

1. First, try the weather prediction task yourself (link). How well did you do? Which cards more reliably indicated rain or shine? Did you find anything odd, confusing, or interesting about the task? [2 pts.]

2. Do you think the weather prediction task requires *declarative memory* or *feedback-based learning*? Explain your hypothesis. [2 pts.]

In the next few questions, you'll plan follow-up experiments to test your hypothesis.

3. If you hypothesized that the weather prediction task requires *declarative memory*, can you think of any changes you could make to the experiment so that it instead relies on *feedback-based learning*? Alternatively, if you hypothesized that the weather prediction task requires *feedback-based learning*, can you think of any changes you could make to the experiment so that it instead relies on *declarative memory*? [2 pts.]

4. What patient groups or naturally occurring lesions would you study to address whether each of the following learning systems is *necessary* for learning in the weather prediction task?

Patient group A: Impaired declarative memory [1 pt.]

Patient group B: Impaired feedback-based learning [1 pt.]

5. Suppose you get the following pattern of results:

- Patient group A shows normal feedback-based learning, but impaired declarative memory
- Patient group B shows normal declarative memory, but impaired feedback-based learning

This pattern of results is called a double dissociation. Based on these results, what can we conclude about neural systems involved in declarative and feedback-based learning? What are the possible advantages of finding a double dissociation, rather than a single dissociation? [2 pts.]