

Writing a Lab Report

Purpose

The purpose of a lab report is to communicate research in a clear, systematic and standardised way. Primarily, a lab report should communicate the following things:

- **Why did I bother?** Why did I do this experiment and why is it an interesting contribution to science.
- **How did I do it?** How did I carry out this research (this should be detailed enough so that the experiment could be replicated precisely).
- **What did I find?** What were the results of your study.
- **So What?** What do your findings mean in terms of your hypotheses and what theoretical contribution do they make.

Format

There are several sections to a lab report:

- Title /Abstract
- Introduction
- Method
 - Subjects (Participants)
 - Apparatus (Materials)
 - Design
 - Procedure
- Results
- Discussion
- References and Appendices

Title

Should be approx. 20 words or under. It needs to clearly communicate what your study is about, but should not be too specific:

"The 'Beer-Goggles' effect"

Too Vague

"Investigation into the effects of drinking 6 pints of Guinness in a nightclub in Brighton at 11.30, while listening to drum and bass played at 100 db through a good sound system, on 12 men's and 15 women's ability to accurately judge the attractiveness of members of the opposite sex"

Too Specific

"The 'Beer-Goggles' effect: Experiment investigating the effects of alcohol on ratings of the attractiveness of members of the opposite sex"

OK

Abstract

100-150 words long.

Should **summarise** the whole report and should be **interesting** (because most people will read the abstract before deciding whether to bother reading the report).

Should have one sentence (or so) describing the following:

- Reason for the experiment
- Method Used
- Analysis conducted and the results found
- Conclusions drawn and implications

Andy Field, 1997

Don't include too much detail.

Although this section goes immediately after the title, you should **write it last**.

Example Abstract:

Ugly (1993) has shown that the propensity to misclassify members of the opposite sex as attractive is increased in nightclub settings. This study was designed to ascertain whether this effect is due to the dim lighting employed in these venues, or the consumption of alcohol that takes place in this setting. Ratings of the attractiveness of a set of stooge participants were taken in both a well-lit and dimly-lit nightclub by both sober and drunk subjects. A 2 way ANOVA revealed a significant effect of alcohol consumption, but not of the lighting used. The results suggest that alcohol inflates the attractiveness of members of the opposite sex. Ugly's conclusion that night-clubs are a bad place for mate-selection is discussed with regard to this finding.

Introduction

This section should inform the reader of the reasons for doing your study. It should present relevant background material, the reasons why your study needs to be done and then finally your hypotheses.

300-400 words

- First, include a brief **review of the relevant literature** (the theories and findings).
- Second, explain **why you are bothering with your study**: Are there gaps in the previous literature? Are there methodological flaws in past work?
- Finally, briefly describe your study, the outcomes that you expect, and their implications.

Method

The method section has several sub-sections:

Subjects (a.k.a. participants)

These are the people who you tested. You should include all relevant information about them such as: age, gender, whether they were paid etc.

A prototypical subjects section might look like this:

'Fifty subjects participated in all conditions of this study: 25 were male and 25 female. Ages ranged from 18 to 39 years with a mean age of 24 (s.d. = 3.5 years). Participants were all undergraduate students at the University of Sussex who took part in return for free admission to the nightclub. All subjects were naive to the purpose of the experiment.'

Apparatus

This section should be a few sentences describing the apparatus used in the experiment. Use full sentences and not lists of objects.

Example:

Legless' (1994) Considered Ratings of Attractiveness of Personality Scale (CRAPS) was used to measure each subject's opinions of the attractiveness of the stooges' personalities. Furthermore, Nicearse's (1992) Considered Opinion of Attractiveness Rating scale (COAR) was used to ascertain subjects' opinions of the physical attractiveness of the stooges.

Design

This should give an account of the design used: was it within- or between-subjects?; was it correlational?; what was the IV and DV? etc.

Andy Field, 1997

You should specify:

Independent variable: What did you manipulate in the experiment?

Dependent Variable: What did you measure in the experiment?

How many groups: How many experimental conditions were there?

How were subjects allocated to these groups: Was it an independent design (i.e. different subjects in different groups - also called between-groups or between subjects design), or a repeated measures design (i.e. the same subjects take part in each experimental condition - also called a within-subject design).

An example might be:

The design used was a repeated measures design. There were two independent variables: the lighting used in the nightclub (bright or dim) and the level of alcohol consumed (none or 6 pints). There were two dependent measures that were analysed separately: the subjects ratings of physical attractiveness (the COAR scale) and the subjects ratings of the attractiveness of personality (the CRAPS scale). Subjects took part in all four conditions of the experiment.

Procedure

This section should tell the reader exactly what you did in your experiment in sufficient detail to ensure that the experiment could be accurately repeated. If instructions were given, include them verbatim.

Results

- This section should be a **summary of your findings**.
- Do **not** include raw data.
- Usually we **summarise the means and/or frequencies**.

- Use **tables and graphs** to present the means etc.
- Don't present the same data in both a graph and a table - do one or the other.
- Remember to give any graphs or tables full titles - remember to label the axes on graphs.
- Report the findings in sentence form.
- Include the results of any **statistical tests** and explain what these tests mean in relation to the experiment.
- As a general rule, you should ask yourself "If the graphs and/or tables were removed, could the reader still understand the results from the text I have written?"
- Do **not** discuss or interpret your results in this section.

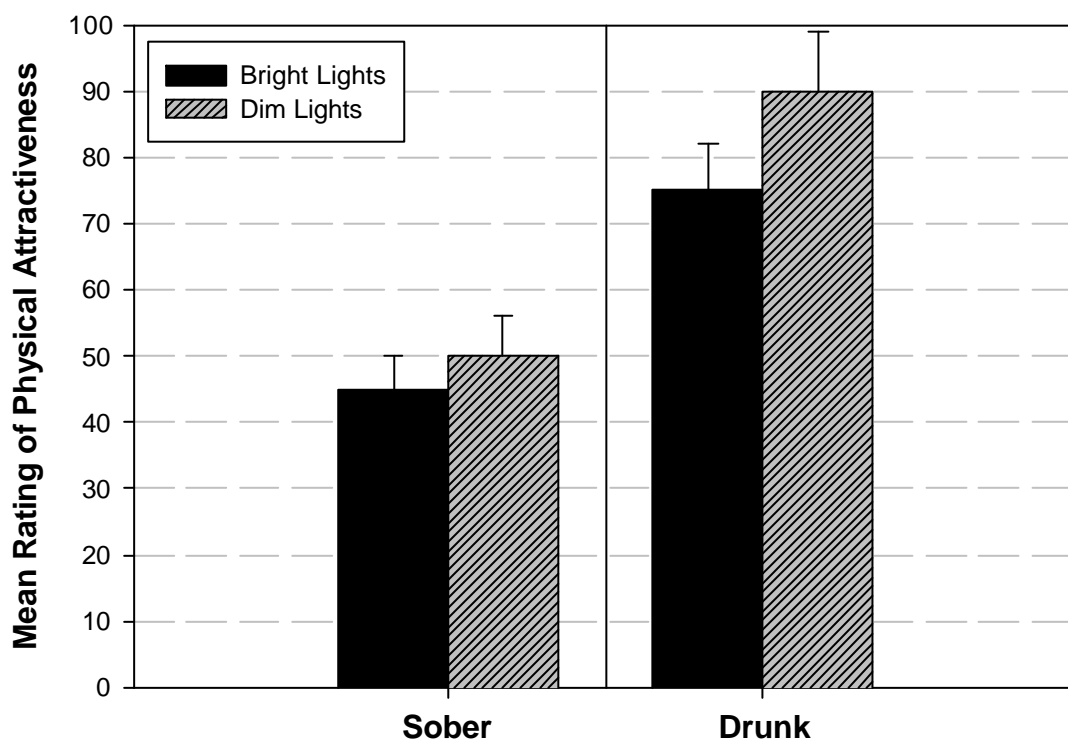


Figure 1: Graph showing the mean physical attractiveness ratings given by subjects under the four experimental conditions.

Figure 1 shows the mean attractiveness ratings given by subjects in each of the four experimental conditions. The graph shows that when subjects were drunk the attractiveness ratings were higher (in the brightly-lit nightclub, in the dimly-lit nightclub) than when subjects were sober (in the brightly-lit nightclub, in the dimly-lit nightclub). In addition, the graph shows that ratings were higher in the dimly-lit nightclub than in the brightly-lit nightclub.

A two way related ANOVA was conducted with lighting (Bright or dim) and sobriety (sober or drunk) as the variables. This revealed a significant main effect of sobriety [$F(1, 49) = 5.67, p < 0.05$] indicating that attractiveness ratings were significantly higher when subjects were drunk. There were no other significant effects.

Discussion

- Briefly **restate the main findings**.
- **Relate these findings to previous work** (preferably the work mentioned in the introduction!).
- **Do the results support, contradict, extend or qualify the previous findings?**
- What are the **weaknesses of your own study**? Are there any factors that could be improved?
- Suggest some areas for **future research** based on what you've found.
- Finally, **conclude** by summarising the main findings and their implications.

Appendices

- Do **not** put raw data in appendices.
- Put materials, examples of questionnaires, examples of stimuli etc. in the appendices.

References

Citing evidence in text:

Evidence suggests that drunk people tend to overestimate the attractiveness of the opposite sex (Legless, 1994)

Studies by Legless (1994, 1987) indicate that drunk people tend to overestimate the attractiveness of members of the opposite sex.

Citing Quotes in text:

"The minute you have a couple of pints ugly blokes transform miraculously into Brad Pitt" (Drunkwoman, 1996: p. 154).

Drunkwoman (1992) declared that "It's not my fault that my boyfriend looks like a strange genetic accident: I was drunk when I met him" (p. 243).

Secondary Citations:

Largerlout (1987, cited in Gleitman, 1995) found that alcohol did not impair his ability to judge the attractiveness of women, however, his subsequent marriage to daisy the cow casts doubt upon his findings.

Journal articles:

Slaughtered, V., & Offmyface, J. (1994). The effect of alcohol on perception of objects. *Journal of Liver Cirrhosis*, **15**, 154-167.

Books:

Drunkwoman, M. G. (1992). *Beer-Goggles: Fact or fiction*. Langeder, USA: Betty Ford Clinic Press.

Chapters in Books:

Shit-faced, H. (1991). A few pints never stopped me from being able to accurately judge attractiveness. In Drunkwoman, M. G. (Ed.) *Some boring case histories from people who think that they are immune to the effects of alcohol*. Yawn, USA: Boring Press.

General Tips

- Write in past tense throughout.
- Do not use 'I', 'we', or 'my' in lab reports.
- Do not use technical terms (especially statistical ones) inappropriately — the marker will not be fooled!
- Always place a name and date when referring to previous research.
- Do not quote other people without referencing them (this is plagiarism and the university gets very upset about it).
- Make sure any factual assertions are substantiated with a reference or your own data (i.e. don't make sweeping statements and generalisations without good evidence).
- Provide a full reference list for everything cited in the text.
- Try to bear in mind that your reader knows nothing about what you are doing.
- Do not copy your mate's report. It is very easy to detect this, and it is nearly always picked up on. The result: zero mark for both reports and possible further action.
- Do not miss the deadline — late reports are seldom marked.