

## 9.10/9.100 REVIEW QUESTIONS

### Working Memory in Nonhuman Primates

1. Several experiments have addressed the question of whether working memory for spatial locations and object features are processed by distinct areas in the frontal lobes, as they are in the posterior association areas.
  - Summarize these experiments (methodology, task, results).
  - What might account for the (apparently) contradictory findings regarding domain specificity in these experiments?
2. What is the biased competition model of selective attention, and what is the role of the prefrontal cortex in this model? What features of the prefrontal cortex make it suitable for such a role?
3. Is working memory a passive buffer of sensory information?
4. What's the difference between prospective and retrospective working memory? What are the advantages of each of these two working memory strategies?
5. What is a confusion matrix? What purpose does it serve in an experimental design? Describe the possible behavioral outcomes of a confusion matrix experiment. State how each of these outcomes would be interpreted, and the reasoning behind the interpretation.
6. Describe specific experiments mentioned in lecture or the readings that used a confusion matrix design. What results were obtained in each?
7. Describe experimental evidence that prefrontal cortical activity does not simply reflect a stimulus or a response to be remembered, but rather an association between the two.
8. What is the copy/trace model? What predictions does it make? Describe (in detail: methodology, task, and results) two experiments that tested this model. Why did the results show that the model cannot be correct?
9. What effects do 'surprising' stimuli have on working memory processing? How would performance be affected if the surprising stimulus were (A) the item to be remembered? (B) presented during the retention interval? What does this indicate about the relationship between attention and working memory?
10. What is proactive interference?