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Name: Rawan Shalhoub

SBS 223: Experimental Methods in Psychology
Exam 1
Fall 2001

Please write your name at the top of each page. DO NOT SPEND TOO MUCH TIME ON ANY ONE QUESTION! I will promptly collect the exams at 1:15 pm., which gives you 75 minutes. The problems differ in difficulty, but they are all worth the same amount of points. I do give out partial credit. Each question is worth 4 points. Total points: 48 + 2 free points = 50.

1. I have just published an experiment that involves how much a person likes a pizza depending on the spices that are added to the pizza. I have used a between-subjects design, with three conditions: mint added to the pizza, thyme added to the pizza, or nothing added to the pizza. The results of the study show that people who had thyme on their pizza liked the pizza more than people who ate pizza with mint or pizza with no spices. However, someone read about my study and sent me the following email. I am coming to you for advice on how to respond. How would you reply to this email based on your knowledge of research methodology?

4

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Date:  Mon, Nov 5 2001 13:54:20 -0700 (PDT)
From: fairuz@ilovebeirut.com
Subject: psych experiment
To:  Professor P.J. Henry <pjhenry@aub.edu.lb>
Mime-Version: 1.0

Professor Henry,

I have carefully read about the study you conducted concerning the use
of spices on pizzas, and I found the results fascinating.  I understand
that the purpose of the study was to investigate how spices influence
peoples' preferences for pizza.  However, I don't understand how one can
measure this without knowing what the participants' liking for pizza was
prior to the experiment.  I do not consider this a good experiment, but
if there is something I am not aware of about it that could convince me
otherwise, I would very much appreciate that knowledge to regain high
regard for the AUB department of Social and Behavioral Sciences.  Thank
you.

Sincerely,
Fairuz
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This is a true experiment as there is manipulation of the independant variable. However, what the researcher forgot to mension is random assignment. ~~which~~ If the researcher carried out random assignment there is no need to worry about 'knowing what participants' liking for pizza was prior to the experiment," as it → these individual differences would be controlled for to a certain extent. In addition the use of a with-in subject design would control even more for individual differences.

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2. An experimenter is interested in measuring the effects of reading romance novels on the loneliness of women between the ages of 40-70.

a. What is the independent variable? Reading Romance novels

(2)

b. What is the dependent variable? loneliness

c. Suggest a sensible hypothesis.

Reading Romance novels effects the loneliness of women between the ages of 40-70.

Ho→

d. Suggest a sensible alternative hypothesis (that is NOT a null hypothesis).

Reading Romance novels has no effect on the loneliness of women between the ages of 40-70.

Ho→

3. According to the text, what is the most important advantage of experimentation over other approaches to research?

(2)

The most important advantage of experimentation over other approaches is the ability to manipulate variables in a controlled environment.

4. You run a statistical test, and get the value $p = .20$.

a. Assuming you are using the standard alpha level set at .05, what *exactly* does this tell you? (Discuss this not only in terms of whether or not your result is statistically significant.)

(3)

Having a p of 0.20 is too large for it to be statistically significant. ~~This means that the effect size is to large~~ This shows a great discrepancy in the

PTO →

b. What decision do you make about the null hypothesis?

The null hypothesis is not rejected.

4-a) values of the dependent variable obtain or the effect size

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5. Provide a theoretical definition and an operational definition for the construct "happy."

(4)

Theoretical definition: feeling of ~~experiencing~~ pleasure and satisfaction

Operational definition: How much a person smiles within a particular time period.

6. What is meant by the following quote from your textbook: "Random sampling and random assignment do exactly the same thing – only at very different stages of the research process."

(1)

Random ~~sampling~~ consists of randomly choosing participants from the population, whereas random assignment involves randomly assigning these participants to the different conditions in our experiment.

7. Describe a situation where experimental mortality would be a threat to external validity. Do not use death as an example of mortality.

(2)

Experimental mortality is a threat to validity when we have ~~heterogeneous~~ homogeneous attrition. This means that the validity is threatened when people quit only one condition of the experiment. In this case something is happening in the treatment group that is not happening in the control group ~~and the~~

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8. Mr. Schaben is interested in improving the study habits of his 2nd grade class at the American Community School. He administers a standardized test on academic performance, and based on that test he is able to select the students who need the most academic help. After school every Monday, he gives those students tips on how to study, and extra encouragement on their classroom ability. At the end of one month, he compares the academic performance of these students with the rest of the class (what he is calling the "control group") and finds that the students in his "treatment group" are now performing about as good as any other student in his class. He decides that his program worked, and he has started to tell other teachers about it. However, you suspect there is a problem.

(2)

a. You might find several problems with this study, but what is the *most important problem*, based on what you know about experimental research? How exactly is it a problem?

The most important problem is the idea of regression towards the mean. This is a problem because the better results at the end of the month may not be due to the treatment but rather due to the tendency for the academic performance to come closer to →PTO

b. How might this be corrected in Mr. Schaben's study?

The more chances a student has to do a test, the closer his/her scores will be to the true score. Therefore giving the students the test another time may correct the results.

9. In another study, Professor Lin randomly assigned people to one of two groups: group one viewed a movie that had several jokes that were negative toward gays, whereas group two viewed a more neutral movie. She showed participants in group one the neutral movie on Monday and Tuesday, and showed participants in group two the negative movie on Wednesday and Thursday. Her results showed that participants who saw the negative movie had more negative attitudes toward gays than those who saw the neutral movie, and she concludes that entertainment media can affect attitudes toward gays. However, she later discovers that on Tuesday night, a highly publicized court case was on the news (non-entertainment media) showing a gay defendant in a negative light.

(3)

a. You might find several problems with this study, but what is the *most important problem*, based on what you know about experimental research? How exactly is it a problem?

The most important problem in this experiment is the presence of an event that may have effected the attitudes of group two but did not show in the results of group one as it →PTO

b. What could Professor Lin do in the future to correct for this problem?

To correct this problem Professor Lin could make sure that both groups are tested on the same day to ensure that no outside confounding variable such as the one in the experiment affects one group and not the other.

8. a) the true score.

9. a) occured after the ~~test~~ results for group one were recorded. This may have acted as a confounding variable ~~affecting the independant~~ or as a third variable that was unaccounted for.

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10. You decide to move your alpha level to .001 in a study you are conducting. What risk does this entail?

(4) This entails a risk of committing a type II error where the null-hypothesis (H_0) is rejected when it is not supposed to be rejected

11. Why do scientists replicate?

(3) Scientists replicate in order to ensure that the results of an experiment are repeatable, increasing the significance (?) of an experiment. This also means that if the results cannot be replicated there may be a problem in the orginal experiment and ~~therefore~~ consequently the results.

12. Look at the following Latin square design, as discussed in the text.

A	B	C	D
B	A	D	C
C	D	A	B
D	C	B	A

(4) ★

a. How many levels of the independent variable are here?

There are four levels of the independent variable

b. When would one use this sort of design, and why?

This is used for with-in subject design in order to counter-balance the effect of participant bais such as practice or test bais. Latin square design is used so that each level of the independent variable appears in a different order, controlling for a possible effect of the order of the variables