

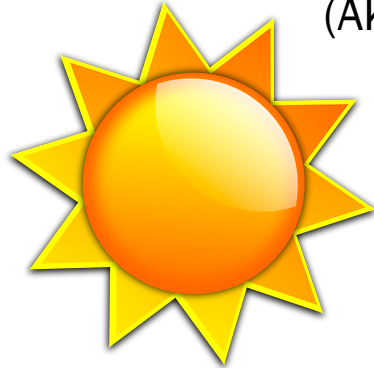
Week 8: Memory

Psych 50

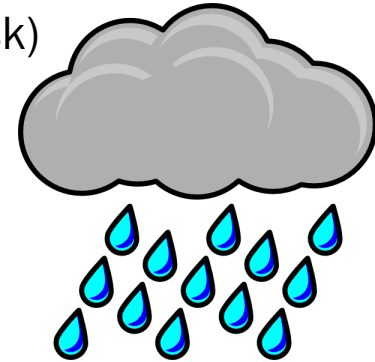
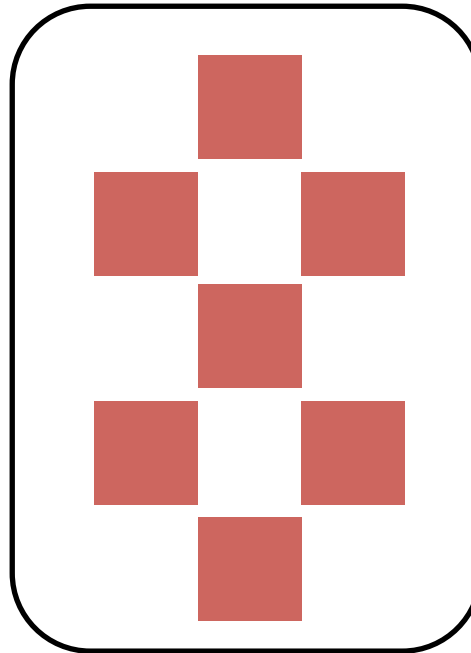
February 26, 2016

This week, you are the experimenter!

Weather Prediction Task
(AKA: Probabilistic Categorization Task)



Shine?



Rain?

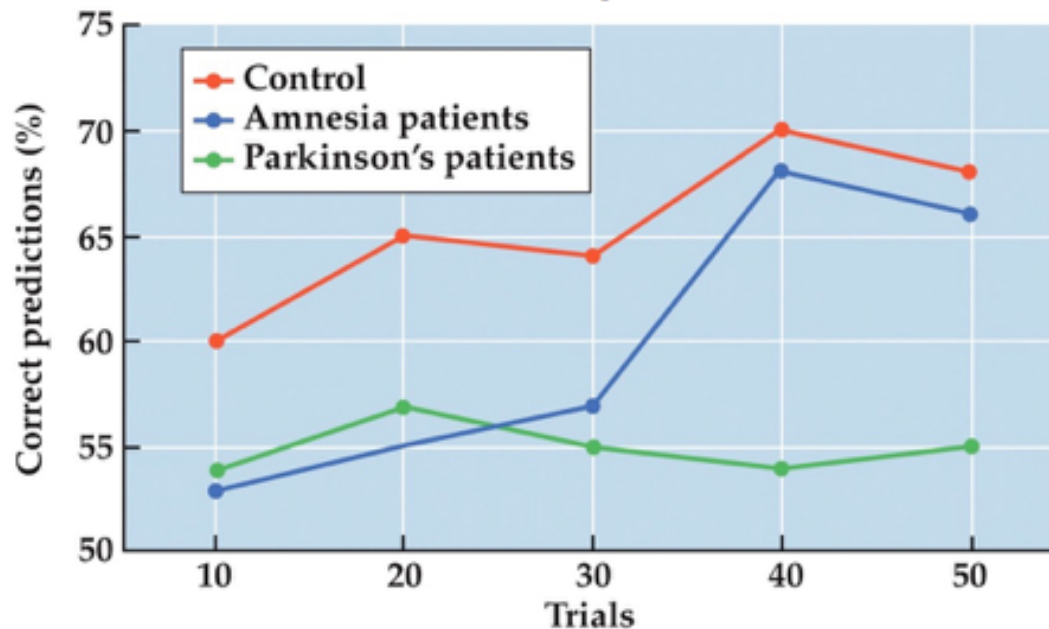


How many questions about cognitive neuroscience can we address with just one task?

Thought question

1. Does the weather prediction task require *declarative memory* or *skill learning*?

MTL patients learn weather prediction task, but Parkinson's patients do not!

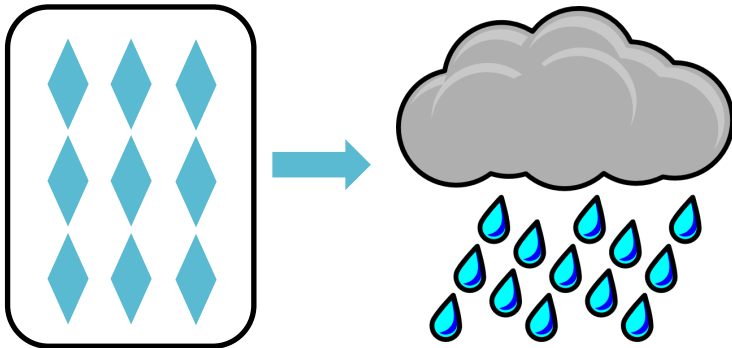


Thought question

2. ...If you hypothesized that the weather prediction task requires *skill learning*, can you think of any changes you could make to the task so that it relies on *declarative memory*?

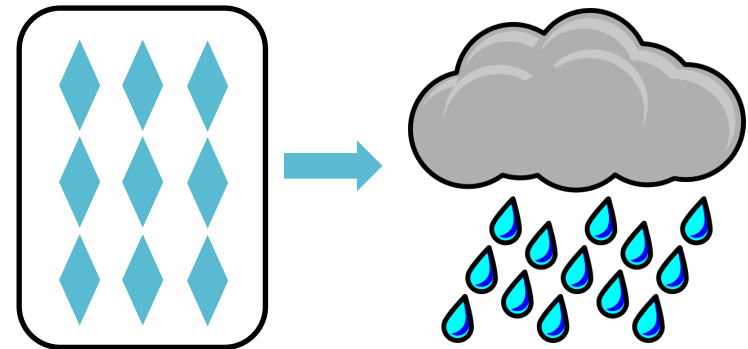
Weather Prediction Task

Press button for *rain* or *shine*



“Paired Associates” Task

Press button for stimulus onset

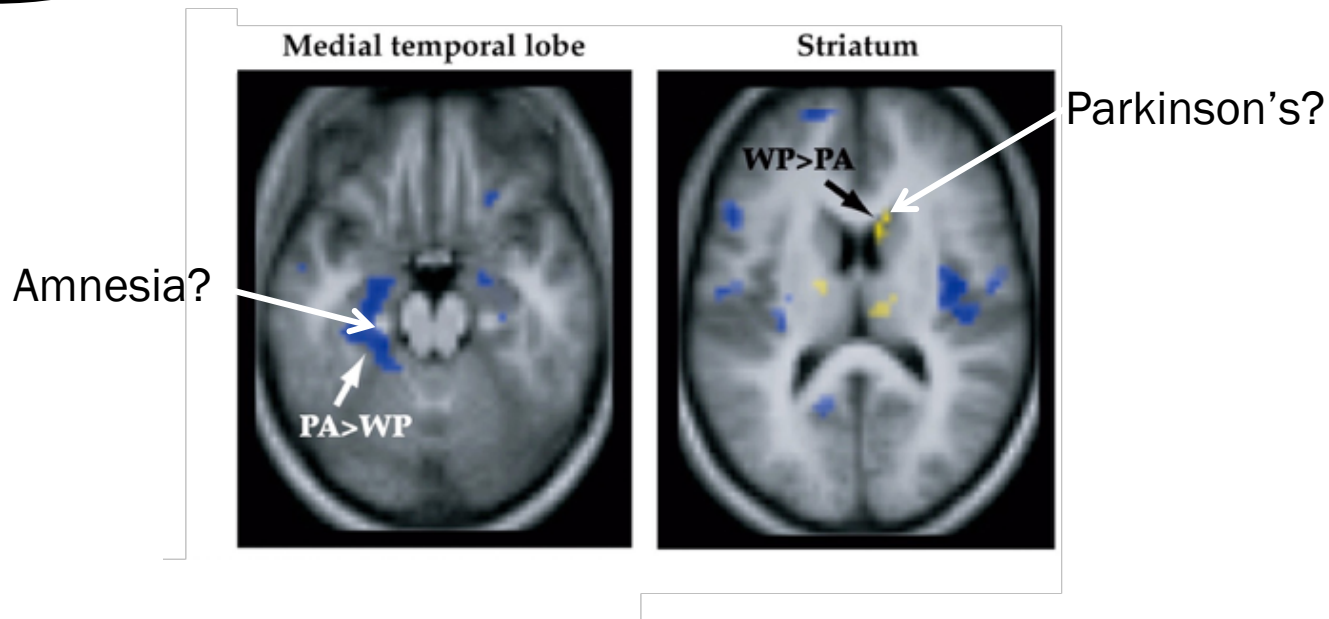


Thought question

3. What patient groups or naturally occurring lesions would you study to address whether (a) declarative memory or (b) skill learning is necessary for learning in the WPT?

Observe

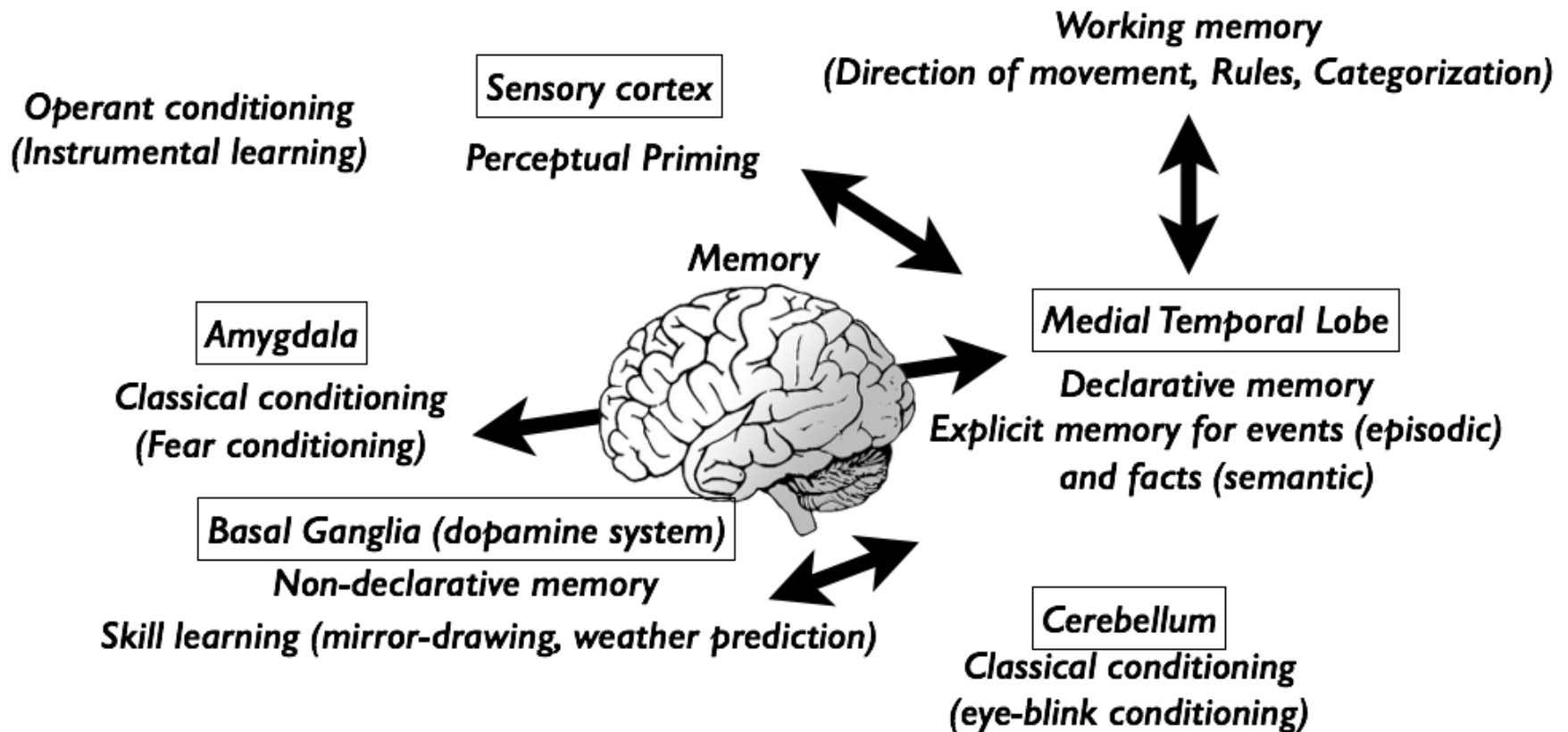
***MTL more activity for paired-associate (declarative)
and striatum more activity for skill learning***



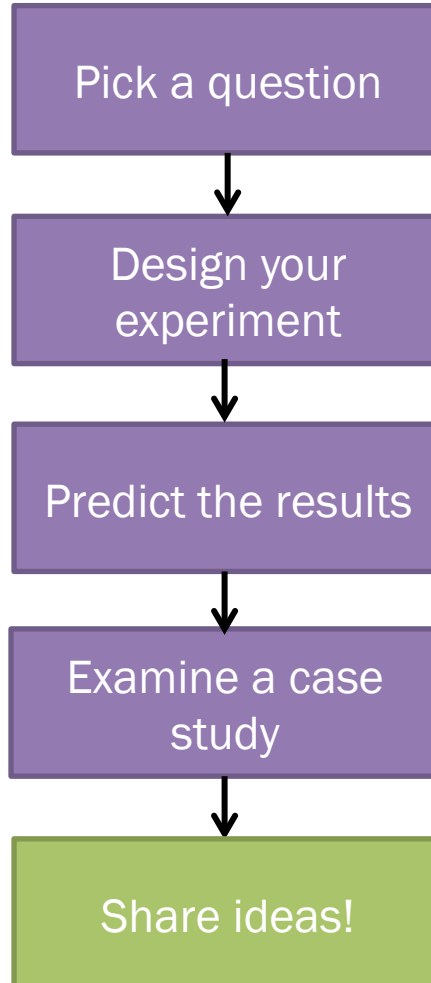
Thought question

4. What can we conclude from a double dissociation?

Different memory functions can be anatomically and functionally disassociated!!



Today's activity



Example:

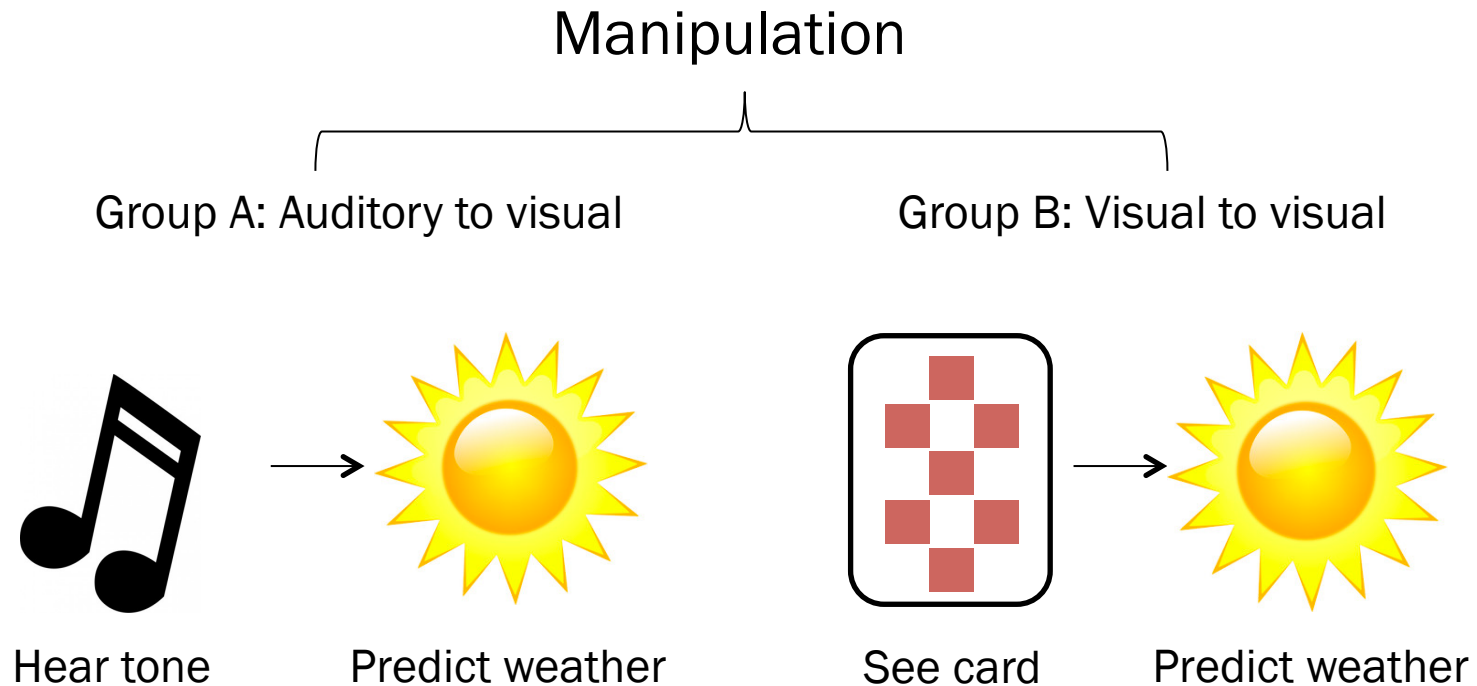
Is it possible to learn across sensory modalities?

For example, is it possible to learn to predict auditory outcomes (thunder) from visual cues (lightning)?



Example:
Is it possible to learn across sensory modalities?

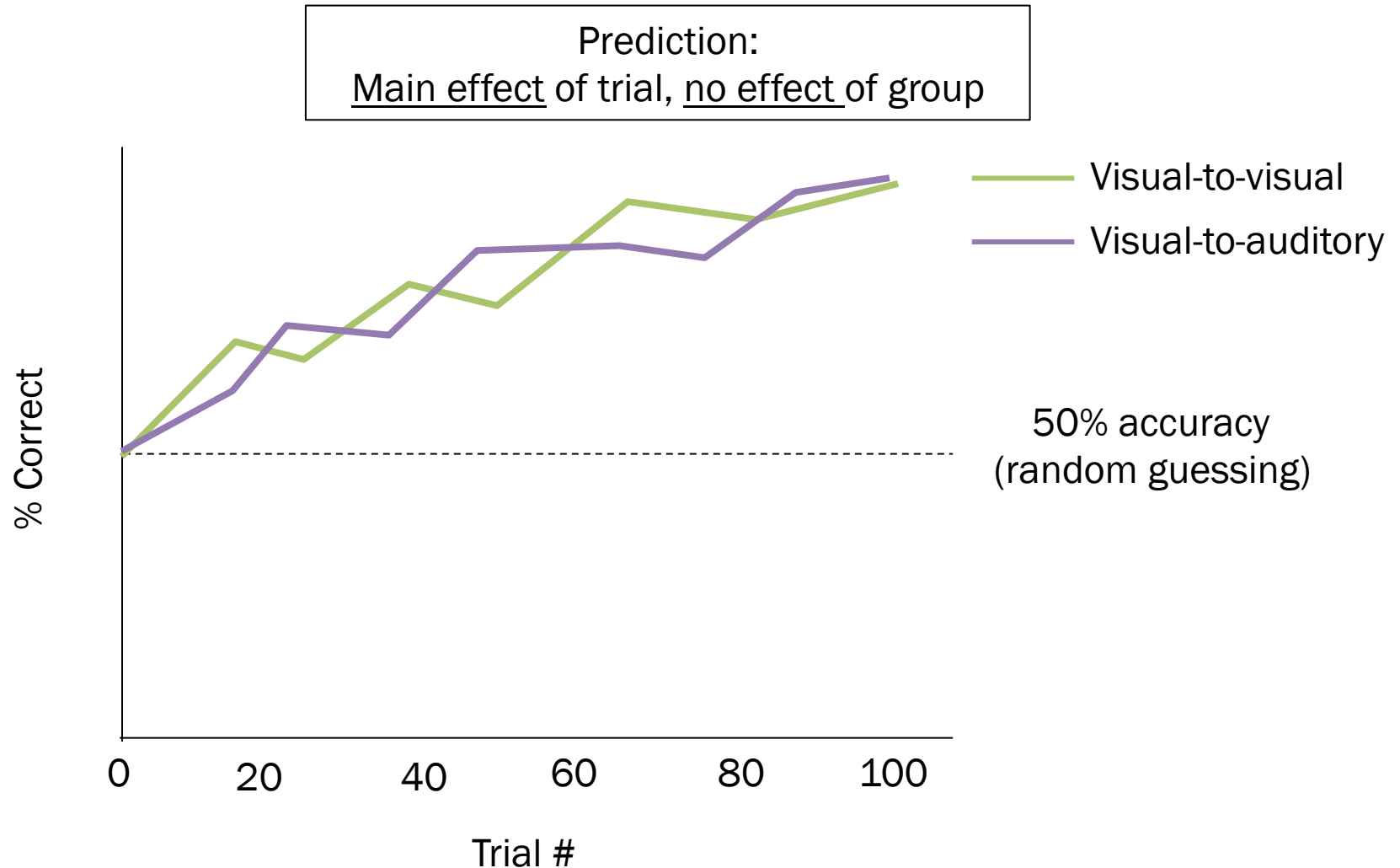
Is it possible to learn across sensory modalities?



What is your hypothesis?

Example:

Is it possible to learn across sensory modalities?



Today's activity

Pick a question



Design your experiment



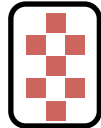
Predict the results



Examine a case study



Share ideas!



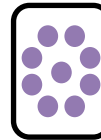
Group 1: Executive control

Does adding distractions impair learning in the WPT?



Group 2: Attention

Can people learn cue-outcome associations spontaneously, without paying attention to the task?



Group 3: Patient studies

Do amnesia patients need to maintain information in working memory in order to learn the WPT?



Group 4: Emotion

Is it easier to learn from emotionally charged cues in the WPT?