

**Styles of Scientific Debate:  
Readings from *Behavioral and Brain Sciences***

Syllabus for Graduate Seminar  
Psychology 450 & 650, section 14

**Instructor:** Geoffrey Miller, Assistant Professor of Psychology  
**Where:** Logan Hall B15 (basement level)  
**When:** Wednesdays 10:00 am to 12:30 pm

**Overview**

How do psychologists argue about psychology? What are the current hot topics of debate and controversy? How does science make progress through the give-and-take of commentaries, reviews, responses, and dialogue? How can we distinguish good scientific arguments from empty rhetoric?

In this class we'll address such issues by reading and discussing recent papers from the leading psychology journal *Behavioral and Brain Sciences* (BBS). BBS is unique not only for its high impact, but also for its structure: each target article is followed by 20 to 30 commentaries by qualified experts, and then by a detailed response to commentaries by the target article authors. This sort of exchange is much more interesting to read, and gives a much better sense of how science really works, than the usual journal article. Each week we will read one of these BBS target articles published since 2000, plus commentaries and responses. This will average 50 pages of journal text reading per week, which should take about 2 hours per week.

This course should be of interest to well-qualified undergraduates and graduate students interested in any areas of psychology. The readings will span a wide array of topics, including:

- Language: the development and functions of language
- Sex: cross-cultural patterns of sexual promiscuity
- Violence: the origins and functions of cruelty
- Religion: the nature and functions of religion
- Free will: causal, epiphenomenal, or illusory?
- Vision: constructivist vs. ecological approaches to visual perception
- Cognition: connectionist vs. symbolic models of cognition
- Robots: biologically inspired robots as models of animal & human behavior
- Rationality: the nature of human rationality and decision heuristics
- Social games: strategic interaction and social psychology
- Money: rational economic tool or addictive drug?
- Brains: trends in brain evolution
- Adaptations: the nature of psychological adaptations and exaptations
- Psychopathology: the genetics of mental illness

Grading will be based on class discussion and preparation of comments on readings (40%) and on one three-phase writing assignment (60%).

## **Course mechanics**

We will meet once a week for two and a half hours. I expect punctuality. There will be a 10-15 minute break about half way through each meeting. If you have to miss a class for any reason, please let me know by email as soon as you know you'll be absent. Feel free to bring coffee or other drinks to class.

## **Instructor:**

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## **Grading: depends on three kinds of work for this course**

### **40%: class participation and preparation of xeroxed comments on the readings.** I

expect regular attendance, knowledge of assigned readings, active participation, intellectual engagement, and well-prepared presentations concerning the readings. Each week, a couple of students will be assigned to lead the discussion of the BBS readings for the following week. Those students will be expected to write one page of discussion-provoking ideas and issues, and to distribute copies to each student in the class. These one-page commentaries should not review the target article or commentaries. Instead, they should articulate the student's own thoughts, reactions, and questions in response to the readings.

### **60% of grade: one writing assignment developed in three phases.** Each student

will write their own APA-format 'continuing commentary' on one of the BBS articles we have read for this course. Typically, this would be about 2,000 to 3,000 words plus references. Ideally, students will actually submit their continuing commentary to BBS for publication. Students should prepare their commentary/review in three stages:

**provisional abstract, outline, and bibliography due Sept. 27 (10% of final course grade)**

**revised abstract, detailed outline, and revised bibliography due Nov. 1 (20%)**

**final draft due Dec. 6 (last day of class) (30%)**

no exams

## **Reading requirements**

Each week we will read and discuss one recent target article from the leading psychology journal *Behavioral and Brain Sciences* (BBS), plus all the commentaries and the author responses that follow the target article.

Please do not take this course if you cannot commit an average of two or three hours a week to the readings. The course's educational benefits depend on you doing the readings on time, so you can follow and participate in the class discussion. If you don't read them, you won't learn much; if you do read them attentively, you'll learn a lot. I

expect all of each week's required readings to be completed well before class, so you have time to digest them, think about them, compare and contrast them, and prepare intelligent comments and questions about them. Last-minute reading will not result in good comprehension or good in-class discussion.

### **Preparing notes on the assigned readings for each class**

One week before each reading is due to be discussed, I will ask two student volunteers to each prepare a one-page set of notes, comments, and questions concerning that reading. I expect each student to volunteer for several such reading analyses throughout the semester. The quality of these analyses will form a substantial portion of your class participation grade, which is 40% of your final course grade.

When it is your week to present a reading, please bring enough copies of your one-page analysis to distribute to everyone else in the class. Assume that the other students have read the paper thoroughly and attentively, and want to know what you think of it. These analyses will serve to initiate class discussion of that reading.

The one-page analyses should have your name at the top, the date, and the APA-format reference for each reading as the header for your comments on that reading. Use numbered lists to identify your specific notes, comments, and questions under each reading. Please make at least three or four substantive comments on each reading – not simply summarizing the reading's main points, but offering some sort of critical analysis of the reading's ideas, or comparison to other readings, etc.

### **Details on the writing assignment**

This assignment determines 60% of your course grade. You will write a 'continuing commentary' about any of the BBS target articles we have read for class. The final draft should be no more than about 3,000 words, plus references. I care more about clarity, insight, research, and the flow of argument than about length per se.

Please plan to submit the final draft in standard APA (American Psychological Association) research paper format. This means computer-printed, double-spaced, single-sided, in 12 point Arial font, with a proper title page, references, and page numbering. Consult the *APA Publication Manual* for more details.

You will get extra credit if you actually submit your 'continuing commentary' piece to BBS for publication. Provide a copy of the submission acknowledgement by email or hardcopy to me by the end of final exams.

To make sure that you are thinking, researching, and writing the commentary/review on a good, conscientious schedule throughout the semester, I require the following:

#### **1. September 27: Provisional abstract, outline, and bibliography due (10% of final course grade).**

In a one-paragraph abstract, just let me know which BBS target article you'll probably write about, and what kinds of points you'll make. If you change your mind, no problem, just tell me in an email later. But I want you to have some topic in mind by this date. Pick a topic that you feel passionate about – you'll have to live with it for several months!

In a one-page provisional outline, show how you'll structure your

commentary. In a provisional bibliography, list about some references that you have actually read, with brief notes about their relevance to your paper.

After you submit this, talk with me at least once to get my verbal feedback (e.g. during class break, after class, or during office hours). This is very important; I will try to make sure your paper looks viable and will try to give you some useful suggestions and references.

## **2. November 1: Revised abstract, detailed outline, and revised, annotated bibliography due (20% of course grade).**

This should be a revised abstract based on our discussion of your topic's viability, plus a much more detailed outline of your commentary, clearly showing its planned structure, and a revised, more complete bibliography. The outline should be a few pages long, and each outline entry should be a clear, detailed, specific statement, not just a short, vague phrase. The flow of your paper's argument should be apparent.

In the annotated bibliography, use standard APA reference format, and please note each reference's relevance to your topic. A good annotation would be "This critically reviews 18 recent studies of domain-specific disgust effects, emphasizing the similarities between social disgust and cheater-detection, and between pathogen-avoidance disgust and nausea." A bad outline entry would be "Reviews disgust research".

After I get this outline, I will write comments and suggestions on it and return it to you as soon as I can. This should allow you to submit a really good final draft, and I hope it will help you improve your writing generally. If you intend to submit your continuing commentary to BBS, you should send a preliminary inquiry at this point to the journal editors (Barbara Finlay or Paul Bloom) about whether they'd be interested in your commentary.

## **3. December 6 (last day of class): Final draft due (30% of course grade).**

This should be a highly polished document in correct format with no spelling or grammatical errors. It should represent the culmination of three months of research, thinking, and writing about a topic that passionately interests you. I will try to grade final drafts by the last day of exams. You will get extra credit for your commentary if you present documentary evidence (e.g. copy of an acknowledgement letter or email) that you have submitted it to BBS.

### **Schedule of topics and readings week by week:**

#### **Class 1. August 23: Course overview**

No assigned readings before first class.

#### **Class 2. August 30: Introduction to BBS; Brain Evolution**

Before this class meeting, read:

(1) Finlay, B., Bloom, P., & Gray, J. (2003). A message from the new editors.

*Behavioral and Brain Sciences*, 26(1), 2. (1 page text)

- (2) BBS Instructions for authors and commentators (1 page text)  
(3) Striedter, G. F. (2006). Précis of *Principles of Brain Evolution*. *Behavioral and Brain Sciences*, 29(1), 1-36. (c. 31 pages text)

**Class 3. September 6: Adaptations**

Andrews, PW; Gangestad, SW; Matthews, D (2002). Adaptationism - how to carry out an exaptationist program. *Behavioral and Brain Sciences*, 25(4), 489-553. (c. 59 pages text)

**Class 4. September 13: Mental Illness**

Keller, M., & Miller, G. F. (in press). Resolving the paradox of common, harmful, heritable mental disorders: Which evolutionary genetic models work best? *Behavioral and Brain Sciences*. (c. 45 pages text)

**Class 5. September 20: Vision**

Norman, J. (2002). Two visual systems and two theories of perception: An attempt to reconcile the constructivist and ecological approaches. *Behavioral and Brain Sciences*, 25(1), 73-144. (c. 64 pages text)

**Class 6. September 27: Cognition**

**Provisional abstract & outline due**

Anderson, J. R., & Lebiere, C. (2003). The Newell Test for a theory of cognition. *Behavioral and Brain Sciences*, 26(5), 587-633. (c. 42 pages text)

**Class 7. October 4: Robots**

Webb, R. (2001). Can robots make good models of biological behavior? *Behavioral and Brain Sciences*, 24(6), 1033-1087. (c. 50 pages text)

**Class 8. October 11: Rationality**

**(just before Fall Break Oct 12-13, Thursday-Friday)**

Todd, P. M., & Gigerenzer, G. (2000). Précis of *Simple heuristics that make us smart*. *Behavioral and Brain Sciences*, 23(5), 727-780. (c. 50 pages text)

**Class 9. October 18: Social Games**

Colman, A. M. (2003). Cooperation, psychological game theory, and limitations of rationality in social interaction. *Behavioral and Brain Sciences*, 26(2), 139-198. (c. 55 pages text)

**Class 10. October 25: Social Psychology**

Krueger, J. I., & Funder, D. C. (2004). Towards a balanced social psychology: Causes, consequences, and cures for the problem-seeking approach to social behavior and cognition. *Behavioral and Brain Sciences*, 27(3), 313-376. (c. 59 pages text)

**Class 11. November 1: Language**

**Revised abstract & detailed outline due**

Locke, J.L., & Bogin, B. (2006): Language and life history: A new perspective on the development and evolution of human language. *Behavioral and Brain Sciences*, 29(3), 259-325. (c. 53 pages text)

**Class 12. November 8: Sex**

Schmitt, D. P. (2005). Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating. *Behavioral and Brain Sciences*, 28(2), 247-311. (c. 57 pages text)

**Class 13. November 15: Violence**

Nell, V. (2006). Cruelty's rewards: The gratifications of perpetrators and spectators. *Behavioral and Brain Sciences*, 29(3), 211-257. (c. 40 pages text)

**Class 14. November 22: Religion**

**(just before Thanksgiving Break Nov. 23-24, Thursday-Friday)**

Atran, S., & Norenzyan, A. (2004). Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion. *Behavioral and Brain Sciences*, 27(6), 713-770. (c. 53 pages text)

**Class 15. November 29: Free Will**

Wegner, D. M. (2004). Precipice of *The illusion of conscious will*. *Behavioral and Brain Sciences*, 27(5), 649-692. (c. 39 pages text)

**Class 16. December 6: Money**

**Final paper due**

Lea, S. E. G., & Webley, P. (2006). Money as tool, money as drug: The biological psychology of a strong incentive. *Behavioral and Brain Sciences*, 29(2), 161-209. (c. 43 pages text)