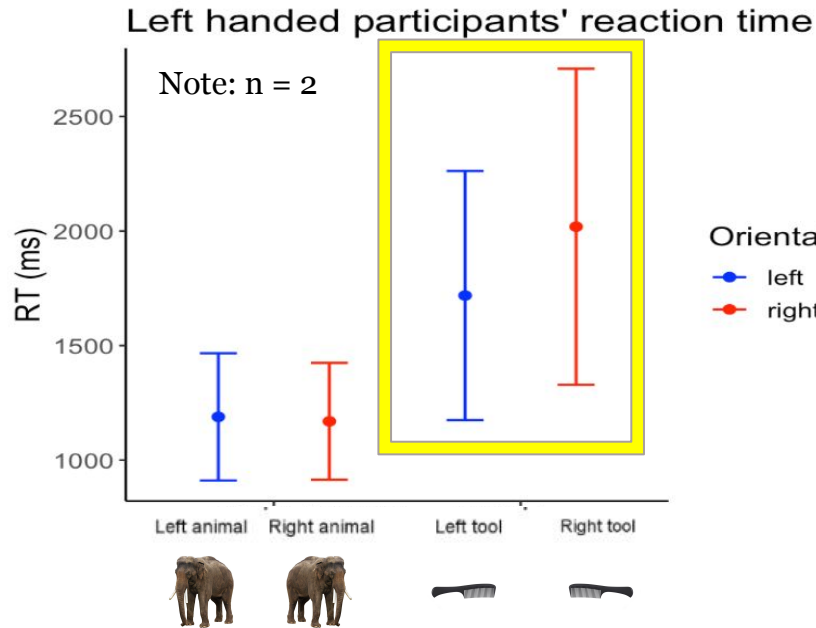   Edinburgh Handedness Inventory (EHI)
    3 motor imagery questionnaires

Preliminary Results

Left handed participants' reaction time

Note: n = 2

Right handed participants' reaction time

n = 27

(Lautz et al., 2020)
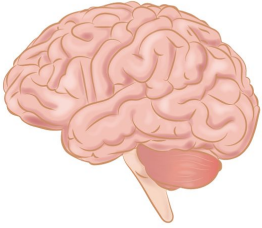
Discussion

If pattern persists, it would suggest that:

- Knowledge about how we grasp an object is part of our conceptual knowledge of that object

- Conceptual knowledge is partially grounded in our motor systems

- Individual differences in motor experiences can produce differences in conceptual knowledge

Different experiences result in different concepts – even for things as simple as *hammer*

Citations

Chrysikou, E. G., Casasanto, D., & Thompson-Schill, S. L. (2017). Motor experience influences object knowledge. *Journal of Experimental Psychology: General*, *146*(3), 395–408. https://doi.org/10.1037/xge0000269

Lautz, N., Annand, C., Walkwitz, D., Davis, T. (2020, November 19-22). Using Grip-Force to Investigate the Involvement of Hand-Action Networks in Tool Recognition [Poster presentation]. Annual Meeting of the Psychonomic Society, virtual.