Is Behavioral Economics Doomed?

*The ordinary versus the extraordinary*

Max Weber Lecture
May 19, 2009
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**

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<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>
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<tr>
<td>$3.25</td>
<td>2</td>
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<tr>
<td>$4.00</td>
<td>7</td>
<td>14%</td>
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<tr>
<td>$4.25</td>
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<tr>
<td>$4.50</td>
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<td>100%</td>
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<tr>
<td>$4.75</td>
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<tr>
<td>$5.00</td>
<td>13</td>
<td>0%</td>
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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>
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<th>Losses</th>
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<td>Knowing</td>
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</tr>
<tr>
<td>Unknowing</td>
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</tr>
</tbody>
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Fudenberg and Levine [1997]

➢ Learning and short-term errors are an important part of mainstream economics
Approximate or $\varepsilon$-equilibrium

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

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

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

$\sigma_i$ mixed strategy or probability of play

$\lambda_i > 0$ parameter

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

$$\sigma_i(s_i) = p_i(s_i) / \sum_{s_i} p_i(s_i)$$

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 $x_i \geq 0$

$$U = \sum_i \frac{0.846 p_i^{0.414}}{0.846 p_i^{0.414} + (1 - p_i)^{0.414}} x_i^{1.056}$$

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