

# THE PROCESS OF DISCOVERY

## KHC HC 401

Fall 2012  
Thursdays  
8:00 - 11:00 am  
Room: CGS 123

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## COURSE DESCRIPTION

The aim of the course is to assist students in designing the research project they will undertake in their senior year. The course is structured around three basic activities: individual and group analysis of innovative research drawn from a variety of intellectual disciplines; writing exercises aimed at promoting intellectual discovery, methodological rigor, and project design; and group activities aimed at honing project design and presentation skills.

The course makes use of group meetings and two breaks for individual work to assist students in their exploration of the discovery process. During the first seven weeks, the class will meet together to discuss field-changing research undertaken by scholars from a variety of disciplines. Focusing on specific cases studies, we will explore the structure of the discovery process, including how researchers embed imaginative questions in viable research projects and balance creative ambition with intellectual modesty by selecting rigorous methodologies. But the test of innovative research is not simply how well it demonstrates the explanatory power of an imaginative leap; a research project must also be clearly presented so that others can appreciate the intellectual insights it offers. In addition to helping students design their research project, then, the class will also teach students how to present technical ideas in clear language that anyone outside their chosen discipline can understand.

After meeting together to consider best research practices, the class will break apart to work on drafts of their research project proposals. In addition to working on your projects individually, you will also be partnered with another student from a different intellectual discipline. It is expected that you meet regularly not only with your faculty advisor but also with your research partner to discuss your projects. In the ninth and tenth weeks, the class will meet again so that students can report on their progress, then break apart once again so that students finish up their research proposals. In the final two weeks, each student will have the chance to present the research project they will undertake as seniors.

## REQUIREMENTS

Grades are based by your performance on the following required assignments:

Four two-page précis	20 percent
Two methods papers	20 percent
10-page research paper proposal	20 percent
One five-minute oral presentation	10 percent
One 15-minute oral presentation	20 percent
Participation during ten class meetings:	10 percent

Please turn papers in on time. "On time" means at the beginning of class on the day they are due. No extensions will be granted. Late papers will be marked down one third of a letter grade per day.

## PARTICIPATION

This course is a seminar, which means that during the weeks the class meets together attendance is required and participation in class discussion is essential. Class participation includes substantive analysis of the assigned texts, engaging your peers in constructive debate, and demonstrating a willingness to make mistakes. Making mistakes is integral to the learning process; it is only through mistakes that we are able to understand how and what we think. For this reason, you will not be graded on the content of what you say, but rather on how much you contribute constructively to the class. In addition to participation in class discussion, students are encouraged to use Blackboard/eportfolio to share their progress with their peers.

## FACULTY ADVISER

By the beginning of the semester, students must have selected a faculty member in their chosen field who is willing to advise them on their senior project. It is strongly recommended that students seek out their faculty adviser on a regular basis for guidance and feedback on the formulation of their project proposals. However, it is required that the faculty adviser read and sign both the draft and final project proposals described below.

## PRESENTATIONS

Students are responsible for two presentations. The first presentation, due in week 11, consists of a short, 5-minute oral presentation of your research partner's proposed project. To explain your partner's project proposal effectively, you must grasp the core questions and design of your partner's research project and communicate them to the rest of the class in language that captures the project's purpose and method without permitting the technical aspects of their field of study to obscure what is important about the project.

The second oral presentation, due in the final two weeks of class, entails a 15-minute explanation of

your proposed senior research project. Students are encouraged to make creative use of audio and visual media to assist them in presenting their projects, provided that these aids do not interfere with the task of communicating the goals and methods of your project in a clear and intelligible manner. The aim of this exercise is to improve your presentation skills and benefit from the constructive criticism of your peers.

## WRITTEN WORK

During the first seven weeks, each student will be required to write four précis based on the assigned texts. There are six weeks of readings, so which texts you write about is left up to you. The purpose of the précis is to hone your writing skills and help you think critically about the discovery process. Each précis should be no more than two pages long and focus on one text/research agenda. It should identify the researchers' main argument, evaluate the kinds of evidence presented to support those arguments, and then assess how effective the research project was in articulating and testing a given problem. Since you only have two pages in which to accomplish this task - which is much less than you think - you should avoid trying to generalize about the entire text/research project. Instead, focus on one or two aspects that struck you as insightful or problematic, evaluate the kind of evidence offered, explain whether the data supports the claims made, and suggest whether the example you have chosen is representative of the researchers' approach. To be clear: the précis is not a book review, but rather a close reading of a specific research project that analyzes the question it poses, the methodology it uses, and/or source base it generates.

Students will also be asked to write two five-page methods papers. These papers require students to compare and contrast the methodologies used by the assigned common readings to the methodologies they intend to use in their senior projects. The methods papers are designed to get students thinking clearly about the relationship between the questions their research projects raise and the while encouraging a

At the beginning of week 11, students must also submit a draft of their 10-page research proposal laying out an original research project that they will undertake in the senior year. In the proposal, students must focus on a problem they think is under-researched, articulate the reasons the problem is of interest to others, outline an experiment/work that defines the problem and illustrates an argument about it, identify methodologies and sources that best suited to a viable demonstration of your hypothesis, and where relevant include a bibliography. Your project should be fun; after all, you'll be spending a lot of time on it next year. It should be imaginative, but also subject that creativity to the rigorous research designs you have learned about during the semester. Last but not least, your project but it should also be "doable" - don't expect to use CERN's super collider or to undertake 1500 interviews in a remote central Asian republic! During the semester, moreover, you are strongly advised to consult their faculty adviser in your chosen field of intellectual inquiry and discuss your project proposal with him/her on a constant basis. Based on the work you have done in class and feedback from your faculty adviser, you will submit a final version of your 10-page research proposal at the beginning of the last class meeting.

## CHEATING

Cheating is a serious infraction of scholarly conduct, and will earn an automatic F for the course. Cheating includes plagiarism, which is defined as the use of intellectual material produced by another person without appropriate acknowledgment. Students are expected to adhere to the Kilachand Honors College and Boston University Academic Codes of Conduct. (<http://www.bu.edu/khc/current-students/policies/>)

## READINGS

**Required Texts:** The following books are available for purchase at Barnes and Noble BU; copies have been placed on reserve at Mugar Library. The articles marked with an asterisk (\*) can be found online on the course's blackboard site; the articles marked with a plus sign (+) can be found on JSTOR.

Émile Durkheim, *The Elementary Forms of Religious Life*, trans. Carol Cosman (Oxford and New York: Oxford University Press, 2008) ISBN-13: 978-0199540129

Jay Macleod, *Ain't No Makin' It. Aspirations And Attainment In A Low-income Neighborhood* (Boulder, Colorado: Westview Press, 2008) ISBN-13: 978-0813343587

James S. Shapiro, *Shakespeare and the Jews* (New York: Columbia University Press, 1997) ISBN-13: 978-0231103442

Part 1: Best Research Practices (Group meetings around readings in different fields)

Week 1/September 6: Introduction: Knowledge vs. Interpretation  
Excerpt from Monty Python, *The Holy Grail* (witch scene)  
Excerpt from David Hume

Week 2/September 13: Designing a Research Agenda (Social Psychology)

Readings:

Daniel Kahneman and Amos Tversky, "Judgment under Uncertainty: Heuristics and Biases,"

*Science* 185:4157 (Sept. 27, 1974): 1124-1131

Amos Tversky and Daniel Kahneman, "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 4 (1973): 207-232, abridged version

Daniel G. Goldstein and Gerd Gigerenzer, "Models of Ecological Rationality: The Recognition Heuristic," *Psychological Review* 109 (2002): 75-90

George A. Akerlof, "The Market for Lemons: Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* 84:3 (August 1970): 488-500

Shlomo Benartzi and Richard Thaler, "Myopic Risk Aversion and the Equity Premium Puzzle," *The Quarterly Journal of Economics* 110:1 (February 1995): 73-92

First précis

Week 3/September 20: Collecting and Analyzing Data (Sociology)

Reading:

Jay Macleod, *Ain't No Makin' It. Aspirations And Attainment In A Low-income*

Neighborhood: preface-chapter 3; chapter 5; chapter 7-page 276; skim methodological appendix

Group 1: chapter 4 and one unanalyzed interview transcript from Macleod's final field visit

Group 2: chapter 6 and one unanalyzed interview transcript from Macleod's final field visit

Second précis

Week 4/September 27: Research Questions

Students are asked to submit three research questions from their chosen field of study, explain to the class why they are worth asking, and propose a method of answering them.

First methods paper

Week 5/October 4: Reframing Questions (Neuroscience)

Readings:

A.J. Parker and W.T. Newsome, "Sense and the Single Neuron: Probing the Physiology of Perception," *Annual Review of Neuroscience* (1998:21): 227-77

R. Romo and E. Salinas, "Flutter Discrimination: Neural Codes, Perception, and Decision Making," *Nature Reviews Neuroscience* (2003:4): 203-18

K. H. Britten, M. N. Shadlen, W. T. Newsome and J.A. Movshon, "The Analysis of Visual Motion: A Comparison of Neuronal and Psychophysical Performance," *Journal of Neuroscience* (1992:12): 4745-4755

R. Romo, A. Hernandez, A. Zainos and E. Salinas, "Somatosensory Discrimination based on Cortical Microstimulation," *Nature* (1998:392): 387-90.

Third précis

Week 6/October 11: Categories of Analysis (Religion)

Reading:

Émile Durkheim, *The Elementary Forms of Religious Life*, introduction (Durkheim's introduction, not the translator's or editor's); book I.1; skim book II.1-5; book II. 6-7; book III (read III.2 especially closely); conclusion

Fourth precis

Week 7/October 18: Context and Interpretation (Literature)

Reading:

James S. Shapiro, *Shakespeare and the Jews*, TBA

Second methods paper

Part II: Proposing Ideas across Disciplinary Lines

Weeks 9-10/October 25-November 1: no class meetings. Meetings with research partners and faculty project advisers

### Part III: Presenting Research Projects

Week 11/November 8: Short oral presentation of student projects by research partners

Drafts of research proposals due

Week 12/November 15: Students finish research proposals and prepare their own presentations

Weeks 13-14/November 29-December 6: 15-minute oral presentations by student researchers

10-page research project proposals due