

In Preparation for Writing a Lab Report

(Note: The bulk of the information in this handout can be found in Daryl Bem's "Writing The Empirical Journal Article" or the APA PUBLICATION MANUAL)

ABSTRACT

Be clear and concise. Your abstract needs to be compact, full of essential information, organized, and self-contained.

Try to keep your abstract less than 120 words. It should contain:

- The problem under investigation (in one sentence, ideally)
- The participants (including any pertinent information about their characteristics, such as number, type, age, sex...etc)
- The experimental method, including data gathering procedures and complete test names.
- The Results, including statistical significance levels
- The Conclusion (larger implications of your research)

Do not include information in your abstract that does not appear in the body of your paper.

***If your study extends or replicates previous research, state this in your abstract. Include names of authors and dates of publication.

Make sure that your abstract is self-contained: Define all abbreviations and acronyms in your abstract. Spell out all names of tests. Define all key terms.

Paraphrase (do not quote) past research in your abstract.

INTRODUCTION

(1) **THE OPENING PARAGRAPH:** Whenever possible, try to open with a statement about people, not psychologists or their research. This rule is commonly broken in professional journals. Try to draw the reader in with an interesting real life example or hypothetical situation.

Avoid beginning too broadly; here are a few *bad* examples: "Understanding human interaction has been the aim of various researchers over the past decades...." OR "Since the creation and development of the field of social psychology..."

As an alternative, begin with a general, non-scientific statement that places *your specific subject area* in a wider, relatable context: "Individuals are often reluctant to help others in a situation where they do not feel a sense of responsibility." Although this paper begins somewhat general and non-specific, the writer clearly identifies his area of interest.

Better yet, begin by offering the reader with a real life example or image to consider.

HERE ARE SOME EXAMPLES FOR THE FIRST PARAGRAPH OF AN INTRODUCTION SECTION (Please note: these paragraphs are not complete Introductions---just the opening statements):

EXAMPLE ONE: *On March 13, 1964, Kitty Genovese was stabbed to death 17 times and then sexually assaulted while roughly 38 witnesses heard her cries and looked on from their windows. It wasn't until about a half hour later that one witness called the police, and by then it was too late. Six years later, this phenomenon was explored by Bibb Latane and John Darley (1968). They found that the sheer presence of other bystanders decreases a person's likelihood of intervening in a situation. This "Bystander Effect" is defined as the tendency for a person to be less likely to provide help when there are others present. The presence of other bystanders also decreases the chances of anyone noticing the incident, interpreting the incident accurately, or assuming responsibility....*

EXAMPLE TWO: *Have you ever tried to focus your attention on reading the newspaper, yet inexplicably found yourself listening to someone's conversation instead? Have you recalled the slogan from a billboard you passed on the street without realizing you had even read it in the first place? Whether you like it or not, you may not be able to consciously control what you pay attention to. In fact, the concept of cognitive interference, or conflict between targets you consciously attend to and the targets you automatically attend to,*

plays a huge role in the study of cognitive processing. One of the primary psychological phenomena used to study interference in cognitive processing is the Stroop Effect. The Stroop Effect was first analyzed by J. Ridley Stroop in 1935 and is used to describe interference between simultaneous, sometimes conflicting mental tasks....

EXAMPLE THREE: The moment an individual walks into a room, a variety of assumptions are made, either consciously or unconsciously, based on appearance. Doors are opened, smiles are exchanged, and judgments are made, all based on physical attractiveness. Physically attractive people enjoy various advantages and, statistically, are predicted to have more financial security, feel more fulfilled and achieve more success in their career (Dion, Berscheid & Walster, 1972). Dion et al. (1972) have labeled this the "what is beautiful is good" effect. Their studies show that people who are considered attractive are viewed as more socially desirable and are perceived to have more success in life. They are thought to be more likely to get married than unattractive people, to get married earlier, to be more satisfied with their spouses and to have higher-status jobs. Attractive people are expected to be happier overall with their lives as a result of their high level of social desirability.

(2) **REAL LIFE EXAMPLES:** Use examples to illustrate theoretical points or to introduce unfamiliar conceptual or technical terms. The more abstract the material, the more important such examples become. For example: "An individual who is asked for a favor may feel responsible to help. For example, if there is an accident and a person is told to call an ambulance, he will likely feel an obligation to act. The individual feels responsible because responsibility has been assigned to him. This same situation can change dramatically if a group of people witness an accident."

(3) **ABSTRACT LANGUAGE:** Avoid using abstractions / meaningless generalizations: *society, mankind, humankind, humanity...etc.* Ask yourself: what particular sector of society / mankind is my particular study concerned with?

(4) **DEFINE YOUR TERMS:** Refrain from using scientific / psychological terms before defining them first. Define them either directly ("The hesitation to help someone when someone else is present is called the bystander effect.") or by use of a synonym ("They found for members of groups with high cohesiveness (perceived similarity), large group sizes actually facilitated helping behavior.") Notice how the term "high cohesiveness" is clarified by the term "perceived similarity."

(5) **LITERATURE REVIEW:** What previous research has been done on this topic? What are the pertinent theories? Citing research shows the reader that a) the field considers your general research area to be important b) how your work fits into existing work. You should determine the most logical order for introducing your previous literature (as you move from a BROAD place to YOUR SPECIFIC area of interest). Do not begin paragraphs with a new study in this portion of your introduction. Create smooth transitions that allow the reader to understand how you are making sense of previous research. We should be able to follow your logic as you approach the GAP in previous research. Once you have finished summarizing/critiquing relevant works, you should spell out the reasoning that led you to your hypothesis.

Citations. The standard journal format permits you to cite authors in the text either by enclosing their last names and the year of publication in parentheses, as in A below, or by using their names in the sentence itself, as in B.

- A. MAO activity in some individuals with schizophrenia is actually higher than normal (Tse & Tung, 1949).
- B. Tse and Tung (1949) report that MAO activity in some individuals with schizophrenia is actually higher than normal.

(6) **CLEARLY STATE THE GAP IN PREVIOUS RESEARCH:** How does your experiment depart from or clarify past research? This may take several paragraphs to develop a solid rationale.

Note: before this point in the Introduction, you SHOULD NOT mention the present research.

(7) **BRIEF OVERVIEW OF METHOD:** Include one sentence that briefly provides an overview of your Method before you state your hypothesis.

(8) **STATE YOUR HYPOTHESIS and PROVIDE JUSTIFICATION FOR YOUR REASONING (IF NECESSARY):** Your hypothesis belongs at the end of your introduction. After you state your hypothesis, briefly clarify the reasoning for this prediction. Example: "We hypothesize that when rushed, individuals will not engage in helping behavior even for in-group members. But in a non-rush situation, individuals will be more likely to help in-group members than out-group members. We predict these results because in a non-rush situation, the cost of helping is much less to the individual, and group membership once again becomes salient and a predictor of helping behavior."

Please note: you are allowed to use the first person (I hypothesize that....)

METHOD

1. As you probably know by this point in the semester, one important job of the Method section is to lead your readers through the experiment so that they could reproduce it themselves. Make sure your Procedure sub-section adequately provides all the necessary information required to replicate your design.
2. USE SUB-SECTIONS: *Participants* (include number, age, gender), *Materials*, *Procedure*
3. Active sentences are always preferable to passive ones. They are more direct and leave no room for ambiguity; in the active voice, we always know *who* is performing a particular action. So please avoid unfortunate passive sentences, such as this one: "A large anvil was administered to the participant's head."
4. Bem reminds us to "name all groups, variables, and operations with easily recognized and remembered labels. Do not use abbreviations (the AMT5% group) or empty labels (Treatment 3). Instead, tell us about the success group and the failure group, the father-watching condition and the mother-watching condition, the teacher sample and the student sample, and so forth" (Bem, 2003).
5. Avoid sentences with *confusing and unnecessary parentheses or em-dashes*.

RESULTS

We'll be discussing how to write your Results section after you have collected your data.

DISCUSSION OVERVIEW

- (1) **FIRST SENTENCE:** Your discussion section should pick up where your introduction ended. Your first sentence needs to state whether or not your data support your hypothesis. You will want to remind the reader of what the hypothesis was: "The data from the experiment provided supporting evidence for only part of our hypothesis. As expected, the strength of the social influence had a significant impact on conformity. People were more likely to conform to a request conveyed through a uniformed individual than one expressed through a sign. In contrast to our expectation..."
- (2) **SIGNIFICANCE OF YOUR FINDINGS:** Place your findings in the context of past research. How does it add to past research? Conflict with past research? What inferences can be drawn from the findings? These inferences may be at a level quite close to the data or may involve considerable abstraction, perhaps to the level of a larger theory regarding, say, emotion or sex differences. What are the theoretical, practical, or even the political implications of the results?
- (3) **DISCUSS LIMITATIONS OF YOUR STUDY:** Compare your results with those reported by other investigators and **discuss possible shortcomings of your study**, conditions that might limit the extent of legitimate generalization or otherwise qualify your inferences. Remind readers of the characteristics of your participant sample, the possibility that it might differ from other populations to which you might want to generalize; of specific characteristics of your methods that might have influenced the outcome; or of any other factors that might have operated to produce atypical results.
- (4) **OPPORTUNITIES FOR FUTURE RESEARCH:** Do not end your report by discussing the limitations of your design. Although addressing limitations is important, a discussion should also point to the possibilities of future work. Consider the questions that remain unanswered or that have been raised by the study itself, along with suggestions for the kinds of research that would help to answer them.

In the words of Bem, end strongly, but modestly. Make a final point about why the study was important.

WRITING TICS TO AVOID:

"This" by itself as the subject of the sentence ("This is why...")

Overuse of It is / It seems that / There is/ There are / There was / There were
is that / is because / is what

Long sentences that exceed three lines (as well as...as well as...)

Overuse of transition words in every sentence

Shift in verb tense

Shift in person from singular to plural

Avoid "he/she" or "his/her."

Data. The word data is plural

Since versus *Because*: Since means "after that."

That versus *Which*: *That* clauses (called restrictive) are essential to the meaning of the sentence; *which* clauses (called nonrestrictive) merely add information. ("Dissonance theory, *which* has received major attention, is one of the theories *that* postulates a motivational process.")

NUMBERS

- Spell out common fractions and common expressions (one-half, Fourth of July).
- Spell out large numbers beginning sentences (Thirty participants. . .).
- Spell out numbers which are below 10 and not grouped with numbers over 10 (one-tailed *t* test, eight items, nine pages, three-way interaction, five trials).
- Use numerals for numbers 10 and above, or lower numbers grouped with numbers 10 and above (for example, from 6 to 12 hours of sleep).
- To make plurals out of numbers, add *s* only, with no apostrophe (the 1950s).
- Use combinations of written and Arabic numerals for back-to-back modifiers (five 4-point scales).
- Use combinations of numerals and written numbers for large sums (over 3 million people).
- Use numerals for exact statistical references, scores, sample sizes, and sums (multiplied by 3, or 5% of the sample). Here is another example: "We used 30 subjects, all two year olds, and they spent an average of 1 hr 20 min per day crying."