

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

ID# _____

Exam 1

PS 306, Fall 2000

The Skidmore Honor Code is in effect for this exam, as always. Please behave accordingly. At the end of the exam you will be asked to sign a sheet attesting to your adherence to the Honor Code.

Read each question carefully and answer each question completely. If some aspect of a question is unclear, please ask for clarification. I think of a point as a minute, so my expectation is that a 10-point question should take you 10 minutes. If you finish a 10-point question in 30 seconds, your answer may not be sufficiently detailed. On the other hand, if you spend 20 minutes answering a 10-point question, you may not finish the exam. Now...take a deep breath...relax a bit...then begin the exam. Good Luck!!

1. Provide a *specific* example of an independent variable for which you would **not** want to conduct a manipulation check. Then tell me the sort of variable that *would* lead you to conduct a manipulation check. [5 pts]

2a. Dr. Alucard is interested in the auditory discrimination abilities of bats. First, he trains 21 bats to fly from a perch at one end of the experimental chamber to the food box at the other end of the room. He then constructs three different mazes of vertical wires (similar to the maze seen in the movie for the cats, but they go from floor to ceiling with a small opening to allow the bat to move through one wall of wire to the next) between the starting perch and the food box. In one maze the wires are Thick, in one maze the wires are Intermediate, and in the final maze the wires are Thin. Each maze is different (openings are in different locations). The dependent variable he decides to use is the number of times a bat hits the wires of the maze.

Dr. Alucard decides to use a repeated measures design for this experiment. Why might he decide to do so? Give Dr. Alucard specific instructions as to how he should construct his experiment (how many bats he should use, how he should run each bat through the experiment, etc.). [15 pts]

2b. Below are the means and a partially completed ANOVA source table for Dr. Alucard's experiment. State the null and alternative hypotheses explicitly. Analyze the data completely, then tell Dr. Alucard exactly what he could conclude. (You can treat any F value greater than 3.3 as significant.) [15 pts]

	<u>Thin Wire</u>	<u>Intermediate Wire</u>	<u>Thick Wire</u>
Mean # of touches	5	1	0

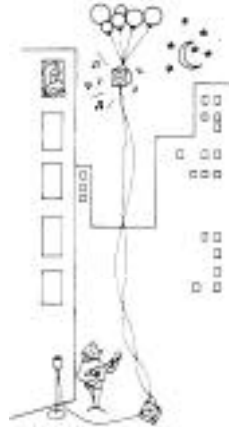
<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Treatment (Wire Width)	126			
Subjects				
Error	68			
Total	195			

2c. Does it appear that Dr. Alucard realized any advantage from using a repeated measures design in this experiment? Why or why not? [5 pts]

2d. Suppose that Dr. Alucard had decided from the outset to do an independent groups design, rather than a repeated measures design. What would he have done with his 21 bats and what would the degrees of freedom look like in the source table for the ANOVA resulting from such an experiment? [5 pts]

3. In the Mook article, he makes a number of claims about the circumstances under which a researcher may not be particularly concerned about external validity. Use *either* the Higgins & Marlatt study (shock and drinking) *or* the Brown & Hanlon (grammar acquisition in children) to illustrate a situation in which a researcher would not necessarily be concerned about external validity. Then, using the Milgram study, illustrate why one might well be concerned about external validity of some studies. [10 pts]

4. In Chapter 8 of your textbook, Ray describes the five conditions found in the Bransford & Johnson (1972) memory study (first mentioned in Chapter 6). These conditions are: Complete-context picture before passage; Complete-context picture after passage; Partial-context picture before passage; Hearing passage once without picture; and Hearing passage twice without picture. Below is the Complete-context picture (as a recall cue for you).



Suppose that the results for this study had turned out as seen below. Complete the source table and then analyze the study as completely as you can. [15 pts]

ANOVA Table for Recall

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Condition		301			<.0001	453.375	1.000
Residual		46					

Means Table for Recall

Effect: Condition

	Count	Mean	Std. Dev.	Std. Err.
Complete-after	15	2.933	.704	.182
Complete-before	15	7.667	1.113	.287
No pic - Hear twice	15	2.400	.737	.190
No pic-Hear once	15	2.267	.704	.182
Partial-before	15	4.133	.743	.192