

## Guidelines to paper writing

In social sciences, the style of writing is scientific. A good rule of thumb when writing in psychology (applies to psycholinguistics, experimental linguistics, and other experimental work in general too) is to be clear with your discussion, be concise in your writing, and minimize your use of first-person pronouns ("I think that...", "I believe that..."). See the Purdue OWL handout on [Stylistic concerns in APA format \(http://owl.english.purdue.edu/owl/resource/560/15/\)](http://owl.english.purdue.edu/owl/resource/560/15/) for more information.

Learning style in your field can be tricky and requires time and practice. You can benefit from analyzing examples of other pieces of writing from psychology. Look at published articles or ask the instructor for examples of previous papers written for the course.

This overview is a condensed form of the excellent Purdue OWL handout collection on writing. I highly recommend it, for content organization and writing style. The guidelines I give below are sometimes slightly adapted. They mostly conform to APA Style, but there are some minor formatting differences, which are accordingly identified (line-spacing, etc.).

### Sections:

- |       |   |        |
|-------|---|--------|
| I.    | Prewriting and Information Collection   | [p.1]  |
| II.   | Writing an Experimental Report: Overview, Introductions, and Literature Reviews     | [p.3]  |
| III.  | Writing the Experimental Report: Methods, Results, and Discussion                   | [p.6]  |
| IV.   | Writing with Statistics   | [p.8]  |
| V.    | Statistics and Visuals  | [p.11] |
| VI.   | A few editing/formatting points   | [p.11] |
| VII.  | A possible structure for what an experimental <b>Thesis proposal</b> should contain | [p.13] |
| VIII. | A possible outline for a <b>short experimental report</b>                           | [p.14] |

### I. Prewriting and Information Collection

Depending on the type of report you are writing, you will go through various stages of prewriting. The following list provides you with some options finding material to write from and beginning to prewrite:

**Prewriting Note-taking and Class Notes:** Notes from readings, class lectures, conferences and presentations, and other professional activities can help you formulate ideas. You can keep your thoughts, sources, and notes organized in a journal, text document, or on note cards before you write.

- If you are writing a critical review, keep notes on topics of interest and sources that you encounter during your class (and related coursework) that can contribute to your topic.
- If you are writing an experimental report, notes from your previous coursework can help you find sources of information. As you are planning and conducting your research, keep a notebook handy to record your thoughts and ideas.

### **Comment your work along the way**

Write a “log file” as you work. Write down explicitly what kind of measures, controls, of counterbalancing you do with your stimuli, what kind of decisions you take as the work comes along. It will ease the writing process later. Be specific and detailed. The best is a sort of journal format.

You will have forgotten most of it by the time you get the results and then it is REALLY hard to remember all those thoughts and decisions you made during the planning phase and at the beginning of the experiment. The crucial point here is that – at least in a dissertation, and in most journal publications – you have to justify and report on those decisions you made, and on the ways you measured and controlled things (e.g. stimuli, acoustic analysis, selection of participants, criteria for exclusion or inclusion of data...).

This helps also to be systematic. Let me give you an example: if you do some acoustic measurements on consonant clusters over a few weeks. On Monday, you start and set the label for the beginning of the consonant clusters (without determining exact guidelines), you do 43% of the work. The following week, on a Wednesday, you want to continue, but you are not sure anymore what were the criteria you used to set boundaries, so you do it a slightly different way without really being aware of it. Up to 90% of the work. Then, 3 weeks later, you finish it for the last 10%. But you really don't remember a thing and do it a third way. The bad news is, it might happen to interact with the reaction times of the subjects, because the time reaction measure was set from the beginning of the consonant cluster – for example. But you don't know that yet.

Now, at the end of the experiment, some strange things come out and you wonder if it has something to do with the way you set the boundary around the clusters... but you can't remember a thing of what you did, worse, you can't even remember if you did it systematically or not !! and the only way to check it is to look at each single file and try to figure your thoughts back then – ok with 10 files, but less fun with 288.... And then you think you remember the Monday way, but you don't remember which files were which... a nightmare.

### **Additional Purdue OWL resources you may find helpful in Writing for Psychology/Psycholinguistics/Laboratory Phonology**

**[Avoiding Plagiarism:](#)** Plagiarism is a major concern of any discipline. Be sure you are clear on what constitutes plagiarism.

**[Writing Concisely:](#)** A strategy for eliminating wordiness and redundancy in your writing.

**[Quoting, Paraphrasing, and Summarizing:](#)** Assists you in integrating sources into your paper with different techniques and avoiding plagiarism.

**[Proofreading your writing:](#)** Every writer needs to develop good proofreading skills.

## **Experimental Report**

In many of the social sciences, you will be asked to design and conduct your own experimental research. If so, you will need to write up your paper using a structure that is more complex than that used for just a literature review. This structure follows the scientific method, but it also makes your paper easier to follow by providing those familiar cues that help your reader efficiently scan your information for:

- why the topic is important (covered in your introduction)
- what the problem is (also covered in your introduction)
- what you did to try to solve the problem (covered in your methods section)
- what you found (covered in your results section)
- what you think your findings mean (covered in your discussion section)

Thus an experimental report typically includes the following sections:

- title page
- abstract
- introduction
- method
- results
- discussion
- references
- appendixes (if necessary)
- tables and/or figures (if necessary)

Make sure to check the guidelines for your assignment or any guidelines that have been given to you before you submit a manuscript containing the sections listed above. As with the literature review, the length of this report may vary by course or by journal, but most often it will be determined by the scope of the research conducted.

## **II. Writing an Experimental Report: Overview, Introductions, and Literature Reviews**

<http://owl.english.purdue.edu/owl/resource/670/03/>

Experimental reports (also known as "lab reports") are reports of empirical research conducted by the authors. You should think of an experimental report as a "story" of your research in which you lead your readers through your experiment. As you are telling this story, you are crafting an argument about both the validity and reliability of your research, what your results mean, and how they fit into other previous work.

These next two sections provide an overview of the experimental report in APA format. Always check with your instructor, advisor, or journal editor for specific formatting guidelines.

## **General-Specific-General Format**

Experimental reports follow a general to specific to general pattern. Your report will start off broadly in your introduction and discussion of the literature; the report narrows as it leads up to your specific hypotheses, methods, and results. Your discussion transitions from talking about your specific results to more general ramifications, future work, and trends relating to your research.

## **Title Page**

- Experimental reports in APA format have a title page.

## **Crafting Your Story**

Before you begin to write, carefully consider your purpose in writing: what is it that you discovered, would like to share, or would like to argue? You can see report writing as crafting a story about your research and your findings. Consider:

- What is the story you would like to tell?
- What literature best speaks to that story?
- How do your results tell the story?
- How can you discuss the story in broad terms?

During each section of your paper, you should be focusing on your story. Consider how each sentence, each paragraph, and each section contributes to your overall purpose in writing. Here is an example:

Briel is writing an experimental report on her results from her experimental psychology lab class. She was interested in looking at the role gender plays in persuading individuals to take financial risks. After her data analysis, she finds that men are more easily persuaded by women to take financial risks and that men are generally willing to take more financial risks.

When Briel begins to write, she focuses her introduction on financial risk taking and gender, focusing on male behaviors. She then presents relevant literature on financial risk taking and gender that help illuminate her own study, but also help demonstrate the need for her own work. Her introduction ends with a study overview that directly leads from the literature review. Because she has already broadly introduced her study through her introduction and literature review, her readers can anticipate where she is going when she gets to her study overview. Her methods and results continue that story. Finally, her discussion concludes that story, discussing her findings, implications of her work, and the need for more research in the area of gender and financial risk taking.

## **Abstract**

The abstract gives a concise summary of the contents of the report.

- Abstracts should be brief (about 100-200 words)
- Abstracts should be self-contained and provide a complete picture of what the study is about
- Abstracts should be organized just like your experimental report-introduction, literature review, methods, results and discussion
- Abstracts should be written last during your drafting stage

## Introduction

The introduction in an experimental article should follow a general to specific pattern, where you first introduce the problem generally and then provide a short overview of your own study. The introduction includes three parts: opening statements, literature review, and study overview.

**Opening Statements:** Define the problem broadly in plain English and then lead into the literature review (this is the "general" part of the introduction). Your opening statements should already be setting the stage for the story you are going to tell.

**Literature Review:** Discusses literature (previous studies) relevant to your current study in a concise manner. Keep your story in mind as you organize your lit review and as you choose what literature to include. The following are tips when writing your literature review:

- You should discuss studies that are directly related to your problem at hand and that logically lead to your own hypotheses.
- You do not need to provide a complete historical overview nor provide literature that is peripheral to your own study.
- Studies should be presented based on themes or concepts relevant to your research, not in a chronological format.
- You should also consider what gap in the literature your own research fills. What hasn't been examined? What does your work do that others have not?

**Study Overview:** The literature review should lead directly into the last section of the introduction - your study overview. Your short overview should provide your hypotheses and briefly describe your method. The study overview functions as a transition to your methods section.

You should always give good, descriptive names to your hypotheses that you use consistently throughout your study. When you number hypotheses, readers must go back to your introduction to find them, which makes your piece more difficult to read. Using descriptive names reminds readers what your hypotheses were and allows for better overall flow.

In our example above, Briel had three different hypotheses based on previous literature. Her first hypothesis, the "masculine risk-taking hypothesis" was that men would be more willing to take financial risks overall. She clearly named her hypothesis in the study overview, and then referred back to it in her results and discussion sections.

Thais and Sanford (2000) recommend the following organization for introductions:

- Provide an introduction to your topic
- Provide a very concise overview of the literature
- State your hypotheses and how they connect to the literature
- Provide an overview of the methods for investigation used in your research

Bem (2006) provides the following rules of thumb for writing introductions:

- Write in plain English
- Take the time and space to introduce readers to your problem step by step; do not plunge them into the middle of the problem without an introduction
- Use examples to illustrate difficult or unfamiliar theories or concepts. The more complicated the concept or theory, the more important it is to have clear examples
- Open with a discussion about people and their behavior, not about psychologists and their research

### **III. Writing the Experimental Report: Methods, Results, and Discussion**

#### **Method Section**

Your method section provides a detailed overview of how you conducted your research. Because your study methods form a large part of your credibility as a researcher and writer, it is imperative that you be clear about what you did to gather information from participants in your study.

With your methods section, as with the sections above, you want to walk your readers through your study almost as if they were a participant. What happened first? What happened next?

The method section includes the following sub-sections:

**I. Participants:** Discuss who was enrolled in your experiment. Include major demographics that have an impact on the results of the experiment (i.e. if race is a factor, you should provide a breakdown by race). The accepted term for describing a person who participates in research studies is a participant not a subject.

**II. Apparatus and Materials:** The apparatus is any equipment used during data collection (such as computers or eye-tracking devices). Materials include scripts, surveys, or software used for data collection (not data analysis). It is sometimes necessary to provide specific examples of materials or prompts, depending on the nature of your study.

**III. Procedure:** The procedure includes the step-by-step how of your experiment. The procedure should include:

- A description of the experimental design and how participants were assigned conditions.
- Identification of your independent variable(s) (IV), dependent variable(s) (DV), and control variables. Give your variables clear, meaningful names so that your readers are not confused.
- Important instructions to participants.
- A step-by-step listing in chronological order of what participants did during the experiment.

## Results Section

The results section is where you present the results of your research-both narrated for the readers in plain English and accompanied by statistics.

Note: Depending on the requirements or the projected length of your paper, sometimes the results are combined with the discussion section.

### Organizing Results

Continue with your story in the results section. How do your results fit with the overall story you are telling? What results are the most compelling? You want to begin your discussion by reminding your readers once again what your hypotheses were and what your overall story is. Then provide each result as it relates to that story. The most important results should go first.

**Preliminary discussion:** Sometimes it is necessary to provide a preliminary discussion in your results section about your participant groups. In order to convince your readers that your results are meaningful, you must first demonstrate that the conditions of the study were met. For example, if you randomly assigned subjects into groups, are these two groups comparable? You can't discuss the differences in the two groups until you establish that the two groups can be compared.

**Provide information on your data analysis:** Be sure to describe the analysis you did. If you are using a non-conventional analysis, you also need to provide justification for why you are doing so.

Presenting Results: Bem (2006) recommends the following pattern for presenting findings:

- Remind readers of the conceptual hypotheses or questions you are asking
- Remind readers of behaviors measured or operations performed
- Provide the answer/result in plain English
- Provide the statistic that supports your plain English answer
- Elaborate or qualify the overall conclusion if necessary

Writers new to psychology and writing with statistics often dump numbers at their readers without providing a clear narration of what those numbers mean. Please see our Writing With Statistics handout for more information on how to write with statistics.

## Discussion Section

Your discussion section is where you talk about what your results mean and where you wrap up the overall story you are telling. This is where you interpret your findings, evaluate your hypotheses or research questions, discuss unexpected results, and tie your findings to the previous literature (discussed first in your literature review). Your discussion section should move from specific to general.

Here are some tips for writing your discussion section:

- Begin by providing an interpretation of your results: what is it that you have learned from your research?

- Discuss each hypotheses or research question in more depth.
- Do not repeat what you have already said in your results—instead, focus on adding new information and broadening the perspective of your results to you reader.
- Discuss how your results compare to previous findings in the literature. If there are differences, discuss why you think these differences exist and what they could mean.
- Briefly consider your study's limitations, but do not dwell on its flaws.
- Consider also what new questions your study raises, what questions your study was not able to answer, and what avenues future research could take in this area.

Example: Briel begins her discussion section by providing a sentence about her hypotheses—what she expected to find. She immediately follows this with what she did find and then her interpretation of those findings. After discussing each of her major results, she discusses larger implications of her work and avenues for future research.

## References Section

References should be in standard APA format. Please see our [APA Formatting guide](#) for specific instructions.

## Writing with Statistics

<http://owl.english.purdue.edu/owl/resource/672/01/>

- 1. Never calculate or use a statistical procedure you don't fully understand.** If you need a statistical procedure, and you don't understand it, then you need to consult someone or learn how to do it properly.
- 2. Never attempt to interpret the results of a statistical procedure you don't fully understand.** If you need to interpret a particular statistic, talk with a professional statistician and make sure you understand the proper interpretation. Unlike descriptive statistics, inferential statistics is anything but black and white, there may be several valid interpretations of a given statistic, and you need to be aware of which ones are better under which circumstances.
- 3. If you are using statistics in a paper, consider your audience.** Will they understand the statistics you are using? If not, you may need to explain the procedure that you are using in detail. This is not inappropriate! It is better to include too much information than too little. Depending on your field, this may be done using an appendix, footnotes, or directly in the text.
- 4. Present as much information as needed so that your reader can make his or her own interpretation of your data.** Certainly, your job is to help them interpret your data, but most statistics are used to support a persuasive argument. You need to give your reader enough information that they can reconstruct your argument from your statistics. If you don't give enough information, people will think that you are being deceptive, which



can damage your credibility. You can't convince someone of anything if they are convinced that you are misleading them!

**5. Use graphics and tables.** Statistics can contain a lot of information, and using visuals can display a lot of information in a manner that can be quickly understood. See the section on visuals and statistics for more information.

**6. If it's applicable, and you can calculate it, do include some measure of variability; typically this is a standard deviation.** Even if you aren't doing any inferential statistics, this statistic provides excellent information about your data set.

**7. Be wary of using statistics from other places that are not peer-reviewed.** Popular magazines are notorious for including bad statistics. Often times their 'sample' is a section of people who choose to respond to some online query. Their sample often includes mostly women or mostly men (depending on the magazine) but rarely do they have a good representation from both genders, and many times the magazines imply that the results generalize to the entire population. While some might, many do not. If it's not from a reliable source, then don't use it.

### A few examples

#### Writing Statistics Plainly

In general, you should always 'translate' your statistics into some understandable form for your reader.

**Poor example:** "A t-test ( $t = 3.59$ ) showed that the two groups were significantly different ( $p < 0.01$ )."

The example above is complicated and hard to read. It's better to say something plainly first, then provide the statistical evidence afterwards:

**Better example:** Women scored higher than men on the aptitude test ( $t = 3.89$ ,  $p < 0.01$ ).

In the second example, your reader understands the relationship, it's not filled with jargon, but all of the same (even more) information is presented. Note that different fields have their own way of writing with statistics—please refer to your field's style guide for specific guidelines.

#### Punctuating Statistics

Use parentheses to enclose statistical values:

...proved to be statistically significant ( $p = .042$ ) with all variables.

Use parentheses to enclose degrees of freedom:

$t(45) = 4.35$

$F(3, 87) = 2.11$

Use brackets to enclose limits of confidence intervals:

89% CIs [3.45, 2.7], [-6.0, 3.89], and [-7.23, 1.89]

## Writing with Descriptive Statistics

Usually there is no good way to write a statistic. It rarely sounds good, and often interrupts the structure or flow of your writing. Oftentimes the best way to write descriptive statistics is to be direct. If you are citing several statistics about the same topic, it may be best to include them all in the same paragraph or section.

The mean of exam two is 77.7. The median is 75, and the mode is 79. Exam two had a standard deviation of 11.6.

Overall the company had another excellent year. We shipped 14.3 tons of fertilizer for the year, and averaged 1.7 tons of fertilizer during the summer months. This is an increase over last year, where we shipped only 13.1 tons of fertilizer, and averaged only 1.4 tons during the summer months. (Standard deviations were as followed: this summer .3 tons, last summer .4 tons).

Some fields prefer to put means and standard deviations in parentheses like this:

Group A (87.5) scored higher than group B (77.9) while both had similar standard deviations (8.3 and 7.9 respectively).

If you have lots of statistics to report, you should strongly consider presenting them in tables or some other visual form. You would then highlight statistics of interest in your text, but would not report all of the statistics. See the section on [statistics and visuals](#) for more details.

If you have a data set that you are using (such as all the scores from an exam) it would be unusual to include all of the scores in a paper or article. One of the reasons to use statistics is to condense large amounts of information into more manageable chunks; presenting your entire data set defeats this purpose.

At the bare minimum, if you are presenting statistics on a data set, it should include the mean and probably the standard deviation. This is the minimum information needed to get an idea of what the distribution of your data set might look like. How much additional information you include is entirely up to you. In general, don't include information if it is irrelevant to your argument or purpose. If you include statistics that many of your readers would not understand, consider adding the statistics in a footnote or appendix that explains it in more detail.

### Writing Statistics Accurately

If you aren't sure how to calculate a particular statistic, either find out how, or don't use it. Along the same lines, never plug in numbers into a computer program, such as SPSS, and think that the output is 'correct'. Computer programs don't think for us; they simply allow for fast calculations. They cannot and do not interpret results. **You should never interpret the results of a statistic that you don't fully understand. This is extremely important.**

When in doubt, keep it simple. If the only thing you can say for certain is that the mean of one group is higher than the mean of another group, then that is fine. This is evidence, albeit it's not as strong as other types of evidence.

Remember that inferential statistics can never "prove" anything. You should think of statistics as a body of evidence (much like a fingerprint at a crime scene) that provides

support for your argument. Sometimes it can be used as primary evidence or sometimes it is used in a more supporting role.

## Statistics and Visuals

About the good use of figures and tables, see this excellent summary:

<http://owl.english.purdue.edu/owl/resource/672/07/>

## A few editing/formatting points

The following guidelines are designed to make your paper look good, easily readable and paper-efficient. Most of them are APA-oriented, but every journal or editor will have slightly different style-sheet and formatting guidelines. As a general indication, try to follow as close as possible the formats you see in published articles.

**Headers/Title:** Highlight your titles and headers. Boldface or a bigger font is appropriate. Number them throughout the paper.

**Fonts:** use 12 points Time New Roman or another common font. Footnotes and tables are usually in 10 points. *Italics* is used for the title of books and names of journals in the references, as well as for referring to a specific word in a linguistic example (e.g. the word *green* in the pair *green ideas* is an adjective).

**Page numbers:** pages should be numbered. Numbers should begin with the introduction.

**Margins:** at least 1 to 1,5 inch on each side

**Line-spacing:** Because it saves paper, it is preferable to write **single-spaced**. Most APA style guidelines found on journal websites ask for double space (for typesetting reasons), but for our purposes at IU, this makes screen reading harder, is paper-wasting for printouts and therefore not necessary for a research or term paper.

*“me-specific” note:* I prefer single-spaced papers with a larger margin on one side, so that I can write comments and suggestions on the side.

**Indents and justification:** Indent the first line of each paragraph 0.25 inch (0.64 cm). Do not skip a line between paragraphs, unless there is a major break in argumentation there. In this case, consider putting a new section header. Text, footnotes, and references can be fully or left **justified**. If you choose full justification, you might want to enable automatic hyphenation if your text looks too spread out.

**Tables and figures:** Tables and figures **should** be in their actual positions in the paper, not placed at the end or on separate pages (again, this differs from most APA guidelines, but the guidelines are made for typesetting purposes). Do not use color in your tables and figures, rather different grey shades or marks. Color doesn't print well on black and white. Make sure that any text in your tables and figures is at a large enough font size to read easily. Captions are **OBLIGATORY** and should be informative. Table captions are above the table; figure captions are below the figure.

**IPA and other special fonts:** Make sure the fonts come out correctly on your print-out (it is even more important if you send your work electronically). If you are unsure, create a pdf, or else correct them by hand on the printout. If you want to be absolutely sure that

the phonetic symbols will be readable on all computers and printers, it is recommended to use the SAMPA IPA symbols (<http://www.phon.ucl.ac.uk/home/sampa/>) .

**Acronyms / Abbreviations:** The first time you use an acronym, you should give the full name with the acronym in parenthesis. Afterwards, you can use only the acronym. Example: “According to a Department of Education (DoE) report....” - Later in the text: “The DoE suggests that...”

**Citations:** are indicated by double quotation marks(“ ..”).

**In-Text Citation:**

**Summary/Paraphrase:** If you are paraphrasing an idea from another work, you only have to make reference to the author and year of publication in your in-text reference, but APA guidelines encourage you to also provide the page number (although it is not required.)

e.g. According to Jones (1998), APA style is a difficult citation format for first-time learners. APA style is a difficult citation format for first-time learners (Jones, 1998, p. 199).

**Short quotations:** If you are directly quoting from a work, you will need to include the author, year of publication, and the page number for the reference (preceded by "p."). Introduce the quotation with a signal phrase that includes the author's last name followed by the date of publication in parentheses.

e.g. According to Jones (1998), "Students often had difficulty using APA style, especially when it was their first time" (p. 199). Jones (1998) found "students often had difficulty using APA style" (p. 199); what implications does this have for teachers?

**Citing Authors:** The following website give an excellent overview.

<http://owl.english.purdue.edu/owl/resource/560/03/>

**References:** APA has specific guidelines for formatting the reference list. A good help is the following website:

<http://owl.english.purdue.edu/owl/resource/560/05/>

Here is an example of a reference list.

Liberman, A.M., Cooper, F.S., Shankweiler, D.P., & Studdert-Kennedy, M. (1967). Perception of the speech code. *Psychological Review* 74, 431 – 461.

Lotto, A.J., Kluender, K.R., & Holt, L.L. (1997). Perceptual compensation for coarticulation by Japanese quail (*Coturnix coturnix japonica*). *Journal of the Acoustical Society of America* 102, 1134 – 1140.

Nolan, F. (1992). The descriptive role of segments: evidence from assimilation. In D.R. Ladd, & G.J. Docherty (Eds.), *Papers in Laboratory Phonology 2* (pp. 261 – 280). Cambridge: Cambridge University Press.

Wiese, R. (1996). *The phonology of German*. Oxford: Clarendon Press.

Austin, J.L. (1962). *How do to things with words*. Oxford: Oxford University Press.

## A possible structure for what an experimental Ph.D. thesis proposal should contain:

### **Chapter 1. Introduction**

- Introduce the issue and your general research question
- Provide an overview of the organization of the paper

### **Chapter 2. Background/Literature Review**

- Motivate the gap in the literature that you intend to fill—why is the research question important and why should the reader care about the research?
- Motivate your hypotheses with previous research—draw explicit logical connections between what is already known and what you expect to find
- Explicitly state the research question and hypotheses
- Motivate your methods (stimuli and procedures)
- Define all terms and constructs, according to the literature and also for your specific purposes

### **Chapter 3. Study**

#### **A. Introduction**

Explain the big picture of the study

#### **B. Subjects**

- Describe population tested (subjects) in detail, how they were recruited, who they are

#### **C. Materials & Procedures**

- Explain how you operationalize the relevant constructs
- Describe all variables (control, independent, dependent, extraneous)
- Explain explicitly how all variables fit into the study design
- Explain how stimuli are chosen/constructed, and what stimuli are representative of
- Provide example/representative stimuli (and/or all stimuli in an appendix)
- Explain materials and procedures in enough detail that study could be replicated by others

#### **D. Results**

- Begin with an explanation of exactly what the data should look like if each hypothesis is confirmed
- Describe descriptive and inferential statistical analyses you will use
- Describe how visuals will be used to present results: provide an explanation of the graphs and choose the graphs carefully/selectively.

### **Chapter 4. Discussion**

- Describe the expected limitations of your study
- Describe the expected implications of your study (assuming all hypotheses are confirmed)

## Possible outline for a short experimental report (7-11 pages) :

- **A succinct literature review part (2-3 pages)**
  - a concise description of your research question,
  - a motivation of the method you chose (why is this method suitable for this question, how does it reveal what you want to show),
  - a **\*brief\*** review of this method in itself: how does it work, what are the pros and cons, what are the general risks (in terms of biases, the need to control for specific things, etc);
- **An experimental part (2-3 pages),** which should describe:
  - How you constructed your stimuli → What you
    - did,
    - did not and why (for example: you chose Icelandic as the language of your experiment, you need to control for word frequency but you didn't because there is no available frequency dictionary to do so. Etc...), and
    - what should be done ideally;
  - How participants have been chosen, recruited...:
    - who are the participants (numbers, demographic and biographical data...)
  - Describe the procedure:
    - what instructions were given, how were the participants tested, how long it took, whether it was speeded, etc...

→ To help you know what belongs into a procedure section, have a look at any paper similar to your experiment and look at their procedure section.
- **A results part (2-3 pages)**
  - What did you measure (RTs, accuracy, responses, etc)
  - What do the results look like
  - A short description of what statistical procedures you plan
    - If you did the stats, report them correctly,
    - if not, describe what they ideally would be and what it would mean to have such results (if all hypotheses are confirmed)
  - A conclusion about your results if applicable. What did you observe and what does it mean for your research question?
- **A short discussion section, a self reflection on the process of constructing the experiment (1-2 pages)**
  - A very brief discussion of your results (or speculatively of the possible results)
  - Discussing the caveats of your experiment, how it could be extended for the real project, whether the methods is appropriate, what you observed was difficult, or unexpected, during the course of the preparation of the experiment.
- **A reference list, materials and stimuli in the appendix** (not in page count).
- All of this must be nicely and thoroughly presented (no photocopies of hand written stats or pages and pages of unnecessary excel figures or SPSS outputs). **By all means avoid wordiness, and aim for clarity.**