

AAPT Workshop - Logic and Philosophy
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Logic Paper Assignment - Fall 2010

1. Your paper should explore a topic in: a. logic; b. philosophy of logic; or c. the application of logic to philosophy. All papers must be double spaced, approximately four to six pages (1000 to 1800 words) in a reasonable font, such as 11 point Times. **The final draft of your paper is due on Friday, December 3.**
2. You may write on any of the topics that we have discussed in class, or you may write on a different topic. The lecture notes for topics we have discussed in class contain some specific suggestions for paper topics. I urge you to meet with me before you write. You must get approval for any topic we have not discussed in class. Your paper should show evidence of independent research; it should not merely summarize what was said in class, or what appears in the class notes. The course bibliography will help you get started with additional readings.
3. Observe basic rules of grammar and spelling. Avoid jargon. Write simply, and clearly. Proofread your paper. Asking a good writer to read and comment on your paper can be helpful; I encourage use of the Writing Center. Don't forget to cite all assistance you received on the paper.
4. A few important, idiosyncratic formatting guidelines: Do not right-justify your paper. Print on only one side of each page. Paginate your papers.
5. Avoid history and biography. Focus on the arguments, or the logical machinery, rather than particular authors' explications of those arguments or presentations of that machinery.
6. Papers on logic proper may present a known result in some extension of the logic we study in class. These papers need not argue for a thesis, but should motivate the result discussed. Papers on the philosophy of logic or the application of logic to philosophy should defend a thesis. See below for further, general information about writing philosophy papers.
7. Any citation method which allows me easily to trace your sources is acceptable. My preferred method involves a list of references at the end of the paper, and citations made parenthetically within the text by merely noting the author and page number: "To be is to be the value of a variable" (Quine 50). If there is more than one work by an author in your list of references, disambiguate using year of publication: "To call a posit a posit is not to patronize it" (Quine 1960: 22). If your list of references contains entries from the same author in the same year, disambiguate using lower-case letters after the year, and indicate the distinction in the list of references: "All we really need in the way of holism... is to appreciate that empirical content is shared by the statements of science in clusters and cannot for the most part be sorted out among them" (Quine 1980b: viii). Internet sources must include a live URL. I must be able to trace the source.
8. Violations of academic integrity, like plagiarism, can and will lead to failing grades. Remember to acknowledge any assistance you have had on your paper, including assistance from the Writing Center. **The Hamilton College Honor Code will be enforced.**

Some General Guidelines For Writing A Philosophy Paper

1. Introduce your paper by briefly stating your thesis, the conclusion you will defend. Be specific. Your paper should be an extended argument supporting your thesis.
2. Argue for your thesis. Each element of your paper should relate directly to your specific thesis. When editing your paper, think about the role that each paragraph plays in support of your thesis. Think about the role that each sentence plays in each paragraph.
3. Provide plenty of road signs along the way. (E.g. “First I will argue..., then I will argue...”; “In the last section, I showed that...”.) Make sure that you and the reader know the narrative structure of your paper, and the role of each part.
4. Consider the best objections to any thesis you defend. Consider responses to those objections, and counter-responses. Avoid straw persons, arguments which no one really holds but which are easy to refute.
5. Avoid arguments from authority. Do not accept without question what any philosopher says. Argue your own point of view, but through the writings of the philosophers.
6. Conclude your essay by summarizing what you intended to say in the paper. You may indicate questions for further research. You may indicate the limits of your argument. (E.g. “My argument only shows that Goodman’s argument is faulty, not that his conclusion is false.”)

Links to excellent advice for writing philosophy papers is available on the home page of the course website.

Some Suggested Paper Topics

I. Conditionals

1. Contrast the following pair of counterfactual conditionals.

If bin Laden didn't plan the 9-11 attacks, then someone else did.

If bin Laden hadn't planned the 9-11 attacks, then someone else would have.

The antecedents and consequents of these statements are nearly identical, but, our estimations of the truth values and semantics of U and U' are different. Discuss the similarities and differences among these sentences. Can we use the material conditional for this example? Are there other options? See Bennett and Jackson for discussions of a relevantly similar pair of sentences.

2. Consider the following inference.

If this is gold, then it is not water-soluble.

So, it is not the case that if this is gold then it is water-soluble.

Intuitively, this argument seems valid. But, if we regiment the argument in a standard way, we get an invalid argument. Discuss this problem in the light of the discussion of the material conditional. For possible solutions, you might look at Lewis and Langford 1932; Priest 2008; or Goodman's work.

3. In relevance logic, we insist that for a conditional to be true, its antecedent and consequent must be appropriately related. People working on relevance logics are mostly following C.I. Lewis's suggestion concerning strict implication. See Priest 2008.

4. Lewis on strict implication

5. The philosopher Paul Grice, responding in part to the problems of the conditional, distinguished between the logical content of language, and other, pragmatic, features of language. In addition to Grice's paper, Fisher, Priest, and Bennett all have useful discussions of Grice's suggestion.

6. Connections to three-valued logics

7. Lewis Carroll's paper, "A Logical Paradox"

8. Goodman, and the relation between conditionals and scientific laws. Hempel.

9. Frank Jackson and David Lewis have extended treatments of conditionals

II. Syntax and Semantics

1. Is there artificial intelligence? How might the defender of strong AI respond to Searle's criticisms? See Dennett, especially.
2. What is a mind? Compare and contrast two or three theories of the mind. See Churchland's first chapter, and consider Searle's argument.
3. Is logic purely syntactic? Consider Frege's microscope analogy, from the preface to the *Begriffsschrift*, and the discussions of semantics from later in the term.

III. Adequate Sets of Connectives

1. While there are no other adequate connectives, there are other connectives. You might be able to work up a paper considering some of those.
2. Why are there only unary and binary connectives?

IV. Three-Valued Logics

1. Do assertions about the future have a truth value? Consider both the bivalent and the three-valued alternatives. You might compare Aristotle's view with that of Leibniz, who says that contingent truths are not necessary, even though they are certain. Alternatively, you could look at Haack's discussion of the way Aristotle's suggestion was pursued by Lukasiewicz. If you want to pursue an interesting technical discussion, Prior's "Three-Valued Logic and Future Contingents" is written in Polish notation.
2. How should we understand the sentence 'the king of America is not bald'? Consider Russell's theory of descriptions, and contrast it with Strawson's response. You might also consider the questions whether there is a difference between logical and grammatical form, and, whether ordinary language has a logic.
3. Are there any people? Consider the problem of vagueness, and the many-valued approach to its solution.

V. Truth and Liars

1. Does introducing a third truth-value solve the problem of the liar? Discuss the strengthened liar paradox. Kirkham has a good, if brief, discussion of the strengthened liar.
2. Is truth deflationary or inflationary? See Horwich, and the Lynch collection. Fisher has a fine introductory discussion.
3. Is truth relative to a language? Tarski's definition of truth introduces a different truth predicate for each language, and creates a hierarchy of languages. Is this construction objectionable? See Fisher, Kirkham, and the Lynch collection.
4. Graham Priest has lately been defending dialetheism, the claim that there can be true contradictions.
Can there be true contradictions? Is the liar one of them?
5. For a more technical paper, describe the difference between Kripke's truth predicate and Tarski's hierarchy. What advantages does Kripke claim for his construction? Is it satisfactory?
6. Is truth a correspondence between words and reality? See the Lynch collection for the classic, historical discussion.

VI. Quantification and Ontological Commitment

1. What is the ontological status of abstract objects, like numbers or appendicitis? How can we characterize the debate between nominalists and realists? How does Quine's method facilitate the debate? Discuss the role of contextual definition Quine mentions at the end of DE.
2. Are there universals? What is the relationship between the distinction between singular and general statements and the distinction between abstract and concrete terms. Does that relationship help us understand the problem of universals? How does Quine's criterion facilitate the debate? Why does Quine reject meanings, in OWTI, and how does the rejection of meanings relate to the problem of universals?
3. What is the problem of non-existence? Consider the solutions provided by McX and Wyman. How does Quine's approach differ? How does Quine's approach relate to Russell's theory of definite descriptions?
4. What is a name? What is the relationship between naming and quantification? Discuss Quine's dictum, that to be is to be the value of a variable.

VII. Color Incompatibility

1. The positivists were epistemic foundationalists, seeking to explain all of human knowledge on the basis of some secure, fundamental beliefs. Some critics of foundationalism, inspired by Quinean holism, defend coherentism in epistemology. Compare the two kinds of epistemologies. Sosa, Sellars, Ayer and Quine would all be good readings.
2. In “Two Dogmas of Empiricism,” Quine argues against the positivist’s reductionism. Evaluate Wittgenstein’s project in light of Quine’s criticisms. See Melchert for a good discussion of the *Tractatus*’s project, as well as Ayer.
3. Do meaning postulates solve the color incompatibility problem? See Carnap’s article, as well as Quine’s response in “Two Dogmas of Empiricism.”
4. What are semantic markers? How do they attempt to solve the color incompatibility problem? In addition to the discussion in “The Problem...,” see Katz’s *Semantic Theory*.
5. How does the color incompatibility problem shift Wittgenstein away from his original project. Work through his “Remarks on Logical Form.” See Allaire and/or Austin, as well.
6. What is the logical form of a sentence? Are there solutions, other than Carnap’s, to the color incompatibility problem that rely on logical form? See the Pietroski article.

VIII. Second-Order Logic