Lecture 10: Lab in Human Cognition

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Agenda for Today

- How to give an academic talk

- (rest of time: Finish final projects!)

First
How to give a talk!

Final presentations

- Monday in this class

- Send me the slides before class monday so I can put them on my laptop (save time)

- Time limit: 10 minutes + 5 for questions

- Each group member should be responsible for walking us through a separate part of the study.

Sections

- **Introduction:** What is the goal of your experiment? What psychological theory will you be investigating? Give a real world example of why what you chose to work on is interesting

- **Experiment Design:** Explain the basic experimental design and procedure. How many people? What were the materials (although we were all participants, give us examples... we'll have forgotten!)

Sections

- **Results:** What did you find? Don't show detailed statistics (boring). We just want the plots of the data. If there is an effect you can label with a * and show the p-value. Step us through the data. What are we looking at, what should we expect to see?

- **Conclusions**: What did you conclude? What did you learn from the study that you didn't know before? What would you change in future designs? What are the limitations of your data?

Important hints

- **Know you audience:** Some people pursued project ideas unrelated to our labs... so you have to explain the idea to people!

- **10 minutes is not a lot of time:** You should practice as a group at least once so you know you can explain everything in time.

Important hints

- **Keep your slides simple:** Too many words can be bad... let the slides be support for the words you are saying rather than a reiteration of them. DONT READ!

- **Avoid color figures unless absolutely necessary**

- Although data analysis was time consuming, don't dwell on how much work you did collecting the data and organizing it.
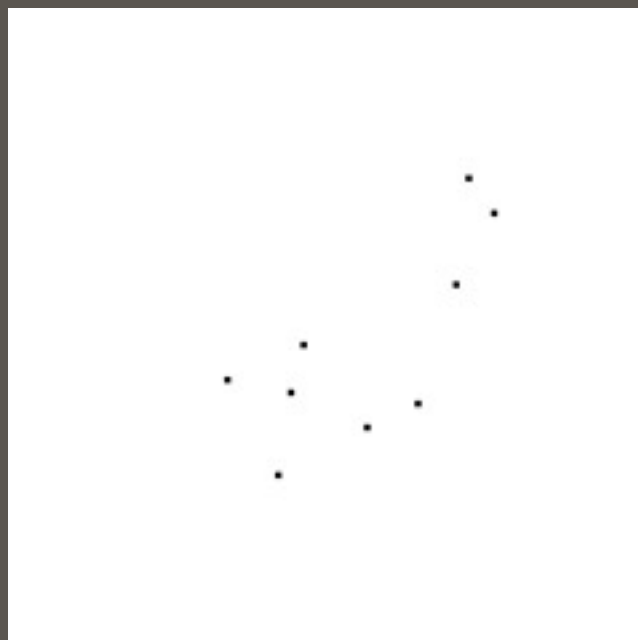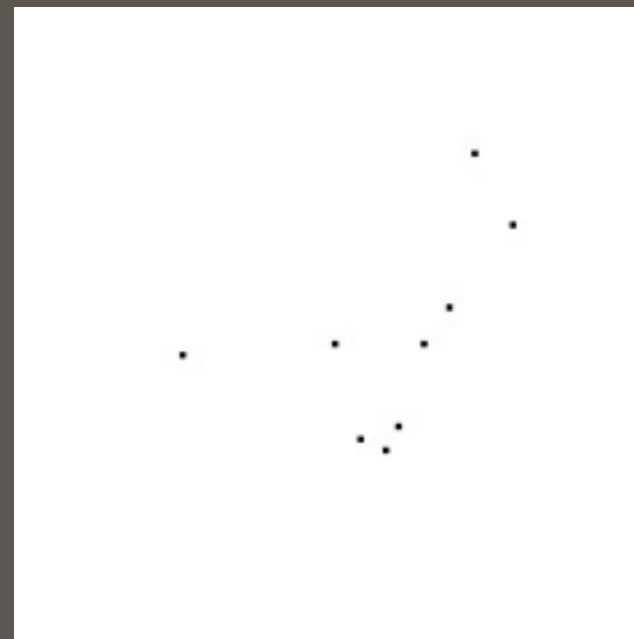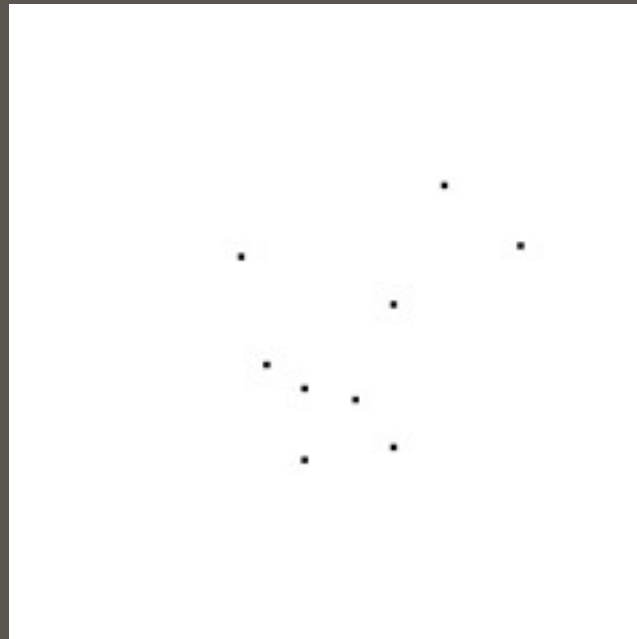
some examples...

some examples...

Study Items
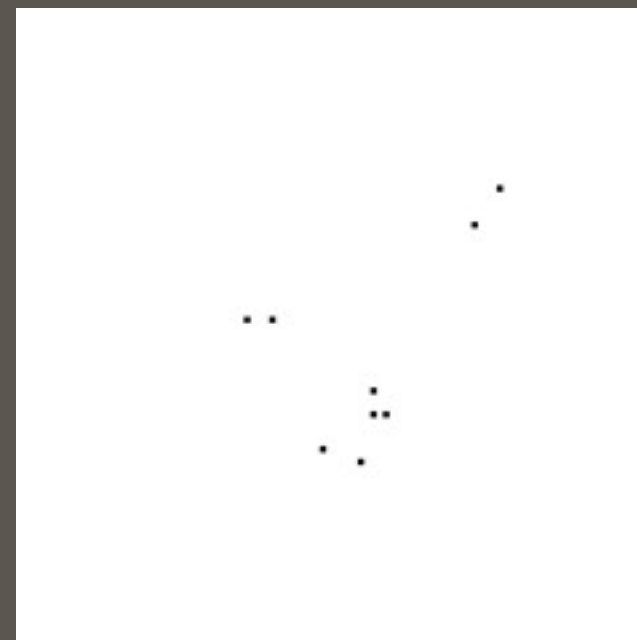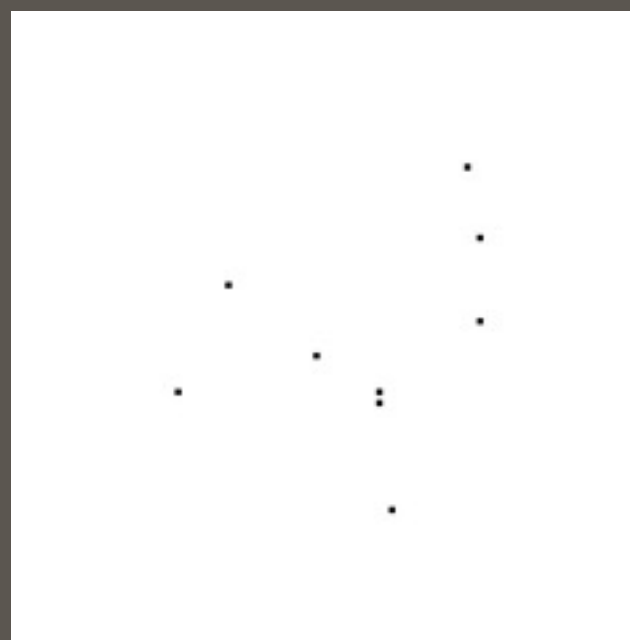
"Explicit" / "Intentional" Condition:

☐ **Shown 5 items (repeated twice each)**

☐ **Participants told that the items came from a "category" just like if you saw a number of "dogs" it would represent the category "dog"**

"Implicit" / "Incidental" Condition:

☐ **Shown 5 items (repeated twice each) as asked to identify the center dot in each pattern**

☐ **Participants were not informed that the patterns belonged to a category**

Test Phase

☐ **Both groups see identical test conditions while being scanned**

☐ **Block design, participants saw blocks of 9 items which were mostly category members or mostly foils (7:2 mix ratio).**
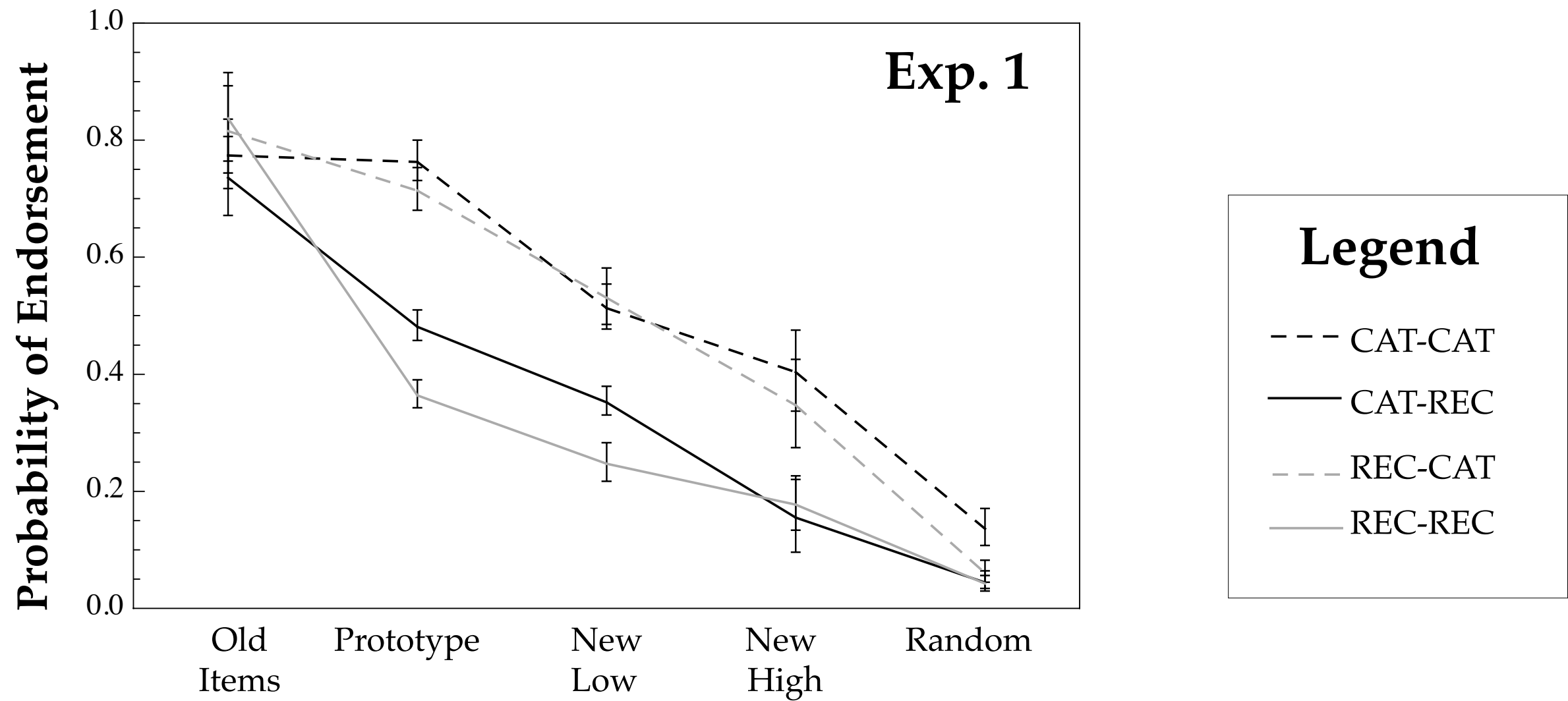
Category Members

36 items
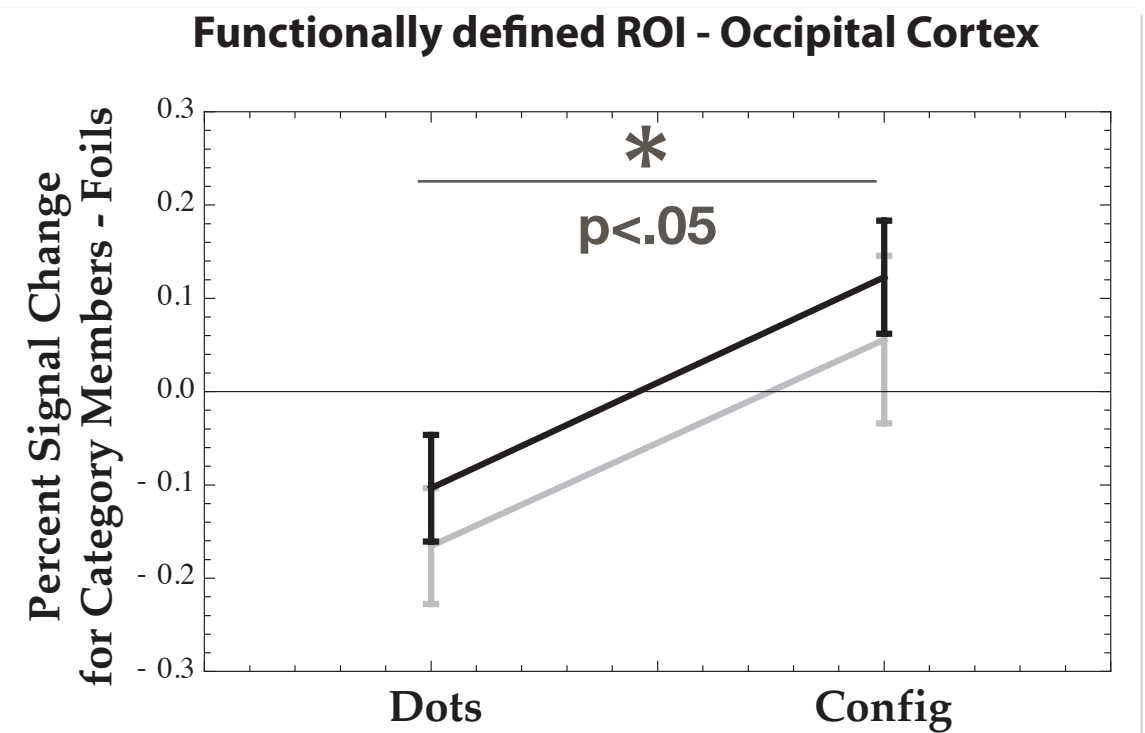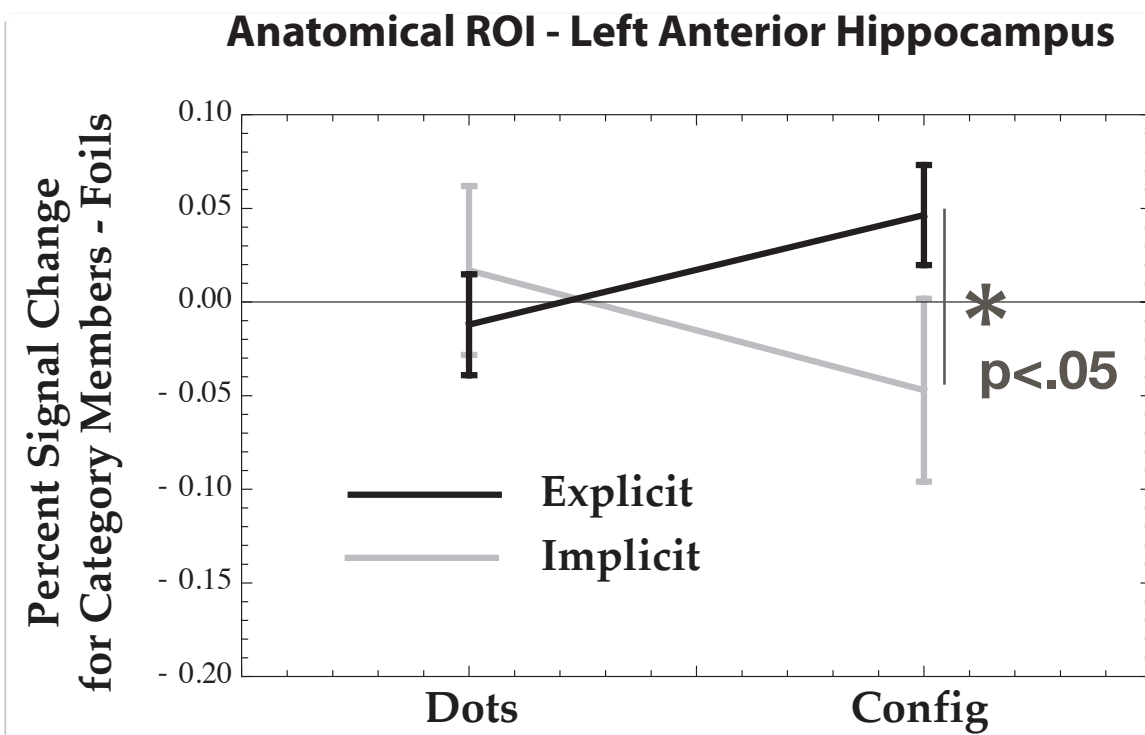- **4 prototypes**
- **16 low distortions**
- **16 high distortions**

Foil Patterns

36 items
- **4 prototypes**
- **16 low distortions**
- **16 high distortions**

5 study items repeated 3 times

Anatomical ROI - Left Anterior Hippocampus

Percent Signal Change for Category Members - Foils

0.10, 0.05, 0.00, -0.05, -0.10, -0.15, -0.20

Dots   Config

* p<.05

— Explicit
— Implicit

Functionally defined ROI - Occipital Cortex

Percent Signal Change for Category Members - Foils

0.3, 0.2, 0.1, 0.0, -0.1, -0.2, -0.3

Dots   Config

* p<.05

Interaction : p<.08

Markant & Gureckis (2010, in press)
Antenna Learning

Experiment
Antenna Learning
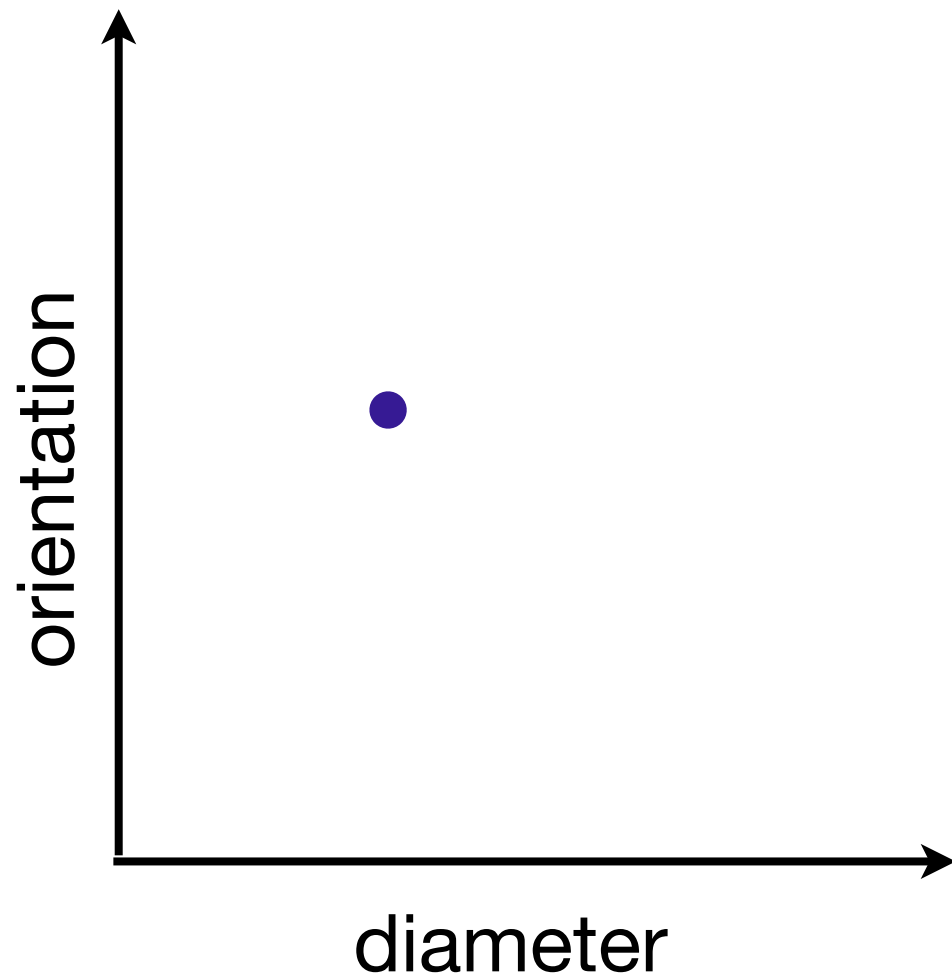
Experiment
Antenna Learning
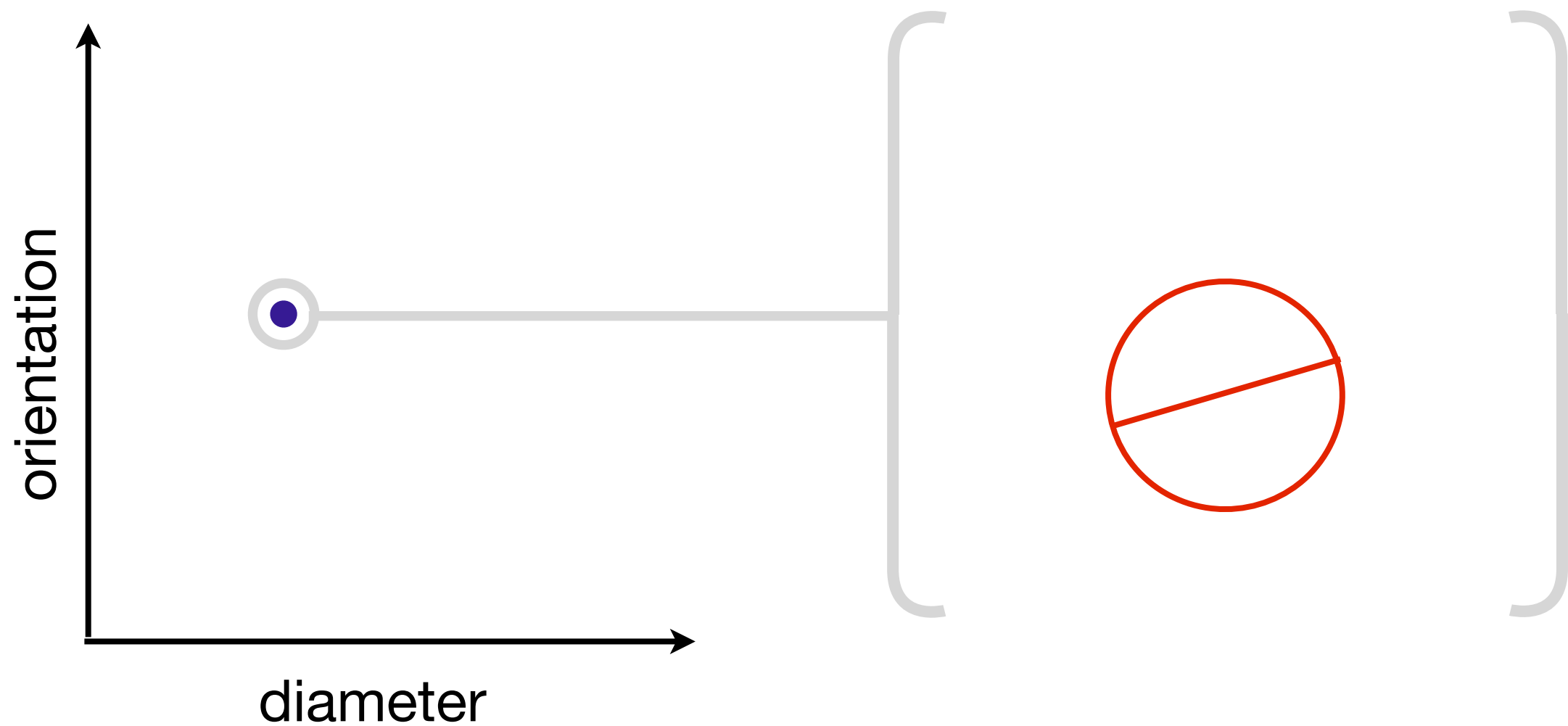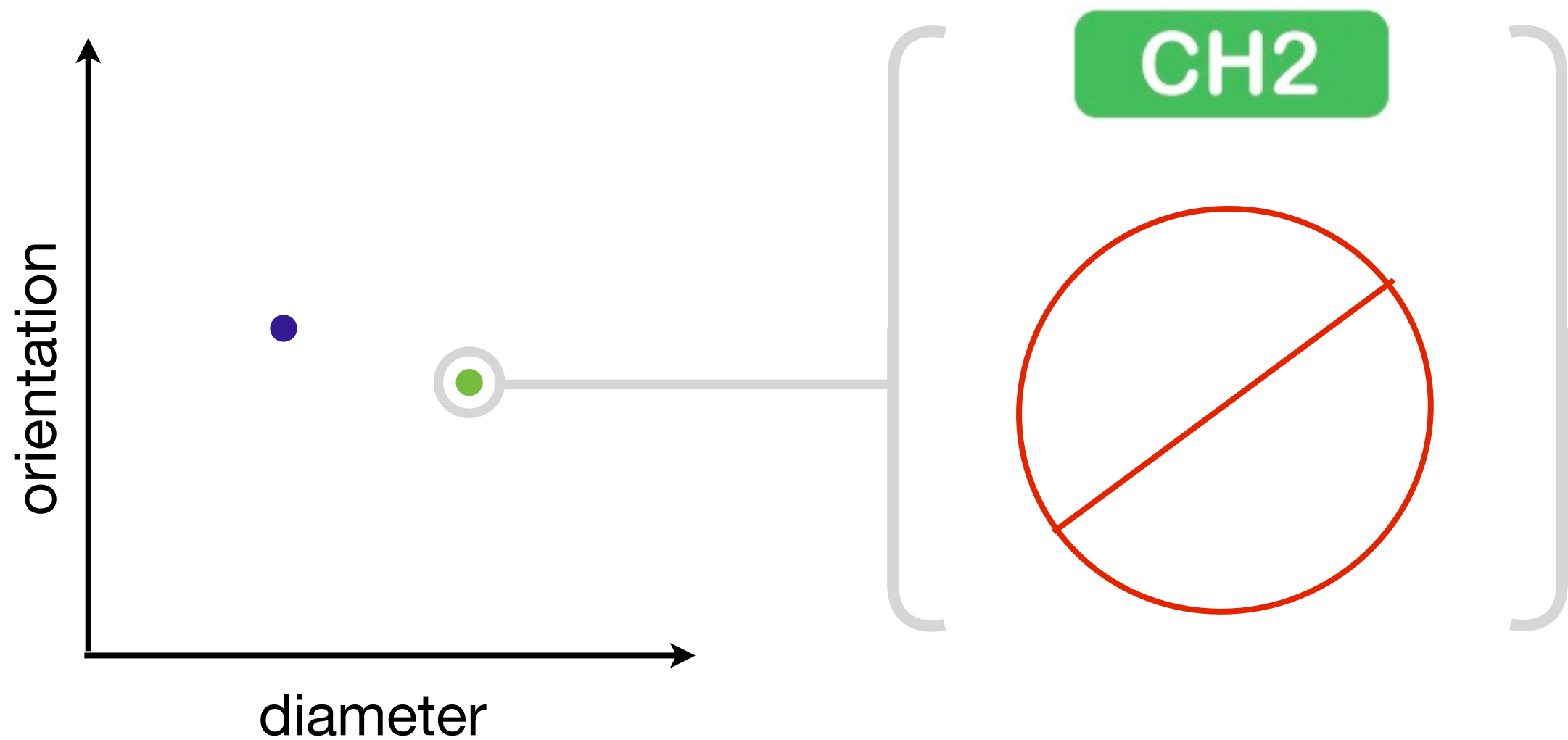
Experiment
Antenna Learning
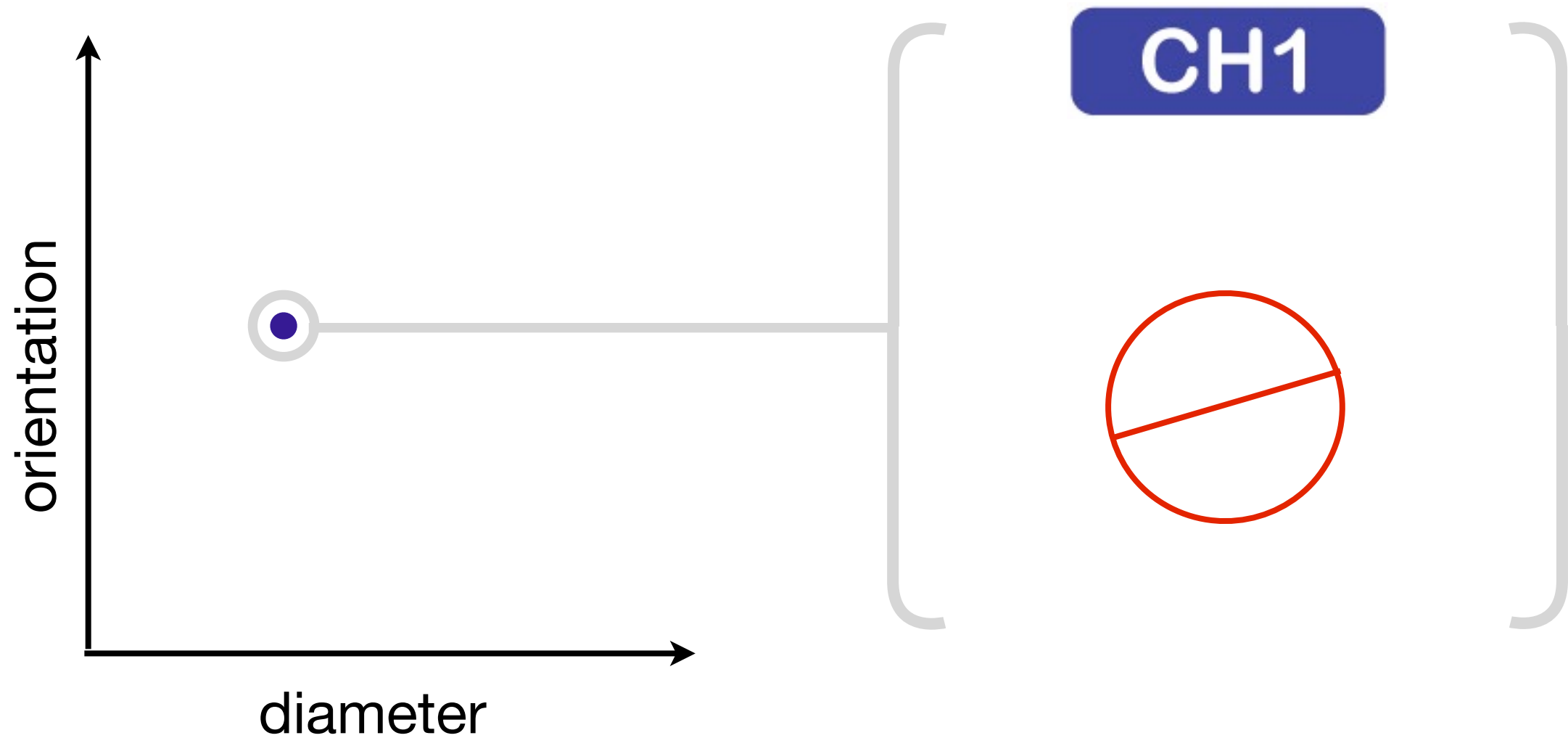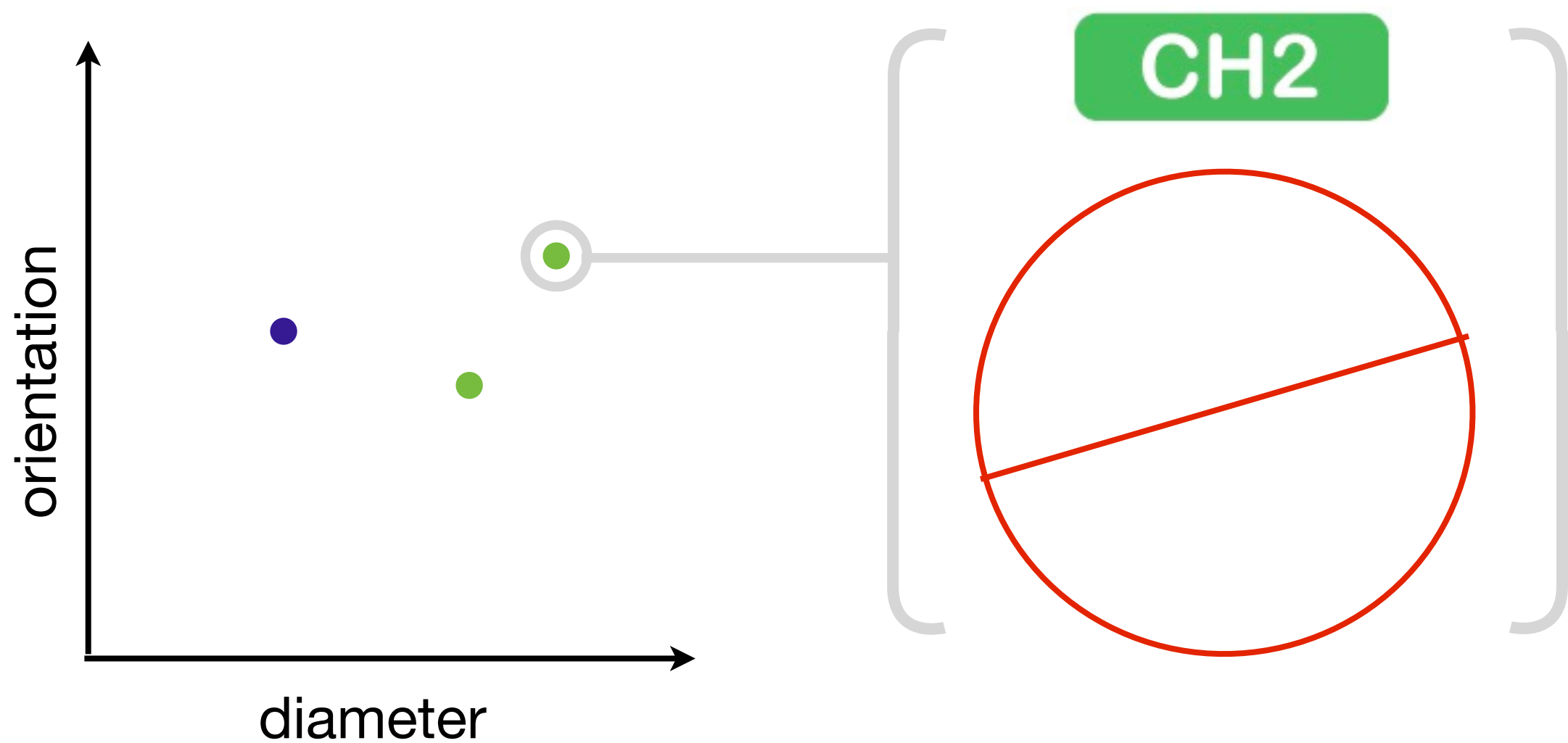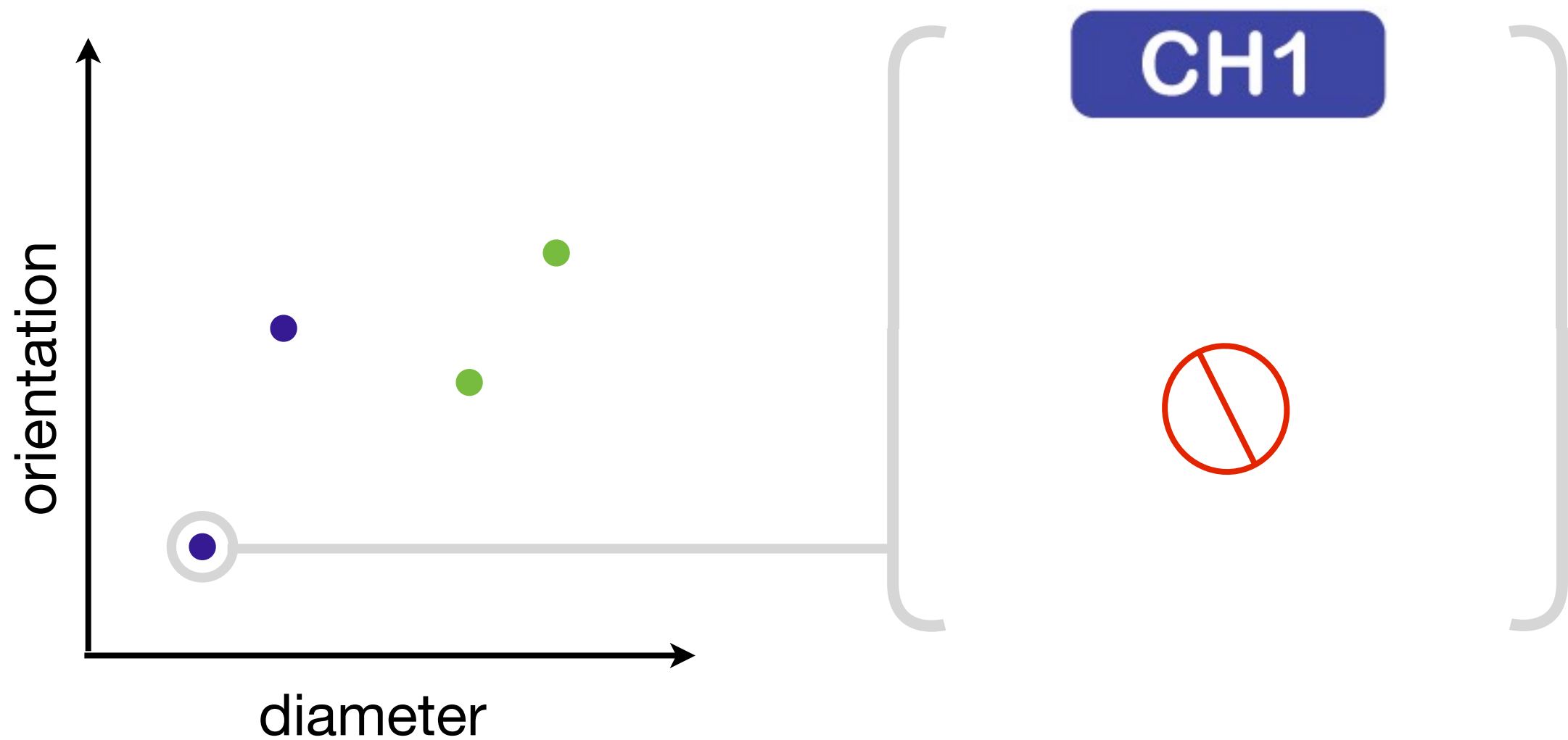
Experiment
Antenna Learning

Experiment
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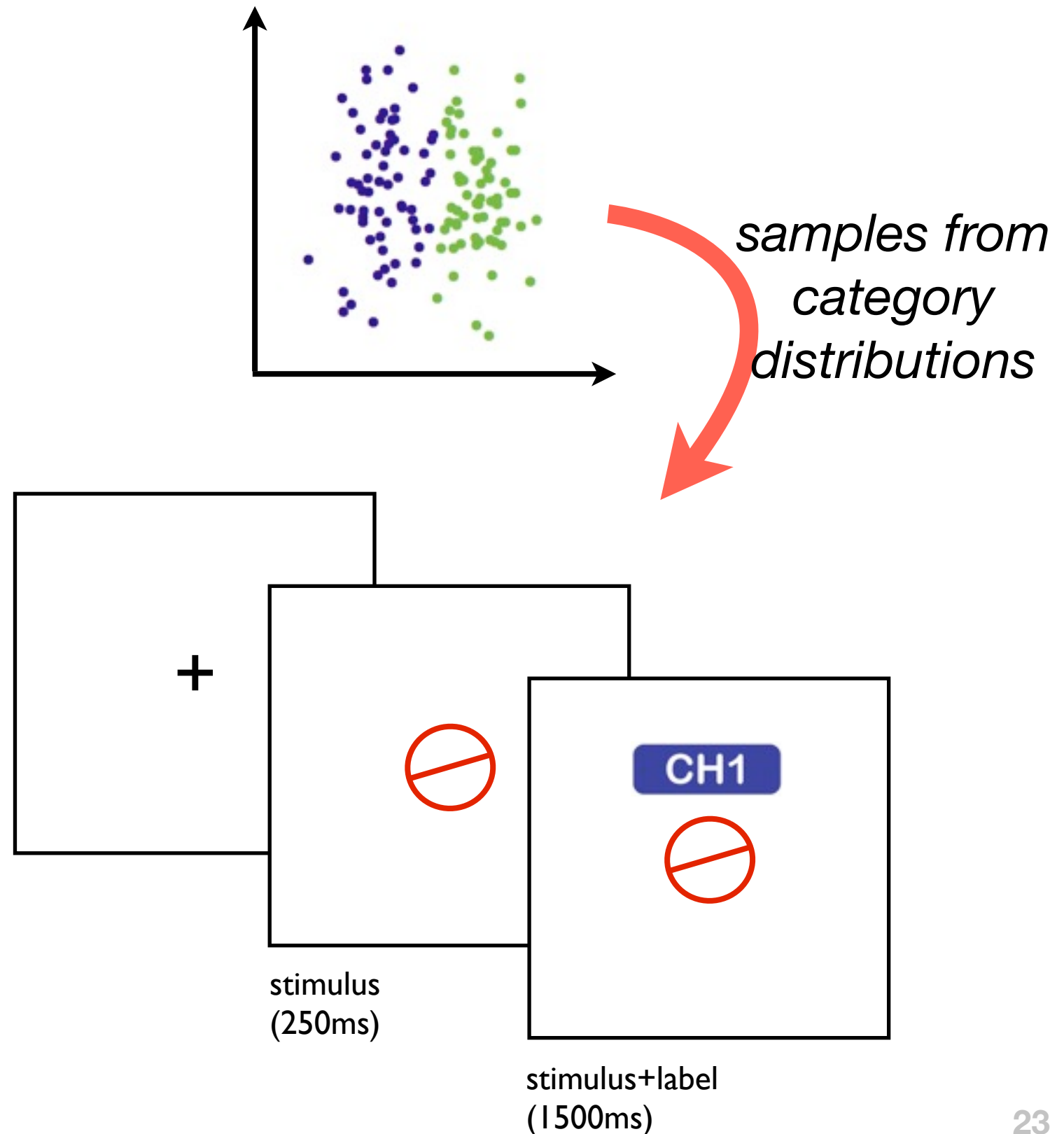
Experiment
Three Training Conditions

1) **Passive** (P)

Ashby et al. (2002)

samples from category distributions
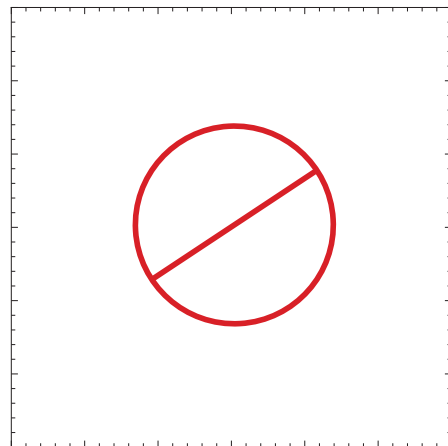
stimulus (250ms)

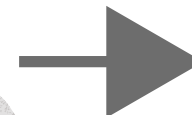stimulus+label (1500ms)
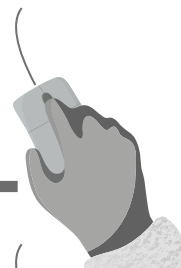
CH1

Experiment
Three Training Conditions

1) Passive (P)

2) **Active** (A)

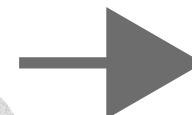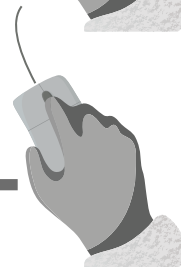*"Dial in a stimulus you would like to learn about"*

Holding 'Z' + ← → Changes Shape

Holding 'X' + ← → Changes Angle

Goal:
Stimulus decoupled from spatial location, movement of mouse
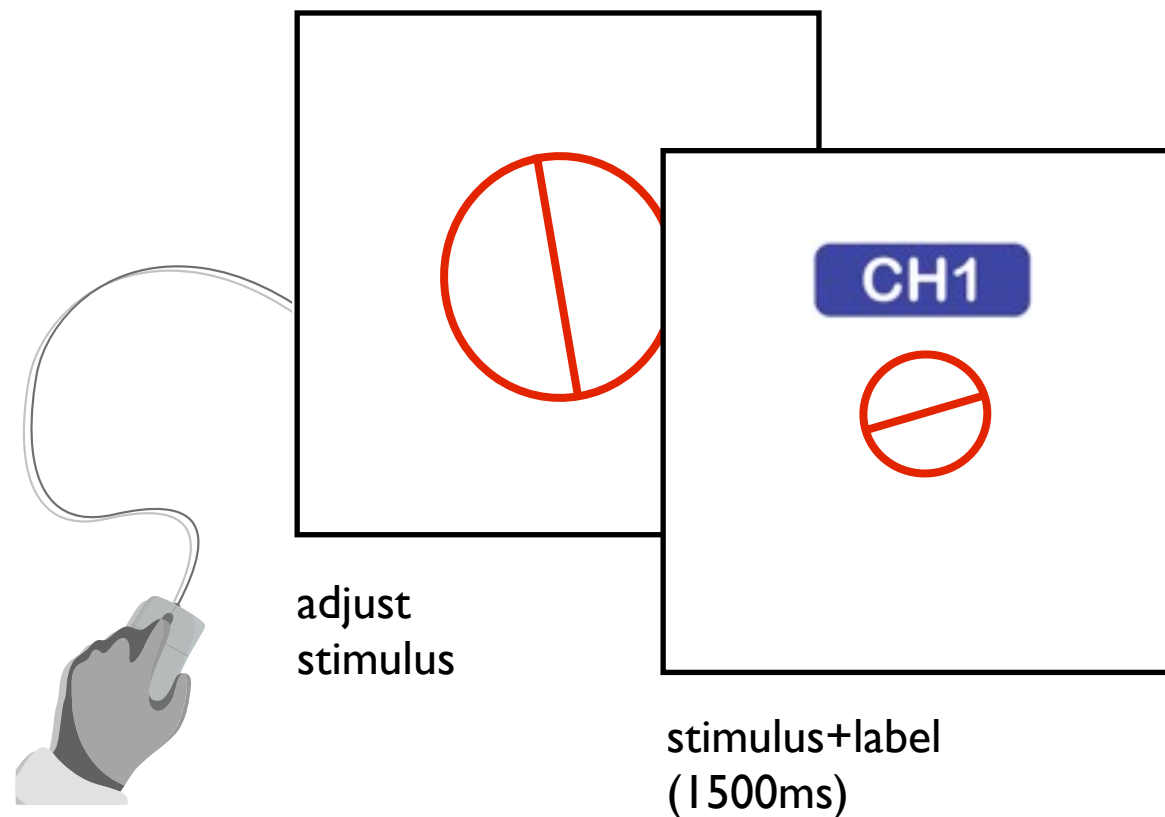*(i.e., this is not simply spatial sampling)*

Experiment
Three Training Conditions

1) Passive (P)

2) **Active** (A)

adjust
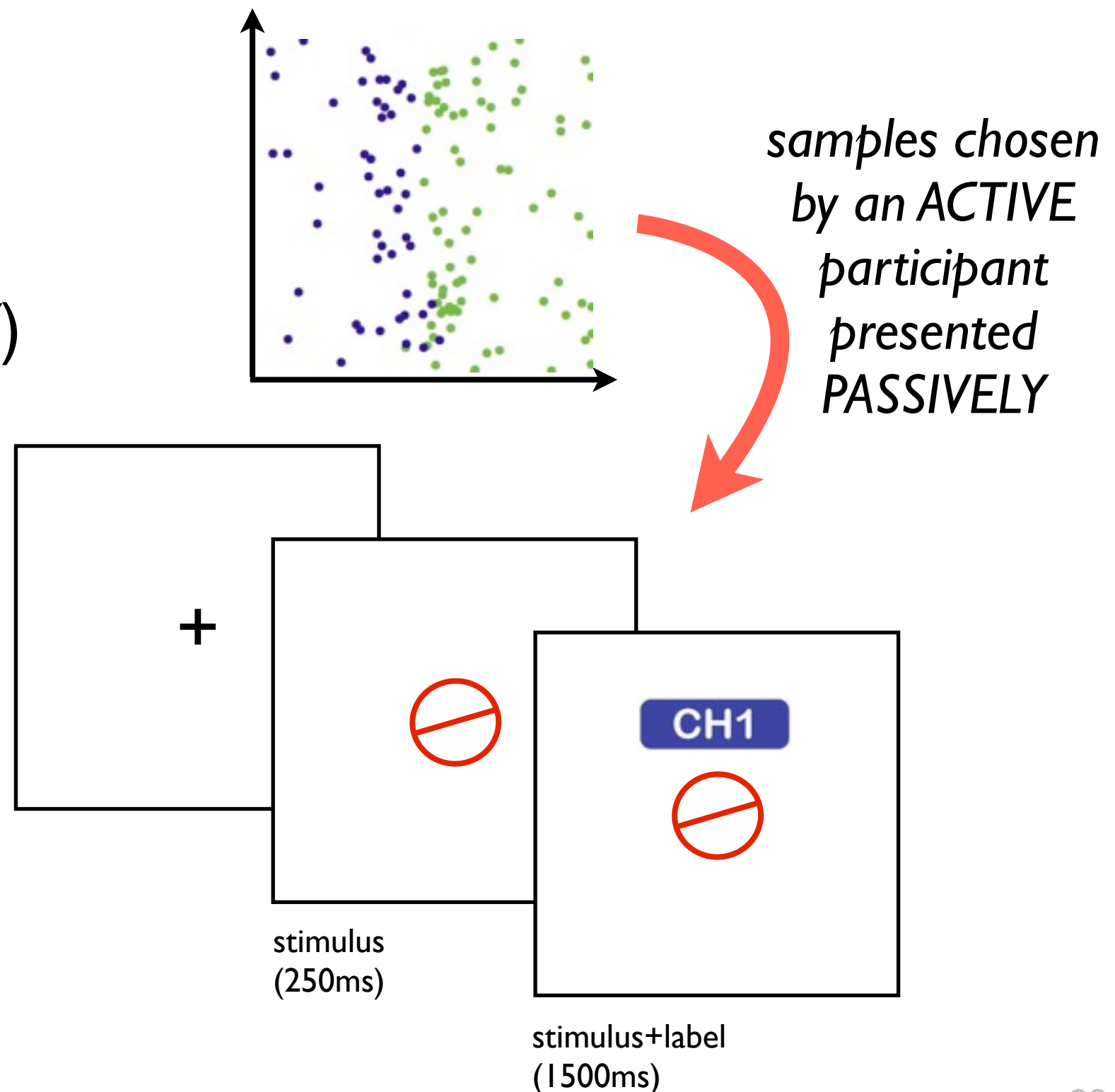stimulus

stimulus+label
(1500ms)

25

Experiment
Three Training Conditions

1) Passive (P)

2) Active (A)

3) **Passive-Yoked** (PY)

samples chosen by an ACTIVE participant presented PASSIVELY

+

stimulus
(250ms)

CH1

stimulus+label
(1500ms)

Questions

1 Can people sample effectively during category learning in both RB and II tasks?

2 Do people learn categories faster when choosing their own training data?

3 Does this facilitation transfer to others given the same training data?

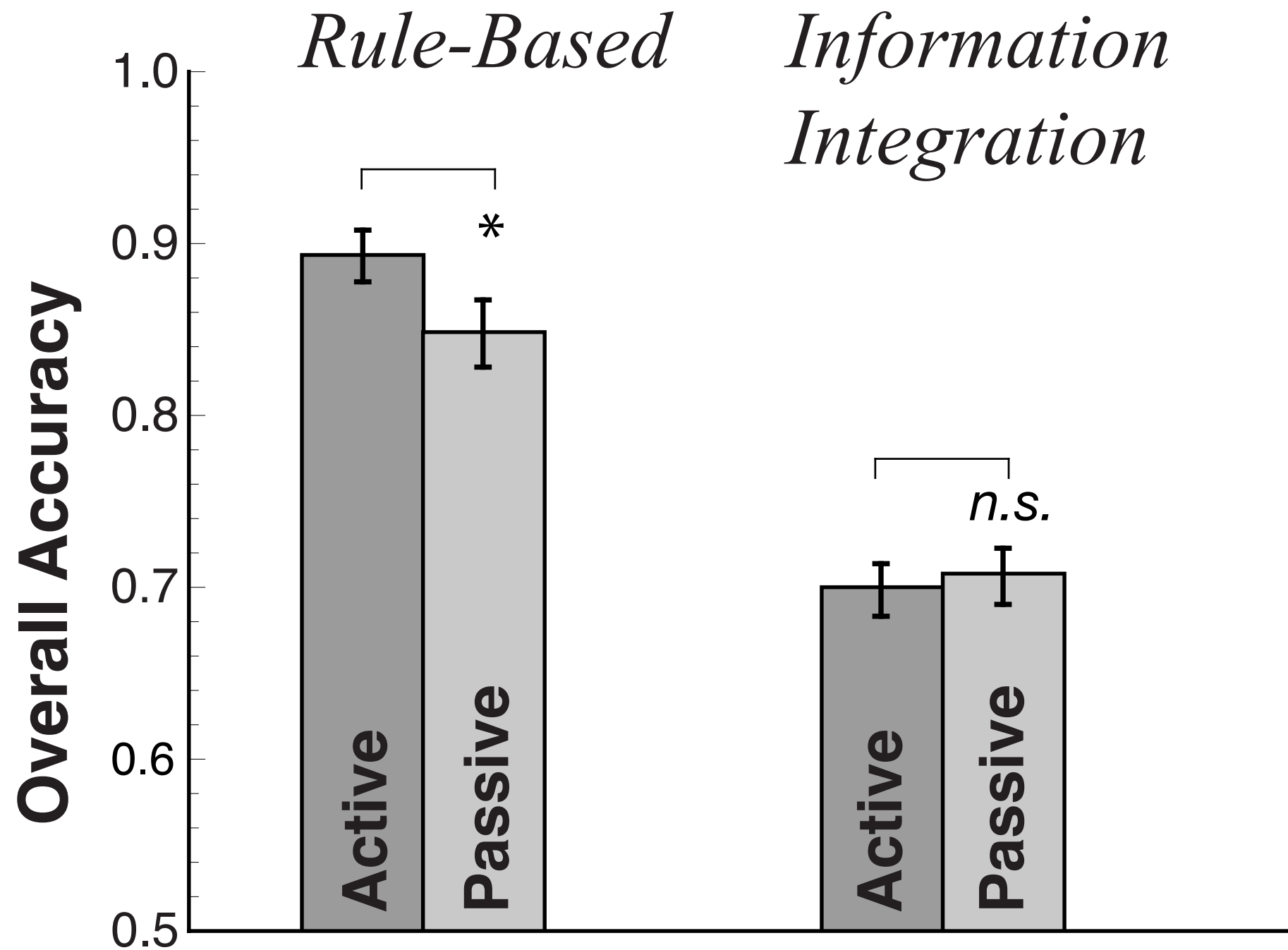Classification
Accuracy

Questions

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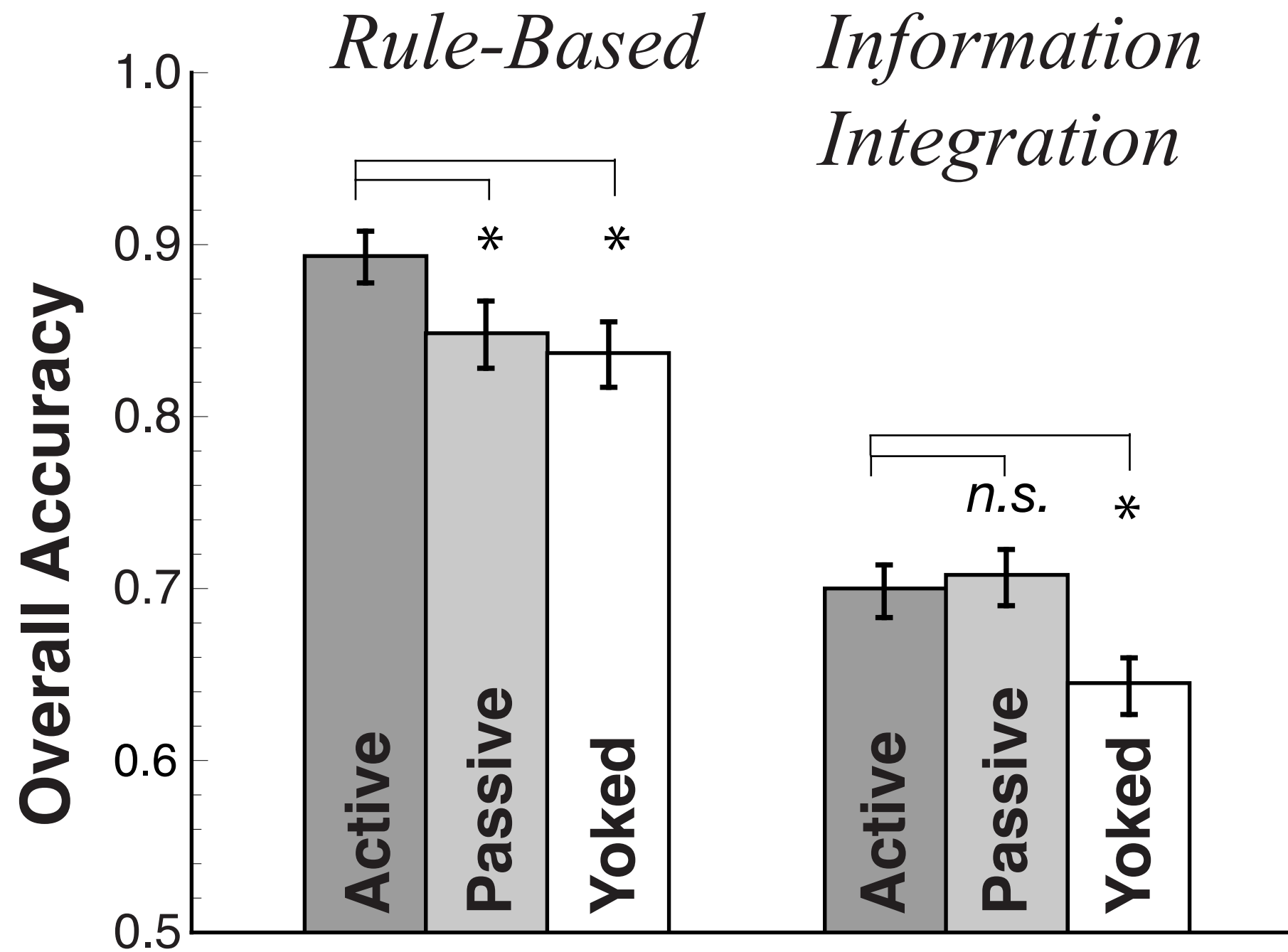
Classification
Accuracy

Final presentations

- Worth 25% of total final grade

- Final paper due on Monday. A key will be making sure you get the APA stuff right. You've had three papers already to practice!

- Remember only one paper per group, but must include acknowledgements section that details the contribution that each person made to data analysis, design, writing, and presentation.

Second
Finish final projects!