



"And one final warning before we begin the exam — any stray eyeballs will be immediately thumped."

OK, the Skidmore Honor Code is in force (as always). Keep your eyes focused on your own exam. You should read each question carefully and answer each question completely. Each question has associated with it a certain point value. I tend to think of points as minutes, so the entire exam is worth 50 points (thus, I think you should be able to complete the exam in 50 minutes). Don't spend 30 minutes on a 10-point question, or you won't finish the exam. On the other hand, if you've answered a 20 point question in 5 minutes, you've likely missed something. Good Luck! Have a nice weekend!

1. Define what we mean by the term *operational definition* and then cite a specific example of an operational definition from both Milgram's shock study *and* Harlow's infant monkey study. [5 pts]

2. Distinguish between the terms *internal validity* and *external validity*. Are they completely independent? (Could you have one without the other?) Which is more important and why? Briefly describe the Higgins & Marlatt (drinking and tension reduction) *or* the Hecht (dark adaptation) study and articulate the external validity problems. Then tell me why you don't think (or Mook didn't think) that those concerns are sufficiently troublesome that they would negate the value of the study. [10 pts]

3. A study was conducted to compare the effectiveness of different rewards that might be used to teach retarded children how words are spelled. Twenty retarded children, ages 5 to 7, were randomly assigned to four groups, with 5 children in each group. Each child was shown five common objects and five cards, each showing the printed name of one of the objects. The child's task was to match each object correctly with its name card. Whenever a correct match was made, the experimenter rewarded the child. Children in Group = 1 were rewarded with candy. Children in Group = 2 were rewarded with tokens that could later be exchanged for candy. Children in Group = 3 were rewarded with tokens that could be later be exchanged for attention from the experimenter (playing games, reading to the child, etc.). Children in Group = 4 were rewarded with verbal praise. The experimenter recorded the number of trials required before a child could correctly match all five pairs of words and pictures. Thus, smaller numbers indicate faster learning. Analyze and interpret the output below as completely as possible. [10 pts]

Analysis of Variance Table

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	3	41	13.667	7.593
Within groups	16	28.8	1.8	p = .0022
Total	19	69.8		

Group:	Count:	Mean:	Std. Dev.:	Std. Error:
Group 1	5	7.2	1.304	.583
Group 2	5	5	.707	.316
Group 3	5	4.4	1.14	.51
Group 4	5	7.8	1.924	.86

4. A habituation task is often used to test the memory of infants. In the habituation procedure, a stimulus is shown for a brief period, and the researcher records how much time the infant spends looking at the stimulus. This same process is repeated again and again. If the infant begins to lose interest in the stimulus (decreases the time looking at it), the researcher can conclude that the infant “remembers” the earlier presentations and is demonstrating habituation to an old familiar stimulus. Hypothetical data from a habituation experiment were analyzed to produce the analyses seen below. How would you characterize this design? What are the null and alternative hypotheses? Complete the source table and then analyze and interpret the data as completely as you can. [15 pts]

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
Between subjects		685			
Within subjects		10915			
treatments		9048			.0009
residual		1866			
Total		11600			

Group:	Count:	Mean:	Std. Dev.:	Std. Error:
First Presentation	5	94.6	14.415	6.447
Second Presentat...	5	59	17.649	7.893
Third Presentation	5	34.8	10.895	4.872

5. Correlational designs do not allow you to make casual claims. Why not? Be very explicit about the difficulty of claiming that changes in one of the two variables in a correlational study *causes* the related changes observed in the second variable. We also discussed the shortcomings of using nonmanipulated characteristics of the participants as “independent variables” in an experiment. How is this class of variable related to the notion of correlational designs? [10 pts]