

Summary and Analysis of Scientific Research Articles

Being able to summarize and analyze a research article is important not only for showing your professor that you have understood your assigned reading, but it also is the first step to learning how to write your own research papers and literature reviews. The summary section of your paper shows that you understood the basic facts of the research. The analysis shows that you can evaluate the evidence presented in the research and explain why the research could be important.

Summary

The summary portion of the paper should be written with enough detail so that a reader would not have to look at the original research to understand all the main points. At the same time, the summary section should not be longer than the analysis. A well-written summary should cover three main points: why the research was done, what happened in the experiment, and what conclusions the author drew.

Why was the research done?

The first section of your summary should include all the important background information and context. It should also include the author's purpose for doing the research and the goal or hypothesis. You should typically be able to pull all this information from the introduction.

What happened in the experiment?

Next, cover what happened in the methods and results sections of the paper. This is important for letting the reader know what happened in the experiment. Do not mix the author's analysis with this section: simply state the facts first. This will keep your summary organized. Also, try not to include too many specific numbers or details. Only offer what is necessary or helpful in explaining what happened.

What conclusions did the author draw?

Lastly, write about the author's analysis and everything they concluded from the experiment. Go over all the main points that the author makes here, including their conclusion, limitations, and future directions. Remember that the conclusion is not the same thing as the results. Results are the final outcomes of the experiment, and conclusions are what the author says the results mean.

Analysis

Analyzing the research is the most important part of this type of assignment. The main goal here is to critically think about the research and show that you understand how it can be used. There are two overarching questions you should ask when analyzing research: "Was this research effective at answering the research question?" and "How is this research relevant or important?"

Was this research effective at answering the research question?

Be critical of how the study was done and whether or not it properly tests what the author says it tests. Evaluate each section in the same order presented in the paper. Look for any inconsistencies in logic or potential shortcomings. Below are some questions you can ask about the paper to help you evaluate the paper's overall effectiveness.

- Was the purpose of the study properly addressed by the experiment?
- Was the scope of the paper too broad or narrow?
 - Was there any unnecessary information?
 - Was there not enough information?
- Was there anything about the study that could be improved?
 - Consider factors such as sample size, confounding factors, potential errors, etc.
 - Were there any limitations that prevented them from improving the study in this way?
- Was the author’s interpretation of the results valid? Why or why not? Were there possible alternate explanations for the results?
- If there are issues with the research, does the author address them?
- Was the article overall clear, effective, and well written?

Be sure to talk about what the paper does well, too. For example, if the experiment was well designed, write a sentence or two about what makes it well designed. Remember to use specific examples rather than simply saying something is “good” or “bad.” You must offer support from the article to prove your analytical assertions.

How is this research relevant or important?

To conclude the analysis, explain how this article might be important or lead to future research. Use this last section to end on what you think of the article as a whole. Again, do not say whether you think the article is “good” or “bad,” but use more descriptive words and phrases like “This article effectively demonstrated...” Your goal is to make analytical claims with proof—not to make value judgments about whether or not you “liked” the article or the research. Below are some questions that you can ask yourself to help you write this section.

- What is the usefulness of this study in the larger context? What further research could build on it?
- Does this research build upon old information or is it something new? Does it contradict something previously thought to be true?
- Is the author funded by an organization that might imply skewed results?

Activity

Look at the following passage and try to write a short summary and analysis. Compare what you write to the sample summary and analysis answer that follows.

Remember that this sample article is short. A full research article from a published, peer-reviewed journal will be easier to analyze because it will have more data and a much longer discussion.

Introduction

Current theories focus on personal characteristics to explain wrong-doing and how someone can intentionally harm others. In a survey, professionals such as doctors, psychologists, and laymen predicted that a small proportion of a population (1-3%) would harm others if ordered to do so. In the recent war trial with Adolph Eichmann, he claims to only have been "following orders." The author wanted to test this claim. Can people harm others because they are merely obeying orders? Can people be ordered to act against their moral convictions?

The experiment will test whether a person can keep administering painful electric shocks to another person just because they are ordered to do so. The expectation is that very few will keep giving shocks, and that most participants will disobey the order.

Methods

Participants

There were 30 male participants. They were recruited by advertisement in a newspaper and were paid \$4.50.

Instruments

A "shock generator" was used to trick the participants into thinking that they were giving an electric shock to another person in another room. The shock generator had switches labeled with different voltages, starting at 30 volts and increasing in 15-volt increments all the way up to 450 volts. The switches were also labeled with terms which reminded the participant of how dangerous the shocks were.

Procedures

The participant met another "participant" in the waiting room before the experiment. The other "participant" was an actor. Each participant got the role as a "teacher" who would then deliver a shock to the actor ("learner") every time an incorrect answer to a question was produced. The participant believed that he was delivering real shocks to the learner. The learner would pretend to be shocked. As the experiment progressed, the teacher would hear the learner plead to be released and complain about a heart condition. Once the 300-volt level had been reached, the learner banged on the wall and demanded to be released. Beyond this point, the learner became completely silent and refused to answer any more questions. The experimenter then instructed the participant to treat this silence as an incorrect response and deliver a further shock. When asking the experimenter if they should stop, they were instructed to continue.

Results

Of the 40 participants in the study, 26 delivered the maximum shocks. 14 persons did not obey the experimenter and stopped before reaching the highest levels. All 40 participants continued to give shocks up to 300 volts.

Discussion/Conclusion

Most of the participants became very agitated, stressed and angry at the experimenter. Many continued to follow orders throughout even though they were clearly uncomfortable. The study shows that people are able to harm others intentionally if ordered to do so. It provides evidence that this dynamic is far more important than previously believed, and that personal ethics are less predictive of such behavior.

Activity Answer Key: Sample Summary and Analysis

Professionals have previously predicted that wrong-doing behavior is caused by personality traits, and the majority of people will not go against their morality when ordered to do so. The research paper “Behavioral Study of Obedience” by Shuttleworth (2008) explores this concept. The purpose of this study was to test how far common people will go when told by an authority to give an electric shock to another person. The author(s) predicted that most people would stop when they felt they were causing too much harm. In the experiment, 40 participants were asked to come in for a learning study. They met an actor who pretended to be another participant. The participant asked questions to the actor in a separate room, and when the actor answered incorrectly, the participant was asked to flip a shock switch. Each wrong answer got a higher voltage, and the actor pretended to be more in pain and started to complain about his heart condition as the study went on. At 300 volts he pleaded to be released, and after 300 volts he went silent. The experimenter would tell the participant to shock the actor whether or not he answered and that no answer counts as a wrong answer. 26 out of 40 participants obeyed the experimenter to the end, and 14 people disobeyed the experimenter before the end. The author(s) concluded that regular people will harm others if ordered, and that personal ethics are not important in predicting this behavior.

Despite being short and not containing much data, this research paper is effective at demonstrating how regular people can be pressured into hurting others. The participants were convinced that they would potentially be killing another person with electric shocks, but they continued the experiment anyway. However, the experiment used did have a small sample size, and there could potentially be a problem with the demographics used. Every participant was male and learned about the experiment through the newspaper. The cash incentive also could have primed the participants to want to finish the study. Considering this is the first study of its kind, the small scope is acceptable since new studies will attempt similar experiments. This article is also definitely lacking in details about each participant. The results should have included more details about each participant, rather than just the number who completed the experiment. The discussion section is also lacking. It would be helpful to have more notes on why each participant acted the way they did. This study would greatly be improved by looking at the personality traits of each participant. This could have potentially provided more evidence to challenge that personality traits are the main driver for bad behavior. Overall, this paper is important because it challenges a long-held assumption that normal people will not cause harm to others when ordered to do so. This is important in understanding human psychology and can shed light into why so many people can go along with dictators who commit crimes against humanity. More research should be done on larger sample sizes and on different demographics to verify these results.

References

- Grand Valley State University. "Business: The Article Analysis." *business_article_analysis_gg_final.Pdf*, 2020, www.gvsu.edu/cms4/asset/CC3BFEEB-C364-E1A1-A5390F221AC0FD2D/business_article_analysis_gg_final.pdf.
- Shuttleworth, Martyn. "Example of a Research Paper." *Explorable*, 21 May 2008, explorable.com/example-of-a-research-paper.