

Take Home Final Exam**Instructions**

- Please **type** your exam. It should be **double-spaced**, and preferably printed on one side of the paper.
- Exams are due by 5:00pm on Wednesday, June 11th, 2003. You may find me in my office (Oxley 24b) and hand your exam to me personally, or leave it in my mailbox in room 222 Oxley Hall.
- Do not copy answers verbatim out of your text or any other reading that was assigned during the quarter. Do not copy answers from each other. Answers are to be written in your own words only. Any answer which is plagiarized will receive 0 points. Please see me if you need clarification about what plagiarism means.
- You are expected to work individually on this exam. If you have any questions or need help, please contact me (by phone or e-mail).
- Please try to limit each answer to a half page – if you have to write more than half a page for a few of the answers, that's fine. Some of your answers may be shorter than a half page.

This exam consists of fifteen short answer questions, plus one bonus question. Each question is worth 10 points unless otherwise indicated. The grand total is 120 points.

- 1) Describe how information flows through the brain when one is reading a word out loud. Begin with the stimulus as it enters the eye, and finish with the actual sound leaving a person's mouth.
- 2) A person who is a subject in an experiment is presented with sound stimuli. In each of the following pairs, which is the person likely to process first, and why?

PAIR A

- (1) The word "wolverine" presented to the right ear.
- (2) The word "mystique" presented to the left ear.

PAIR B

- (1) Thunder presented to the left ear
- (2) The word "storm" presented to the left ear

- 3) Describe Wernicke's Aphasia. (5 points)
- 4) Describe Broca's Aphasia. (5 points)
- 5) Describe conduction aphasia. Include the site of damage, and reasoning about why such individuals show the symptoms that they do.
- 6) How do we know that the angular gyrus is necessary for reading and writing? Your answer should include names and descriptions of the two aphasias that result from damage to the angular gyrus, and their symptoms.
- 7) If you give a split-brain patient an object to hold in his left hand, but don't let him see what it is, will he be able to say the name of the object? Explain why or why not. (5 points).
- 8) Pick any two of the following and explain how they can be used as evidence in support of the hypothesis that language is modular. Begin your answer with what it means for language to be modular – recall that there were two definitions of modularity, and you should be precise about which one you mean when discussing the two topics you choose.
 - a. Wernicke's and Broca's aphasia
 - b. Williams Syndrome
 - c. N400 and P600 event-related brain potentials (ERPs)
- 9) How are two languages stored in the brain of a bilingual person? In your answer, include information on the following:
 - a. Are they housed in the same area? Which hemisphere?
 - b. How compact are the naming areas for each language?
 - c. If a bilingual person suffers a stroke, will that person lose both languages or just one of them? If only one, then which one?
- 10) Successful language acquisition depends on environmental stimuli in the form of language. How must we be exposed to language? Give the relevant example. (5 points)
- 11) Explain how the McGurk Effect provides support for the Motor Theory of Speech Perception. (5 points)
- 12) Consider the following data by Connine, Blasko and Titone (1993). They set up a priming experiment as follows: participants were shown a prime from the left hand column. Then they were shown a target word for which they had to perform a lexical decision task. Reaction times for lexical decision of the target word are given in the third column.

Prime	Target	Reaction Time
doctor	nurse	254 milliseconds
toctor	nurse	277 milliseconds
zoctor	nurse	498 milliseconds
computer	nurse	498 milliseconds

Note that 498 msec is significantly different from 277 msec, and from 254 msec. But, there is no significant difference between 254 and 277.

Explain these results. Is the word zoctor priming the word nurse? Is toctor priming the word nurse? Since both toctor and zoctor are non-words in English, why should they elicit the different reaction times that they do?

- 13) What is the basic difference between the modular view of sentence processing and the interactive view of sentence processing? (5 points)
- 14) What is dyslexia? In particular, explain which language processing level is involved, and what exactly the deficit is.
- 15) Think back to the Skinner-Chomsky debate. Recall that Skinner claimed that language was behavioral, while Chomsky claims to this day that language is innate. Knowing what you know now, explain why they both are right. Give evidence to support your explanations.
- 16) **Bonus Question** (5 points) Consider the New York Times Article "Old Brains Can Learn New Language Tricks" that you read for class on June 4th. Could Dr. McClelland's training technique extend the critical period for first language acquisition? What about the critical period for second language acquisition? As usual, explain your answer.