TOPICS: Economic Data Engineering

Professor Andrew Caplin Wednesdays 10-12, room 736

ECON 3002.009 Spring 2015

1 Guide to Course

This course is for graduate students who are interested in modeling and measuring human behavior in a theoretically-oriented manner. The general theme of the course is the vital role that carefully engineered data expansion will increasingly play in enriching our understanding of behavior. We are in an era in which we can profoundly influence data generation, and in so doing enhance the interaction between theory and evidence. My purpose in teaching this course is to stimulate research interest. I am involved in two ongoing efforts at gathering just such expanded data: the VRIP and the Kavli Human Project. Good applications and complementary data expansions are vital and I am always open to ideas in this regard.

The basic idea is that while the standard economic model of choice is profoundly simple, it is hard to operationalize. The theory asserts that a decision maker (DM) has available a set of options. The DM has beliefs about how the options map to consequences. The DM selects among options according to preferences over these consequences. Unfortunately, the econometrician (EC) does not have direct access to any of the key model objects. The DM's view of available options, how these are mapped to consequences, and how consequences are ordered in terms of preference are not observable to the EC. In light of this constraint, the EC fills in much of what the theory deems to be subjective with externally measurable counterparts. The conclusions may as
a result teach us as much about the EC as it does about the DM’s decision making mechanisms, the supposed object of study.

The goal of the course is to highlight the need for a third actor: the data engineer (DE). The DE designs data that, to the maximum extent possible, substitutes the DM’s viewpoint for that of the EC. The first two parts of the course illustrate by example how appropriately engineered data can be used to amplify the voice of the DM relative to that of the EC.

My view of much economic theory is that it too needs to be more responsive to the voice of the DM rather than to the intuition of the theorist. More thought is needed on how to operationalize models in a manner that will lead theorists to interact with evidence on closer to a real-time basis.

The course is divided into three parts. The first two parts present a series of examples of data engineering organized around the three key constructs of the standard model: preferences; beliefs; and available choices. The third part of the course is more expansive and speculative in terms of the data discussed, with psychological and biological measurement of particular interest. I will make lecture notes available on my Website as I complete preparations. Students will benefit most by finding an area of interest, reading the listed articles, and diving in at depth to absorb the literature and contemplate how best to advance the research frontier. As such interest develops, students should develop subsidiary reading lists and discuss with me. I divide readings according to which part of the course they concern.

The current lecture plan is as follows:

- Part 1: Measuring Preferences
  - Lecture 1: Behavioral Data is not Enough
  - Lecture 2: The VRI and SSQs
    * Lecture 2.1: VRI
    * Lecture 2.2: Separating bequest and precautionary motives
    - Lecture 2.3: SSQs
  - Lecture 3: Long Term Care Utility and the Under-Insurance Puzzle

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Lecture 4 Transfers, Precautionary Motives, and the Family.

* Bigger topic concerns family interactions for future survey measurement

- Part 2: Beliefs, Preferences, and Attention (SSQs)
  - Lecture 5 concerns survey measurement of second key element in all models of life cycle behavior: beliefs about the future
  - Lecture 6 on wide open subject concerning interactions of preferences and beliefs: Portfolio choice over the life cycle
  - Lecture 7 goes over labor market application: end of career job switching and search depends on preferences, beliefs, and search frictions
  - Lecture 8 on RP approaches to incomplete information
  - Lecture 9 introduces rational inattention and the Shannon model
  - Lecture 10 next steps with Shannon model
  - Lecture 11 ties approach to future VRI work on knowledge and attention

- Part 3: new measurement technologies that will lead theory forward
  - Lectures 12: Psychometric, psychological, and physiological measurements
  - Lecture 13: Neuroeconomics and Genoeconomics
  - Lecture 14: The Kavli HUMAN project

1.1 Part 1

References


1.2 Part 2

References


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Cason, Timothy, and Charles R. Plott. 2013. “Misconceptions and Game Form Recognition: Challenges to Theories of Revealed Preference and Framing.”


1.3 Part 3

References


Benjamin, Daniel, Andrew Caplin, David Cesarini, Kevin Thom, and Patrick Turley. 2014. “Genes, Smoking, and Health.”


