Is Behavioral Economics Doomed?

The ordinary versus the extraordinary

Introductory Lecture

David K. Levine
Rational Economic Man

“a lightning calculator of pleasures and pains, who oscillates like a homogenous globule of desire of happiness under the impulse of stimuli” Thorstein Veblen 1899

“The implicit presumption in these … models was that people could be fooled over and over again.” Robert Lucas 1995
Theory That Works: Voting

Levine and Palfrey [2007]
**Theory That Works? Ultimatum Bargaining**

<table>
<thead>
<tr>
<th>$x$</th>
<th>Offers</th>
<th>Rejection Probability</th>
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<tbody>
<tr>
<td>$2.00$</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>$3.25$</td>
<td>2</td>
<td>50%</td>
</tr>
<tr>
<td>$4.00$</td>
<td>7</td>
<td>14%</td>
</tr>
<tr>
<td>$4.25$</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>$4.50$</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>$4.75$</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>$5.00$</td>
<td>13</td>
<td>0%</td>
</tr>
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</table>

27

US $10.00$ stake games, round 10

Roth, Prasnikar, Okuno-Fujiwara, Zamir [1991]
**What the Theory Tells us: Losses In Ultimatum**

Out of $10

<table>
<thead>
<tr>
<th>Losses</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Knowing</td>
<td>$0.34</td>
</tr>
<tr>
<td>Unknowing</td>
<td>$0.99</td>
</tr>
</tbody>
</table>

Fudenberg and Levine [1997]

- Learning and short-term errors are an important part of mainstream economics
**Equilibrium: The Weak versus the Strong**

Approximate or $\varepsilon$-equilibrium

$s_i$ strategy choice; $\mu_i$ beliefs; $u_i$ utility

$$u_i(s_i | \mu_i) + \varepsilon \geq u_i(s'_i | \mu_i)$$

equilibrium: beliefs are correct
Individual Play in Voting
Quantal Response Equilibria

$\sigma_i$ mixed strategy or probability of play

$\lambda_i > 0$ parameter

$$p_i(s_i) = \exp(\lambda_i u_i(s_i, \sigma_{-i}))$$

$$\sigma_i(s_i) = \frac{p_i(s_i)}{\sum_{s_i'} p_i(s_i') }$$

Games with Strong Equilibria

➢ voting

➢ competitive equilibrium
Learning and Self-confirming Equilibrium

government chooses high or low inflation…then in the next stage
consumers choose high or low unemployment; but prefers low unemployment
government gets 2 for low unemployment plus 1 for low inflation
subgame-perfect equilibrium: government chooses low inflation and gets 3
self-confirming equilibrium: government believes that low inflation leads to high unemployment, so chooses high inflation and gets 2
no data is generated about the consequences of low inflation

Sargent, Williams, Zhao 2006: detailed explanation of how learning by the U.S. Federal Reserve led to the conquest of American inflation
The Ordinary, the Extraordinary and the Dishonest

Periodic short crises during which long-run beliefs of consumers are wrong, although short-run beliefs are right

Sargent, Williams, Zha 2008

➢ The current crisis: the ordinary; the extraordinary and the dishonest
Procrastinating at the Health Club

- people who choose membership pay more than $17, even though a $10-per-visit fee is also available
- agents overestimate ... delay contract cancellation whenever renewal is automatic ($70 per month)

DellaVigna, Malmendier 200

Hypothesis 1: people think incorrectly that they will cancel tomorrow

Hypothesis 2: people think it will be an expensive hassle to cancel; wait for “hassle” cost to be low

Takes 2.3 months to cancel after stopping attendance

- Eliot Spitzer, Rush Limbaugh and the Las Vegas vacation
Prospect Theory to the Rescue

Suppose that $p_i$ is the chance of winning one of two prizes $x_i \geq 0$

$$U = \sum_i \frac{.846 p_i^{1.414}}{.846 p_i^{1.414} + (1 - p_i)^{1.414}} x_i^{1.056}$$

Bruhin, Fehr-Duda, and Epper [2007]

Would you rather have:
A. $5,000 for sure
B. a 50-50 coin-flip between $9,700 dollars and nothing

***and*** you don’t exhibit the Allais paradox
Framing and the Becker Marschak DeGroot Elicitation Procedure

- Willingness to pay versus willingness to accept

Zeiler and Plott 2004
Psychology versus Economics

- non-functional versus functional people
- narrow models versus broad models
- individual versus group behavior
- arithmetic versus axiomatic models and the domain of concern
- pieces of paper, computers and neuroeconomics
Strengthening Economic Theory

Mainstream models
- learning
- habit formation
- consumer lock-in

Works in progress
- ambiguity aversion and the dishonest
- level-k thinking and one-off play
- menu choice and self-control
- interpersonal preference
The Rabin Paradox

If you are indifferent between a 70% - 30% chance of
A: $40 and $32
B: $77 and $2
And your lifetime wealth is $860,000 then your coefficient of relative risk aversion is 27,950

If you are indifferent between holding stocks and bonds your coefficient of relative risk aversion is 8.84

➢ The reference point is real