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Instructions for Paper II: Methods and Results (Study One) (Worth 35 Points)

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### Purpose of Paper II (Methods and Results)

#### 1). Psychological Purpose

The psychological purpose behind Paper II is to make sure you can tell your reader what you did on your study, how you did it, and what you found. By now you have read several empirical studies in psychology, and you should be familiar with the Methods and Results sections. Now is your chance to write your own Methods and Results sections!

Like those prior studies you looked at in Paper I, you will provide information about your participants, materials, and procedure in your Methods section. Your participant section goes first, and it includes descriptive statistics about your sample (means and standard deviations for age as well as percentages for gender and race/ethnicity). Your materials and procedure sections include information about what you did and how you did it. You should write this section for an audience who is unfamiliar with your specific study, but assume that they do know research methods. Thus educate your reader about your materials and procedure, giving enough detail so they could replicate the study. This includes explicitly describing your independent and dependent variables and talking about how you presented those variables to your participants. My suggestion is to look over the articles you summarized in Paper I and see how they described their Methods. This will give you a good idea regarding the level of depth and detail you need in your own Methods section.

Your Results section follows. The purpose of this section is to make sure you can show how you analyzed the data and describe what you found. You will have a lot of help in this section from your lab instructors.

#### 2). APA Formatting Purpose

The second purpose of Paper II: Methods and Results is to once again teach you proper American Psychological Association (APA) formatting for methods and results. In the pages below, I will tell you how to format your paper using APA style. There are a lot of very specific requirements in APA papers (as specific as what to italicize), so pay attention to the instructions below as well as Chapter 14 in your textbook!

#### 3). Writing Purpose

Finally, this paper is intended to help you figure out how to write a Methods and Results section. Many students find statistics daunting, but my hope here is that writing this paper will help you understand both the logic and format of statistics in results sections. We will once again give you a lot of feedback and help in this paper, which you help you when you write Papers IV and V later in the course. Make sure that you write this for an audience familiar with APA methods and results, but also for someone who needs you to tell them what you found.

Note: The plagiarism limit is waved in this paper since your classmates are doing the same design

## Methods

1. Title Page: I expect the following format (**5 points**):
  - a. The title page for your Paper II is identical to the one you used for Paper I: Mini-Literature Review. For proper APA formatting, I suggest you either copy your title page from Paper I or review the title page instructions I gave you in Paper I.
2. Abstract, Graphs, and Tables? These are optional
  - a. You DO NOT need an abstract for Paper II: Methods & Results (Study One), and you DO NOT need a table or figure. You can choose to include them if you want, but they will not be graded. Check with your instructor to see if they prefer to see abstracts and tables. It may give you good practice on learning how to do them if you include them, though!
3. Methods Section: I expect the following format (**15 points**):
  - a. For this paper, the methods section starts on page 2.
  - b. Write **Method** at the top of this page, make it bold, and center it (see the top of this page as an example!)
  - c. The participants section comes next. The word **Participants** is bolded and left justified. In this section ...
    - i. Tell me who your participants were (college students, family members, friends?) and how many there were.
      1. Note: If a number starts a sentence, then spell out the number. That is, "Two-hundred and five participants participated in this study."
      2. If a number is mid-sentence, you can use numerals. "There were 205 participants in this study."
    - ii. Provide frequencies and descriptive statistics for relevant demographics.
      1. For some variables—like ethnicity and gender—you only need to provide frequency information (the number of participants who fit that category). "There were 100 men (49%) and 105 women (51%) in the study." Or "The sample was 49% male ( $N = 100$ ) and 51% female ( $N = 105$ )."
      2. Other variables—like age—are continuous (rather than categorical), so use descriptive statistics here (the range, mean, and the standard deviation). "Participants ranged in age from 18 to 77 ( $M = 24$ ,  $SD = 3.50$ )." or "The average age of participants was 24 ( $SD = 3.50$ )."  
Your TA can help you find the mean and standard deviation for this assignment, though information is also available in a lab powerpoint.
      3. Make sure to italicize the  $N$ ,  $M$ , and  $SD$  (the letters, not the numbers)
- d. **Materials and Procedure**
  - i. For this section, things are flexible. Some studies include Materials and Procedure in the same section while others break them up into two sections. This is a matter of choice.
    1. In general, the more complex the design, the better it is to split up the methods and results. In one section, the author may describe the materials; in the next, they describe what participants did with those materials (the procedure). This is one option for you. However ...

2. However, your “Paper II: Methods & Results (Study One)” is simple enough that I strongly recommend combining them into one overall Materials and Procedure section.
  - ii. Again, the words **Materials and Procedure** are flush left. In this section ...
    1. Provide information about your materials and your procedure.
      - a. I suggest starting with your procedure. Tell your reader what your participants did in the order participants did them. Be specific here. I have the following recommendations:
        - i. First, talk about the oral informed consent procedure.
        - ii. Second, talk about the three versions of the automobile accident scenario. Provide enough detail so that your readers know how the three conditions differ. Imagine I need to replicate your design – give me enough detail so I can do so.
        - iii. Third, talk about your dependent variables (that is, your questionnaires in Parts II, III, and IV. For these dependent variables, once again provide enough detail so I know exactly what questions you asked. For example, “Participants provided their gender, age, and race”. For other dependent variables, tell me how the responses were recorded (yes/no, true/false, a scale of 1 to 9, etc.). If you used a scale, note the endpoints. That is, does a 1 mean it is high or is it low? “Participants were asked, ‘How frustrating was this task?’, and they responded on a scale from 1 (not at all frustrating) to 10 (very frustrating).”
        - iv. Fourth, make sure to highlight which specific DVs you analyzed. If there are DVs participants completed but you did not analyze it, feel free to say those DVs were not analyzed.
        - v. Finally, mention debriefing
- e. There is no set minimum or maximum on the length of the methods section, but I would expect at least a page (though probably more. After all, your own research script took up several pages – you should provide a similar level of depth and detail in your methods section!). Missing important aspects of your IVs and DVs or presenting them in a confused manner will lower your score in this section.
- f. Remember, make sure that another researcher can replicate your study based on your methods section. If they can't, then you may not have enough detail!

4. Results Section: I expect the following format (**10 points**):
  - a. The results are the hardest part of this paper, and your lab instructor will help you with this part of the paper.
  - b. First, write **Results** at the top of this section, center it, and use boldface. This section comes directly at the end of the methods section, so the results section DOES NOT start on its own page.
  - c. For this assignment, include statistics about the most important variables in your study, including your IV (Sceanrio – Changeable, Unchangeable, Neutral) and the DVs you feel are most important to your hypotheses. Note that some instructors

may only have you collect the Changeable and Unchangeable conditions, while others may not do this counterfactual thinking study at all. The results section, however, should follow the same guidelines regardless of your study design.

d. For this paper, **you must run at least two different analyses** (that is, focus on two different dependent variables). You might use ANOVAs, *t*-Tests, or even a chi square (\*\*Note that I strongly recommend ANOVAs for the number of counterfactual thoughts in Part II and the blame question (#7) in Part III, though you could also use a chi square on the Yes/No response in question #8\*\*\*).

- i. **ANOVA:** For those of you with three levels to your IV (e.g. scenario), the most appropriate test is a one-way ANOVA. Your lab instructor will show you how to conduct this test, but there are some guidelines I want to give you about how to write your results. Below, I am going to walk you through one analysis specific to this paper. However, keep in mind that this is for your information only and you may run other types of tests.
  1. First, there are several dependent variables to choose from. You may analyze many of them or concentrate on just one or two. For my example analysis below, I want to focus on the “How much of a causal role did the taxi driver’s behavior play in Eugene and Tina’s deaths?” dependent variable, which ranges from 1 (not at all causal) to 9 (the most important cause).
  2. Second, given that this study has one IV with three levels and one DV that is on a continuous scale, a One-Way ANOVA is the best test to use to see if there are significant differences among the levels. We look first at the ANOVA table (or *F* table) and focus on the between subject factor. We note the degrees of freedom, the *F* value itself, and the *p* value.
  3. If the *p* value is significant (less than .05), we have one more step to take. Since this is a three level IV, we need to compare mean A to mean B, mean A to mean C, and mean B to mean C. We do this using a post hoc test (try using Tukey!). That will tell us which of the means differ significantly. You then write up the results ...
    - a. “Using scenario as our independent variable (changeable v. unchangeable v. neutral) and whether the taxi driver caused the accident as our dependent variable, we found a significant effect for scenario,  $F(2, 203) = 4.32, p < .05$ . Follow-up Tukey post hoc tests showed that participants thought the taxi driver played a more causal role in the accident in the changeable condition ( $M = 4.56, SD = 1.21$ ) than the unchangeable condition ( $M = 3.24, SD = 0.89$ ) or the neutral condition ( $M = 3.23, SD = 0.77$ ). However, those in the unchangeable condition did not differ from those in the neutral condition.”
    - b. Make sure to italicize the *F*, *p*, *M*, and *SD* (as in the example)
    - c. Pretty simple, right! Go back and do this same procedure for at least one additional dependent variable
- ii. ***t*-Test:** For those of you with two levels to your IV (changeable v. unchangeable only), things are even more simple

1. Here, you will run a *t*-Test (a *t*-Test looks at differences between only two groups). Again, your lab instructor will tell you how to run this, but you can do it on your own as well (you can even run this if your study originally has three levels to the IV – when you go into the *t*-Test menu in SPSS, choose “define groups” and select 1 and 2 (changeable condition = 1 and unchangeable condition = 2). This will let you look at two of the groups! You could also select “1 and 3” or “2 and 3” where neutral condition = 3)
2. Rather than an *F* value, we will look at the *t* value in the *t*-Test data output. Here, we have one number for the degree of freedom, we have the *t* value, and we have the *p* value.
3. The nice thing about a *t*-Test is that since you only have two groups, you do not need a post hoc test like Tukey (you only need that if you have to compare three means. Here, we only have two means, so we can just look at them and see which one is higher and which is lower when our *t*-Test is significant). Then just write it up ...
  - a. “Using scenario as our independent variable (changeable vs. unchangeable) and whether the taxi driver caused the accident as our dependent variable, we found a significant scenario effect,  $t(203) = 3.42, p < .05$ . Participants thought the taxi driver played a more causal role in the accident in the changeable condition ( $M = 4.56, SD = 1.21$ ) than in the unchangeable condition ( $M = 3.24, SD = 0.89$ ).
  - b. Repeat for other dependent variables
  - c. Make sure to italicize the *t*, *p*, *M*, and *SD* (as in the example)

iii. **Chi square:** If your DV is on a continuous scale (it has a high to low range, like 1 to 9 or 0 to 5), you can run a *t*-Test or ANOVA to look at differences between groups. However, if your DV is categorical (yes / no responses, or even yes / no / maybe responses), then you cannot run an ANOVA or *t*-Test. Instead, you run a chi square.

1. Consider DV #8 in Part III, which asks if the driver agreed to the far (with a yes or no response option). Here, you can run a chi square
2. We are interested in the chi square ( $\chi^2$ ) and *p* value. We also provide percentages for each of our groups (rather than means and *SD*).
  - a. “Using scenario as our independent variable and the yes/no did the driver agree to drive the couple as the dependent variable, the chi square was significant,  $\chi^2(1) = 68.49, p < .001$ . Few participants in the changeable condition said the taxi agreed to drive them (2%). Similarly, few participants in the unchangeable condition said the taxi agreed to drive them (1%). However, most participants in the neutral condition said the driver agreed to drive them (97%). Phi showed a large effect.”
  - b. Make sure to italicize the *X* and *p*
- e. There is no page minimum or maximum for the results section, though I would expect it to be at least a paragraph or two for each dependent variable

5. Overall writing quality (**5 points**)

- a. Make sure you check your paper for proper spelling and grammar. The FIU writing center is available if you want someone to look over your paper (an extra eye is always good!) and give you advice. I highly recommend them, as writing quality will become even more important on future papers. I also recommend visiting the FIU Research Methods Help Center if you need additional guidance with writing or statistical analyses. Also, remember to upload this paper through the Pearson writer before uploading to blackboard!

#### **Other Guidelines for Paper II – Methods and Results (Study One)**

- 1). Page size is 8 1/2 X 11" with all 4 margins should be one inch. You **must** use a 12-point font in Times New Roman.
- 2). PLEASE use a spell checker and Pearson Writer to avoid unnecessary errors. Proofread everything you write. I actually recommend reading some sentences aloud to see if they flow well, or getting family or friends to read your work.
- Use the Paper II Checklist on the next page before you turn in your paper to make sure it is the best paper you can write!

## Checklist – Paper II: Methods and Results (Study One)

Use the check sheet below to make sure your paper is the best it can be! Make sure you answer “Yes” to all questions before submitting your paper! The first two sections duplicate the Paper I checklist, but those elements in **purple** are unique to you Methods / Results Paper II

General Paper Format (This section is identical to the Paper I Checklist)		
Yes	No	
		1. Is <u>everything</u> in your paper (including headers, the main body of your mini-literature review, and <u>your references</u> ) in 12 point Times New Roman font?
		2. Is <u>everything</u> in your paper double spaced, including references (here I mean the spacing above and below each line, not the spaces following a period)?
		3. Do you have one inch margins on all sides of the paper (one inch from the top of the page, one inch from the bottom, and one inch from each side)
		4. Are the <u>first</u> lines of all paragraphs indented another $\frac{1}{2}$ inch (or 1 $\frac{1}{2}$ inches from the page edge)?
		5. Are your paragraphs aligned left? (That is, text should be flush left, with lines lining up on the left of the page, but text should NOT line up on the right side of the page – it should look ragged)
		6. Do you need help figuring out how to configure a word document in APA format (inserting headers, page numbers, proper indents, etc.)? If YES or NO, I highly recommend watching this video which walks you through setting up an APA formatted paper! <a href="http://www.youtube.com/watch?v=9pbUoNa5tyY">http://www.youtube.com/watch?v=9pbUoNa5tyY</a>

Title page (This section is identical to the Paper I Checklist)		
Yes	No	<i>Header</i>
		1. Do you have the phrase “Running head” in your header (with a lower case h)?
		2. Is the rest of your Running head title in ALL CAPS?
		3. Is your Running head in 12 point Times New Roman font?
		4. Do you have a page number that is flush right (also in 12 point Times New Roman font)?
		<i>Title / Name / Institution</i>
		1. Is your title 12 words or less (as recommended by the APA)?
		2. Do all title words with four letters or more start with a capital letter?
		3. Are your name and institution correct?
		4. Are your title, name, and institution elements centered and in 12 point Times New Roman font?

Methods Section (New Information in this section)		
Yes	No	<i>Header</i>
		1. Is your header title present and identical to your header title on the title page?
		2. Is your header title in ALL CAPS and 12 point Times New Roman font?
		3. Does your header on this second page omit the phrase “Running head”
		4. Do you have a page number starting on page 2
		<i>Title for the methods section</i>
		1. Is the word “ <b>Methods</b> ” centered and in bold at the top of your methods page?

Methods Section Continued		
Yes	No	<i>Participants</i>
		1. Do you have the word “ <b>Participants</b> ” flush left and in bold, right below the word “Methods”?
		2. Did you list out your demographic characteristics, including gender, age, and ethnicity / race?
		3. Did you provide the descriptive statistics for (means and standard deviations) for age and italicize the letters <i>M</i> and <i>SD</i> ?
		4. Did you provide frequencies for gender and ethnicity/race and italicize the <i>N</i> ?
<i>Materials and Procedure</i>		
		1. Did you mention informed consent?
		2. Did you thoroughly describe your independent variable in enough depth and detail that another researcher could duplicate your materials?
		3. Did you give this IV a name that matches up with the name you refer to in the results section?
		4. Did you describe all of your most relevant dependent variables, noting the scales you used (e.g. “Yes / No”, “A scale ranging from 1 (not at all likely) to 9 (very likely)”) for EACH of your DVs?
		5. Did you fully describe what participants went through in the study, noting the order in which they received study materials (e.g. first informed consent, then IVs, DVs, and debriefing)?

Results Section (New Information in this section)		
Yes	No	
		1. Do you have the word “ <b>Results</b> ” centered and in bold, immediately following the methods section?
		2. Did you analyze at least two <u>different</u> dependent variables? <ul style="list-style-type: none"> <li>a. Note: using a <i>t</i>-Test to analyze question #4 and an ANOVA to once again analyze question #4 does NOT count as two different DVs. That is the same DV analyzed twice. Make sure to look at two <u>different</u> DVs</li> </ul>
		3. Did you mention both the IV and the DV by name when talking about your analysis?
		4. Did you include means and standard deviations within parentheses for each level of your independent variable?
		5. Did you italicize the letters <i>F</i> , <i>t</i> , <i>p</i> , <i>M</i> , <i>SD</i> , and <i>X<sup>2</sup></i> (where appropriate)?



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