Exam 3 Preparation

Chapter 3: pp. 121-124

Chapter 4: Through section 4.4

Chapter 2: pp. 79-84.

Lecture Study Questions:

1. What is the blocking effect and what is Kamin's hypothesis regarding the blocking effect? How does it challenge a simple contiguity view of Pavlovian conditioning?

2. What do all of the terms in the Rescorla-Wagner model mean? What conditions would increase or decrease the value of the two parameters in the Rescorla-Wagner model? What range of values can these parameters have? What effect does each have on the form of the learning curve? If "surprise" increases what would happen to ΔV ? What conditions would increase or decrease "surprise." Is the Rescorla-Wagner model a qualitative or a quantitative model? Why?

3. How does the implied view of extinction in the Rescorla-Wagner model differ from Pavlov's view of extinction? Compare and contrast overshadowing and blocking. How does the R-W model account for each of these phenomena?

4. Do you know how to work the Rescorla-Wagner model mathematically so that you could show your work and look at the change in V and accumulation of V over two or three trials? Do you know what to use as V(tot) during compound conditioning?

5. What role does conditioning to "background" cues play in how the Rescorla-Wagner model accounts for conditioned inhibition and contingency?

6. Describe the "unblocking" and "overexpectation" experiments. Describe what is happening in each experiment in Rescorla-Wagner terms. What are some of the limitations of the Rescorla-Wagner model?

7. What is the conditioned compensatory response theory (Siegel)? According to this theory, what accounts for the observed behavioral reaction to a drug? What type of response would one observe, for example, if only the CS is presented, or if only the Drug is presented? How does Siegel's theory differ from Eikelboom and Stewart's interpretations of conditioning using drugs? How does each compare to Pavlov's stimulus substitution account of Pavlovian conditioning? What is homeostasis and how does it relate to conditioning using drugs?

8. What are the 2 general issues in the study of the neurobiology of learning and memory? How would you determine the location of learning in the CNS? How does the learning-performance distinction make it difficult to interpret lesion studies? What is the logic behind the work of Thompson and colleagues in their search for the "engram?" What did they find and do their findings suggest? How is the Rescorla-Wagner model seen in the circuit used learning for eyelid conditioning?

9. What is Hebb's rule? What is LTP? What is meant by "change in synaptic efficacy?" How are the findings of the LTP experiments analogous to Pavlovian conditioning? How are the findings of the LTP experiments consistent with Hebb's rule? How, in general, do synapses work (a repeat question from an earlier exam)? How does the NMDA receptor work? How does the NMDA receptor fit Hebb's rule? What area of the brain is thought to be important for conditioned fear and what evidence is there that an LTP-like mechanism is important for learning of conditioned fear?