

## PSYCHOLOGY 281 ASSIGNMENT 4

Due: 7 June 2012

LAST NAME: \_\_\_\_\_ FIRST NAME: \_\_\_\_\_ ID: \_\_\_\_\_

LAST NAME: \_\_\_\_\_ FIRST NAME: \_\_\_\_\_ ID: \_\_\_\_\_

### INSTRUCTIONS:

You may work on this assignment singly or in a group of two people. If you work in a group only turn in one assignment with the names and IDs of both students on it. Both members of a group receive the same grade.

Answer the questions in the space provide on this form. You may print off the form and fill in the answers by hand or open the form with a word processor and type your answers. If you write answers by hand your handwriting must be neat and legible. Whether you write answers by hand or type them, ensure that your answers actually make grammatical and syntactic sense. Failure to do so will be reflected in your grade... Also, be aware that **scientific writing should be succinct and to the point!** Rambling answers, sometimes called “shotgun answers”, in which lots of material is provided, much of it irrelevant to the actual question at hand, will be penalized during grading.

Once completed, staple (no paperclips or binders) the pages together and turn the assignment in to the instructor by the end of class on 7 June; a 10% penalty will be applied immediately to any assignment not submitted by this time. An additional 10% late penalty will be applied each subsequent day (including weekends and holidays) at 12:00 PM (i.e., noon). Late (or early!) assignments must be submitted *directly* to the instructor, or may be turned in to office staff at the Department of Psychology office (BSP-217), who will date-stamp the assignment (hours of operation Monday–Friday 8:00-12:00 and 1:00-4:00).

This assignment is out of 15 points

**Question 1:** Why are so many athletes and gamblers inclined to be superstitious? (2 points)

**Question 2:** In operant learning a subject either makes an appropriate response or avoids making an inappropriate response in order to receive an appetitive outcome. A rat may need to press a lever to get a treat, a child needs to try speaking in order to benefit from speech therapy, etc. Without a response there is nothing to reinforce. As you know from your text and from lecture, shaping and chaining procedures can be used to bring about the “target” response (i.e., a response of a specific form). For this question identify a target behaviour. Be creative. Choose a behaviour that might not occur spontaneously but could be shaped. After identifying the target behaviour, list the successive approximations needed to shape the behaviour. (2 points)

Target behaviour: \_\_\_\_\_

Successive approximations (note: there is no set number of successive approximations you need to come up with. Try to break down the behavioural response(s) into individual units.)

**Question 3:** How does the Sidman avoidance procedure differ from other avoidance procedures? (1 pt.)

**Question 4A:** Consider the following two-key choice study for which key 1 was operating on a VI-20 second schedule and key 2 was on a VI-50 second schedule. The average number of reinforcers delivered per an hour for key 1 and key 2 were 180 and 72 reinforcers/hour, respectively. The average number of responses per hour subjects made on key 1 and key 2 were 1377 and 578 responses/hour, respectively. Using Herrnstein's matching law equation and the data provided here, determine whether or not the subjects demonstrated matching in their choice behaviour. Show your calculations. (1pt)

**Question 4B:** Another two-key choice study is run with a different group of subjects. Once again, key 1 is on a VI-20 second schedule and key 2 was on a VI-50 second schedule; the average number of reinforcers per hour for keys 1 and 2 would again be 180 and 72 reinforcer/hour, respectively. This time, however, the average number of responses per hour made by the subjects was 1382 responses/hour for key 1 and 1740 responses/hour for key 2. Use Herrnstein's matching law equation and the data provided here to determine whether or not the subjects demonstrate matching in their choice behaviour. Show your calculations. (1 pt)

**Question 4C:** Bias could account for the results of section B. What *specific* change to reinforcer *amount* could explain your findings from section B? (Remember that “amount” refers to, for example, the number of pieces of rat chow given for a single reinforcer delivery, not the total number of reinforcer deliveries per hour). (0.5 pt)

**Question 5:** Mr. Smith and Ms. Jones both give their students new spelling words on Friday. Mr. Smith always tests his students on the following Friday. Ms. Jones also tests her students once a week, but the day varies, and she does not announce the test day in advance. Whose students are most likely to study on Tuesday nights? Explain why in terms of operant learning principles. (1.5 pt)

**Question 6A:** Mary-Lou, aged 3 years, still does not speak, although she will vocalize (squeals, gurgles, etc.). Medical examination reveals that she is in perfect health. Testing shows that she has normal intelligence. Her parents do not abuse her; in fact, they spoil her shamelessly. Answer the following: What is the most likely explanation for Mary-Lou’s failure to speak? (1 pt.)

**Question 6B:** Using what you know of operant conditioning and in light of your answer to part A of this question, propose a methodology that could be used to get Mary-Lou speaking. (2 pts.)

**Question 7:** Assume that you train subjects on FR-30, VR-30, FI-30 sec., and VI-30 sec. schedules until they are responding at a steady and consistent rate. Now shift each schedule to extinction (i.e., no reinforcers are provided for responding). Complete the following in the space provided: rank order, from easiest to hardest (i.e., quickest to longest), the schedules for extinction. Explain your reasoning for the rank order you have provided. (1 point for ranking, 2 points for explanation)

Easiest \_\_\_\_\_ Hardest

Explanation: