

Phil 301h: Philosophical Foundations of Neuroscience

Fall 2007 Syllabus

Instructor: Dr. Anthony Beavers

Office: Olmstead Hall 342

Email: tb2@evansville.edu

Hours: M&F 10:00-11:50; 1:00-1:50

Office Phone: 488-2682

W 1:00-1:50; 3:00-4:50

Time & Place: Th 6:00-8:45 p.m. in LI 209

Th 5:00-5:50

Course Description

This course will carefully study Bennett and Hacker's *Philosophical Foundations of Neuroscience*, a recent text (2003) that takes to task many of the philosophical presuppositions that go unquestioned in the background of current neuroscience research. To describe this course, then, one could perhaps do no better than to use the description that appears on the book itself. "In this provocative work, a distinguished philosopher and a leading neuroscientist outline the conceptual problems at the heart of cognitive neuroscience. Writing from a scientifically and philosophically informed perspective, the authors provide a critical overview of the conceptual difficulties encountered in many current neuroscientific and psychological theories, including those of Blakemore, Crick, Damasio, Edelman, Gazzaniga, Kandel, Kosslyn, LeDoux, Penrose and Weiskrantz. They propose that conceptual confusions about how the brain relates to the mind affect the intelligibility of research carried out by neuroscientists, in terms of the questions they choose to address, the description and interpretation of results and the conclusions they draw. The book forms both a critique of the practice of cognitive neuroscience and a conceptual handbook for students and researchers."

Required Text

Bennett, M. R. and P. M. S. Hacker. *Philosophical Foundations of Neuroscience*. Malden, MA: Blackwell Publishing, 2003.

Assignments

Each student will be required to come to class prepared, where "prepared" means having read the reading assignment for the day and attempted to achieve a genuine understanding of it. Additionally, each student will be required to write five of seven possible papers, according to the guidelines below, and present at least one of the them orally in class at some point during the semester.

Grading

75% - Papers (15% each)

25% - Course Participation

Seminar Format

This class meets one night a week for three hours. Each session will be divided into two parts with a short break in the middle. During the first part, I will make preliminary comments on the reading in light of student observations. In some cases, I may present a formal exposition of segments of the material that may be particularly difficult. During the second part, a student will read a paper to set the tone for a discussion to follow.

To facilitate student presentations, each student will be assigned to one of two groups, labeled for convenience as A and B. Every other week, each member of the A group will be writing a paper.

On the alternating weeks, the B group will be writing. Each student will have the opportunity to write seven papers, of which you are required to write five. (In other words, you get to “opt out” of two.) You are welcome to write six or seven if you wish. In this case, your paper grade will be based on the average of all the papers you write. To ensure that we always have a student available for a presentation, it is imperative that not all students in a group opt out of a paper during the same week. Consequently, anyone wishing to opt out of a particular assignment must specify this no later than the class session before the assignment is due.

Group Assignments

Group A

Anderson
Barker
Clucas
Miller
Shelton
Smith

Group B

Stewart
Turner
Veatch
Wallace
Weber
Weger

Paper Requirements and Evaluation

The topic for your papers must be targeted at the reading assignment for the day. Your paper should be longer than four pages and no longer than five. It must be in Times New Roman, 12 point font and formatted according to the MLA style as indicated in the *MLA Handbook for Writers of Research Papers*, 6th Edition. (Copies are available in the library, bookstore and at Barnes & Noble.) Be sure to include a title. Staple the paper in the top, left corner. Late papers will not be accepted!

Your papers will be evaluated according to the following qualities, though they will not be graded according to an average based on an individual assessment of each area. (In other words, I will consider the paper as a whole looking at the following for guidance.)

- *Focus* – Does the paper stick to its topic, addressing necessary details while avoiding extraneous ones?
- *Organization* – Is the paper well-organized with respect to the order and presentation of ideas? Are ideas properly subordinated throughout the paper?
- *Clarity* – Is the paper generally clear and the prose readable? Is the thesis and argument explicit?
- *Argument* – Is the paper well-reasoned on the basis of sound and cogent argument? Is evidence interpreted adequately?
- *Factuality* – Are the factual assertions advanced in the paper true? Are they adequately supported by documentation as needed?
- *Documentation* – Is the selection and use of sources appropriate for the topic? Is the paper properly documented with citations to your sources?
- *Format* – Does the paper adhere to the formatting guidelines of the 6th edition of the MLA style manual?
- *Grammar* – Is language used according to the rules of grammar? Is it properly academic?

Further assistance with paper writing can be found in Peter Vranas' brief, but excellent guide to writing philosophy papers. I have appended a copy below. Follow it as you wish, except where it disagrees with the guidelines provided above.

When it comes to help with academic writing, I have found no book better than Joseph M. Williams, *Style: Toward Clarity and Grace*. Chicago: The University of Chicago Press, 1990. This book is not a writing manual for beginning students, but a carefully prepared handbook for those who already know how to write in general and wish to address academic audiences. If you wish to work in academia, regardless of field, this book is a must read.

Resources Relating to Course Content

The available resources relating to cognitive neuroscience and the philosophy of cognitive neuroscience are extensive, and it would be a misrepresentation of the field to attempt even a small list. But here are a few that might prove helpful.

1) The bible of neuroscience research is Kandel, et. al., *Principles of the Neural Sciences*, New York: McGraw Hill Medical, 2000. It is a (more or less) comprehensive treatment that runs 1,414 pages and sells for a remarkably low \$90 at Amazon.

2) For a shorter, though more expensive, treatment of cognitive neuroscience *per se*, try Gazzaniga, et. al., *Cognitive Neuroscience*. New York: Norton, 2002. The Amazon price is \$126.40.

3) *CogPrints* is a free, online paper archive of papers relating to all aspects of cognitive science. Its holdings in neuroscience and philosophy are extensive. The archive is fully-searchable and available at <http://cogprints.org>.

4) *Noesis: Philosophical Research Online* also indexes a fair amount of philosophy relating to the many issues discussed in the text. See <http://noesis.evansville.edu>.

5) For detailed background of key philosophical concepts relating to the course, see the *Stanford Encyclopedia of Philosophy*, available at <http://plato.stanford.edu>.

6) For quick definitions of philosophical terminology, see the *Dictionary of the Philosophy of Mind* at <http://philosophy.waterloo.ca/MindDict/>. (Both the Dictionary and the Stanford Encyclopedia are indexed by Noesis.)

7) *Psyche* is an online journal sponsored by the Association for the Scientific Study of Consciousness and regularly publishes top names in consciousness studies. It is available online for free at <http://psyche.cs.monash.edu.au>.

8) UEPCN is a Facebook group for UE faculty, students and alumni interested in the study of cognition and behavior in human and non-human animals and other animats. If you are interested in pursuing research in artificial intelligence, cognitive psychology, cognitive science, neuroscience or robotics beyond this course, please send a request to join, and I will be happy to approve it.

Academic Honesty

All work submitted in this course must be prepared by the student expressly for this course. A student who submits work that is plagiarized, bought, borrowed from the archives of a fraternity, copied from another student, etc., *will fail the course*. (If you don't believe me, ask around.) I fully support the University's Academic Honor Code. To avoid confusion, students should keep in mind that plagiarism occurs not only when someone copies an author word for word, but also when someone uses another's ideas without giving credit, even if the ideas are paraphrased. Always document your sources!

Attendance

For a seminar such as this, my attendance policy differs from my regular lecture courses. It is quite simple: don't miss!

Course Participation

Course participation grades are not automatic. They are based on oral contributions to the collective learning experience of the class as a whole in terms of asking pertinent questions, answering questions correctly or, at least, provocatively, making insightful observations, and offering other meaningful expressions of interest in the material that help encourage learning. I begin by assuming a C for each student's course participation grade and move from there. Students should realize that *it is possible to talk a lot in class and receive a low grade for course participation*. Absences are also grounds for a low participation grade.

Electronic Technology in the Classroom (Cell Phones, Laptops, Etc.)

The use of laptops, cell phones, gaming devices and other electronic contraptions is not permitted in class. Students caught using them will be asked to leave. (You can wear a watch, if you must, but please don't sit staring at it during my lectures.)

Email

I do not read my UE email at home and, as a consequence, I will only answer email from that account during my scheduled office hours. Even then, I am not apt to sustain long, academic dialogues in this forum. For extended discussion, please come visit me in person. Office hours are posted above.

Food in the Classroom

No eating in class.

Course Calendar

8/30 - Assignment: Bennett and Hacker, Forward and Introduction

9/8 - The Early Growth of Neuroscientific Knowledge
Assignment: Bennett and Hacker, Chapter 1
Group A Papers Due

N.B. Special Meeting Time: Saturday 1:00 – 4:00 p.m.

9/13 - The Cortex and the Mind in the Work of Sherrington and his Protégés
Assignment: Bennett and Hacker, Chapter 2
Group B Papers Due

9/20 - The Mereological Fallacy in Neuroscience
Assignment: Bennett and Hacker, Chapter 3
Group A Papers Due

9/27 - Sensation and Perception
Assignment: Bennett and Hacker, Chapter 4
Group B Papers Due

- 10/4 - The Cognitive Powers
Assignment: Bennett and Hacker, Chapter 5
Group A Papers Due
- 10/11 - The Cogitative Powers
Assignment: Bennett and Hacker, Chapter 6
Group B Papers Due
- 10/18 - Emotion
Assignment: Bennett and Hacker, Chapter 7
Group A Papers Due
- 10/25 - Volition and Voluntary Movement
Assignment: Bennett and Hacker, Chapter 8
Group B Papers Due
- 11/1 - Intransitive and Transitive Consciousness
Assignment: Bennett and Hacker, Chapter 9
Group A Papers Due
- 11/8 - Conscious Experience, Mental States and Qualia
Assignment: Bennett and Hacker, Chapter 10
Group B Papers Due
- 11/15 - Puzzles about Consciousness
Assignment: Bennett and Hacker, Chapter 11
Group A Papers Due
- 11/22 - Self-Consciousness
Assignment: Bennett and Hacker, Chapter 12
Group B Papers Due
- 11/29 - Reductionism
Assignment: Bennett and Hacker, Chapter 13
Group A Papers Due
- 12/6 - Methodological Reflections
Assignment: Bennett and Hacker, Chapter 14
Group B Papers Due

How to Write a Philosophy Paper

Peter B. M. Vranas

0. INTRODUCTION

1. **Keep in mind two main goals:**
 - a. To *think deeply* about a philosophical issue (preferably an issue that you find interesting, important, and puzzling), *reaching a (tentative) conclusion* that leaves you to a large degree satisfied.

- Philosophy is not sophistry: you should only defend conclusions in which you believe. You should be open, however, to the possibility that your views will change while you are thinking or writing about an issue: you may start with the intention of defending a particular conclusion and end up defending an opposite conclusion.
 - Even if philosophical questions have no unique right answer, they do have *better* and *worse* answers; if you believe that anything goes, then you are not in a proper frame of mind for writing a philosophy paper.
- b. To *write down your thoughts* in a clear, precise, concise, and organized way.
2. **How to choose a paper topic**
- a. Choose a topic that you find *important* and *exciting*: it's better if working on the paper feels worthwhile and fun.
- b. Choose a topic on which you have something *new* to say: if you agree with everything the readings or your instructor said on a particular issue, then you have no paper topic (related to that issue).
- c. Especially for short papers, choose a very *narrow* topic and examine it in detail: *depth* is much more important than *breadth*. (E.g., don't try to defend—or attack—relativism in general; choose a specific version of relativism.)
3. **The content of a philosophy paper**
- a. When writing about an issue, start with what other people have said about the issue: don't reinvent the wheel.
- b. But other people's views should be only a starting point: the bulk of the paper should consist of your own views, not of exposition.
- c. And your own views should be not just stated, but should be supported by arguments.
- d. Rather than passing over in silence objections to your views, you should consider the most plausible objections you can think of, you should reply to these objections, you should consider plausible rejoinders to your replies, and you should respond to these rejoinders. It's like a dialogue; the longer it gets, the better, provided that the participants keep making new points rather than repeating themselves. (Note that one might object to an argument in *three* ways: by objecting to the argument's *premises*, to its *reasoning*, or to its *conclusion*.)

1. FIRST STEP: PREPARATION

1. Start working as *early* as possible. Don't expect to produce a decent paper if you start on the eve of the due date.
2. Consulting extra sources is often helpful but is *not* necessary: it's far more important to study carefully the required readings and to *think* deeply about your topic.
3. Before you start writing the paper, make an *outline* that lists in an organized way the points you want to make.

2. SECOND STEP: WRITING

1. **Organization**
 - a. The paper should have a concise and informative *title*. ('First paper' is *not* an acceptable title.) The title should make clear the *topic* of the paper (e.g.: 'The death penalty') or, even better, the *thesis* you are going to defend (e.g.: 'Against the death penalty'). Avoid 'journalistic' or 'literary' titles (e.g.: 'Death of a penalty') whose point the reader cannot understand before reading the paper itself.
 - b. The *introductory paragraph* is very important and you should do three things in it. (i) State briefly the *topic* of the paper. (Avoid banal openings like 'Topic X has been a great mystery and source of controversy since the dawn of humanity'.) (ii) Take a stand on the topic: formulate your *thesis* as precisely as it's possible at this early stage. (iii) Announce the *plan* of the paper; namely, what you will do in the remainder (or in each section) of the paper.

- c. It's advisable to divide the paper into numbered and titled sections. Start each section by saying what you will do in the section. End each longer section by summarizing what you have done in the section.
2. **Reasoning**: Make sure that your arguments are either deductively valid or inductively strong, and that they contain no irrelevant or redundant premises. It helps to lay out the arguments in standard premise/conclusion form.
3. **Justification**
 - a. Every statement in the paper must be justified, except for uncontroversial statements ('The Earth is round'). Avoid uncontroversial statements that just express your personal opinion ('I feel that the death penalty prevents many murders').
 - b. One way to justify a statement is to provide a reference ('Jones (1996: 437) concluded that the death penalty prevents many murders'). References should be precise so that they can be checked: *include page numbers*. Keep quotations to a minimum: paraphrasing usually demonstrates better your grasp of the material.
 - c. It's not justified to ridicule people or views. Remember that the authors of most readings are intelligent people: try to present the most plausible understanding of their views ('*Principle of Charity*') rather than presenting these views in a way that makes them appear to be obviously false.
 - d. Acknowledge your debts: presenting other people's ideas as if they were your own is called 'plagiarism' and is a serious violation of ethical conduct. (Example of acknowledging debts: this handout is partly based on handouts by David Brink, Edwin Curley, Jeanine Diller, Mika Manty, and Katie McShane, and feedback from Elizabeth Anderson.)
4. **Originality** consists in producing new ideas. A minimal degree of originality, which consists in going beyond the readings, is required; originality exceeding this minimal degree is highly desirable.
5. **Clarity** is probably the most important virtue that philosophical writing must have.
 - a. Don't presuppose that your reader is familiar with the texts to which you are referring: your intended audience should not be the instructor, but should rather be an intelligent philosopher possibly unfamiliar with the texts.
 - b. If your instructor doesn't understand what you want to say by a sentence, then the sentence is probably not sufficiently clear. To see if your instructor finds your writing sufficiently clear, give to your instructor a draft of the paper.
 - c. It's *not* OK to write *first* an obscure sentence and *then* to explain what you meant.
 - d. To promote clarity: (i) use short sentences; (ii) prefer active to passive voice and affirmative to negative constructions; (iii) avoid pretentious words and jargon; (iv) define the technical terms that you use.
 - e. It is very important for clarity to use *transition phrases* indicating (i) that you are moving to a new step in the reasoning (e.g., to a new objection, or from an objection to a reply to that objection) and (ii) whether what you are saying is supposed to support *your* view or the view of an *opponent*. Examples: 'I turn now to my argument for the second premise'; 'One might object to the first premise that ...'; 'My reply to this objection is ...'; 'One might rejoinder that ...'; 'I reply ...'.
6. **Conciseness** consists in saying many things in few words.
 - a. Think of the *maximum* length of the paper as a limit within which you are trying to cram as much thought as you can (*not* as a number of pages you have to fill by multiplying the number of words you use to make your points). But don't let the quest for conciseness result in obscurity: *clarity* is paramount.
 - b. To promote conciseness, *avoid*: (a) wordiness; (b) digressions; (c) banalities; (d) too long quotations; (e) unnecessary repetitions. (It is *not unnecessary* repetition to summarize at the end of a section what you have done in the section.)
7. **Precision** is almost as important as clarity. General rule: be *meticulous*, even nit-picking, in saying *exactly* what you mean and in avoiding ambiguity. Achieving precision requires thinking about every single word.

- a. Avoid ambiguous pronouns (like 'this', 'that', 'it', 'he', 'his'): repeat nouns. 'John used Bill's gun to kill his dog' should be 'John used Bill's gun to kill John's dog' or 'John killed his dog by using Bill's gun'.
 - b. Avoid extreme words (like 'completely', 'absolutely', 'always'). Replace 'It is always wrong to X' with 'It is usually wrong to X' or 'It is almost always wrong to X' (except if you show in the paper that it's really *always* wrong to X).
 - c. Avoid immodest expressions. 'In this paper I will prove conclusively that X' should be something like 'In this paper I will argue that X' or 'In this paper I will give reason to believe that X'. Avoid words like 'proof' or 'demonstration'.
 - d. Avoid category mistakes. Incorrect: 'the likelihood of this situation is quite improbable'. A *likelihood* is a *number* and thus can be *high* or *low* but not *probable* or *improbable*; it's a *situation* that can be probable or improbable. Correct: 'the likelihood of this situation is quite low'; or: 'this situation is quite improbable'.
 - e. Avoid unnecessary variation (which is encouraged in literature papers). If you are making three points, don't say 'The first argument ... The second remark ... The third point'; choose the most accurate word and repeat it.
 - f. Give names to theses (arguments, etc) for ease of reference. It's much easier and clearer to refer to a thesis as 'conclusion C3' rather than as 'the conclusion of the first argument in this section'.
8. **Language**
- a. A philosophy paper differs from a literature paper. The style should be factual: avoid excessive use of metaphors. *It's OK to use 'I'; it's even advisable*, because it facilitates the use of the active voice.
 - b. The style need not be excessively formal, but the paper should not be a transcript of how you talk: avoid slang.
 - c. Plural of 'phenomenon': 'phenomena'. Similarly: criterion/criteria; thesis/theses; hypothesis/hypotheses. Avoid confusing: then/than; their/there; principal/principle; adapt/adopt; affect/effect; complementary/complimentary; its/it's.
9. **Other matters**
- a. Don't spend too much time on the concluding paragraph: it can be as short as a single sentence that repeats your thesis. On the other hand, the concluding paragraph is a good place at which to mention possible extensions of your argument or problems that you were unable to address.
 - b. The format of the paper (e.g., font size and type, margins, single- vs double-spaced, title page or not, footnotes vs endnotes, references in footnotes or in a list of references) does not matter except if your instructor indicates otherwise. But it's a good idea to *number the pages* so that the instructor's comments can refer to specific page numbers.
 - c. There is no minimum length requirement, but keep close to the *maximum* length unless you write very concisely.

3. THIRD STEP: REVISING

1. Write the paper in (at least) two drafts. After writing the first draft, set it aside for a while, then read it through and make handwritten changes and corrections before typing the second draft.
2. It's a very good idea to give a draft to your instructor for comments. The more complete your draft is, the more you should benefit from this process. But *don't expect your instructor to catch every problem*.
3. Spell-check the final draft and *proofread* it carefully for spelling, grammar, punctuation, and coherence of argument. Check also that you in fact do in the paper what you promise in the introductory paragraph that you will do.