The Impact of Gary Becker’s Work

James J. Heckman
The University of Chicago

A Celebration of the Life and Work of Gary S. Becker
The University of Chicago
October 31, 2014
Becker Receiving Nobel Prize (1992)
Becker Receiving Medal of Freedom (2007)
“Becker is the best student I ever had.”
– reference letter on Becker’s application to Chicago, 1951
“Becker has a brilliant, analytical mind; great originality; knowledge of the history of economic thought and respect for its importance; a real feeling for the interrelationships between economic and political issues; and a profound understanding of both the operation of a price system and its importance as a protection of individual liberty.” (1953)
“It is hard to write to you about Mr. Becker without sounding over-enthusiastic. He is an exceedingly intelligent and imaginative young man and certainly, I think, will become really outstanding in the economics profession. He is honest in all matters, has the highest character, and I am confident, is exceedingly trustworthy. I recommend him to you without any reservations.”

H. Gregg Lewis
“Gary Becker was the most influential social scientist of the past half century.” – Milton Friedman, 2001
“It [economics] is judged ultimately by how well it helps us understand the world, and how well we can help improve it.” – Gary Becker
A Brief Biography of Becker
Becker at Princeton
Becker as a Grad Student at Chicago
Becker on Leave at Chicago (1969)
The Long and Short of the Chicago School: Early 1970s
Friedman & Stigler
Chicago 1972 Poster (After “The School of Athens” by Raphael)
### Developments in Economics 1950–2014

<table>
<thead>
<tr>
<th>Becker</th>
<th>1950</th>
<th>1960</th>
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#### Developments in Economic Theory
- First round of game theory; decision theory; uncertainty; operations research
- General equilibrium
- Optimal growth

#### Macroeconomics
- Keynesianism Dominant Era

#### Developments in Econometrics
- Simultaneous equation models; computers enter; macro econometrics (Keynesian)
- Refinement of multiple regression measurement error (Theil, Zellner, Goldberger)

#### Developments in Data Analysis
- Computation; national accounts
- Development of large scale macro models
- Collection & analysis of microdata

#### Policy Issues
- War on Poverty (Discrimination, schooling, inequality)
- Coleman Report (Importance of Family)
- Crime and Urban Riots (Koerner Commission)
- Growth of Welfare and Single Headed Families (Moynihan Report)

**Key Points:***
- **1950–1960**:
  - First round of game theory;
  - Decision theory;
  - Uncertainty;
  - Operations research
- **Keynesianism Dominant Era**
  - Macroeconomics
  - Refinement of multiple regression measurement error

**Issues Addressed:**
- War on Poverty
- Coleman Report
- Crime and Urban Riots
- Growth of Welfare and Single Headed Families

**Additional Notes:**
- Becker's Work on Economics of Discrimination
- Babies as Consumers of Durables
- Durables
- Babies as Consumer Durables
- Durables

**The University of Chicago**

**Gary Becker's Work**
### Developments in Economics 1950–2014

#### Developments in Economic Theory

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Developments in Economics 1950–2014

**Developments in Economic Theory**
- 1950: First round of game theory; decision theory; uncertainty; operations research
- 1960: General equilibrium; optimal growth
- 1970: Moral hazard; adverse selection; models of incentives; game theory
- 1980: Auction models; incentive compatibility; contract theory
- 1990: Habits, preferences, health

**Macroeconomics**
- Keynesianism Dominant Era (Brookings Model)
- Era of Rational Expectations and Micro-based Macroeconomics

**Developments in Econometrics**
- Simultaneous equation models; computers enter; macro econometrics (Keynesian)
- Refinement of multiple regression measurement error (Theil, Zellner, Goldberger)
- Microeconometrics (Discrete Choice; Selection Bias; Accounting for individual heterogeneity)
- Computational Economics
- Panel data models; experiments

**Developments in Data Analysis**
- Computation; national accounts
- Development of large scale macro models
- Collection & analysis of microdata
- Information on individual actors; growth
- Panel surveys
- Experiments (Lab and Field)
- Big Data

**Policy Issues**
- War on Poverty (Discrimination, schooling, inequality)
- Coleman Report (Importance of Family)
- Crime and Urban Riots (Koerner Commission)
- Growth of Welfare and Single Headed Families (Moynihan Report)
- Growth in worldwide inequality

**Heckman**
Gary Becker’s Work

**The University of Chicago**
Video Clip on Incentives

http://youtu.be/gfEaoDuhBYA
His organizing principles

- People pursue self-interest (broadly defined and increasingly broadly defined over his lifetime)
- Stable preferences
- Equilibrium in market
“‘The Easterlin theory is all the more valuable for its scarcity among economic theories, standing out in welcome relief from the rather sterile verbalizations by which economists have tended to describe fertility decisions in terms of the jargon of indifference curves, thereby tending to intimidate non-economists who have not mis-spent their youth in mastering the intricacies of modern utility theory.’” – Paul Samuelson (1978)
Heckman

Gary Becker's Work
Heckman

Gary Becker’s Work
HUMAN CAPITAL

A Theoretical and Empirical Analysis with Special Reference to Education

THIRD EDITION
Human Capital Lecture

Heckman

Gary Becker’s Work
Frameworks for Measuring Rates of Return

“Mincer Equation”

- Initially used IRR
- Developed a simpler method in *Becker and Chiswick (1966)*
- Expanded and extensively applied in Mincer (1974)

\[
\ln y_i = \alpha_i + \rho_i s_i + \phi_i(x_i) \quad (1)
\]

\(\rho_i\): “rate of return to schooling for person \(i\).”
Good Vs. Bad Inequality
BECKER AGORAEEUS

CRIME, ADDICTION, INEQUALITY, ECONOMIC GROWTH, INCENTIVES IN GOVERNMENT AND THE LABOR MARKET, FERTILITY, DISCRIMINATION, MARRIAGE, DIVORCE, HABITS AND HABIT FORMATION

LAW AND ECONOMICS, HEALTH AS HUMAN CAPITAL, SCHOOLING, JOB TURNOVER

WAGE GROWTH, EVOLUTION OF PREFERENCES

HUMAN CAPITAL

THE ECONOMICS OF THE FAMILY: HOUSEHOLD PRODUCTION AND TIME ALLOCATION

PREFERENCES, HABITS, AND ADDICTIONS

POWER OF INCENTIVES
BECKER AGORAEUS

POWER OF INCENTIVES

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CRIME, DECEPTION, FRAUD, AND THE LAW

E UNIVERSITY OF CHICAGO
a treatise on the family

GARY S. BECKER
Becker Teaching Household Production Model
On the Interaction between the Quantity and Quality of Children

Gary S. Becker and H. Gregg Lewis

University of Chicago

JPE, 1973
Tastes, Preferences, and Habits
(1996)
Irrational Behavior: (1962)
IRRATIONAL BEHAVIOR AND ECONOMIC THEORY

GARY S. BECKER
Columbia University
Becker 1962 Theory of Irrational Behavior

Preferences

Initial choice selected

Amount of $x_1$ if spend entire budget on $x_1$

Old Budget Set

Amount of $x_2$ if spend entire budget on $x_2$
Becker 1962 Theory of Irrational Behavior

Amount of $x_1$ if spend entire budget on $x_1$

Preferences

New Budget Set
$x_1$ more expensive

Choice point selected in new regime

Amount of $x_2$ if spend entire budget on $x_2$
Becker 1962 Theory of Irrational Behavior

- Amount of $x_1$ if spend entire budget on $x_1$
- Amount of $x_2$ if spend entire budget on $x_2$
- Preferences
- Initial choice selected
- Old Budget Set
- New Budget Set
- $x_1$ more expensive
- Choice point selected in new regime
- $x_2$
- $U_1$
- $U_0$

Gary Becker’s Work
A Lot of Basic Propositions in Economics Do Not Need Rationality: Constraints are Basic.

Mean of Cloud of Irrational Agents

Old Budget Set

Amount of $x_1$ if spend entire budget on $x_1$

Amount of $x_2$ if spend entire budget on $x_2$
A Lot of Basic Propositions in Economics Do Not Need Rationality: Constraints are Basic

- Mean of Cloud of Irrational Agents
- New Budget Set $x_1$ more expensive
- New Position of Cloud of Irrational Agents

- Amount of $x_1$ if spend entire budget on $x_1$
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A Lot of Basic Propositions in Economics Do Not Need Rationality: Constraints are Basic

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- Amount of $x_2$ if spend entire budget on $x_2$

Heckman
Gary Becker’s Work
Household Production
Habit Formation
A Theory of Rational Addiction

Gary S. Becker and Kevin M. Murphy

University of Chicago

(1988)
Crime and Punishment
Crime and Punishment: An Economic Approach

Gary S. Becker*
Columbia University

I. Introduction
Since the turn of the century, legislation in Western countries has expanded rapidly to reverse the brief dominance of laissez faire during the nineteenth century. The state no longer merely protects against violations of person and property through murder, rape, or burglary but also restricts "discrimination" against certain minorities, collusive business arrangements, "jaywalking," travel, the materials used in construction, and thousands of other activities. The activities restricted not only are numerous but also range widely, affecting persons in very different pursuits and of diverse social backgrounds, education levels, ages, races, etc. Moreover, the likelihood that an offender will be discovered and convicted and the nature and extent of punishments differ greatly from person to person and activity to activity. Yet, in spite of such diversity, some common properties are shared by practically all legislation, and these properties form the subject matter of this essay.

In the first place, obedience to law is not taken for granted, and public and private resources are generally spent in order both to prevent offenses and to apprehend offenders. In the second place, conviction is not generally considered sufficient punishment in itself; additional and sometimes severe punishments are meted out to those convicted. What determines the amount and type of resources and punishments used to enforce a piece of legislation? In particular, why does enforcement differ so greatly among different kinds of legislation?

* I would like to thank the Lilly Endowment for financing a very productive summer in 1965 at the University of California at Los Angeles. While there I received very helpful comments on an earlier draft from, among others, Armen Alchian, Roland McKean, Harold Demsetz, Jack Hirshliefer, William Meckling, Gordon Tullock, and Oliver Williamson. I have also benefited from comments received at seminars at the University of Chicago, Hebrew University, RAND Corporation, and several times at the Labor Workshop of Columbia; assistance and suggestions from Isaac Ehrlich and Robert Michael; and suggestions from the editor of this journal.

JPE, 1968
Law and Economics
Incentives
COMPETITION AND DEMOCRACY (1958)

GARY S. BECKER
Columbia University
Becker’s Impact on Sociology
Becker Contributed to and Extended the Chicago Tradition in Economics
Chicago Economics: Disagreement at a High Level of Originality and Rigor
T.W. Schultz

Marschak
Three Ground Rules for Chicago Economics

1 The first ground rule is that its faculty know and understand the corpus of economic theory — not just their specialty within the field. That we insist that students and faculty speak a common language — the language of basic price theory and the economics of incentives — and that participants communicate these ideas clearly.
The second ground rule is that it views economics as a serious subject, tackling serious problems.
The third ground rule is that Chicago economists move beyond selective and self-serving appeals to “stylized facts” to “illustrate” their theories and instead engage and promote the serious scientific task of creative collection and analysis of hard data, analyzing it with care, and linking the theory and evidence. Chicago does not devalue the hard empirical work that produces hard evidence and rigorous economic theorizing.
The Chicago School of Economics
Milton Friedman, George Stigler, and Aaron Director at First Mt. Pelerin Society Meeting (1947)
Becker’s Contributions to Empirical Economics
Contributions to Public Policy & Economic Literacy
Lyndon Johnson
Intergenerational Mobility and Inequality: The “Gatsby Curve”

IGE: \( \ln Y_1 = \alpha + \beta \ln Y_0 + \varepsilon \)

Income in current generation

Income of parents

Source: Bradley J. Setzler (2014)

Note:
- Inequality is measured after taxes and transfers.
- Gini index defined on household income.
- IGE measured by pre-tax and transfer income of individual fathers and sons.
Gary & Guity Becker
Impact of Gary Becker – Summary
“It [economics] is judged ultimately by how well it helps us understand the world, and how well we can help improve it.” – Gary Becker