Behavioral Data and Psychological Constructs

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Carnegie-Mellon Conference June 2017

- Personal Review and Preview
  - Psychological Expected Utility (Caplin and Leahy 2001)
  - Fear as a Policy Instrument (Caplin 2003)
  - Concerned Expert (Caplin and Leahy 2004)
  - Economic Theory and Psychological Data (Caplin 2008)
  - State Dependent Stochastic Choice Data (Caplin and Martin 2015, Caplin and Dean 2015, Caplin, Dean, and Leahy 2017)
  - Understanding Ignorance (2018-?)

- Why not think about future health, wealth?
- Why shout down challenges to out-moded beliefs?
- "Rational" if prizes psychological
- Change **domain** of prizes to expand **range** of decision theory

- Psycnology matters not irrational per se
- PEU model period utility over abstract psych prizes
- Standard discounting and substitution
- What produces psychological states?
- Include beliefs about future prizes: anticipatory utility
  - From Loewenstein 1987
  - Allows anxiety, fear, desire for future surprise, etc.
- Inspiration: why not question origins?
  - Instinct would be disorganizing

- Generalizable behavioral implication: avoid information about risky behaviors
- Model decision on investigation of health risk (genetic information on self, children)
  - Bad outcome overwhelming
  - Even thinking about it unpleasant
- Propaganda to promote or dissuade from prevention
  - Much depends on the production function for fear
  - Can authority make you ponder worst case to avoid?

- Behaviorally: preference for ignorance
- Love of surprise and fear both lead to same behavior
- We have intuitions as experts
    - Pass message if good news on test
    - Say nothing about upcoming surprise party
    - These emotions revealed to be understood

- Huge measurement challenges
  - Intuitions about feelings not accepted as basis for theorizing.
  - Topic of thoughts unmeasured
  - Attention not measured standardly
  - What about intensity of propaganda?
  - Why detail psychology beyond behavior?
- If only behavior, preference for late resolution (Kreps and Porteus 1978)

- Bigger debate
- Self control as hyperbolic discounting and multiple selves
  - What behavior reveals multiple selves?
- Gul and Pesendorfer on Temptation and Self Control 2001
- Choice of Choice sets (Koopmans 1960, Kreps 1979)
- Recent implementations: Toussaert

- Not only behavioral, also neuroeconomics and genoeconomics
- Camerer, Loewenstein, Prelec 2005: Economics Needs Brains
- Gul and Pesendorfer 2008: In Defense of Mindless Economics
- Utility function operationalized by Samuelson 1938
    - SARP in ideal choice data
- Makes it best founded psychological construct

- GP: domain of economics to operationalize choice data
- Psych and economics when cleverly enrich definition and measurement of choice
  - Savage 1954 and SEU
  - Koopmans 1960 for choice of choice sets
  - Kreps and Porteus 1978 for temporal lotteries

- Choice behavior unrestrictive
- Any measurable behavior that took one of many possible values
- Including so-called "biological" outputs
- Used pulse to be provocative!
- ETPD: Samuelsonian approach to enriched ideal data
- Economic Data Engineering

- Data set endogenous to question
- First departure from operational is incomplete information
- Imperfect information, asymmetric information, search theory, RI theory,..
- Block and Marschak 1960 noted ID problem in standard choice data
  - Apple better than orange or orange not seen?
- Proposed and discussed expansion of data

- Pursued last 10 years (with Dean, Martin, Agranov, Tergiman, Leahy)
- Designing ideal data for models of incomplete information
- Believe have identified key new data set
- Define behavior as state dependent stochastic choice (SDSC) data
  - Ernst Weber 1834 and Weber-Fechner
  - Modern perceptual psych.
  - CM 2011, CD 2015 in economics
- Consumers may not notice sales tax, econometrician does (Chetty, Looney, and Kroft 2009).
- Payoff determining state of the world and behavioral choice as visible to ideal observer (IO).

- Costs of learning are subjective, basic and universal
  - Why not 100% on all exams?
- To gauge IO watches DM in same decision infinitely often, assuming same strategy

- IO observes distribution state realizations and action choices.
- CDL (2017 soon): response to incentive reveals costs of attention
- Form of attention cost revealed in behavioral patterns
- Sign of a valuable data set!

- Note now new ID problem:
- CDL is EU: no preference over resolution
- In practice both (e.g. finances, computers, medical conditions complex)
    - Ignorant decisions due to preference for late resolution or costs of learning?

- How do I know if ignorant cos hard to learn or don't want to know about future health?

- Theoretical challenge for next steps:
- Can SDSC be used to separate three forces:
    - Hard to know
    - Don't want to know
    - Don't like thinking about?
- Can this be used to design teaching methods?