Psychology Methodology Statistics

# Building a multisensory integration task in OpenSesame

Lotje van der Linden

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Psychology Methodology Statistics

# Cats, dogs and capybaras

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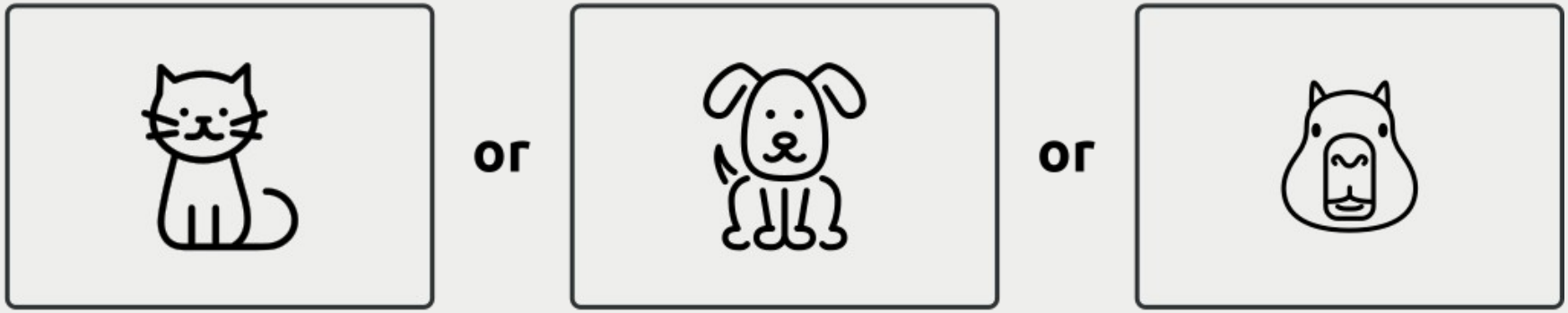
- Beginner's level
- Graphical user interface
- (Almost) no coding

# Cats, dogs and capybaras

Psychology Methodology Statistics

Does sound influence animal recognition?

# Cats, dogs and capybaras



# Intermezzo

Psychology Methodology Statistics

- What is a capybara?

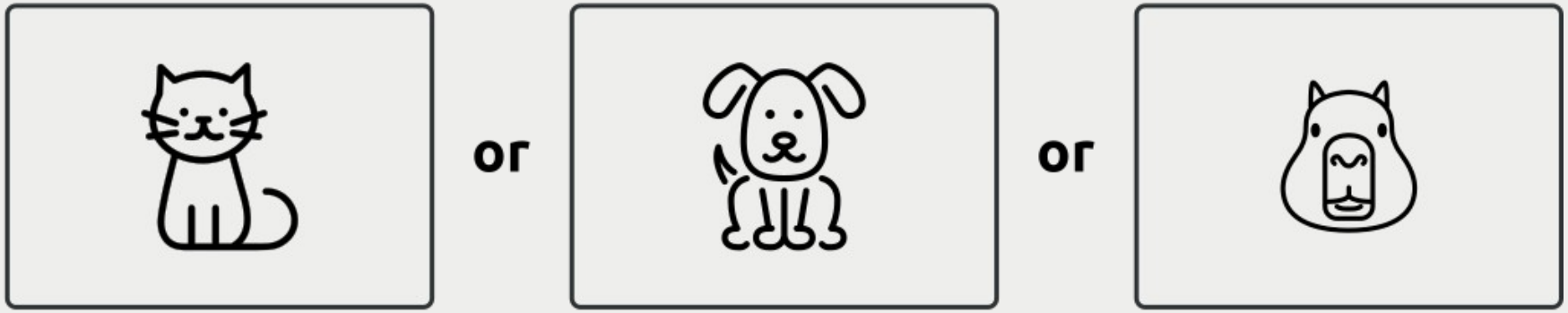
# Intermezzo

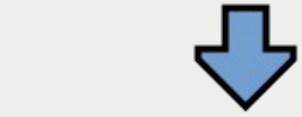
Psychology Methodology Statistics

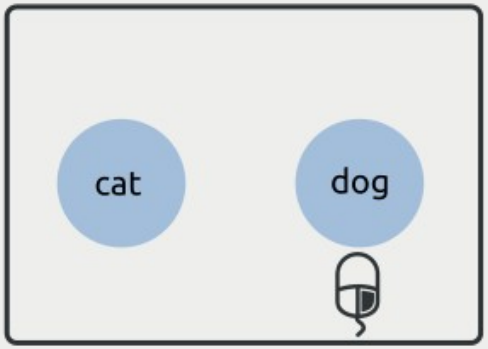
- What is a capybara?

# Cats, dogs and capybaras

Psychology Methodology Statistics



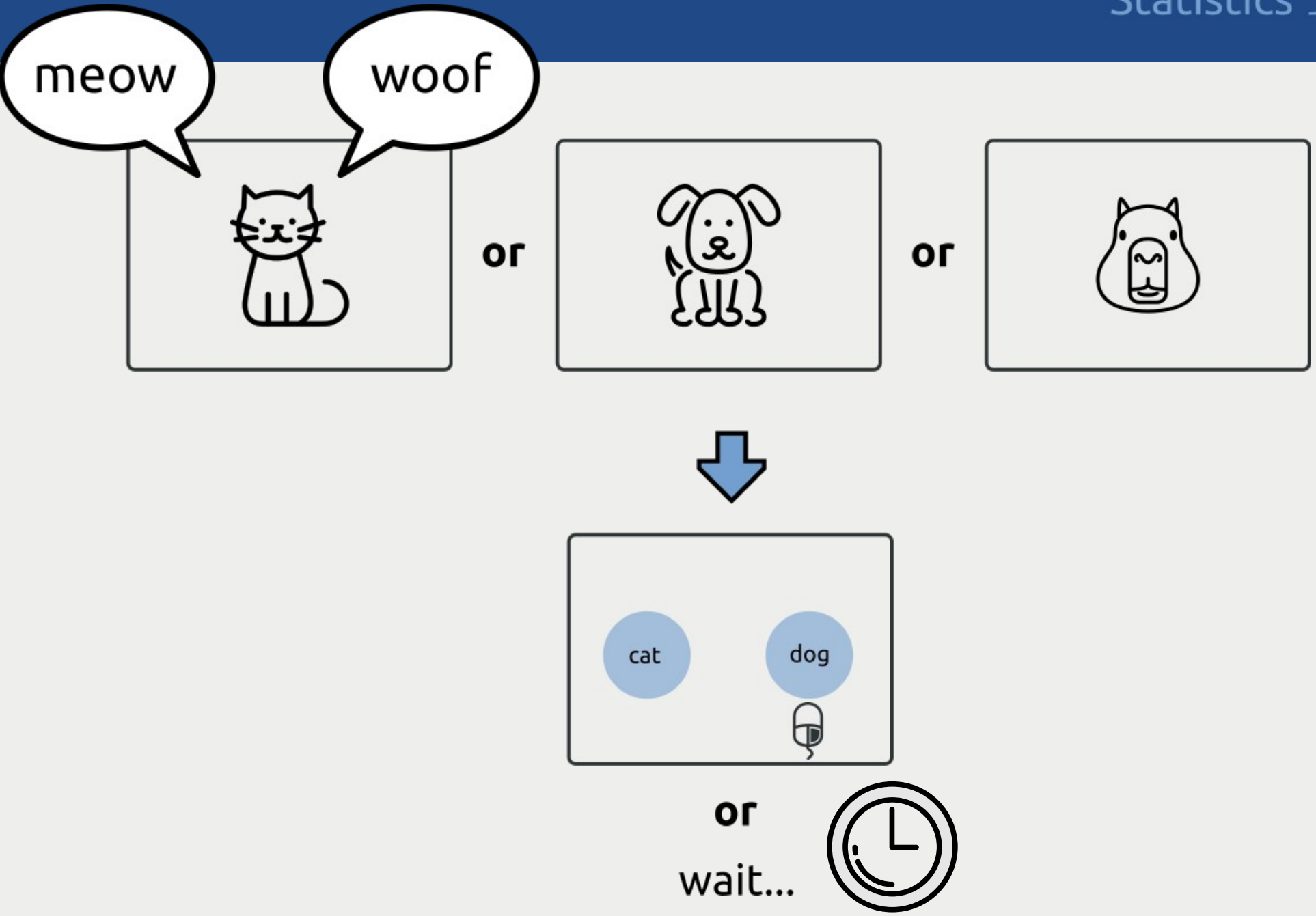



**or**

wait...

# Cats, dogs and capybaras

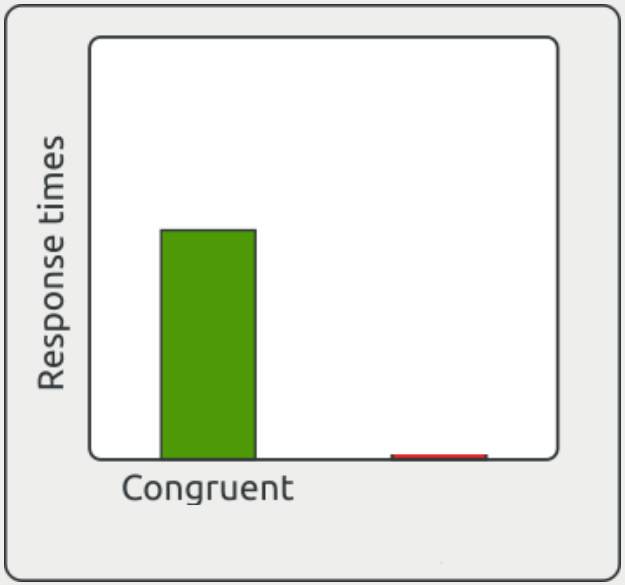
Psychology Methodology Statistics

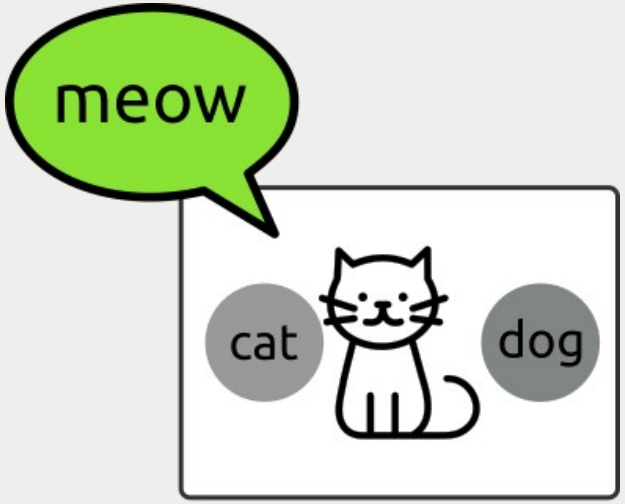


# Cats, dogs and capybaras

Psychology Methodology Statistics

- Prediction 1
  - Easier to respond to **congruent** mappings

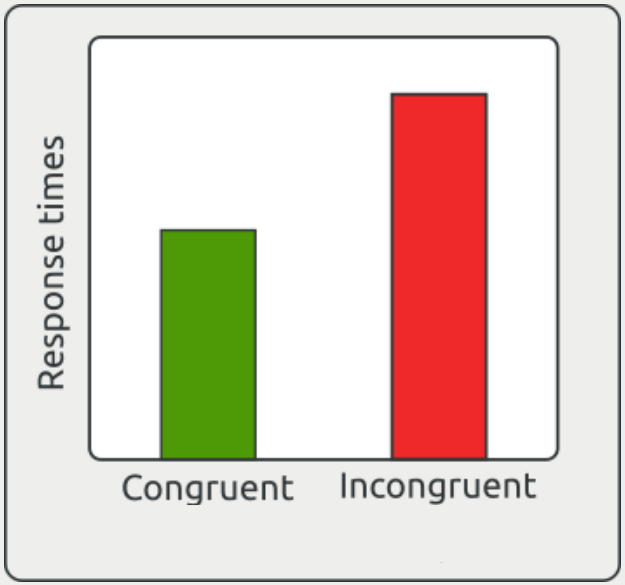


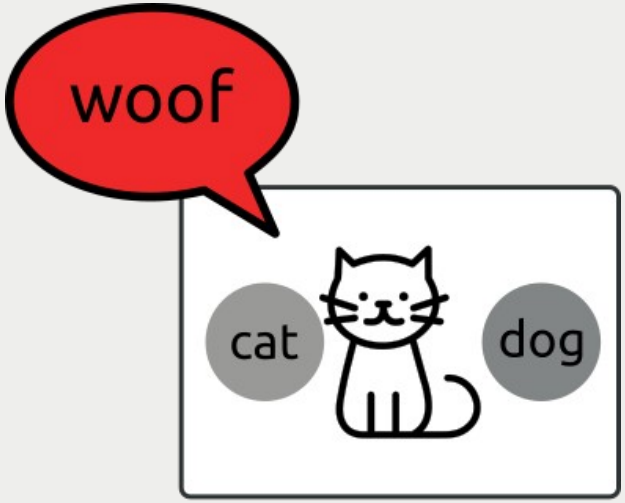



# Cats, dogs and capybaras

Psychology Methodology Statistics

- Prediction 1
  - Easier to respond to **congruent** mappings
  - Than to **incongruent** mappings

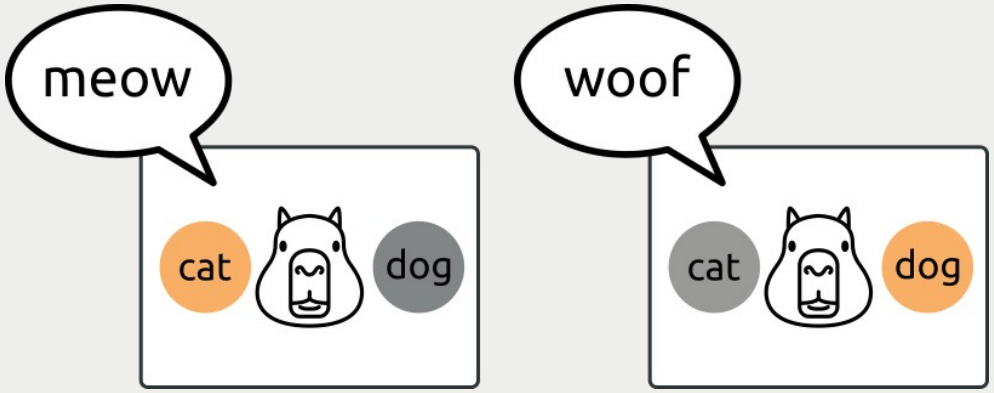


# Cats, dogs and capybaras

Psychology Methodology Statistics

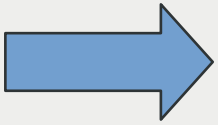
- Prediction 2
  - For false alarms after capybara
    - Biased towards sound



# Experimental design

Psychology Methodology Statistics

- Independent variables
  - Animal (cat, dog or capybara)
  - Sound (bark or meow)



3 x 2 design

- But 5 exemplars of each stimulus type
  - 5 cat pictures, 5 meow sounds, etc.

# Experimental design

Psychology Methodology Statistics

- Independent variables
  - Animal (cat, dog or capybara)
  - Sound (bark or meow)

→ 3 x 2 design

- But 5 exemplars of each stimulus type
  - Picture number (1,2,3, 4 or 5)
  - Sound number (1,2,3,4 or 5)

→ 3 x 2 x 5 x 5 design = 150 combinations!

# Before programming

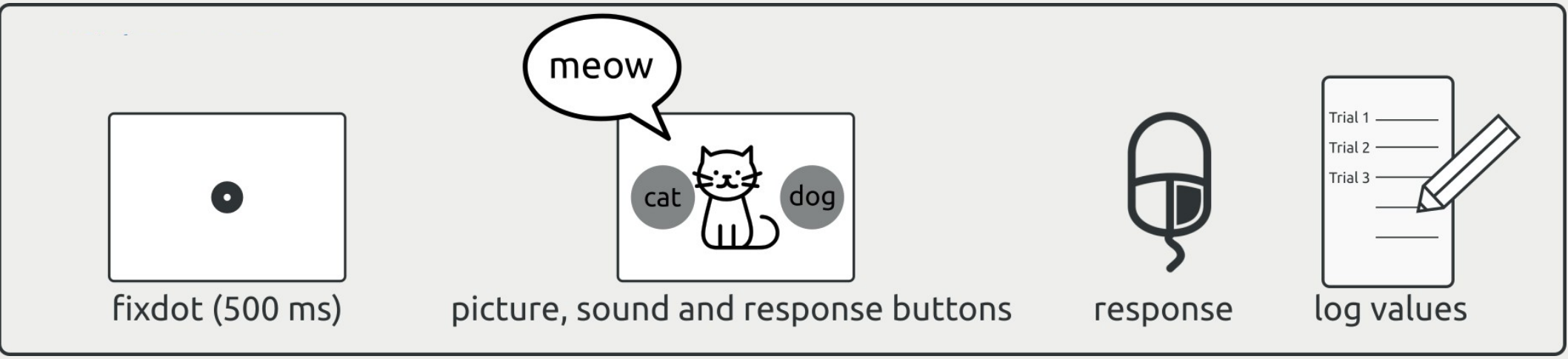
Psychology Methodology Statistics

- Trial sequence
- Experimental hierarchy

# Before programming

Psychology Methodology Statistics

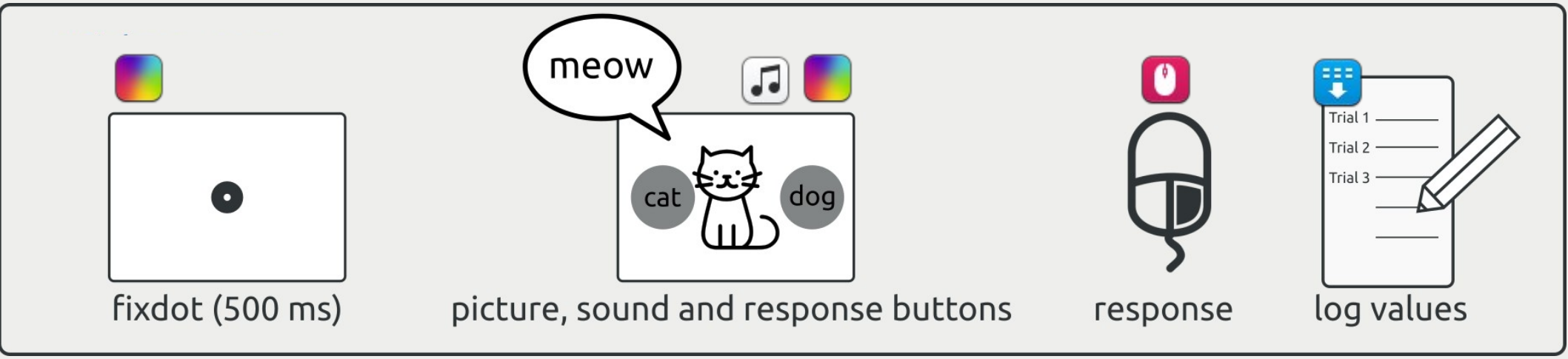
- Trial sequence



# Before programming

Psychology Methodology Statistics

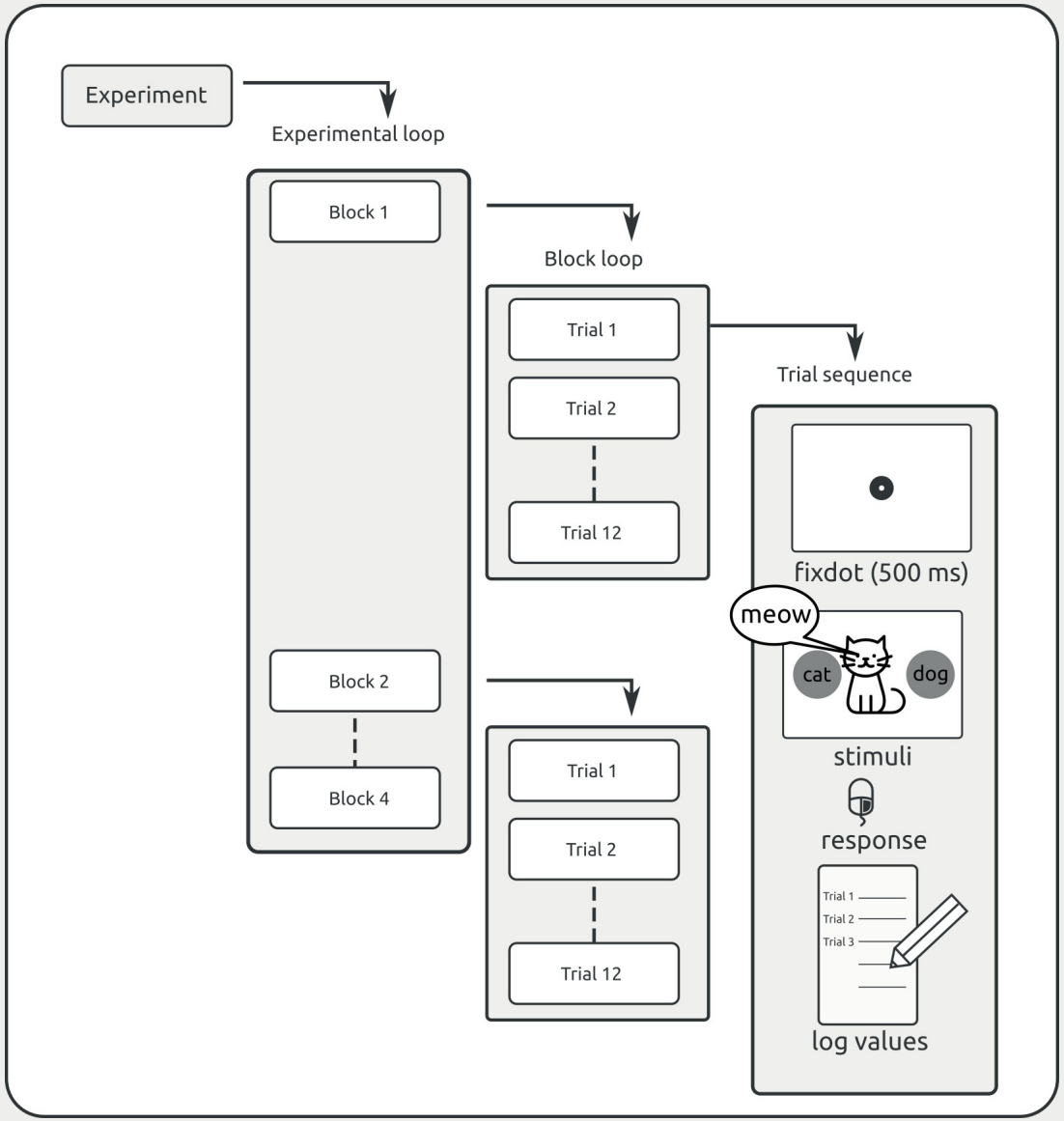
- Trial sequence



# Before programming

Psychology Methodology Statistics

- Experimental hierarchy



# Materials

Psychology Methodology Statistics

- Download animal stimuli
  - https://osdoc.cogsci.nl/3.3/attachments/cats-dogs-capybaras/stimuli.zip

Psychology Methodology Statistics

# Cats, dogs and capybaras

# 2.0

# Extra assignments

- Some coding

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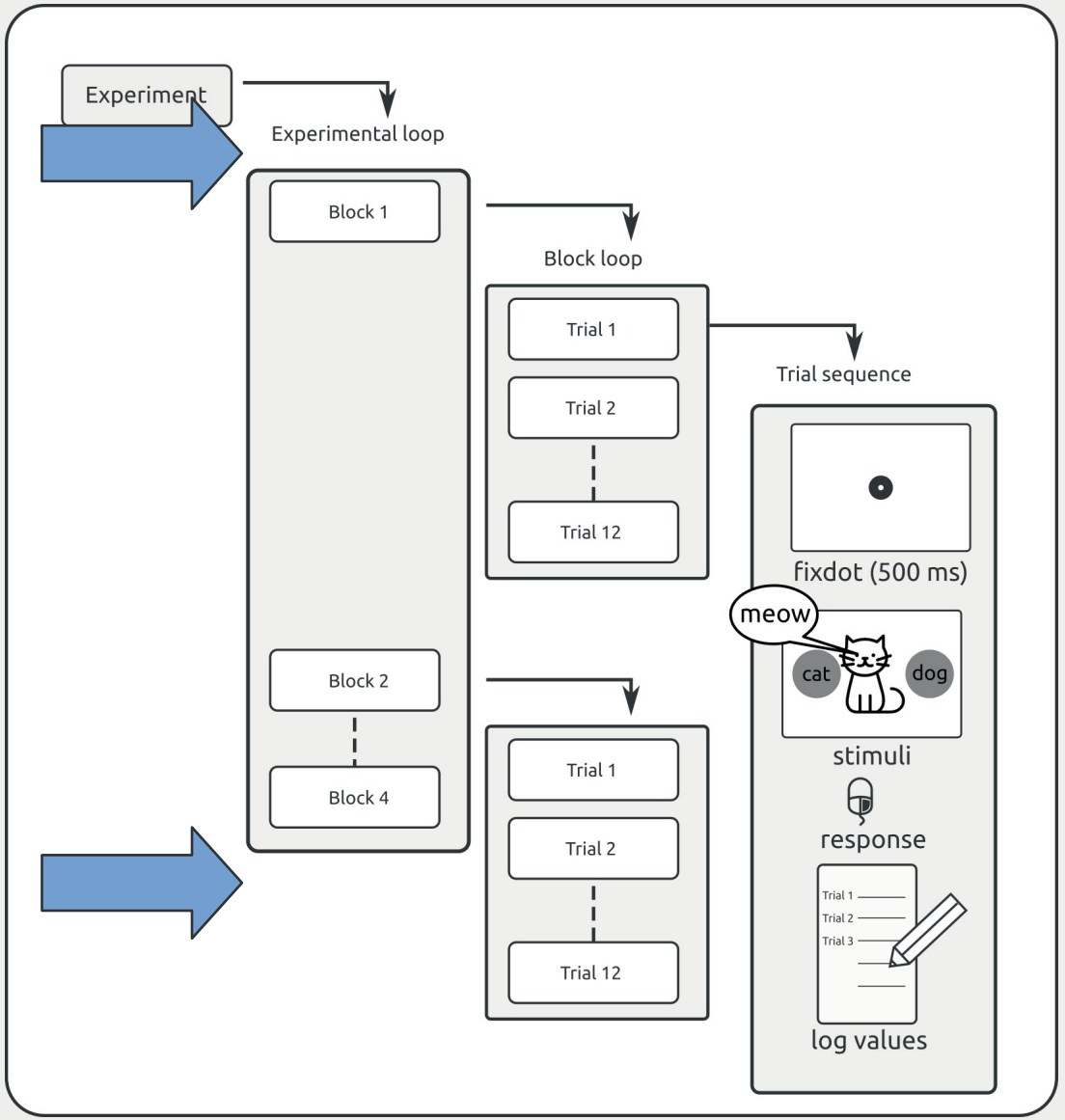
# Extra assignments

- Talk to the participant
  - Consent form
  - Instructions
  - Goodbye



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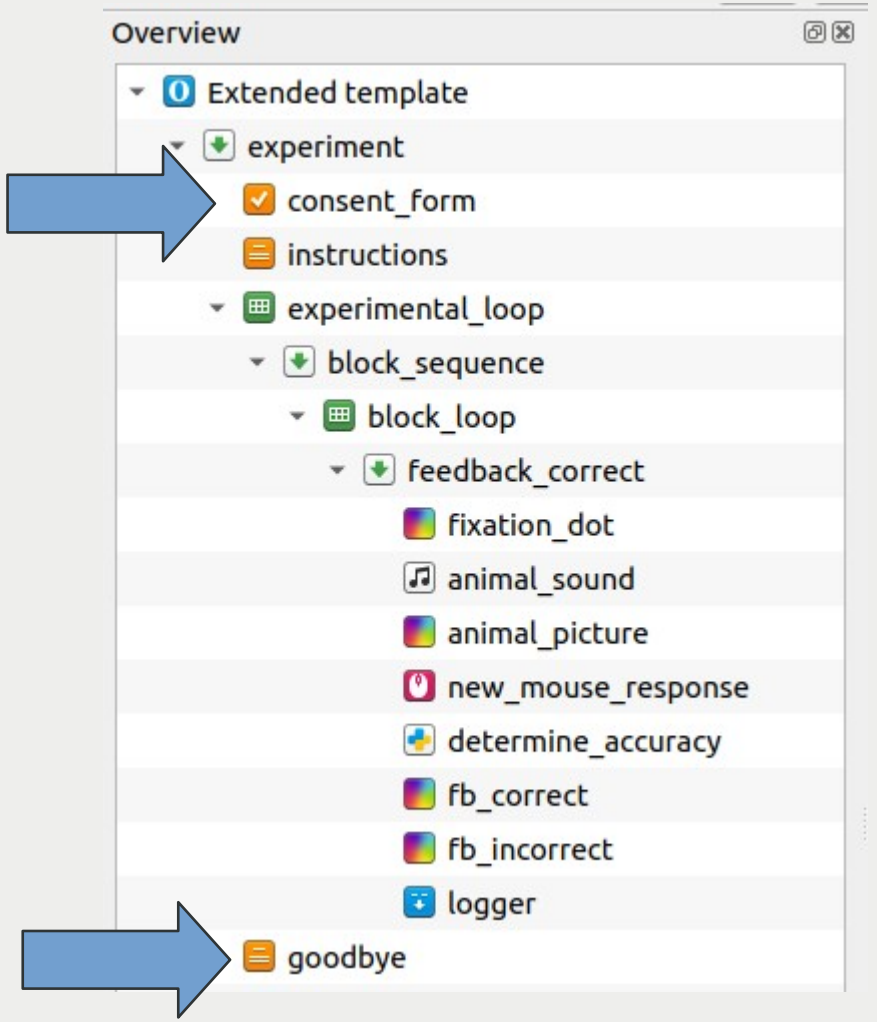
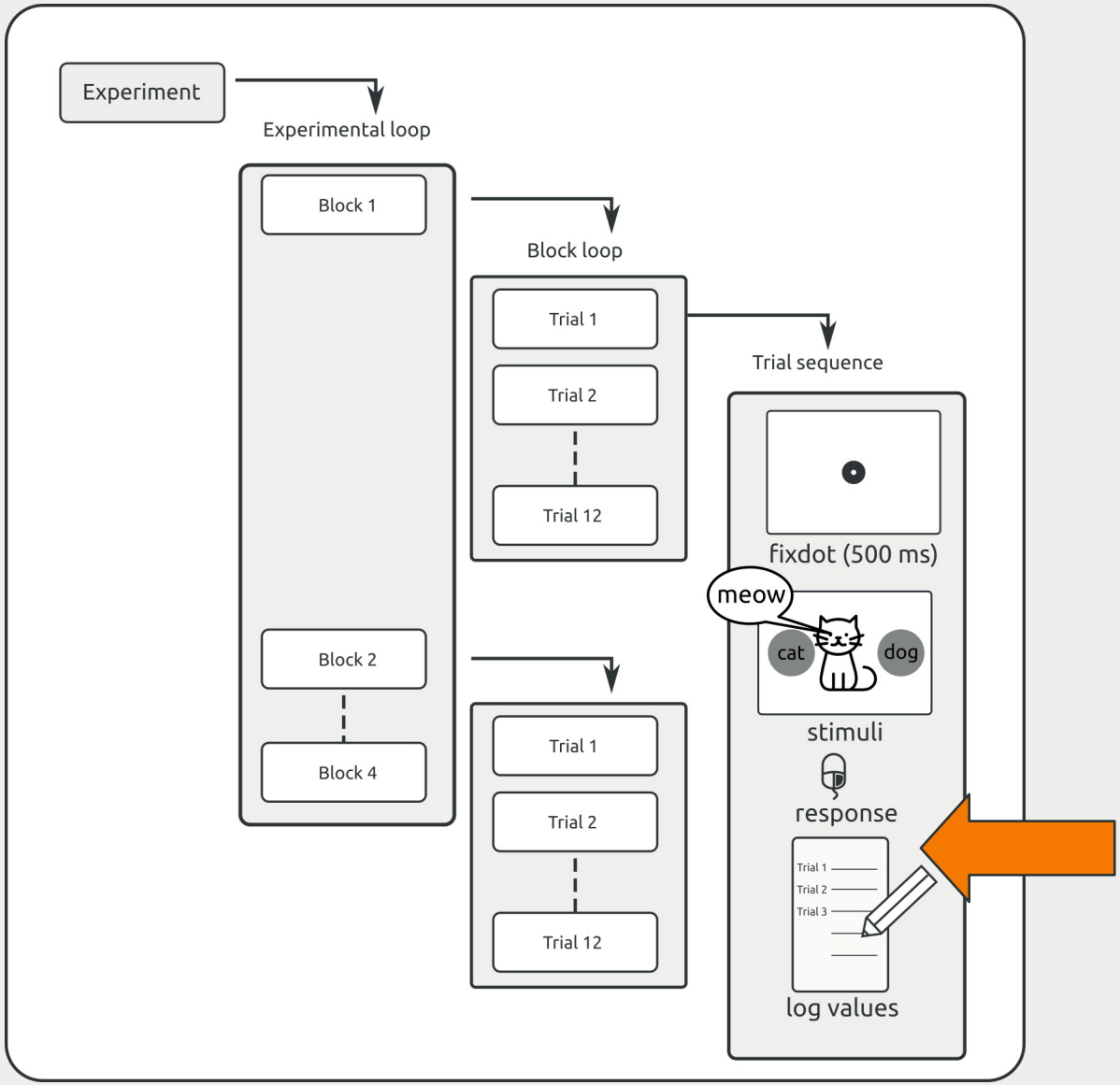


# Extra assignments

Psychology Methodology Statistics

- Feedback after every trial
  - Intermediate
    - Run-if statements
- Response accuracy
  - Advanced
    - Python inline script



# Extra assignments

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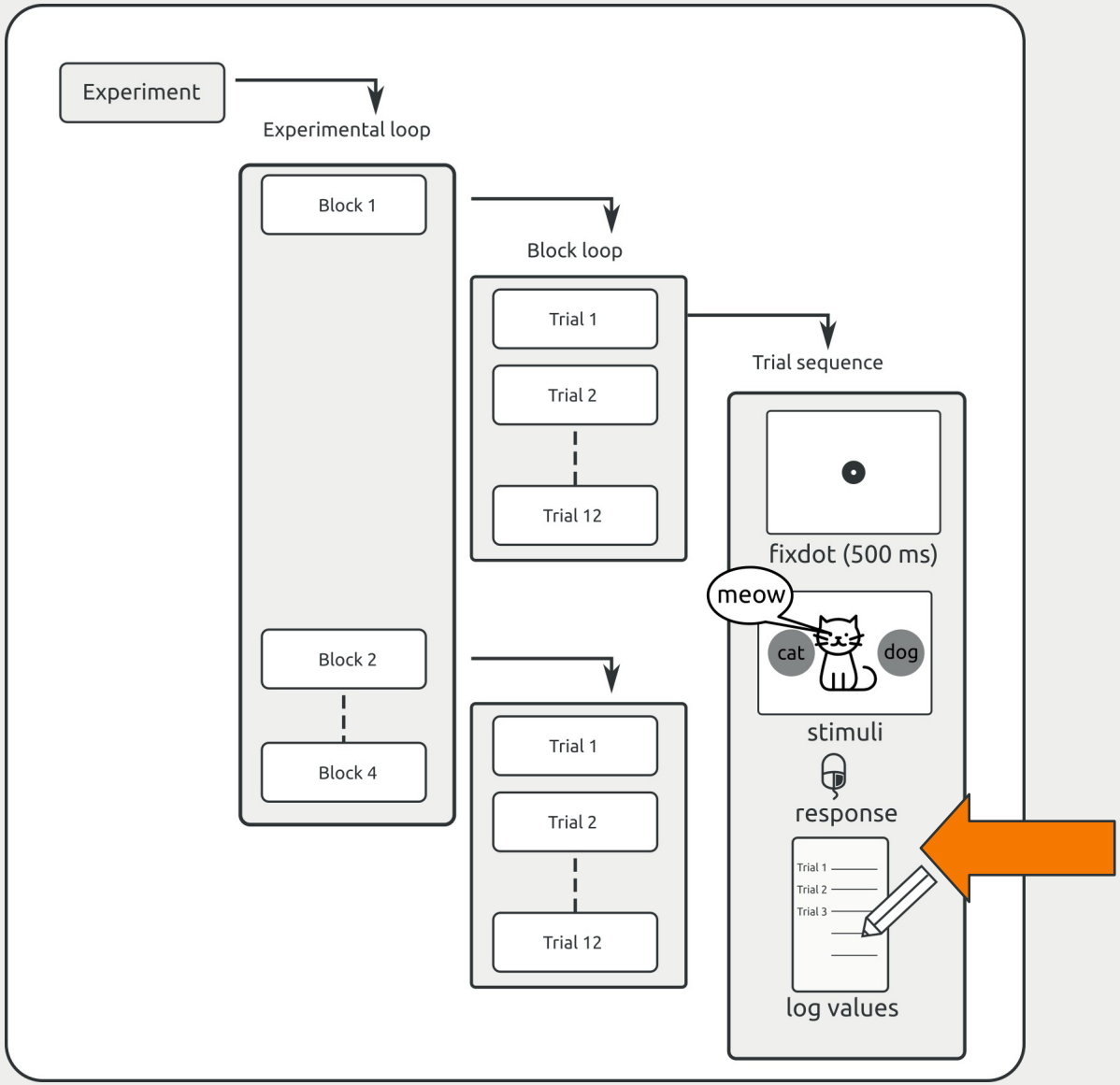

# Regions of interest

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- In OpenSesame (locally)
  - Give elements in sketchpad a **name**
  - **Link** sketchpad and mouse_response
  - Use the variable **cursor_roi**

# Extra assignments

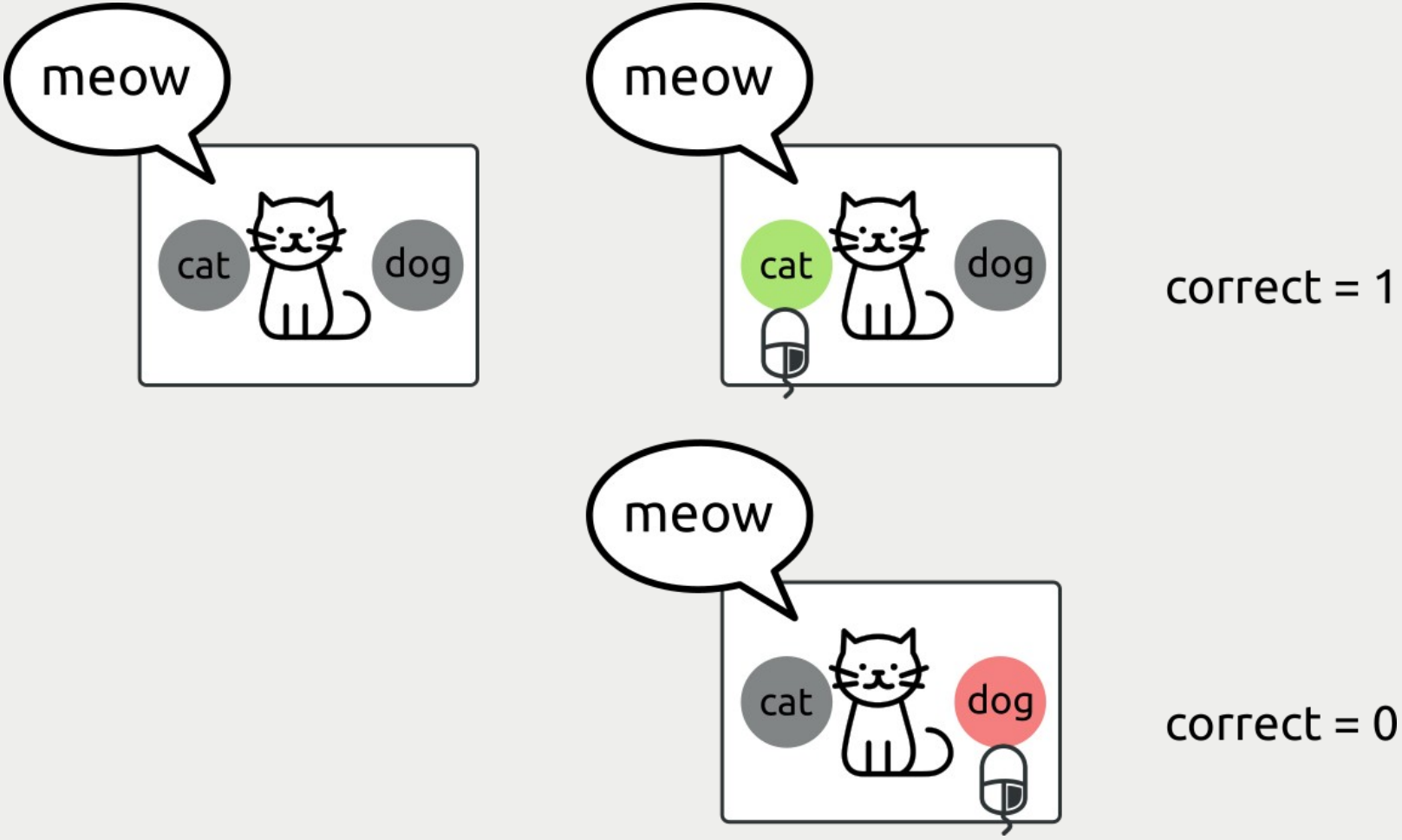
Psychology Methodology Statistics

- Response accuracy
  - Create a variable called *“correct”*
  - Built-in variable *“cursor_roi”*
    - List of all element names (from the linked `sketchpad`) that were clicked
    - If elements overlap, *“cursor_roi”* returns multiple names

# Extra assignments

Psychology Methodology Statistics

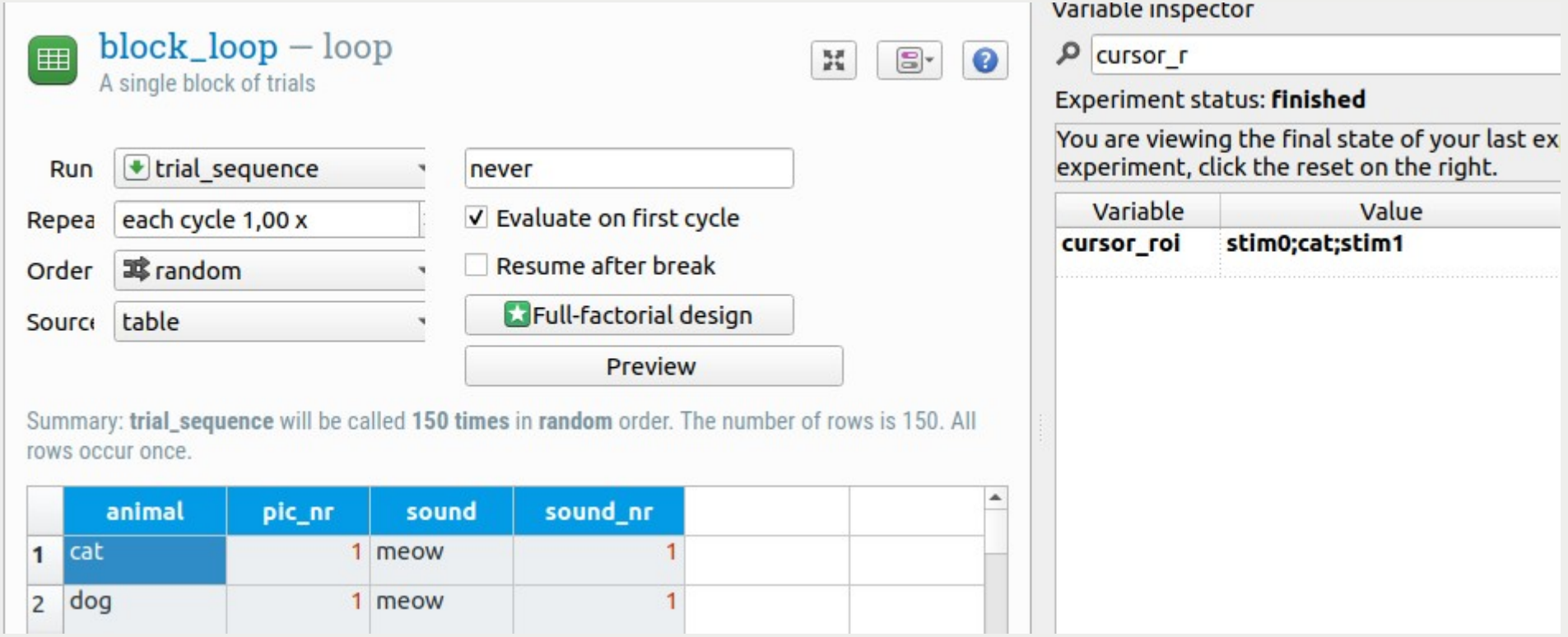
- When is a response correct?



# Extra assignments

Psychology Methodology Statistics

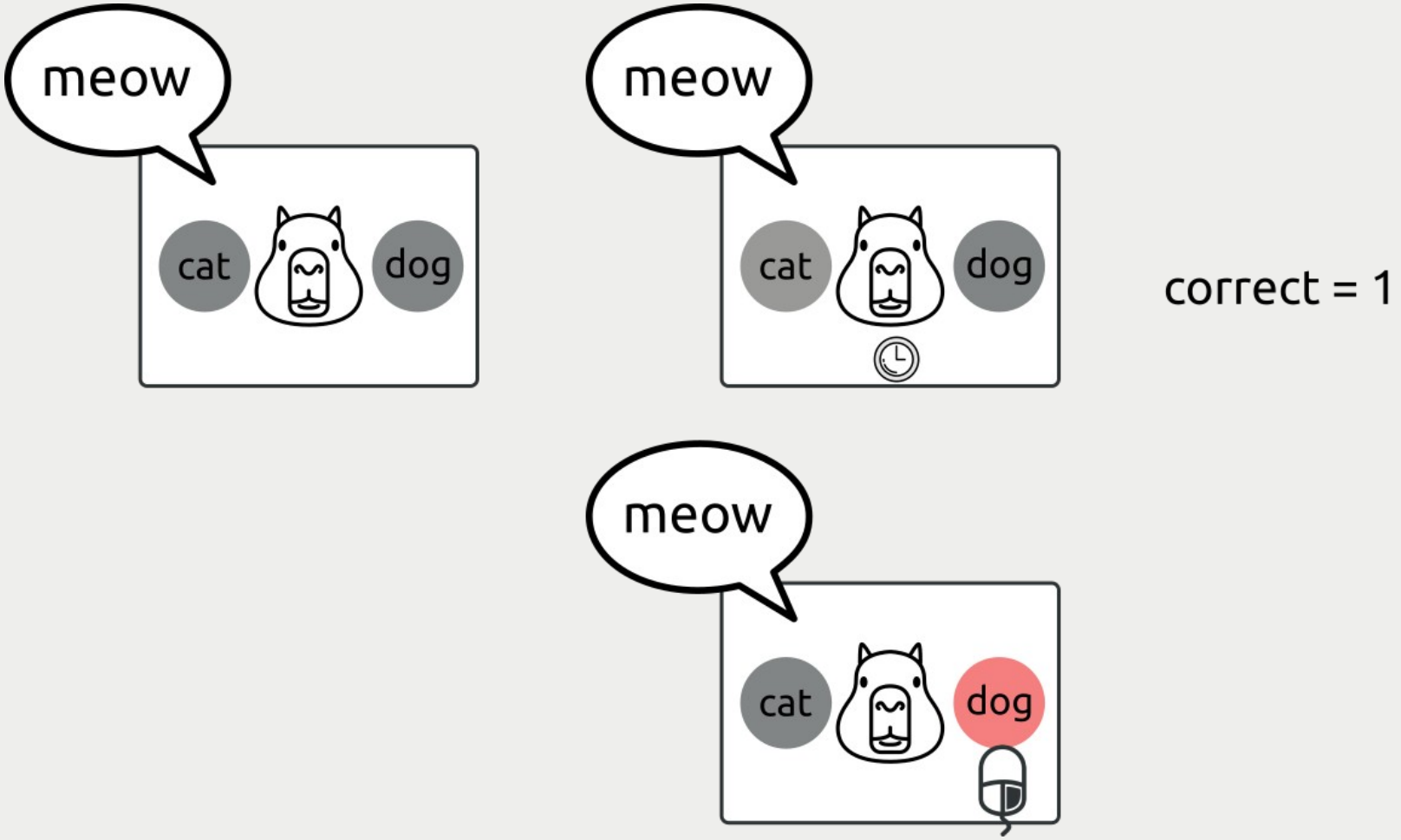
- When is a response correct?
- In programming logic:



# Extra assignments

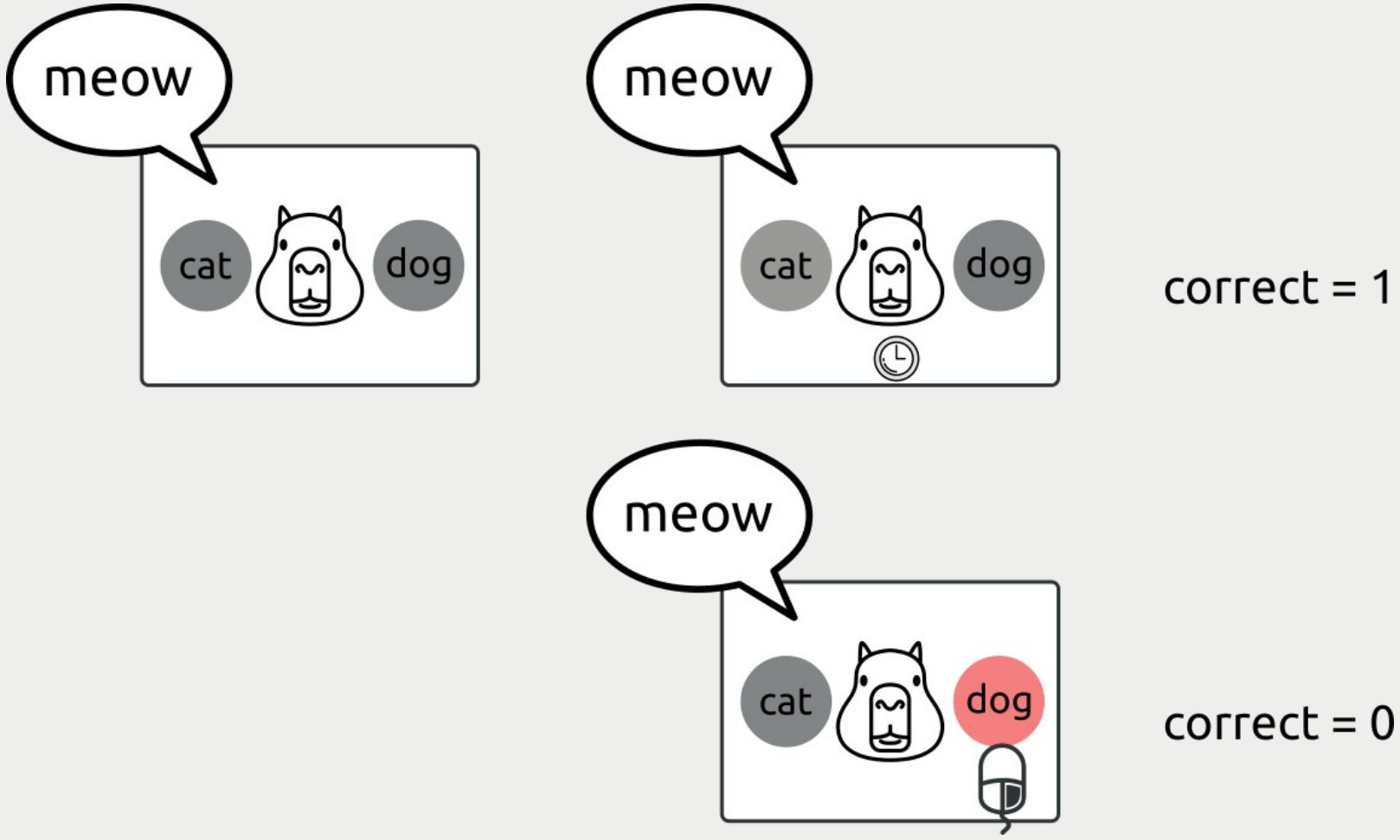
Psychology Methodology Statistics

- If the animal is a capybara?



# Extra assignments

- If the animal is a capybara?



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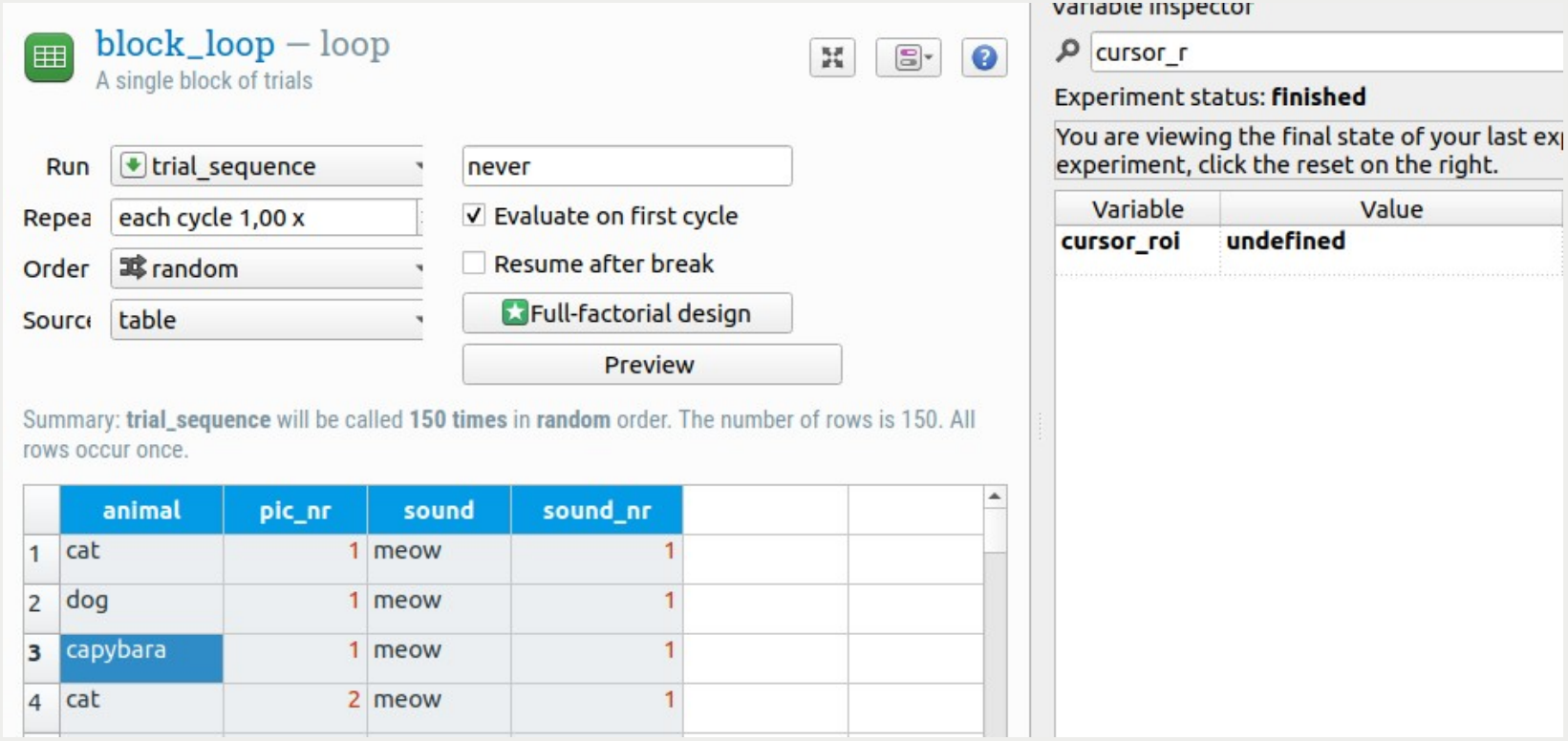
- If the animal is a capybara?
- In programming logic: