15.838 Research Seminar in Marketing

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Spring 2011

Tuesdays 2:30 pm – 5:30 pm
Richard Derbes Conference Room (E62-526)

Who must take this Seminar

The recently adopted MIT Sloan Marketing PhD guidelines require that all PhD students currently enrolled in the marketing PhD program register for 15.838. Exceptions are granted only for medical, birthing, and bereavement leave and for students in the Fall semester of their job-search year.

Goal of the Seminar

We seek to help you

1. Define a publishable research topic.
2. Position and defend that topic within one of the philosophies of science.
3. Use reliable and valid measures to ground your research, test your research, and/or apply your research.
4. Develop and evaluate a nomological network of causes and effects, whether implicit or explicit, that summarizes your research.

These goals cut across the subfields in marketing including marketing science, behavioral, and economics-motivated approaches. Although some topic sessions focus on specific subfields, our goal is to understand these subfields from the perspectives of philosophies of science and measurement. For example, within these contexts we will examine

1. Constructed preference
2. Planckian vs. Princetonian perspectives on behavioral research
3. Structural economic models
4. Machine learning approaches

The readings illustrate approaches; they do not cover the entire field. Your primary task is to evaluate whether and how each of the assigned papers advance (or do not advance) science and whether or not the papers have used careful measurement methods.

Readings

I’ve ordered a copy of the Shadish, Cook, and Campbell textbook for each of you. You will get it on the first day of classes. All other readings are available in pdf format on a DVD that you will receive from me. Most of these pdfs are from the MIT Libraries. As a registered MIT student, you have copyright access for your own use. (Please do not distribute or post any pdfs that have
For most topic sessions the readings are divided into one or more of the following categories.

1. **Common-ground readings.** These papers give us a common ground for discussion. All students should read these papers. It may seem like a lot of reading, especially for the first session, but you can skim some of these to distill the essential philosophical arguments. You should be prepared to discuss the essential arguments (but not all details) for all of these papers.

2. **Group assignments.** We will split these papers among seminar participants. Everyone should read the abstract of all of these papers, but each student is required to read only a subset these papers. Prior to each topic session we will decide together who will read which paper. Your responsibility for assigned papers is to be prepared to present and discuss the essential arguments of the paper.

3. **Example articles.** Philosophy is fine, but you can only appreciate arguments when they are applied. In the indicated topic sessions you should choose one (or two) example articles. You should read and critique the chosen articles with respect to the topic of the session. You do not need to read all details of the article, only those relevant to the topic session. For example, if you choose a mathematical article (in the philosophy of science topic session) you can assume that all proofs and derivations are correct. You should focus for that topic session on (a) which philosophy justifies the paper and (2) whether the paper succeeds within that philosophy.

4. **Background.** I’ve provided many background articles for those students who wish to explore the topic in more detail. I hope they will be valuable at some point in your career. (There are a few copyrighted articles and books listed. They are not provided.)

The syllabus contains many more articles than we will have time to read. The seminar is designed to help you in your career and I wanted to give you as much helpful material as possible. As the seminar evolves we will tailor the assignments to get the maximum impact balancing depth of understanding and breadth of topics. As a rough guideline, 15.838 is listed in the MIT catalog as 3-0-6, that is, 3 classroom hours, no lab hours, and 6 hours of preparation for each topic session. A full reading of a technical article should take, on average, about 2 hours – about three per week. However, you should be able to distill the essence of an article in less time than 2 hours. This is your seminar. We’ll tailor the topics and the assignments for maximum impact on your careers. That is, we will focus on deep understanding, not breadth of reading.
**Topic Sessions**

The MIT class schedule includes 12 Tuesdays. However, one Tuesday is in SIP when many of you have substantial grading responsibilities for your TAs. I also realize that we may move faster or slower than one topic per session. The schedule is flexible; we can adjust on the fly. My open-loop prediction is:

1. **February 1.** Advice on How to Define a Topic and Write an Article
2. **February 8.** Philosophy of Science
3. **February 15.** Design of Experiments, Reliability, Validity
4. **March 1.** The Art of Asking Questions and Scale Development
5. **March 8.** External Validity and Demand Artifacts
6. **March 15.** SIP. Catch-up day or separate meetings if necessary.
7. **March 29.** Mediation and Nomological Networks
8. **April 5.** Constructed Preference
9. **April 12.** Max Planck Institute vs. Princeton School of Thought
10. **April 26.** MSI Conference. Catch-up day or separate meetings if necessary.
11. **May 3.** Structural Models
12. **May 10.** Quant meets Behavioral
13. Potential extra session if we move rapidly. Machine Learning as Measurement

**Integrated Exercise**

My goal is to help you become a better scientist and to write papers that are likely to have an impact. With luck, this will also help you get a job, earn tenure, and be famous. Throughout the seminar I want you to relate each topic session’s discussion to your own research. Your research can either be a thesis paper or a Part II paper (see new guidelines for the marketing PhD general exam). The following numbers correspond to session numbers. These assignments are tentative. Together we will refine the assignments to fit your research interests and your career goals.

1. **Define a topic (February 1).** Identify your research focus for the semester. Don’t worry, it will evolve.
2. **Philosophy of science (February 8).** Tentatively choose the philosophy of science that will drive your research and be prepared to defend your research within that philosophy. Write a one-half-to-one-page defense of your research using philosophy-of-science ideas.
3. **Measurement (February 15).** Even if your research is pure theory, decide how you will establish the reliability and validity of your measures, constructs, or theory. Write a one-half-to-one-page description of how you will do this.
4. **Asking questions (March 1).** Assume you will collect qualitative and quantitative data. We will customize an assignment that lets you collect qualitative data (3-4 respondents) relevant to your research. As a exercise you should also develop, and be prepared to defend, a short questionnaire relevant to your research (and drawn from issues identified in the qualitative research).
5. **External validity (March 8).** Examine threats to validity for the theory and measurements in your research, including alternative explanations and demand artifacts. In one-half-to-one page, defend your ability to convince the reader that your research has external validity.

6. **Nomological networks (March 29).** Establish the nomological network relevant to your theory. Develop a circle-and-arrow diagram detailing the nomological network.

7. **Constructed preference (April 5).** In one-half-to-one page, relate your research to either constructed preference or introspection. That is, what are you assuming about how consumers learn.

8. **Schools of thought (April 12).** The Planckian and the Princetonian philosophies can be viewed as opposed or complementary (is everything is a shade of grey). In one-half-to-one page, place your research on an analogous stylized continuum.

9. **Structural models (May 3).** Relate your research to structural models. This particular assignment will be finalized later.

10. **Quant meets behavioral (May 10).** If you are doing quant research, identify the behavioral component. If you are doing behavioral research, identify the quant component. Plan how you will integrate quantitative and behavioral perspectives in your research. Summarize your positioning in one-half-to-one-page.

Please note that there are other exercises discussed in the “readings” section of this syllabus. Those exercises are relatively short, but important.

**Classroom Values**

MIT Sloan has recently adopted standards on classroom values. Specifically, it is the policy of the MIT Sloan School that:

- Students are expected to arrive promptly on time and to stay for the entire class.
- Faculty are expected to begin and end class on time.
- Laptops and e-readers not be open in the classroom except with explicit permission of the faculty.
- Cell phones and PDAs are not be used or permitted to ring in the classroom.
- Students are expected to attend all classes.
- Faculty will articulate how these rules apply in their class as well as how the rules will be enforced.

Because the majority of the course packet will be delivered electronically, you are welcome to have a laptop or e-reader open during class discussion in order to have the readings on hand. The laptop or e-reader should not be used for any other purpose except with the permission of the instructor.
Revised General Exam and Seminar Guidelines

During the fall of 2010, the marketing faculty developed and endorsed revised guidelines on the general exam and the two-per-year marketing seminars. Our goal is to improve both the general-exam and research-seminar experiences for all students. We can discuss clarifications on the first day of class. These guidelines are on the readings-packet disk for the first topic session.

Summary.

Together we will explore research. It should be fun.
Readings for 15.838 Research Seminar in Marketing, Spring 2011

Topic 1. Getting Started (Tentative target date: February 1)

Advice on How to Define a Topic and Write an Article

It may seem like a lot of reading, but these are all philosophical arguments that we will discuss. You should be able to read these five articles relatively quickly.

**Common-ground Readings**

6. Rathbone, Robert R. (1967), *Communicating Technical Information*, (Reading MA: Addison Wesley Publishing Company). There is no pdf on disk due to copyright issues. This book is not required reading. But if you are ever to write a scientific paper, this is a must read. I view it as the single most valuable book for my career.

**Example Articles**

Pick any one of the following articles and discuss what the article accomplishes. Concentrate on the net contribution relative to whatever philosophy you feel is appropriate. Assume all proofs are correct. For the purposes of discussion you do not need to understand either the proofs or the subtleties of the mathematical arguments. If you have read this article before, or even discussed it, feel free to choose it for discussion. However, you should coordinate the example articles among yourselves. An article should not be chosen by two or more people.


**Topic 2. Philosophy of Science (Tentative target date: February 8)**

**Common-ground Readings**

**Group Assignments (Specific readings to be assigned to specific students)**

**Background Readings (Not required. Useful to skim, but at least read the abstract.)**


**Example Articles**

Now that we have some formal reading in the philosophy of science, revisit the example article that you read for Topic 1. Or, alternatively, choose an article that you have read in another class or an article that you would like to read. Critique that article, more than one article if you would like, with respect to Kuhn’s philosophy, Platt’s philosophy, and the philosophy espoused in the specific articles assigned to your group. Write a one-paragraph summary of the article’s philosophy and be prepared to defend your summary.

**Topic 3. Design of Experiments, Reliability, Validity (Tentative target date: February 15)**

**Common-ground Readings**

   - Chapter 1. Experiments and Generalized Causal Inference
   - Chapter 2. Statistical Conclusion Validity and Internal Validity
   - Chapter 3. Construct Validity and External Validity
   - Chapter 4. Quasi-Experimental Designs That Either Lack a Control Group or Lack Pretest Observations on the Outcome
   - Chapter 5. Quasi-Experimental Designs That Use Both Control Groups and Pretests


**Group Assignments (Specific readings to be assigned to specific students)**


4. Silk, Alvin J. (1990), “Questionnaire Design and Development with Appendix on Measurement Error, Reliability, and Validity,” Harvard Business School Case Notes, August, 9-590-015. Not in readings packet due to copyright issues. It is not required. However, I included the citation because it is a nice summary that you might want to have at some time. If you would like, we can print out a hard copy of the appendix.

*Example Articles*

For Topics 1 and 2, you read an article. Not all of these articles focused on measurement. If the article that you chose did not have a measurement component, or if you would like to read another article. Otherwise, choose one of the articles from Topic Session 1. At this point you have at least two articles to critique. Critique both of these articles with respect to measurement validity.

Prepare a one-half-to-one-page summary of your critique and be prepared to defend that critique. In case you have trouble choosing additional articles, here are some from which you can choose.


   a. Wagenmakers, Eric-Jan, Ruud Wetzels, Denny Borboom, and Han van der Maas (2010), “Why Psychologists Must Change the Way They Analyze Their Data: The Case of Psi,” Comment on the Bem *JPSP* 2010 article on ESP.

**Topic 4. The Art of Asking Questions and Scale Development**
(Tentative target date: March 1)

**Collecting Your Own Data or Deciding if Your Data is Worth Using (Topic 4a)**

*Common-ground Readings*


*Group Assignments (Specific readings to be assigned to specific students)*


**Scale Development and Methods to Establish Reliability (Topic 4b)**

**Common-ground Readings**


**Group Assignments (Specific readings to be assigned to specific students)**


**Example Articles**

If relevant, critique the example articles you have been reading with respect to questionnaire development, scale development, and reliability. For any empirical article that you have read so far in class, or for an additional article that you are welcome to choose, develop a list of potential non-response biases. Non-response bias applies broadly. For example, even scanner data could, potentially, suffer from non-response bias. Did the authors attempt to address non-response bias? Prepare a one-half-to-one-page written assessment.

**Topic 5. External Validity and Demand Artifacts ((Tentative target date: March 8)**

**Demand Artifacts (Topic 5a)**

**Common-ground Readings**


**Group Assignments (Specific readings to be assigned to specific students)**


**External Validity Debates (Topic 5b)**

**Common-ground Readings**


**Group Assignments (Specific readings to be assigned to specific students)**


**Example Articles**

What is the external validity of the example articles that you have been reading? If there is any measurement in the articles, identify potential demand artifacts. Did the authors address potential demand artifacts? If you cannot find enough material in the example articles that you have read so far, here are a few additional articles.

March 15. My experience in previous PhD seminars is that the reading schedule is too ambitious and the topics too interesting that we need a catch-up date. March 15 is SIP week for MBAs, but normal class schedule for UGs and PhDs. This date is set aside in case we need a session to catch up on the ambitious reading schedule.

Topic 6. Mediation and Nomological Networks. (Tentative target date: March 29)

Common-ground Readings

Group Assignments (Specific readings to be assigned to specific students)

Example Papers
Every scientific paper, even pure theory, has either an implicit or explicit nomological network. In the example articles that you have been reading, identify the nomological network that is implicit (explicit). In one-half-to-one-page describe the nomological network and suggest how you might test it. In case you need an additional paper to critique, here are two more. We will also cover the Tybout and Hauser article in Topic Session 10.


**Topic 7. Constructed Preference (Tentative target date: April 5)**


**Topic 8. Max Planck Institute vs. Princeton School of Thought (Tentative target date: April 12)**

**Common-ground Readings**


**Group Assignments (Specific readings to be assigned to specific students)**


**April 26.** This date is set aside in case we need a session to catch up on the ambitious reading schedule.

**Topic 9. Structural Models (Tentative target date: May 3)**

**Common-ground Readings**

**Group Assignments (Specific readings to be assigned to specific students)**


**Topic 10. Quant meets Behavioral (Tentative target date: May 10**). This is the last session, so I thought it would be useful to assign some of the papers that I have co-authored that attempted to address behavioral issues from a quantitative perspective. There are many others in the field, but I chose my own papers so that we can talk about how the papers were developed.

**Group Assignments (Specific readings to be assigned to specific students)**

6. Hauser, John R., and Glen L. Urban (1979), "Assessment of Attribute Importances and

Topics 11. Machine Learning as a Measurement Device: Illustration of an MIT-driven Paradigm Entering Marketing. We may or may not get to this material. If not, you might want to skim some of the papers. Depending on preferences within the class, we might switch Topic 11 with Topic 10.

Group Assignments (Specific readings to be assigned to specific students)