

# Final Paper

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## 1 Overview

You must turn in two drafts of your final paper. The first draft, due on **March 22 by 11:59pm**, must be in the range **2000-2500 words**. The second draft, due on **April 12 by 11:59pm**, must be in the range **3500-4000 words**. Both drafts should be submitted through the course's LumiNUS website:

<https://luminus.nus.edu.sg/modules/a6a5a962-0447-41c7-9e70-2470afe1cd0e>

Note the lateness policy on my course website:

<http://isaacwilhelm.com/Courses/2022/PhilSciS2022/PDFs/Policies.pdf>

In particular, note that you are responsible for making sure that your file is uncorrupted and successfully loaded to LumiNUS. Technological mistakes will not avoid lateness penalties.

Please read the following instructions carefully. For the assignment, choose one of the following selections from the textbook.

1. C. Hempel, "Studies in the Logic of Confirmation (I.)," the passage on p. 14 which begins with the phrase "Thus, we shall agree..." and ends with the phrase "...or a black raven)."
2. I. Lakatos, "Science and Pseudoscience," the passage on p. 23 which begins with the phrase "Is, then, Popper's falsifiability criterion..." and ends with the phrase "...as are some Marxists."
3. H. Longino, "Values and Objectivity," the passage on pp. 153-154 which begins with the phrase "Objectivity, then, is a characteristic..." and ends with the phrase "...the uses it serves."

Although your assignment will be based solely on the selected passage, you should read the whole article, in order to understand the passage's background context.

Your paper should begin with a short introduction in which you explain the basic topic of the article and what you plan to discuss. Then, for the first draft, you should do the following two things.

1. *Extract* the author's argument in the assigned passage: roughly put, tell me what the argument's premises are and what the argument's conclusion is.
2. *Justify* that argument: roughly put, tell me why the author thinks that each of the premises are true.

And for the second draft, you should do both of those things, and also a third.

3. *Evaluate* the argument: roughly put, tell me what you think of the premises.

In the rest of these instructions, I explain what I mean by 'extract', 'justify', and 'evaluate'.

## 2 Extraction

Extracting an argument means reformulating an argument in order to capture, as clearly as possible, what the author has in mind. The extracted argument must be logically valid: so the truth of the premises must guarantee the truth of the conclusion. And the extracted argument must be more-or-less what the author was thinking, when they wrote the paragraph.

For example, suppose you were to extract an argument from the paragraph below.

People have become lazy when walking their dogs. Sometimes, they neglect to pick their dog's poop up off their neighbors' grass. Those people should read up on the local laws regarding domestic pets. The laws are extremely fair. They cover many different things, including proper dog-walking etiquette. So whenever I walk my dog, I always follow the law: do not leave dog poop on your neighbor's lawn!

A first attempt at an extraction might be this.

The author claims that the local laws are fair. In addition, according to the author, the local laws imply that it is wrong to leave dog poop on your neighbor's lawn. Therefore, the author concludes, it is wrong to leave dog poop on your neighbor's lawn.

The first two sentences of this extraction are the premises of the argument in the paragraph above, and the final sentence is the argument's conclusion. Note that neither the second premise nor the conclusion is explicitly stated in the paragraph above. That is fine: in many cases, your extracted argument will have statements which the assigned passage leaves implicit. And note that it may be possible to extract a different kind of argument from the assigned passage. That is normal: in general, the argument in the assigned passage will be compatible with several different extracted arguments.

This first attempt is no good, because it is not valid. The first and second premises do not logically imply the concluding line 3. To make the argument valid, another premise is required. So here is a second attempted extraction.

The author of the passage commits, implicitly or explicitly, to three claims. First, the author claims that the local laws are fair. Second, according to the author, the local laws imply that it is wrong to leave dog poop on your neighbor's lawn. Third, the author seems to accept the following: if the local laws imply that it is wrong to leave dog poop on your neighbor's lawn, then it is wrong to leave dog poop on your neighbor's lawn. Therefore, the author concludes, it is wrong to leave dog poop on your neighbor's lawn.

Note that this is just one way of making the original attempted extraction valid. There are others: for instance, the "If ... then ..." premise could be replaced by "Everything that the local laws imply is true."

The second attempted extraction is better than the first, because it is valid. But it is still not good enough, because the first premise—about the local laws being fair—is superfluous. That is, the conclusion follows from the second and third premises alone: the first premise is unnecessary. So that premise should be cut. The resulting extracted argument is as follows.

The author of the passage commits, implicitly or explicitly, to three claims. First, according to the author, the local laws imply that it is wrong to leave dog poop on your neighbor's lawn. Second, the author

seems to accept the following: if the local laws imply that it is wrong to leave dog poop on your neighbor's lawn, then it is wrong to leave dog poop on your neighbor's lawn. Therefore, the author concludes, it is wrong to leave dog poop on your neighbor's lawn.

This final extracted argument is great. It is valid, since it has the logical structure indicated below:

1.  $A$
2. If  $A$  then  $B$
3. Therefore,  $B$

where  $A$  is “the local laws imply that it is wrong to leave dog poop on your neighbor's lawn” and  $B$  is “it is wrong to leave dog poop on your neighbor's lawn.” In addition, this final extracted argument is good because it represents, reasonably well, what the author of the assigned passage had in mind. In other words, this final extracted argument is a good *precisification* of the line of thought in that passage.

A quick aside: your extracted argument should include more details than the extracted argument in this example. For the passages from which you will extract an argument—taken from the Hempel, Lakatos, or Longino readings—are more involved than the passage upon which this example extraction was based. Your extraction, for example, should explain all the relevant parts of the author's argument: the terminology that they use, the principles that they invoke, and so on. In general, your extraction will probably be around two or three pages. It is fine, however, if your extraction is longer or shorter than that; just make sure that it is reasonably clear and complete.

In this part of your paper, it is often worth describing how the extracted argument connects to the rest of the author's article. So if you have space, explain the role that—in the context of the author's article—the extracted argument plays.

### 3 Justification

Justifying an argument means presenting the arguer's reasons for endorsing the premises. To justify your extracted argument, go through the premises one by one, and tell me why the author of the assigned passage thinks that each premise

is true.

For example, consider the final extracted argument from the previous section. To justify that argument, you must say why the author of the original paragraph thinks that the first and second premises are true. Presumably, the author thinks the first premise is true because the author has read the local laws, and according to those laws, it is wrong to leave dog poop on your neighbor's lawn. The author thinks the second premise is true because, for instance, the author thinks that the local laws are generally fair, that the local laws are generally just, and that the local laws correctly capture the moral facts about dog-walking etiquette in particular.

This raises an important distinction: namely, the distinction between premises and *justifications* of premises. Note that the premise “The local laws are fair.” which appeared in the first extracted argument in Section 2, did not appear in the third extracted argument. That fact about the laws—though it was quite prominent in the original passage upon which the extracted arguments were based—is not the sort of fact that can feature in a premise. But it *is* the sort of fact that can *justify* a premise. In particular, it justifies premise 2: since the local laws are fair, we can trust them to tell us what is right and what is wrong. So do not be surprised if the argument you extract, from the assigned passage, leaves a great deal of that passage out. The other bits of the passage are still relevant to the extracted argument, because those other bits serve to *justify* the extracted argument's premises. So you can talk about the rest of that passage in the justification section of your paper.

## 4 Evaluation

In the second draft of your paper, you must—in addition to improving your extraction and justification, in light of my comments—evaluate the extracted argument. Evaluating an argument means determining whether you think the argument is sound. Recall that a sound argument is a valid argument whose premises are true. Your extracted argument should be valid; see Section 2. So to evaluate your extracted argument, you must present your reasons for thinking that the premises are true or false.

For example, consider once more the extracted argument concerning the local laws and dog poop. Suppose you think that the argument is incorrect – the conclu-

sion, you think, is false. Then you must say which premise is incorrect: since the argument is valid, if the conclusion is false then one of the premises must be false as well. Perhaps you think that the second premise—“If the local laws imply that it is wrong to leave dog poop on your neighbor’s lawn, then it is wrong to leave dog poop on your neighbor’s lawn”—is false. Then tell me why that is. Perhaps you have reasons to think that the local laws are not as fair as the author of the passage suggests.

Alternatively, suppose you think that the argument is correct: like the author, you think that each premise in the argument is true. Then you must tell me why you think that. In your own view, why should we accept the premises? How might someone object to one of the premises in the argument, and how could that premise be defended?

Note that in the evaluation section of the paper, you should not merely express your own opinions. You should give reasons that support what you think.