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Edited by Samuel Bowles, Steven N. Durlauf, and Karla Hoff: Poverty Traps

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INTRODUCTION

Samuel Bowles, Steven N. Durlauf, and Karla Hoff

THERE IS A CONVENTIONAL VIEW about poverty that still informs much public debate. It is famously illustrated by the rags-to-riches stories of the nineteenth-century American author, Horatio Alger. He penned more than one hundred such tales, nearly all best sellers. Every hero in an Horatio Alger novel, no matter how dire his straits at the beginning, escapes poverty by dint of effort, ability, and inner strength.

The Horatio Alger vision resonates with the sort of society most Americans want and, to a large extent, believe has been achieved. What is critical in this view is the idea that the mechanisms that determine an individual's socioeconomic prospects are largely under his or her control. Thus, this view has been called the *achievement model of income determination*. In a limited way, traditional competitive economic theories support that view of income determination: in a perfectly competitive economy, individuals navigate a sea of economic opportunity that rewards productive effort and savings. Initial poverty typically does not entrap; only those who don't make the effort remain in its clutches.¹ By similar reasoning, those who have attained affluence must work to keep it; inertia alone will not perpetuate wealth.

But the stubborn persistence of poverty in much of the world and in many pockets even in rich countries has led scholars to question the explanatory power of the achievement model. By the opening of the twenty-first century, an unprecedented level of inequality had developed in the world: a person earning an income of \$2 per day is in the *top* half of the world income distribution today. Income inequality in the world as a whole has increased substantially over the past two centuries, with the richest 10 percent receiving over half of world income today, while the poorest 50 percent receive less than 10 percent. In the United States, home of the rags-to-riches tale, the son of a person born to parents in the poorest decile of income earners is twenty-four times more likely to achieve an income in the lowest decile than in the highest decile when he grows up. The son of parents in the top decile of income earners is

¹ Classic models are Solow (1956) and Loury (1981).

ten times more likely to remain at the top than to fall to the bottom decile.²

Economists find these patterns difficult to explain. Economic competition, together with liberal democratic institutions, is thought to support convergence in the economic fortunes of otherwise similar individuals and groups. The presumption of convergence across countries and over generations is captured by many standard results. According to the international factor price equalization theorem, under certain conditions free trade equalizes the wage rates of trading partners. Another force for convergence is “regression to the mean” in intergenerational transmission processes. Francis Galton observed that children of taller than average parents were also taller than average, but typically by a smaller amount. Regression to the mean has been documented for both wealth and income. But convergence pressures appear to be offset, in some cases even overwhelmed, by counterpressures.

Recent research in economics has developed new theories to explain persistent poverty. These theories depart sharply from the achievement model of income determination. They describe mechanisms that could cause poverty to persist—“poverty traps.” These theories have addressed both the question of how whole economies may fail to develop, and how subgroups within rich economies may fail to share in overall prosperity. At the risk of oversimplification, recent research has identified three broad kinds of explanations for the persistence of poverty.

First, there may be *critical thresholds*—in overall wealth or human capital—that must be reached before the forces of standard competitive theory take hold. Countries can face thresholds and individuals can, too; and the critical threshold for an individual will, in general, depend on the environment in which he lives. For example, if unskilled wage rates are sufficiently depressed by an oversupply of uneducated persons, a poor person may never be able to save enough to escape poverty if he remains in a developing country with a small educated population, but may escape poverty if he moves to a country with a larger educated population. Critical thresholds may arise when “lumpy” investments are required to increase productivity, or more generally when there are scale economies. With scale economies, a rise in output lowers unit costs, which sets in motion a chain of positive self-reinforcement of investment and cost reduction. If there are scale economies in the returns to education, then the cost of education relative to household income and to the skill premium may cause a very poor economy to be trapped in a state with minimal educational attainment. Some scholars have argued that the worst performing countries,

² See Chen and Ravallion (2001), Bourguignon and Morrison (2002), and Milanovic (2005) on world inequality; see Bowles and Gintis (2002) on the “inheritance of inequality” in the United States.

particularly in sub-Saharan Africa, can be characterized as being near or in a trap.³

Second, *dysfunctional institutions*, arising from political forces or broader social interactions, may entrap entire nations in poverty. High inequality in power and wealth influences the support for public schools, public goods, and the protection of property rights, especially the property rights of a broad cross-section of society; and these institutions shape the economy. A society that fails to develop good property rights institutions will be characterized by low investment and low incomes. A society without broad-based public education will likely contain pockets of persistently poor citizens.

The third category of explanation for the persistence of poverty encompasses *neighborhood effects*. The term neighborhood effects is a metaphor for an array of influences from one's membership in various groups, which may be fixed (such as race) or may be determined by the economy (such as neighborhoods or schools). Many decisions that an individual makes directly affect the group. Such influences can distort the decisions of others, and the interaction of the slightly distorted behaviors of individuals within a group may produce very large distortions. The consequence of these distortions may be low-level equilibrium traps that are socially very undesirable. For example, high levels of corruption can be sustained when each individual's decision to be corrupt makes it a little bit harder for others to sustain productive activities. Low levels of educational attainment among subgroups in the population can be an equilibrium when each individual's well-being is influenced by his conformity with the attainments of his peer group. Many social interactions operate locally, and can contribute to the persistence of poverty in pockets of affluent societies. Examples in this book include peer group effects and role model effects.

The purpose of this collection is to make accessible to a broad audience recent work in these three areas, and we now turn to a summary of this volume. Each of the authors draws on long-term research programs.

THRESHOLD MODELS OF POVERTY

Costas Azariadis in chapter 1 describes *threshold models of poverty*. An initially high level of poverty and low life expectancy may change the way an economy works because it may make the return to incremental changes in capital small or even negative. Azariadis confronts conventional theories of economic growth with what he terms the "fundamental facts of world economic development" and, in particular, with evidence of the apparently

³ Azariadis and Drazen (1990) and Caucutt and Kumar (2003).

weak forces propelling the poorer countries to catch up with the rich. While there is a great deal of empirical evidence against the convergence hypothesis,⁴ of particular importance to Azariadis's argument are those studies that have found "convergence clubs," that is, subsets of economies where each subset follows a distinct time path of economic development.⁵ The presence of such clusters is a common prediction of models with threshold effects, as Galor (1997) has shown. Intuitively, poor economies cannot produce the levels of human and physical capital to exceed the thresholds necessary for achieving a certain type of economic organization. Azariadis provides a general analysis in which kleptocratic governments, incomplete markets, and increasing returns to scale to investments in health, human capital, or physical capital may generate macroeconomic poverty traps, leading to income polarization across nations.

Azariadis emphasizes that an important cause of threshold effects are capital market imperfections.⁶ It can happen that productive investment opportunities abound, but many individuals are unable to finance them. Entrepreneurship holds the key to higher incomes only to those able to finance an investment. If capital market imperfections prevent the poor from obtaining capital, entrepreneurship is beyond their reach. There is a threshold that divides the population into two classes—the rich who are able to become entrepreneurs and accumulate more wealth, and the poor who cannot become entrepreneurs and who cannot accumulate wealth in their lifetimes and perhaps not even over generations.⁷

If poverty persisted only through the mechanisms captured in threshold models, then the eradication of poverty would be relatively straightforward. Simply provide individuals or countries enough education or capital (or medical services, insurance, technical assistance, etc.) to raise them above that threshold, and they will escape poverty. Poverty programs and foreign aid donors have sometimes tried that approach and yet, in many cases, the goal of sharply reducing poverty has proven elusive.⁸ Clearly, development is not just about having productive opportunities. More than having productive opportunities, most economists would agree that development

⁴ See Durlauf and Quah (1999) for a survey.

⁵ Examples of such work include Canova (1999), Desdoigts (1999), Durlauf and Johnson (1995).

⁶ A remarkable survey of the evidence of capital market failures in developing countries is Banerjee and Duflo (2005).

⁷ Central contributions are Galor and Zeira (1993) and Banerjee and Newman (1993). A wealth threshold below which a household has no incentive to save and accumulate wealth may exist *even when there is no fixed cost component to investment*, as shown in Mookherjee and Ray (2002). For surveys of microeconomic models with threshold effects induced by credit market imperfections, see Hoff (1996) and Bardhan, Bowles, and Gintis (2001).

⁸ See, for example, Burnside and Dollar (2000).

depends on being able to create a never-ending supply of new opportunities in the future. The next two sets of explanations of the persistence of poverty address that issue.

INSTITUTIONS AS POVERTY TRAPS

There is a broad consensus today that central obstacles to growth in many poor countries are institutions that make property rights insecure and protect a narrow elite. But which institutions are key, and how can we explain the differences in institutions across countries? In trying to explain a puzzle of economic history—why did Latin America fall behind?—Stanley Engerman and Kenneth Sokoloff have developed a provocative theory of paths of institutional development, which they describe in chapter 2, and which has been found to have predictive power for economic development in the former European colonies generally.⁹ Their work examines the role of a broad class of institutions as mediating mechanisms between the level of initial inequality in the former European colonies and per capita incomes today, four or five centuries later.

The experience of a small number of European countries coming in the sixteenth and seventeenth centuries to the Americas to establish colonies in very dissimilar environments provides a kind of natural experiment whose outcomes are broadly consistent with this theory. All the European colonial powers tried to structure the organization of production in their colonies to reap material gain, but they faced very different circumstances in different colonies. In some colonies, dense populations pre-existed or could be created profitably through the importation of slaves, which laid the basis for extreme inequality. In other colonies, mining was the most profitable option and again laid the basis for an economy with highly concentrated wealth. Many of the Spanish colonies and the sugar-producing English and French colonies were in these categories. Sparse populations and a climate suitable for crops that did not exhibit scale economies, and that could not be profitably cultivated with slaves, characterized a third category of colony and laid the basis for a low level of inequality in those colonies. The northern United States and Canada were in this category.

Engerman and Sokoloff trace the long, lingering effects of these initial differences in factor endowments on institutions. Initial conditions led, almost from the beginning of European colonization, to high levels of initial economic and political inequality in the first two categories of colonies, and to a more egalitarian social organization in the third category of colony. In turn, these differences in inequality were associated with markedly different

⁹ See Acemoglu, Johnson, and Robinson (2002).

policies in the eighteenth and nineteenth centuries with respect to suffrage, schooling, the distribution of public lands, financial markets, and the activities and tax structure of local governments. These policies played a central mediating role between the initial level of inequality of New World colonies and their pattern of development. Latin America developed in such a way that there were few public resources for development, especially at the local level, and few opportunities for mobility for a broad cross-section of the population. In contrast, the United States and Canada invested a very high level of public resources in development, particularly at the local level, and created broad opportunities for mobility. Engerman and Sokoloff are able to establish remarkably clear, divergent patterns of institutional evolution between those areas with initially high levels of economic and political inequality, on the one hand, and those areas with initially low levels of inequality, on the other. Colonies characterized by high inequality were among the richest areas in the Americas in 1700, but fell behind the United States and Canada beginning in the late eighteenth century. The divergence in per capita incomes *within the Americas* occurred at the same time as the divergence between the currently poor and currently rich countries among the broader class of *all non-European colonies*, as shown by Acemoglu, Johnson, and Robinson (2002). The evidence of this divergence, and of the differences in the paths of institutional development across former European colonies, support the view that the breadth of access to opportunities to obtain schooling, to buy land, to borrow and invest, and to vote was a central factor determining which countries became rich, and which became relatively poor.¹⁰

Chapters 3–6 of this volume view the economy as a kind of ecosystem.¹¹ In an ecosystem, a key factor determining how any individual will behave is his environment. One of the most important aspects of that environment is the behavior of others. Under some conditions, ecosystems have multiple equilibria, and individuals may fail to “coordinate” on the equilibrium that is preferred by everyone. Seeming improvements may fail to survive on their own if they require complementary changes in the behaviors of others or in social institutions. There is no teleology—no evolutionary force that ensures that outcomes will be efficient.

A canonical example relates to rent-seeking and corruption. This is the subject of chapter 3. In many countries of the world, Mafia-like organizations prey on private producers and contribute to the impoverishment of entire societies. Theory suggests that a society that is highly corrupt need not be fundamentally different from one that is not—it is “simply” a matter

¹⁰ A survey of the broad research program that Engerman and Sokoloff’s work has opened up is Hoff (2003).

¹¹ This perspective is developed in Hoff and Stiglitz (2001).

of initial conditions and the positive feedback effects that social organization can produce.¹² Given these positive feedbacks, small initial differences in societies can lead to very large differences in equilibrium levels of corruption, and these differences will be stable in the face of a variety of small shocks. As Douglass North (1994, 361) put it, “If the institutional matrix rewards piracy, then [only] piratical organizations will come into existence.”

The basic mechanics of coordination failure are simple: An individual’s behavior—for example, to produce or to prey on the production of others—creates externalities. The externalities affect not only the *welfare* of others, but also their *decisions*. The interaction of the slightly distorted behaviors of many different agents may produce very large distortions and can lead to the existence of multiple equilibria, some very good for every member of the economy, and some very undesirable. In the “bad” equilibrium, each individual is optimizing given the incentives he has, which depend on the behaviors of everyone else. The basic insight is that whereas individuals can choose occupations through their decisions about education and effort, and can choose goods in the marketplace, they cannot in general choose among incentive systems, institutions, and social norms. These evolve in response to a multitude of individual decisions that may spread over large stretches of time and that reflect each individual’s efforts to do the best he can for himself given the behaviors of others in the society—irrespective of whether his choices foster poverty or affluence at the level of the wider society.¹³

To demonstrate these ideas, Halvor Mehlum, Karl Moene, and Ragnar Torvik in chapter 3 consider a setting where entrepreneurs choose between becoming predators or producers. An increase in the number of predators may lower the returns to production more than it lowers the returns to other predators. In that case, the returns to predation relative to production increase, and this can lock the society into an outcome in which a large fraction of the society are predators. In this equilibrium, the fraction of producers is low and returns to production and growth are low because the fraction of predators is high. But there may exist another equilibrium in which the number of predators is low, the returns to production are high, and a large fraction of entrepreneurs are producers. In the first equilibrium, unlike the second, many entrepreneurs do not have the means to escape poverty.¹⁴

¹² Seminal contributions are Murphy, Schleifer, and Vishny (1993) and Acemoglu (1995).

¹³ This perspective has given rise to an enormous literature. See North (1994); Basu, Jones, and Schlicht (1987); Cooper (1999); Ray (1998, chap. 5); and Hoff and Stiglitz (2001).

¹⁴ Since an individual’s choice of economic activity may affect his political preferences, a political demand for the rule of law may paradoxically fail to emerge in a society with a high level of predation. Externalities mediated through the political environment are another channel through which individuals may coordinate on an undesirable equilibrium; see Hoff and Stiglitz (2004a,b) for an application to Russia.

A longstanding debate among social scientists concerns whether customs can impede economic development. Will social customs “follow the money,” changing when it becomes to everyone’s advantage to change them, or can social customs that are harmful to every individual nonetheless fail to be overturned by self-interest? In chapter 4, Karla Hoff and Arijit Sen show that institutions important to traditional kin-based societies may linger, inhibiting the transition to a market economy. They consider an ethnic group, observationally distinct from others in the population, which has developed an enforcement mechanism to support mutual insurance (the extended family system, or *kin system*, for short). The kin system is welfare-increasing in a high-risk, subsistence economy. But this need not be so once the group comes into contact with a market economy. In the market economy, the kin system exacerbates problems of moral hazard. For example, once a member of a kin group is in a managerial position with power to recruit and promote, other members of the kin group exert pressure on him for favors, which he has some obligation to meet. This may lead to lower wages and blocked employment opportunities for an entire ethnic group. An extended family system that increased welfare before the introduction of a labor market may thus become dysfunctional after a kin group enters into extensive contact with the labor market.

In this case, how will members of the kin group respond, individually and collectively? An individual might want to commit to a potential employer *not* to participate in the extended family system, but if the only means to do that is to become an outcast from one’s ethnic group or to assimilate to another subculture, the cost may be too high. Coordination failures may occur both in the decision to break ties and in the decision to participate in the labor market. Further, when individuals differ in their ability to benefit from new market opportunities, improvements in future income prospects may paradoxically trigger collective opposition by the kin system to the new prospects, a kind of status quo bias that can make the kin system a poverty trap.

Institutional poverty traps are placed in a general conceptual framework by Samuel Bowles in chapter 5. He asks: Why have institutions that implement highly unequal divisions of the social product been ubiquitous since the domestication of animals and plants eleven millennia ago? Why do they persist even in those cases where they convey no clear efficiency advantages over other feasible social arrangements? The chapter presents an evolutionary model with the unusual feature that novelty is introduced into the system, not by mutation-like random innovations, but instead by the deliberate refusal of individuals to abide by the status quo institutions. Combining evolutionary game theory with the theory of collective action yields results at variance with the more common evolutionary models. The main finding is that unequal institutions may persist over long periods due

to the nature of these arrangements as self-enforcing conventions, and due to the difficulty faced by the poor in coordinating the types of collective action necessary to “tip” a population from an unequal to a more equal set of institutions. Moderate levels of inequality may not be sufficient to motivate collective action by any of the poor, while conventions characterized by extreme levels of inequality can be displaced only through collective action endorsed by very large fractions of the poor.

NEIGHBORHOOD EFFECTS AS POVERTY TRAPS

The final section of this book explores the new insights into poverty that emerge when local, social interactions are considered. Many of these insights have been important in shedding light on inner-city neighborhoods in the United States. As such, this work constitutes a systemization of the seminal ideas in Wilson (1995).

In Chapter 6, Steven Durlauf describes a perspective on persistent inequality that he terms the *memberships theory of poverty* (introduced in Durlauf 1999). The memberships theory of poverty comprises a set of theories that try to capture the influences on individual outcomes of the socioeconomic groups to which an individual belongs. Durlauf shows how peer effects, role model influences, and other factors that operate at the level of the group can help explain persistent inequality. For example, if the absence of role models (examples of adults who have succeeded in converting educational opportunities into economic success) causes children who grow up in poor neighborhoods to develop lower labor market aspirations and hence to pursue fewer educational opportunities themselves, this may transmit poverty across generations. When these children grow up, the adverse wage consequences of lower education will cause their own children to once again be consigned to poorer neighborhoods with the same absence of role models, thus repeating the cycle. Thus, poverty traps arise quite naturally in these contexts, at least as a theoretical matter. Durlauf argues that there is persuasive empirical evidence that these group effects matter, although efforts to develop formal statistical evidence of group effects are often flawed. One problem is that studies may not properly identify the behavioral parameters that describe group effects. Another problem is that studies may fail to account for the implications of self-selection into groups for observed correlations between individual behavior and group characteristics.¹⁵

Durlauf argues that a memberships theory perspective on poverty traps has public policy implications. If *group* influences are a primary

¹⁵ See Manski (1993) and Brock and Durlauf (2001) for formal analysis of selection effects.

determinant of *individual* outcomes, then it may be necessary to ask how redistributive policies can affect group memberships, a class of policies he refers to as *associative redistribution*. Affirmative action and the development of charter and magnet schools are examples of such policies. While complicated ethical issues arise when one considers associative redistribution policies, Durlauf concludes that such policies need to be integrated into public policies designed to promote equality of opportunity.

Some of the issues Durlauf raises are studied empirically by Robert Sampson and Jeffrey Morenoff in chapter 7. They address the issue of spatial concentration of poverty in a case study of neighborhood change in Chicago. The authors divide Chicago into over 300 neighborhood clusters based on geography and other factors. They find that over the period 1970–1990, poverty increased most in those neighborhoods that were already poor in 1970, suggesting that initial poverty is self-reinforcing.

Sampson and Morenoff look for an explanation of the self-reinforcing nature of concentrated poverty in the social processes to which concentrated poverty may contribute. Using an original survey administered to almost 9,000 residents representing all Chicago neighborhoods, they find that the level of neighborhood poverty in 1970 and subsequent changes in poverty in the next two decades are associated with two social process outcomes—*collective efficacy* in achieving social control, and *cynicism*. Indicators of collective efficacy measure residents' beliefs about the responsiveness of their neighbors to threats such as children spray painting graffiti on a local building, a fight in front of one's home, or the threatened closure of the local fire station. Indicators of cynicism measure beliefs about the legitimacy of law and social norms. The authors find that neighborhood poverty and increases in poverty are associated with a decrease in collective efficacy and an increase in cynicism. These findings are consistent with the view that concentrated poverty is socially reproduced in neighborhoods over time, as residents come and go, because concentrated poverty undermines processes of community organization.

Michael Sobel, in the final chapter of this volume, considers some of the statistical difficulties that arise in attempts to measure the effects of neighborhood memberships on individual outcomes. He focuses on conceptual difficulties in evaluating public policies designed to promote socioeconomic integration of communities. He shows that there are limits to the extent to which findings from small public policy experiments may be extrapolated to inform the design of large-scale anti-poverty policies. His analysis thus casts doubt on what we can learn from *small* public policy experiments, such as the Moving-to-Opportunity Demonstration, an ongoing set of projects by the Department of Housing and Urban Development to assess whether and how poorer families benefit from moving to more affluent communities. An important feature of Sobel's analysis is the

recognition that large-scale programs will induce general equilibrium effects that are not present in the small public policy experiments. Large-scale transfers of the poor to new communities may induce changes in the composition of these communities that alter how the communities affect individuals. Sobel shows how proposals for massive relocation of the poor, such as those recently made in Fiss (2003), may not be as efficacious as the evidence from small-scale relocation programs might suggest.

Taken as a whole, the studies in this book illustrate the complexity of the factors that produce poverty traps. A plethora of mechanisms has been identified as potentially creating poverty traps. These mechanisms include scale economies in production, incomplete financial markets, economic and political institutions that privilege the well-to-do or simply work poorly, and social norms. The diversity of these causal mechanisms does not permit the identification of any single specific policy recommendation to counter potential poverty traps. Rather, what this new literature does is to delineate a set of mechanisms that provide coherent microeconomic explanations as to why poverty traps could emerge—traps that could be rectified *only* by policy interventions. However, one should not underestimate the difficulties in designing efficacious policies and, in fact, the new literature on poverty traps has yet to explicitly focus on issues of policy design. To take one example, government efforts to promote the movement of poor families into affluent neighborhoods would seem an obvious implication of neighborhoods models. Yet one can easily imagine how such policies could unravel as affluent families in turn make new neighborhood choices or decide to opt out of public schools. So while this volume makes clear that the Horatio Alger view that poverty can always be escaped through hard work and determination really is fiction in many contexts, we have far to go in terms of understanding what is to be done.

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