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Evolving Approaches to the Economics of Public Policy: Views of Award-Winning Economists

Jean Kimmel, Editor
Western Michigan University

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EVOLVING
APPROACHES
TO THE
ECONOMICS
OF
PUBLIC
POLICY

Views of
Award-Winning
Economists

JEAN KIMMEL, EDITOR

Evolving Approaches to the Economics of Public Policy

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Views of Award-Winning Economists

Jean Kimmel
Editor

2016

W.E. Upjohn Institute for Employment Research
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—Jean Kimmel

1

Introduction

Jean Kimmel
Western Michigan University

In the academic year 2013–2014, the Department of Economics at Western Michigan University in Kalamazoo, Michigan, commemorated the fiftieth anniversary of the Werner Sichel Lecture Series with a series organized by this author and titled “Award-Winning Economists Speak on Contemporary Economic Issues.” The annual Sichel series, sponsored jointly by the Economics Department and the W.E. Upjohn Institute for Employment Research, is named for Dr. Sichel, a longtime Western Michigan University economics professor and former department chair who retired in 2004. The success and longevity of this series is a testament to his vision and guidance.

All five authors represented here who participated in this anniversary series, although they are at different points in their accomplished careers, have achieved substantial national and international notoriety for their research accomplishments. While each speaker discussed a specific subject, they all adhered to the series theme of highlighting the various ways that economics can assist policymakers in the development and evaluation of public policy. The topics were wide-ranging: microfinance, human capital, worker motivation, societal institutions, and workplace regulation. In all, five of the six presenters from that year prepared chapters from their presentations for inclusion in this edited volume.

Chapter 2, “Microfinance: Points of Promise,” stems from the lecture by Erica Field of Duke University, who was the recipient of the Elaine Bennett Research Prize in 2010. This prize is awarded by the American Economic Association’s Committee on the Status of Women in the Economics Profession to the top young female economist who completed her doctoral dissertation within the past seven years.

Field’s lecture and the corresponding book chapter, jointly authored with Abraham Holland and Rohini Pande, both of Harvard University,

contain a nicely written description of microfinance, a popular anti-poverty tool used most often by developing nations. In place of the requirement of collateral to ensure repayment, it relies on small-group social pressure. The chapter includes a comprehensive discussion of its early implementation and the ways it has evolved over time. Much of this evolution, at least in recent years, has been in response to rigorous economic analysis. Most interestingly, the chapter includes a thoughtful discussion of what is meant, generally, by policy success or policy failure, and how economists ought to evaluate policy, followed by an application of this evaluation strategy to microfinance.

Oftentimes, when researchers talk about microfinance, they speak of it in glowing terms, implying that it offers the promise of great success with little downside. Field, Holland, and Pande relate the microfinance “narrative” to that of penicillin, which preceded it by many years. Penicillin is often spoken of as a miracle drug that arose seemingly from nowhere. In reality, it was developed and brought to market over many years with much trial and error, and less than 30 years after its introduction physicians began observing occurrences of drug-resistant bacteria. Penicillin’s glory days were short-lived.

This first section of the chapter makes clear that while microfinance has enjoyed explosive growth, there is limited evidence of “success” when focusing on outcomes closely tied to the likelihood that households will be extremely poor. The next section of the chapter looks at the nitty-gritty of the policy details, with the goal of identifying specific policy components that show the greatest promise. The authors present evidence that, if microcredit’s impacts are to be enhanced, microfinance contracts need more flexibility, particularly in the grace period between loan initiation and the start of repayment, as well as in the frequency of loan repayments. The authors themselves have been involved in the design and implementation of policy experiments that manipulate various loan details incrementally to determine the impact of specific changes. In one study described in this chapter, Field, with her coresearchers, shows that extending the grace period not only has a substantial positive impact on small business formation but also results in an impressive accompanying increase in household income. Another experiment focused on varying the frequency of repayment; the results were impressive, with substantial increases in household income and business profits along with no increase in default rates.

In their description of the origins of microfinance, Field, Holland, and Pande lay the framework for the interdisciplinary discussions that occupy the remaining chapters in this edited volume. It is clear from their description that the origins of microfinance were based on a realization of the ways that sociology and psychology can offer insight into the dilemma of how to provide credit to populations that simply cannot access traditional bank loans. Reliance on group pressure to repay the microloans reflects an appreciation for the way that culture is manifested in social behavior: in developing nations, extended families and their local communities tend to be very tight-knit, making it possible to rely on these social connections in developing alternative loaning mechanisms.

In Chapter 3, Nancy Folbre, emerita professor of economics at the University of Massachusetts Amherst, writes about “The Once (But No Longer) Golden Age of Human Capital.” Dr. Folbre, a MacArthur Fellow in 1998, devoted her career largely to the study of the interface between political economy and feminist theory, with an emphasis on the value of unpaid care work. Her chapter describes the evolution in how economists talk about human capital (specifically, college education) as an investment, and the empirical evidence regarding the labor market return to that investment. Until somewhat recently, a college education produced a fairly reliable return relative to a high school diploma; thus, many economists viewed inequality as a problem that could be addressed primarily by improving access to higher education. Unfortunately, as Folbre explains, this optimistic view ignores the interaction of both supply and demand factors in market determination of wages; the very nature of markets puts much of wage determination beyond individuals’ control. Economists have struggled to use standard models of discrimination to explain differences in wages by race and gender, and these differences have been made more striking by growing wage inequality among white men. Folbre’s analysis of discrimination relates to her human capital theme because of the link between differences in human capital investment and wage inequality. Interestingly, over the years, the very existence of standard “Mincer” earnings equations has implied that, to the extent that wage differences can partially be explained within a regression framework because of differences in human capital, then somehow these wage differences are acceptable. But in recent years, as the reliability of the linkage between educational

attainment and wages has weakened, concerns have grown both about the economists' human capital narrative and about the implications for educated workers struggling to adapt to a changing world.

The chapter provides a sweeping overview of the way that economists have talked about human capital throughout history and across types of human capital, leading to a discussion of the role of government in encouraging and financing such investments. This link to government is critical, given the final portion of Folbre's chapter: it focuses on what could be considered the alarming consequences of recent technological advancements, particularly with regard to information technology, which has weakened the link between a college diploma and high lifetime earnings. Not only is this link weakened, but, now more than ever, for those with college degrees, variation in the *type* of skills developed during school leads to substantial variation in earnings. This development ought to imply a revision in public attitudes toward higher education and a resultant overhaul of government policies. According to Folbre, the demise of the societal promise of reliable returns to a college degree may lead these workers to "identify themselves as members of a working class that is collectively disadvantaged by technological change and globalization," potentially leading to a new, strong political voting bloc.

Avner Greif, cowinner of the MacArthur Foundation Fellowship with Folbre in 1998, is professor of economics and Bowman Family Endowed Professor in Humanities and Sciences at Stanford University. His areas of research include European economic history and the historical development of economic institutions, including their interrelations with political, social, and cultural factors and their impact on economic growth. In Chapter 4, "Society and State in Determining Economic Outcomes," Greif analyzes the relationship between social structures and government institutions, on the one hand, and economic outcomes on the other. He explains that, in general, sociologists tend to emphasize the role of culture and social structures in determining economic outcomes, while economists tend to emphasize governments and markets; the latter emphasis results in behavior based on formal-rule-driven behavior, while the former implies culturally driven behavior. His chapter is a rather technical historical narrative of this discussion, with well-placed examples to which the reader can relate. For example, Greif talks about drivers of automobiles: how their rule-following

behavior evolves from social expectations, possibly influenced by the threat of the force of law. He concludes with a thoughtful description of the manner in which the two approaches are interrelated.

Greif talks extensively about rule formulation and the circumstances under which social rules can be formally institutionalized into rules enforced by the state. He returns to the example of automobile drivers to characterize the manner in which socially appropriate behavior is best achieved when the goals of social behavior can be individually internalized. For example, individual automobile drivers follow rules of the road, in part, because they know that it is important to them that others follow those rules as well. He extends this discussion to include morality as a force behind individual behavior that may be socially appropriate. In this way, his chapter is perhaps the most interdisciplinary of the ones included in this edited volume, with its intertwining of economics, sociology, psychology, and even theology.

Greif's chapter contains a detailed description of the nature of institutions as reflecting a collection of rules and contracts, as well as a description of the nature of institutions as dynamic, in the sense that they evolve over time. Finally, the chapter concludes almost where it began, with explicit comparisons between formal rule-driven behavior versus culturally driven behavior, from static as well as dynamic vantage points. Greif displays his vast appreciation for history with his varied examples, including late medieval Genoa, which produced a largely individualist society; a comparison of the way that different cultural beliefs in America and Germany led to the development of very different institutional structures in the nineteenth century; and a comparison of the timing of the elimination of institutionalized slavery in Christian versus Muslim societies. Greif refers to his theory of institutions and their evolution over time as a theory of action, explaining that the theory does not presuppose that behavior is rule-driven (i.e., driven by the state) or behavior-driven (i.e., driven by society). "From this perspective, asking whether society or the state is more important in determining economic outcomes understates the complexity of studying the sources of economic behavior," he writes. "Society and state intertwine in generating behavior. . . . It is sufficient to note that a functioning state is an outcome, and its ability to formulate rules depends on the cultural beliefs of various groups regarding not only their interests but also the goals and expected behavior of other groups."

David M. Kreps is the Adams Distinguished Professor of Management in the Graduate School of Business at Stanford University; he also holds a courtesy appointment as professor of economics, also at Stanford. In 1989, he was awarded the prestigious John Bates Clark Medal by the American Economic Association. This medal is awarded to “the American economist under the age of 40 judged to have made the most significant contribution to economic thought and knowledge.” His research applies theories of dynamic choice behavior to economics with a wide variety of applications, including human resource management and noncooperative game theory. Kreps’s submission, Chapter 5, is titled “Motivating Consummate Effort.” As suggested by an earlier working title (“The Economics and Psychology of Worker Motivation”), this research lies at the nexus of two areas in labor economics: industrial relations and industrial organizational psychology. Kreps’s contribution to this volume lies primarily in his expansion of the previous authors’ focus on economics as the primary analytical tool into a more fully interdisciplinary approach. Additionally, his chapter serves to demonstrate to the reader the reach of economics: his theoretical sophistication is clearly well informed by his professional proximity to the real business world.

Kreps begins by defining terms: “consummate effort” is “effort undertaken by a worker within an organization that goes well beyond any nominal job description, in a manner that is desired by the organization.” Kreps is referring to jobs that he labels “Type-K” jobs, in which K stands for Knowledge: high-skilled jobs that require a great deal of worker independence, creativity, and multitasking, and that feature vaguely defined tasks and a great deal of cooperation with coworkers. According to Kreps, traditional theory of worker motivation rooted in economics is not particularly useful for Type-K jobs because it relies on “reward for performance,” but in Type-K jobs, worker performance quality can be difficult to assess.

As a starting point, Kreps uses results from a survey that he administered to participants in the 2013 Stanford Executive Program (SEP), an annual six-week general management program serving top-level executives from around the world. In this particular summer, there were 158 program participants, of which 124 responded to the survey. Of the respondents, most were male, having an average age of 45, and about half were chief executive officers (CEOs), chief operating offi-

cers (COOs), or other very senior executives. The survey asks what motivates the respondent to exert consummate effort and offers a variety of possible responses (tangible rewards such as higher pay, better promotion opportunities, higher status; nontangible rewards such as work that is interesting and exciting, organizational success, and social importance). Then the respondent also reports what he believes motivates those who report directly to him (so-called direct reports). Kreps notes that current economic theory is most appropriate when tangible rewards motivate effort. His results show, however, that much motivation is driven by *nontangible* rewards. Kreps analyzes other survey questions as well and mines the data for differences by age, gender, and country of origin, noting that “Europeans perceive themselves as less self-motivated by tangible rewards and more by organizational success than do U.S. citizens and Canadians, with East Asians in the middle.” Overall, the survey shows that worker motivation is far more nuanced than current economic theory can accommodate, but it fits well within the social psychology construct.

Kreps moves on to present a broad overview of the social psychologist’s accounts of worker motivation, revealing that it includes the above-noted nuance, permitting more of a place for how workers perceive themselves and their roles within their organizations. He describes two different case studies: first, he describes nursing at Beth Israel Hospital and how it evolved from “primary nursing” in the 1970s to its current “floor nursing” model. In the 1970s, Beth Israel became the leading hospital in the Boston area by following the primary nursing model, in which each patient is assigned a primary nurse who is responsible for coordinating all care for that patient. However, in the ensuing years, as cost pressures mounted—partially because of changes in the nature of insurance reimbursement—care decisions became less driven by “what is best for the patient” and more driven by “what is cost-effective.” Care decisions now became jointly determined by the nurses on the hospital floor. The result, unfortunately, was a decline in nurses’ work satisfaction along with a decline in Beth Israel’s standing in the hospital community. The reaction on the part of the nurses can be described in theoretical terms as an evolution from intrinsic motivation to extrinsic motivation.

The same motivational issue is described in Kreps’s second case study, which looks at Company Z, a tech start-up in which the founding

tech workers were motivated intrinsically. As the company grew, salespeople were hired, and these new employees were motivated extrinsically by being offered performance incentives with tangible rewards (i.e., higher pay and bonuses). As might have been predicted, having tech workers who were expected to continue to be motivated intrinsically while they now were working alongside those being motivated monetarily resulted in tech-worker performance problems.

Kreps concludes his manuscript with a long, imagined conversation between a psychologist and an economist in which the two discuss the issues and evidence presented thus far. The section concludes with Kreps's admission that his sympathies lie with the psychologist, largely because of the difficulty that current economic modeling has in incorporating changing worker preferences. But Kreps remains convinced that economists are up to the task of developing better models, and in his conclusion he asserts that economists should embrace the psychologist's ideas.

The final chapter, Chapter 6, "Efficient and Effective Economic Regulation in a Confusing Technological Environment," comes from Michael J. Piore, the David W. Skinner Professor of Political Economy, Emeritus, at the Massachusetts Institute of Technology (MIT). Piore was awarded the MacArthur Foundation Fellowship in 1984. He is director of the MIT-Mexico Program and faculty cochair of the Industrial Performance Center at MIT. His chapter presents a thorough historical analysis of the role of government and regulation in a market-based economic system, providing illumination through several very different real-life examples involving the administration of labor market standards and the organization of product design and product development. As explained by Piore, the modern literature on this subject begins with the onset of much new government intervention in the private sector, which proliferated as a response to the Great Depression of the 1930s. Attitudes toward government regulation have ebbed and flowed since that time, with a strong push toward deregulation taking hold under then-President Reagan in the 1980s. According to Piore, however, while attitudes may shift, the arguments for and against government regulation remain consistent, with those who favor deregulation emphasizing the benefits of freely adjusting prices in response to scarcity. Piore focuses this chapter on work regulation, which is opposed by antiregulation adherents because of concerns that government labor-market interfer-

ence, with resulting wage rigidities, can produce inefficient allocation of labor across sectors. These concerns have become more focused in recent years in light of technological advancements that some believe have made existing regulation inappropriate.

Piore's contribution to this discussion is driven by his international expertise; thus, while there may be some truth to the more dire predictions arising from technological change within the administrative system of work regulations as they exist in the United States, Piore explains that systems of workplace regulations vary significantly worldwide; generally speaking, workplace regulation in the United States is inflexible because it is more specialized and focused on sanctions, while the administrative structure more common in France and much of southern Europe, as well as in South America, is much more flexible, thus more able to adapt to changing technological environments. Piore refers to this alternative administrative structure as the Franco-Latin system of work regulation, which he defines as being built on a conciliation/remediation model. In other words, compliance is monitored by administrators who have a more personal relationship with the proprietor and a more specific understanding of the particular production process, and these inspectors have more individual control over how to address violations. "The emphasis on compliance should lead the inspector to look for the underlying causes of the violations and seek remedies in managerial practice or technology that actually address the problem at its root," Piore writes. "In this way, the system encourages inspectors to look for support from other government programs that address these problems, such as manufacturing extension programs or employment and training. The U.S. system, by contrast, leads the inspectors to focus narrowly on what are, in effect, symptoms of the way the company does business. It is like the difference between a doctor focusing on the symptoms and one focusing on the disease."

Piore broadens his discussion of the manner in which the street-level inspectors are trained and managed in the Franco-Latin system of work regulation to a more general concern: how does regulation evolve in the first place? He outlines various models, with a focus on one in which each of the different actors in the puzzle communicates well with the others, thereby permitting regulation to evolve in an effective and efficient way. This discussion is informed by the author's studies on new product development—specifically, studies of the way in which

new products can pave the way for the development of more efficient, flexible government regulation. The primary example is the development of the cellular telephone. The development of this product draws from both radio and telephone technologies; thus, the ability of experts in both fields to communicate well with each other was paramount to the success of this important product development effort. According to Piore, “the cellular phone as it exists today emerged out of what I term in my organizational research an ongoing conversation, a conversation not only among the disparate engineers and managers who ultimately had to collaborate to produce the new product, but also between the producers and consumers who would ultimately purchase and use it.” At its core, successful product development requires enormous flexibility and communication, and these things also lie at the root of the success of the Franco-Latin system of work regulation discussed earlier.

Following the other chapters in this volume, particularly that of Kreps, Piore’s discussion of both regulation and product development extends explicitly beyond the traditional economics narrative to incorporate contributions from sociology and psychology. As Piore explains, this is by necessity—if economists are to improve upon their ability to contribute to the ongoing public policy debate on critical issues relating, for example, to workplace safety, then economists need a broader-based analysis.

The five chapters that follow this introduction, although focusing on very different subjects, share more than the general theme of the role of economics in public policy. Each chapter reflects, to varying degrees, the evolution of traditional economic approaches toward more interdisciplinary ones that blend economic theory with that of psychology and sociology. Whether this interdisciplinary result is discussed explicitly by the author (e.g., Kreps) or simply implied (e.g., Field, Holland, and Pande), each chapter displays the broader movement of applied economics toward this more inclusive and thus real-world approach.

2

Microfinance

Points of Promise

Erica Field
Duke University

Abraham Holland
Harvard University

Rohini Pande
Harvard University

Give a man a fish, he'll eat for a day. Give a woman microcredit, she, her husband, her children, and her extended family will eat for a lifetime.

—Bono, *New York Times* (2005)

Microcredit is not the “silver bullet” to end poverty.

—Jomo Sundaram, U.N. assistant secretary-general for economic development (2010)

WHAT IS A MIRACLE?

A majority of the world's impoverished people lack adequate access to financial services. Typically, formal banks do not target the poor because lending without collateral is considered too risky. Poor households seeking credit are consequently forced into informal markets where the prices are high, the quantities limited, and the methods of ensuring repayment can be brutal.

Since the poor arguably need liquidity more than anyone else, their impaired credit access is especially concerning. They face high levels of

risk and have almost no savings buffer, which means that small income shocks can generate huge consequences for their well-being. Furthermore, the majority are engaged in some form of self-employment, and entrepreneurship often requires significant capital up front. The limited availability of formal savings instruments makes accumulating savings more difficult for the poor to do than for their richer counterparts. For all of these reasons, the rapid emergence of microfinance institutions (MFIs) providing banking services to poor individuals in low-income countries was believed to be a potentially powerful tool for poverty alleviation.

Has microfinance delivered on this promise? Perhaps the most challenging aspect of navigating the discourse surrounding microfinance has been the roller coaster of exuberance and disillusionment (see the epigraphs above). Today, the general belief is that “microfinance is not a miracle.” While we, as researchers who have been long involved in the study of microfinance, certainly support a more pragmatic perspective, the excessive optimism we have seen does raise another question: What is humanity’s best example of a “miracle” intervention?

While there may be others, the discovery of penicillin and the subsequent development of antibiotics is a likely contender. One estimate places antibiotics’ impact on average life expectancy at between 2 and 10 years (McDermott 1982). Yet achieving this level of impact took decades. In the case of penicillin, Sir Alexander Fleming made his initial discovery in 1928, but it was not until 1945—almost 20 years later—that mass production and distribution began (Aminov 2010). This intervening period was filled with years of iterations, attempts, failures, intermediate successes, and a little serendipity: the penicillin strain ultimately found to have the best properties for commercial production came from a moldy cantaloupe in an Illinois fruit market (Aldridge, Parascandola, and Sturchio 1999). Despite these efforts, the specter of drug-resistant bacteria was not far behind. Roughly three decades after penicillin’s discovery in a petri dish containing strains of *Staphylococcus aureus*, an estimated 25 percent of community-based strains of the bacterium were resistant to penicillin (Chambers 2001). Our advantage in this continually evolving challenge has only been maintained through corresponding improvements in antibiotics or other supporting technologies.

Our experience with penicillin and antibiotics provides three critical lessons about “magic bullets.” First, the development of such products is far from miraculous, but rather reflects years of research and development. Second, the application of a miracle cure may be remarkably constrained—antibiotic “miracle drugs” are only effective when their use is well-defined, targeted, and consistently applied. Third, maintaining the miracle is a dynamic process—continuous innovation is required to prolong the effectiveness of these “magic bullets.”

Given this framework, some of the successes of microcredit are truly impressive. Microcredit began in the 1970s as a community-based antipoverty campaign predominantly targeting women. This campaign stood in opposition to the belief that the world’s poor were incapable of supporting credit (Cull, Demirgüç-Kunt, and Morduch 2009). The Global Microcredit Summit 2011 Report estimated that by that year, microcredit had reached 195 million people across the globe, many of whom previously had lacked any kind of formal financial access (Reed 2013). Over the past two decades, microcredit has become a key mechanism for providing credit to poor microentrepreneurs. Its impressive scale is rivaled perhaps only by its surprisingly low default rates. Producing global default assessments gives rise to a number of problems stemming from varying definitions and differences in reporting. However, it is common to see MFIs report default rates of around 2 percent. From this perspective, the rapidity, scale, and scope of microcredit is real, and its success is remarkable.

Yet the reality of microcredit still has failed to match the lofty expectations for it. Critics have denounced the sector for failing to reach the poorest and most remote among potential clients. A typical MFI client is “working poor” rather than destitute. There has also been substantial controversy over alleged excessive pressure on clients to repay, and the industry is often criticized for exploiting the poor by encouraging them to take on high-interest-rate debt.¹ Perhaps most damning, there is limited evidence that access to microcredit, in its current form, is associated with reductions in poverty through microentrepreneurship (Banerjee 2013).

However, if we return to the problem-framing afforded by the antibiotics experience, then a different narrative emerges: namely, that the limited impacts on poverty that current microfinance products are having does not make them purely failures, but rather critical lessons capa-

ble of helping us redesign microcredit to better serve the poor. Given this perspective, one such lesson is that financial services for the poor can succeed when products provide the means for insuring clients while those clients undertake high-return but risky activities. Arguably, elements of microfinance that help provide greater insurance while relaxing credit constraints may be the most important for creating a significant impact.

In this chapter, we develop this view further, with lessons gleaned from our portfolio of research on the microfinance sector in India. We begin by providing background on the emergence and current design of microfinance and by explaining its theoretical underpinnings. We go on to highlight several points of promise: areas where our own empirical research suggests ways in which the delivery of microfinance might be changed to increase its impact on poverty and microenterprise growth. In particular, results from a series of field experiments that we conducted with MFIs in India demonstrate that it is possible to make microfinance work better for the poor with a few small changes to the existing model. Based on these studies, we explore different ways in which the microcredit experience can be tailored to improve targeting of key development outcomes.

THE IDEA OF MICROFINANCE

Microfinance began as an attempt to address a perceived poverty trap: poor households, because of a lack of collateral, were unable to access formal loans, but without credit they could not accumulate assets to be used as collateral. Microfinance sought to end this cycle by providing small loans—microcredit—without the typical asset requirements by harnessing social rather than physical collateral. In particular, by requiring new clients to have social ties to existing clients, MFIs could better select “good” clients (because those clients more likely to be invited by existing group members are more likely to repay) and also incentivize repayment because of the threat of losing or damaging one’s social ties to group members in cases of default. In this sense, in a microcredit contract, social links are able to serve much the same purpose as physical collateral does in a standard loan contract.

The initial success of Bangladesh's Grameen Bank with social collateral-based loans inspired the first wave of MFIs, largely consisting of nonprofit organizations providing loans to self-selected "joint liability groups" (JLGs). Each JLG member, typically female, received a loan "secured" by the social ties and shared responsibility of the entire group. If one group member defaulted, then the entire group was penalized. These loans were of reasonably short duration (3 to 10 months) and had relatively high interest rates (30–40 percent). Loan repayment usually took place at regular weekly meetings between JLG members and a loan officer; the meetings began a week or two after loan disbursement.

This "Grameen Bank approach" appeared to offer an attractive model. Taking advantage of the local knowledge of fellow JLG members enabled institutions to screen out the worst credit risks prior to group formation. If an individual member was delinquent with repayments, then group members could apply social pressure to end delinquency or, in the case of those truly unable to pay, serve as informed guarantors and repay the delinquent funds themselves. From an MFI operations perspective, the JLG structure also reduced monitoring costs.²

Today, microfinance has expanded to encompass a range of financial products and services.³ Under this umbrella are nearly countless variations of savings, insurance, credit, and other financial offerings aimed at improving the well-being of urban and rural clients. Even early innovators like the Grameen Bank continue to develop and expand their offerings. The "Grameen Bank II" experience blends the structure and discipline of the original model with more breadth and greater flexibility.⁴ The notion that microcredit is simply "loans for the poor" misses how significantly these products have evolved since their initial introduction.

Another iconic Indian microfinance pioneer, the Self-Employed Women's Association Bank (SEWA Bank), adopts a similarly broad perspective. Targeting poor women working in the informal sector, SEWA Bank seeks to address a client's entire life cycle of potential financial needs. Every client has a savings account and access to a variety of structured investment, pension, insurance, and credit products (although strong emphasis is placed on the importance of saving).⁵

These early innovators are not the only organizations updating their offerings.

As observed by Karlan and Zinman (2009, p. 3), the microcredit industry has developed a “second generation,” distinguished by “for-profit lenders, extending individual liability credit, in increasingly urban and competitive settings.” Arguably, this distinction is not simply cosmetic, but rather reflects the fact that evidence on whether the joint liability structure is, itself, important remains mixed (Banerjee 2013). Cull, Demirgüç-Kunt, and Morduch (2007) analyze data from the Microfinance Information Exchange on 346 institutions employing an assortment of individual and group liability models. They report that organizations offering individual versus group liability loans “have the highest average profit levels but they perform least well on measures of outreach” (p. F109). Meanwhile, a randomized controlled trial (RCT) in the Philippines in which the joint liability structure was removed randomly from a set of loan groups (but the group structure remained otherwise intact) revealed no increase in delinquency or default, according to Karlan and Zinman.

Although much of microfinance’s success has been in demonstrating the possibility of providing loans to the poor without incurring inordinate financial risk, evaluating the ability of such loans to improve the socioeconomic well-being of poor households is a critical part of the product development process. Prior to making such an evaluation, it is important to review the evidence on two issues. First, do poor households have access to profitable investment opportunities? If yes, this raises a second issue: are poor households constrained in their ability to accumulate funds? If so, this may be because they are destitute and have no spare cash to save or no place to put it aside secure from other household or community members—or from their own temptation.

Experimental studies such as de Mel, McKenzie, and Woodruff (2008) use randomized cash grants to small Sri Lankan enterprises and report real returns to capital of between 55 and 65 percent a year. While research in this area is certainly ongoing (Berge, Bjorvatn, and Tungodden 2011; Karlan et al. 2014; McKenzie and Woodruff 2008), there is enough evidence to suggest that our foundational assumption of access to profitable opportunities is not unreasonable for the average microentrepreneur and may be particularly true for men (de Mel, McKenzie, and Woodruff 2009).

In terms of whether microcredit client households are destitute, the Global Microcredit Summit 2011 Report indicates that only 63 per-

cent of microfinance households can be characterized as coming from “extreme poverty,” defined as living on less than \$1.25 a day (Reed 2013). Furthermore, even those in extreme poverty are likely to have the capacity to save. Banerjee and Duflo (2007) utilize detailed household surveys across 13 countries to gain an in-depth perspective on the financial lives of the poor (those living on less than \$2.16 a day) and the extremely poor (those living on less than \$1.08 a day). Contrary to what one might expect, even the extremely poor are clearly not spending all of their money on basic needs, as their spending on food ranges between 56 and 78 percent of household income. While it is certainly reasonable that other, nonfood expenses could be very important, spending on alcohol, tobacco, and festivals typically makes up a meaningful part of the remaining budget as well.

Studies on returns to savings products by Dupas and Robinson (2013) simultaneously support the view that poor households have the capacity to save and highlight the constraints they face that make it difficult to save. More recent evidence shows that, like the rich, the poor often exhibit time-inconsistent preferences. In addition, a high incidence of health shocks in this population greatly increases the need for easily accessible savings.

Microcredit’s success at reducing poverty also depends on the degree to which microloans are used to finance investment. Looking across studies in three countries, Morduch (2013) observes that microloan usage is almost evenly split between business investment and other objectives. While these latter purchases could be welfare-improving (examples include financing household expenses and paying down debt), they are not likely to effect a quick and permanent exodus from poverty.

Given the evidence on savings and credit opportunities in particular, microloans should have the capacity to help many clients speed up the rate of asset acquisition, thus initiating the climb out of poverty. Nevertheless, a review of seven recent experimental studies reveals no evidence of microcredit leading to sustained increases in income or consumption.⁶ When microbusinesses are affected by microcredit access, it generally appears to be on the intensive rather than extensive margin; i.e., improvements are seen with existing businesses, not from new business creation. Only two studies, Augsburg et al. (2012)

and Banerjee et al. (2013), demonstrate statistically significant positive effects on business creation.

Within existing businesses, it does appear that microcredit facilitates business investment, and in some cases this translates into increases in revenue. Unfortunately, all studies with the exception of Crépon et al. (2011) and Banerjee et al. (2013) fail to identify positive effects on profits at standard significance levels, and in both exceptions the impacts are concentrated in subpopulations.⁷

Another outcome often emphasized by the microcredit narrative is female empowerment. However, most studies report no effect on traditional empowerment measures. One exception is Angelucci, Karlan, and Zinman (2013), who find statistically significant but relatively small increases in the likelihood that the female household member will participate in household decision making. However, we should note an important caveat: unlike business profits, which have a clear monetary definition, definitions of female empowerment may be context-specific, and reporting may be subject to social desirability concerns. To date, most papers rely on clients' self-reported survey responses.⁸

ENHANCING THE IMPACT OF MICROCREDIT

Despite indications that microcredit has relatively weak impacts on traditional socioeconomic measures, there are many reasons to hold out hope that microcredit products can be modified to enhance their effects on business investment and poverty. In particular, evidence from several studies that we conducted in India suggests multiple ways to improve microfinance through design. The research also points to alternative measures (aside from profit) to judge microfinance's success or failure. So how can we make microfinance more relevant to the poor?

The following subsections highlight five points of promise, areas where the research suggests ways to enhance or better understand the impact of microfinance on a variety of important development outcomes. These include building more flexibility into the microfinance contract, directly encouraging greater business investment, using microfinance to build social capital, anticipating and measuring a broader range of development outcomes, and focusing more on the rural population.

Build Flexibility into the Microfinance Contract

There is increasing evidence that typical microcredit contract designs restrict the ways in which the poor use loan funds. Interestingly, many of today's microcredit arrangements bear little resemblance to loans offered by organizations such as the U.S. Small Business Administration (SBA), which are also designed, ostensibly, to support the kind of entrepreneurial risk-taking necessary for success. As pointed out by Glennon and Nigro (2005), these loans typically have fixed monthly (or less frequent) repayment schedules and a grace period between the initial loan disbursement and the beginning of repayment. The default rate on SBA loans is also rather high—between 13 and 15 percent. On this point, the gap between microcredit loans and SBA loans is stark; in one study by Field, Pande, et al. (2013), the default rates for individual-liability microloans in India were around 2 percent.

From a theoretical perspective, introducing grace periods or decreasing repayment frequency may increase a microentrepreneur's ability to self-insure. In more concrete terms, this would mean that a particularly bad performance one week could be offset by improvements the next. Alternatively, if a microentrepreneur knows she won't be able to make a payment on time by herself, she has more time to mobilize additional support to avoid default, or is less likely to need to liquidate business assets in order to make bank payments on time.

In a recent study, we use a field experiment to investigate directly the effect on business outcomes and household income of introducing a two-month grace period into the structure of an individual-liability microcredit agreement (Field, Jayachandran, et al. 2013). Introducing such a grace period has an immediate and positive effect: the rate of new business formation doubles, and a greater portion of the loan is invested into the business. What is more surprising is that the effect on poverty is even more impressive: three years on, household income is 17 percent higher and business profits nearly double. Interestingly, the default rate on these loans increases from 2 percent to roughly 10 percent, still below the 13–15 percent experienced by companies receiving SBA loans, but a healthy indicator that microentrepreneurs indeed are taking greater risks when microcredit agreements allow them to do so.

A companion study explored the impact of switching from weekly to monthly repayment frequency (Field et al. 2012). The change more

than doubled business income, increased household income by 84–88 percent, and caused no increase in the default rate during the study period. In what could be a proverbial “win-win” situation, the same study found that clients were 51 percent less likely to report feeling “worried, tense, or anxious” and 54 percent more likely to report feeling confident about repaying.

These results suggest that there is significant leeway in how to enhance microcredit’s effectiveness by making simple changes to contract design. In particular, products providing more flexible capital, loosening the credit constraint, and increasing the borrower’s ability to self-insure appear to effectively boost the entrepreneurial capacity of poor clients. However, these results do come with an important caveat: the higher default rates associated with more flexible contracts present a significant obstacle to for-profit MFIs, particularly in settings in which loan terms and interest rates are heavily regulated.

Organizations like SBA enjoy substantial subsidies, but the political appetite for subsidizing private-sector MFIs may be limited. One approach could be to improve MFIs’ ability to assess the risk of individual applicants. Credit bureaus are one such mechanism for doing so, as they provide lending organizations with a way to independently verify a potential borrower’s financial capacity. In this way, credit bureaus alleviate some of the customer screening burden and enable MFIs to offer products tailored to the needs and capabilities of individual clients.

A key complementary lesson is the importance of not overregulating interest rates. That is, greater flexibility will generally only be possible if banks are allowed to charge higher interest rates to compensate for associated changes in lending risk. Constraining rates at artificially low levels may prevent MFIs from offering a menu of products catering to specific client needs, and thereby prevent MFI clients from “buying” more flexible loan contracts. Those seeking to protect the interests of the poor through microfinance regulation must be particularly careful on this front. Empirical research suggests that more limitations on lenders are likely to restrict their ability to get the lending model right.

Encourage Investment Directly

As stipulated by the Grameen Bank lending model, MFIs maintain high levels of interaction with their clients for purposes of loan

monitoring. This suggests that MFIs are also well placed to disseminate information and training efficiently, potentially enhancing clients' use of microcredit. In particular, MFIs that follow the Grameen Bank model and interact regularly with clients have the potential to increase the likelihood that a particular client will take up a loan and increase the use to which loan funds are applied. One simple model for conceptualizing the role of financial literacy or business training in generating profits is that of perfect complements (Berge, Bjorvatn, and Tungodden 2011). In this framework, training can help increase profits only to the degree that the skills of the entrepreneur are the binding constraint. Once other factors, such as social norms or access to further credit, become the limiting factor, training must be suitably modified for it to have an impact.

Consistent with this framework, training programs that focus on conveying relatively basic, relevant, and concise content have seen significant results. Drexler, Fischer, and Schoar (2014) conducted an RCT that found that teaching clients "rules of thumb" outperformed a more traditional financial literacy training program, showing substantial effects on sales (improvements of 30 percent or more) during bad weeks. Another experimental evaluation of training in simple practices, Berge, Bjorvatn, and Tungodden (2011), found significant impacts of business training on profits, between 25 and 30 percent, but these impacts were limited to male microentrepreneurs. No impacts were observed among women.

Still, many other studies find no significant effects on what arguably is the most important business outcome, profits. Using an experimental design in Ghana, Karlan, Knight, and Udry (2012) engage microentrepreneurs with combinations of cash grants and business consulting services. Despite the rather intensive nature of this tailored management guidance, they find no evidence that the effort increases profits. The authors also conduct a short review of 10 other papers examining the effects of business training. Variations in business circumstance and training methods aside, only 3 of the 10 show statistically significant positive effects on profits.

In the context of findings like these, one possibility for improvement is to help ensure more supportive environments for entrepreneurship outside the classroom, particularly for women, since many cultures consider work, especially risky entrepreneurial ventures, inappropriate for women. To shed light on some of these factors, Field, Jayachandran,

et al. (2013) undertook an experimental analysis of a two-day business counseling program for female business owners. Half of the clients targeted by the training were invited to bring a friend. The counseling program also focused on assisting attendees in identifying and developing a plan to achieve a medium-term financial goal (one feasibly attainable in under six months).

Despite explicitly discouraging the women from acquiring debt, the training experience doubled the likelihood that a woman would take out a loan, and loan size reflected the woman's stated goals. Women who attended with a friend were more than twice as likely to take out a business loan as they were to take out a loan to fund nonbusiness goals such as home improvement or education. Upon follow-up, women who attended the training with a friend reported 11 percent higher household incomes and 15 percent higher expenditures, while those who attended by themselves were still indistinguishable from the control group. Interestingly, increased business investment did not translate into higher defaults; both treatment groups had similarly low default levels. Finally, among women trained with friends, the economic effects were particularly pronounced for women who faced more social restrictions, such as more conservative caste or religious constraints (also see Field, Jayachandran, and Pande 2010).

Use Microfinance to Build Social Capital

Social capital has traditionally underpinned the design of microfinance products.⁹ In the face of inevitable setbacks and adverse events, informal insurance networks supported by social capital may be a critical source of support for microentrepreneurs. Indeed, such social capital formation may be a key reason the group-lending model can reduce default risk. Recent research has continued to explore this area and has highlighted how the group meetings themselves, rather than simply group liability, may build social capital directly.

One study, Feigenberg, Field, and Pande (2013), uses a randomized experiment in the city of Kolkata (formerly Calcutta), India, to examine the influence of microfinance meetings on social capital and the resulting ability of social networks to provide informal insurance. Clients in this experiment were offered individual-liability loans but were required to meet to repay the loans in groups, either on a weekly

or a monthly basis. Increased interaction associated with weekly meetings led to a lasting change in the degree of social connections between group members well beyond the loan cycle. In the short run, clients saw one another outside meetings significantly more often, and these effects persisted two years later. Even after a large fraction of the groups had stopped meeting for loan purposes, those who had met weekly as opposed to monthly during their first loan cycle were significantly more likely to remain in regular contact with fellow group members and state that they could rely on one another in cases of emergency.

Furthermore, clients assigned to the weekly meetings were three times less likely to default on their subsequent loan, irrespective of payment frequency. Employing a second arm of the same experiment, the study used an artificial game to isolate what appears to be driving this effect: improved risk pooling. Added to that, the more intense social interaction between microcredit group members appears not to “crowd out” a borrower’s nonmicrocredit social network, indicating that the microcredit experience may play an important role in improving the resilience of microentrepreneurs in the face of inevitable financial shocks and setbacks, even without the additional constraint of joint liability.

Beyond this, more recent research indicates that the frequency with which meetings are held matters not only for first-time clients, as was demonstrated in Feigenberg, Field, and Pande (2013), but also for clients who have been together for at least two previous loan cycles. In particular, a similar RCT, in which third-time borrowers were randomized into weekly versus monthly meetings, shows that social capital is significantly higher among the weekly groups, despite the fact that group members already know one another at the outset of the loan cycle (Feigenberg et al. 2014). According to these results, regular microfinance meetings can continue to stimulate social contact among group members for several years.

A related result is found in Karlan and Zinman (2009); the authors employ an RCT design in Manila, the Philippines, that randomly assigns access to individual liability microcredit loans to the marginal applicant. On balance, they find that microcredit appears to increase the amount individuals are able to borrow from their social networks in an emergency.

While direct comparison of these findings is difficult given the difference in settings and loan products, the key message for microfinance policy is more general: to maximize the economic impact of providing microcredit, it makes sense to focus on a delivery model that encourages social interaction. Social capital appears to be stimulated in significant and economically meaningful ways by regular microfinance meetings. While the group-lending model may be favored for other reasons, it is reasonable to infer that at least some of its success is a result of the relationships between borrowers fostered by regular meetings.

Based on this evidence, it makes sense not only to continue with the group-lending model, particularly with respect to new borrowers, but also to target microfinance toward clients who are particularly socially isolated. These results also suggest that women in socially restrictive settings may be of particular importance in understanding the potential effects of microcredit/microfinance as a development intervention, a topic we will discuss below.

Anticipate (and Measure) the Effect of Microfinance on Other Development Goals

One reason to hold out hope that microfinance can deliver on its promise of reducing poverty is the relative youth of the sector and the supporting experimental research: many of the potential channels through which the poor could benefit are arguably indirect and long-term, and hence have not been rigorously assessed by existing impact evaluations.

Perhaps most notably, the gendered aspect of the traditional microfinance model—which caters exclusively to female clients—has led to claims that microloans have the potential to empower women by increasing their bargaining power within the household.¹⁰ Increasing female bargaining power, in turn, has the potential to reduce poverty through several channels, including increasing rates of human capital accumulation (e.g., Thomas [1990], [1994]) and reducing fertility. While theoretically possible, it is not obvious that increasing household debt levels in female members' names will lead to greater female financial control, as MFI loan funds are generally used for household businesses and consumption.

To evaluate this claim empirically, Field, Pande, and Martinez (2015) conducted a study of female clients in Ahmedabad, India, who had received access to credit through one of the first microfinance institutions in the world, SEWA Bank. The study follows a sample of clients with SEWA Bank savings accounts from 1999 to 2009. Over this decade, about half of these women took out loans from SEWA Bank. We make use of quasi-experimental variation in the placement of SEWA loan officers (female employees who collect payments door-to-door and receive commissions on loans) in order to account for systematic differences between those who do and those who do not seek credit. This enables us to identify the causal effect of access to microloans on household financial and demographic outcomes. The intuition behind this empirical approach is the following: Within a four-block radius, women that live on the same block as the loan officer have virtually identical finances, according to observable measures, as those who live slightly farther away. Yet those who live slightly farther away are much less likely to take out a loan over the decade. The distance of one's residence to that of the neighborhood loan officer arguably provides a valid source of exogenous variation in access to credit.

Similar to other impact evaluations of microfinance, this study also finds that access to microcredit is associated with no change in household income or business profits. However, there is a large and significant increase in the household's fraction of income earned by women and in female labor force participation. Most notably, access to credit is also associated with a significant reduction in fertility and a significant increase in the marriage age of daughters, which suggests that increasing women's earning potential increases their bargaining power within the household. In the long run, the social and economic benefits of reductions in unwanted births may contribute to significant improvements in the lives of the poor.

Focus on the Rural Population

One of the greatest shortcomings of existing evidence on microfinance impacts is that virtually all evaluations take place in urban settings. Meanwhile, given the substantial differences between urban and rural areas, it seems reasonable to expect that there will be different constraints limiting microentrepreneurs in these two environments.

One common assumption is that the rural poor face far greater credit constraints. While studies like Crépon et al. (2011) certainly find a near vacuum of credit access in rural Morocco, other studies discover levels of credit access analogous to urban areas. Attanasio et al. (2011) find that more than 60 percent of rural Mongolian residents have at least one outstanding loan prior to their introduction to microcredit. Similarly, Banerjee et al. (2013) determine that 68 percent of urban residents in Hyderabad, India, have some kind of formal or informal loan at baseline.¹¹ Given this picture, it is not immediately apparent that the defining characteristic of the urban-versus-rural divide is simply access to credit.

Karlan et al. (2014) consider an alternative perspective: that the constraining factor in rural environments may be uninsured risk rather than credit constraints. Using a field experiment, they randomly assigned cash grants and rainfall insurance offerings over multiple years and found significant positive effects of insurance on investment in agricultural inputs. While the authors' particular point estimates will vary with realized weather outcomes, the immediate results can tell us something about the relative cost-effectiveness of cash grants (i.e., free money) versus rainfall insurance. Their results note that "the cost of the rainfall insurance is an order of magnitude less than the cost of the capital grant, whereas the consequential behavior change is an order of magnitude more. Hence the cost-effectiveness is unambiguous and striking: if using subsidy money to generate higher farm investments, rainfall insurance grants are far more cost-effective than cash grants" (p. 628).

Another important aspect of their findings highlights a central role MFIs may play in enhancing the impact of rainfall insurance. As noted by Karlan et al. (2014), a significant hurdle for greater adoption of insurance is lack of trust between the farmer and the insurance underwriter. Compared to traditional financial organizations, MFIs have far greater access to and familiarity with impoverished rural communities. While strategies will certainly vary, the microcredit group experience may be a scalable mechanism for fostering greater trust through educating borrowers as well as sharing experiences among clients.

Calderón, Cunha, and De Giorgi (2013) reinforce the potential value of MFIs as a platform for disseminating knowledge and training in rural areas. The authors employ an RCT design in evaluating an intensive six-week, 48-hour business literacy training program for female business owners. The training program created statistically significant

increases in profits and revenues by roughly 23 and 28 percent, respectively.¹² Business practices also changed as microentrepreneurs adopted improved accounting techniques and became increasingly likely to formally register their businesses. At least some of these practices proved contagious, as untreated businesses in treatment areas also adopted better accounting techniques. These results have also been proven to be rather persistent: statistically significant effects are still detectable more than two years after treatment. While this research focuses on the impact of the training program, it is important to note that business owners also reported having access to additional capital. Thus, these results are potentially subject to the availability of credit.

In summary, protection against risk and improvements in human capital appear to yield significant returns in rural areas. Microcredit may also have an explicit complementary effect, as tested by Karlan et al. (2014) with the use of cash grants. Keeping this in mind, the role of rural MFIs becomes particularly important. With appropriate design, MFIs can offer precisely the sustainable and scalable platform necessary to take advantage of these significant and economically important effects.

CONCLUSION

We began this chapter by arguing that the lessons of a real example of a “magic bullet” can provide a useful framework for understanding the evolution and potential promise of microfinance. With this perspective, we have experienced the same roller coaster of invention, failure, and reinvention as Sir Richard Fleming, who labored for years before penicillin’s eventual success. Similarly, current microfinance research has identified several points of promise for real, positive impact: adjustments in microcredit agreement structure, improvements in business training, and changes in the social aspects of borrowing. Such promise confirms the importance of creating a microfinance experience that both encourages greater entrepreneurial risk-taking and improves microentrepreneurs’ ability to protect themselves against risk. As we have seen in results from rural areas, the role of MFIs as a sustainable and trusted platform for financial inclusion may be particularly important for miti-

gating risk. Some effects may also be indirect and longer-term, as could be the case for a variety of female empowerment outcomes.

The lessons learned from the penicillin “magic bullet” experience also carry a message for policymakers: effective regulation must be both smart and light-handed. Reactive policies may end up derailing the process of iteration and invention needed to deliver effective and efficient financial access to the poor. Yet research has also exposed ways in which policy could spur evolution in the sector. The formation of credit bureaus could increase the ability of microfinance institutions to assess client credit risk, and regulation could encourage MFIs to offer a broader range of financial products. These appear to be two ways in which informed policy could enhance the effectiveness of microfinance organizations.

Notes

1. Examples include media attention to farmer suicides in India, which were blamed on microfinance debt, and the larger 2010 default crisis in the state of Andhra Pradesh, which led to calls for dramatic reforms to the already heavily regulated sector (Biswas 2010; Menon 2010).
2. Tracking and collecting loans in a group rather than at the individual level effectively lowered the cost of administering small loans to poor households.
3. Much of the current research, as well as this review, focuses on a particular subtype of microfinance, microcredit.
4. In addition to multiple potential individual-liability loan types, a Grameen client now has access to life insurance, savings accounts, and pension accounts. Even within a loan cycle, liquidity-strapped clients can access an additional line of credit based on the amounts previously paid on their current loans.
5. SEWA Bank also has strong linkages with its other sister SEWA institutions, providing access to union support, training, and housing services. This comprehensive concern may be well justified. In one nonexperimental study of 900 women from the SEWA Bank service area in Ahmedabad, 71 percent reported at least one significant financial shock over the two-year study period (Chen and Snodgrass 2001).
6. Studies considered for this statement include Angelucci, Karlan, and Zinman (2013), Attanasio et al. (2011), Augsburg et al. (2012), Banerjee et al. (2013), Crépon et al. (2011), Giné and Mansuri (2011), and Karlan and Zinman (2009).
7. In the case of Crépon et al. (2011), profits increase only in the agricultural household subsample. This appears to be driven by increased investments in hired farmhands. Banerjee et al. (2013) have even more nuanced findings: benefits appear concentrated in the upper tail of microenterprises, with firms in the ninetieth percentile of profitability seeing a 20 percent increase in profits, but only after three years of exposure to microcredit.

8. In an example of just how difficult it can be to measure female empowerment, Beaman et al. (2009) exploited a government program that randomly reserved village council seats for female candidates in India. The authors employed a combination of explicit and implicit tests to determine preferences regarding female elected officials. Implicit tests, those unlikely to be subject to social desirability bias, indicated that both male and female villagers had strong preferences for leaders of their own gender. Simultaneously, when researchers solicited explicit perspectives, both men and women responded with preferences for male leaders. The contradictory results among female villagers encapsulate the challenge in assessing progress in empowering women: stated responses may not be an accurate measure.
9. For the purposes of this chapter, we apply Putnam's definition of social capital: "features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions" (Putnam 1993).
10. In economics, intrahousehold bargaining power is generally about the ability of individual household members to assert their preferences over themselves or the entire household. Changing bargaining power has the potential to increase household well-being if the shift causes changes in household investment behavior. Thomas (1990) has published a classic treatise in this area.
11. This number should be treated with some degree of suspicion because of baseline implementation challenges.
12. These estimates reflect the program's intention-to-treat effect, which is a conservative estimate of the program's effect. The treatment-on-the-treated effect, or the effect on those that actually received the training, was 1.5 times larger.

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3

The Once (But No Longer) Golden Age of Human Capital

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Human capital remains both a valuable concept and a valuable commodity. However, both its theoretical incarnation and its economic value are losing some of their shine. In this chapter, I will explain why, emphasizing recent reversals both in the way economists think about human capital and in the evidence that its accumulation will continue to deliver rich rewards. My account begins as an exercise in intellectual history, goes on to argue that the U.S. economy is shifting from a regime of excess demand for college-educated workers to a regime of excess supply, then speculates on how such trends might affect both patterns of and political responses to the resulting increased income inequality.

One could examine the history of human capital theory from many vantage points. I focus here on the way in which the theory complemented the view that markets operate in both efficient and equitable ways. This does not imply that the theory can be reduced to an ideology, nor that it was intended as an ideological construct, but simply that it conformed to a set of principles that have been described as “belief in a just world” (Lerner 1980). I use the past tense here for good reason: both the evolution of ideas about human capital theory and the market rewards for it have undermined its initial ideological impact. That is, many current interpretations of human capital theory—as well as current empirical trends—lead toward the conclusion that individuals are not necessarily fairly rewarded for their efforts.

One could examine returns to investments in human capital in a variety of ways. I focus here on rates of return to a college education, examining factors relevant to both the supply of and demand for college-educated workers on the national and the global level. Rather than mobilizing new data, I summarize existing research showing that

absolute rates of return to private investments in college degrees have declined, even though relative rates—expected earnings compared to those of workers without a college degree—have remained attractive. Neither private nor public investments in higher education have expanded as much in recent years as one might expect, given this persistent college premium. I offer an explanation based on shifts in both the demand for the skills that higher education develops and the global supply of college graduates. I also predict a significant constriction of opportunities for all but a relatively small subset of college-educated workers in the near future.

This constriction has probably already intensified inequality in the United States between those in the top decile of the earnings distribution and everyone else, though it seems unlikely that it has affected the relative earnings of the top 1 percent relative to others in the top tenth. A less explored but perhaps politically more important question is how it will affect earnings inequality between those with and those without college degrees, who are currently located at very different ends of the so-called “middle” class. If a declining rate of return on a college education diminishes the average economic distance between the median college graduate and the median high-school graduate, it could lead to the emergence of new political coalitions. Depending on how one defines the “working class,” that group may be increasing both in relative numbers and in relative credentials. Changes in returns to college could also complicate the impact of race and ethnicity, diminishing the advantage that young white non-Hispanics have accrued from their superior access to educational credentials. In general, diminishing rewards to higher education, combined with slow economic growth, may undermine the confidence in upward mobility through “self-investment” that characterized the golden age of human capital.

A BRIEF INTELLECTUAL HISTORY

In 1964, Gary Becker published a book with the simple title *Human Capital*. Neither the basic concept nor the phrase was novel (Folbre 2009). But the Beckerian version—complemented by the convergent insights of Jacob Mincer and Reuben Gronau—quickly gained adher-

ents for two reasons: it was 1) methodologically consistent with the mainstream emphasis on individual choice and 2) easily adaptable for detailed econometric analysis. Becker's book laid the foundation for the subsequent development of his *Treatise on the Family*, widely considered a masterpiece of modern microeconomics.

Placed in historical context, the rise of human capital theory represented an important new episode in an ongoing ideological drama. Classical political economy pointed to significant conflict between capital and labor. Both Ricardian and Marxian theories treated profits as a form of surplus essentially expropriated from workers. Even the neoclassical theories that emerged at the end of the nineteenth century treated profits above and beyond the cost of capital and entrepreneurship as a rent that would, under perfect competition, be competed away to zero. John Bates Clark and Philip Henry Wicksteed offered a more pointed justification for factor payments by developing a more specific theory of distribution, arguing that wages represented the marginal product of labor, just as profits represented the marginal product of capital. The normative implications were clear: each factor of production was remunerated according to its contribution.

Still, the theory of marginal productivity clearly shows that an individual worker's wages can be adversely affected by circumstances completely outside of her or his control. An increase in the supply of labor drives down the equilibrium wage. Firms will hire more workers, but the fact that the marginal worker is paid for her or his marginal product offers little consolation to the average worker who experiences a drop in living standards. The greater the prospect of labor market trends that may worsen the position of workers, the greater the incentive to collectively organize in ways that might prevent an overall increase in labor supply. One conspicuous manifestation of such collective efforts is strict limits on immigration (a subject to which this chapter will later return).

The theory of human capital offers a much stronger ethical justification for wages by emphasizing the link between the quality of labor supplied and the wage earned. Indeed, the notion that a worker's skills represent an animate form of capital elides the very distinction between capital and labor as factors of production. It also implies a far more egalitarian distribution of assets than one based on ownership of financial capital alone. As the journalist Noah Smith put it, "For most of

modern history, inequality has been a manageable problem. The reason is that no matter how unequal things get, most people are born with something valuable: the ability to work, to learn, and to earn money” (Smith 2013).

The first generation of human capital models designed for econometric analysis treated earnings as a function of education and experience, controlling for other factors. Under these models, everyone is a capitalist with the potential to make investments in her or his own productive skills that will pay off in increased future earnings. The theory effectively diverted attention from the earlier problem of class conflict by emphasizing differences among workers, rather than between workers and owners. In other words, it primarily offered an explanation of relative wages (why some earned more than others) rather than an explanation of the absolute level of wages. Changes in productivity drop out of the picture except insofar as technological change might affect the rate of return to specific skills.

This new emphasis was particularly well suited to an era in which higher education in the United States was rapidly expanding, along with opportunities for professional and managerial employment. In the 1960s, a college degree became a ticket to ride on a train that was rapidly gaining momentum. Nor were neoclassical economists the only ones turning their attention to differences among “workers.” Both journalists and sociologists influenced by Marxian political economy soon began to explore the meaning of a professional-managerial class occupying an intermediate position between labor and capital—similar, in that respect, to the older category of *petite bourgeoisie* or owners of small businesses (Ehrenreich and Ehrenreich 1979).

The human capital approach also provided a timely framework for understanding earnings inequalities based on race and gender, just as these inequalities were provoking new forms of political mobilization. The presumption that individual earnings are determined by education and experience invited consideration of “unexplained” variation as a measure of discrimination. In Becker’s authoritative formulation, such discrimination could be conceptualized as a taste or preference held by employers, fellow workers, or consumers that reduced the demand for workers with particular characteristics for reasons unrelated to their level of skill. Among employers, a taste for discrimination could prove costly, since firms that were more narrowly focused on profit maximiza-

tion and that were uninhibited by any concerns other than productivity should be able to deliver superior performance and outcompete discriminators in the long run.

Ironically, however, the vast empirical literature based on human capital assumptions that quickly proliferated seemed to document rather deep and persistent differences in earnings based on race and gender. In this sense, its internal logic led to an unintended—or at least unanticipated—direction, away from a tidy legitimization of wage inequality toward evidence of widespread irrationality (and, one might argue, dysfunctionality) in the form of discrimination that might (or might not) prove persistent. However, by emphasizing one particular form of potential injustice that linked the economic grievances of blacks and women, it deflected attention from wage inequality among white men, increasingly pictured as a relatively privileged—because “undiscriminated” against—component of the labor force.

In retrospect, the methodological naiveté of early efforts to measure discrimination is shocking. Researchers offered up simple regression models with earnings on the left-hand side and education and experience on the right-hand side, along with some standard demographic controls, referring to unexplained variance in wages as evidence of discrimination, as though no other significant variables could possibly have been omitted and no residual was to be expected. Such an estimate could be construed as a serious overestimate of discrimination. On the other hand, the standard approach also underestimated the effects of discrimination by ignoring problems of endogeneity: while earnings are clearly influenced by education and experience, expected earnings also influence decisions to invest in education and experience. Many women accumulated less experience on the job than men did, for the simple reason that they were paid significantly less; thus, they had less to gain from it. Had their wages been higher, they would have remained employed longer. It was rather disingenuous, then, to explain their lower earnings by their lack of experience. The same reasoning applies to education: discrimination has the indirect effect of lowering returns to education, and therefore reducing incentives to invest in education, as well as directly lowering earnings.

Still, the basic human capital-based earnings equation raised a kind of meritocratic standard, implying that earnings *should* be based on the individual worker’s own productive characteristics. In this sense, it was

politically consistent with efforts to outlaw explicit discrimination. It was also consistent with efforts to improve access to schooling, clearly revealed as a major determinant of earnings differences by race and ethnicity. Earnings differences by gender were more strongly explained by women's lower level of labor force experience, a finding that urged women to seek access to higher-paying occupations and improve their continuity on the job.

However simplistic the basic model, it directed economists' attention to an aspect of labor supply that had not, until then, received much attention: educational attainment. And while Becker's original theory concerned "self-investment" (i.e., the decision by young adults to forgo current earnings in order to continue their education beyond high school), Becker himself moved rather quickly to acknowledge that family decisions to invest in the schooling of young children represented an important antecedent. In this sense, his *Treatise on the Family* represented a logical extension of *Human Capital*, and in it he acknowledged a significant market failure: parents might lack access to sufficient capital to make the optimal investment in their children's education. In a "Supplement to Chapter 11" coauthored with Kevin Murphy on the relationship between the family and the state, he suggested that this market failure helped explain the emergence of public investment in education as part of an intergenerational contract in which the working-age population would repay their elders by helping finance public pensions (Becker 1993, pp. 362–379).

Looking back on this intellectual trajectory, it almost seems as though the internal logic of human capital theory directed it away from the utility-maximizing choices of autonomous adults (where it had initially pointed), in nearly the opposite direction: consideration of the consequences of public policies in determining children's income security and access to education. By the early twenty-first century, James Heckman, a colleague of Gary Becker at the University of Chicago, had begun to make the case that limited access to early childhood education means that many students from poor families are unlikely to achieve the academic success necessary to attend college, even if it is affordable for them. In his words,

Never has the accident of birth mattered more. If I am born to educated, supportive parents, my chances of doing well are totally different than if I were born to a single parent or abusive parents. I

am a University of Chicago libertarian, but this is a case of market failure: children don't get to 'buy' their parents, and so there has to be some kind of intervention to make up for these environmental differences. (Stille 2001, A:5)

This statement doesn't augur the end of the human capital paradigm, but it does signal a major inflection point, a new emphasis on social rather than personal choice. It also points to two theoretical issues that were largely undeveloped in the Chicago-school approach to human capital—1) externalities or positive spillovers from education and 2) distributional conflict over who would pay for them.

The notion that education generates positive externalities (even beyond solving the other market failures alluded to above) strengthens the supposition that the social benefits exceed the private ones, and that public investment yields a rich—if diffuse—payoff. Emphasis on such externalities was implicit in the early work of Theodore Schultz on the role of human capital in development. It received far more detailed theoretical elaboration in theories of endogenous growth developed by David Romer and in microeconomic models developed by Daron Acemoglu (1996), among others. It has been explored empirically by scholars including Acemoglu and Angrist (2000) and Moretti (2004).¹

The most important positive spillovers include increases in labor market productivity (suggested by the effect of the percentage of college graduates in an urban labor market on the earnings of individual graduates), reduced incidence of crime, and improved child health (Hout 2012).

Economic historians have also emphasized this positive macroeconomic perspective. Countries that developed successful public education systems in the nineteenth century, including the United States, enjoyed more sustained and rapid development than those that did not. Goldin and Katz (1999) refer to the years from 1900 to 2000 in the United States as the "human capital century" and note that the early expansion of secondary education was followed by a rapid expansion of postsecondary education after World War II, funded both by the expansion of the GI Bill, which provided subsidies for veterans, and by the development of a state-financed public higher education system.

Goldin and Katz (1999) rely largely on the "canonical" Beckerian model that emphasizes individual utility maximization, and they further assume that technological change has been and will continue to

be skill-intensive (Acemoglu and Autor 2012). They focus, as Becker himself did in *Treatise on the Family*, on the extent to which government intervention may be required to reduce the capital constraints that may prevent parents from making an optimal investment in their children's education. Indeed, they argue that a reduction in public efforts to improve educational opportunity helps account for a significant slowdown in the growth of U.S. high school and college graduate rates in the latter decades of the twentieth century. In other words, both individual and public choice play an important part in their story.

The public choice dimension emphasizes the social benefits or public gains from investments in human capital, and its political implications resemble those of Keynesian approaches that offered a macroeconomic rationale for redistributing resources from the affluent to the poor in order to increase aggregate demand. The "everybody benefits from investments in education" rubric suggests that the interests of both employers and society in general are closely aligned with the interests of forms of redistribution that might improve educational outcomes. From this perspective, distributional conflict is unlikely—or at least misplaced—because increased equity in access to education is so likely to yield increased economic efficiency. In ordinary language, taxpayers may see their slice of the economic pie reduced by their contributions to public provision, but in the long run the pie itself will grow so dramatically that these taxpayers will be more than compensated.

Less theoretical or empirical attention has been devoted to measurement of the actual or perceived costs to increased public investment in education, despite the obvious possibility that these costs are likely to be disproportionately borne by relatively affluent families or those whose children have already completed the most vital stages of their own human capital accumulation. A contemporary illustration is offered by the most famous campaign promise made by William de Blasio, the mayor of New York City elected in 2014: to impose additional taxes on families earning more than \$500,000 to finance universal early childhood education (Hernández 2013).

The historical literature is peppered with observations suggesting that fiscal distributional conflict comes into play. Those who have achieved relatively high levels of affluence in any form of capital are generally reluctant to help finance its acquisition by others. Those who lack adequate access to education for themselves or their children or

grandchildren are generally supportive of increased public investments. Cross-national studies show that, in the early twentieth century, the greater the percentage of men who voted—all else being equal—the higher the level of primary schooling (Lindert 2004, p. 106).

The extended, intense, and ongoing political controversies over efforts to equalize per-student spending in primary and secondary schools on the state level testify to a distinctly human capital-specific ingredient in the so-called tax revolt (Folbre 2001). In the United States, both primary and secondary schools funded by local taxes generally received more generous funding in communities where wealth was broadly distributed, with a more homogeneous population (Goldin and Katz 1999).

Largely as a result of financing based on local property taxes, the United States is one of the few countries that spends more on K–12 education for affluent than for poor children (Porter 2013). The historical trajectory of support for publicly funded state universities shows that it has been lowest in those states with privately endowed institutions already in place to provide a fine education to the affluent (Goldin and Katz 2008).

Racial or ethnic inequalities tend to shape political coalitions that determine public investments in human capital. Race-based collective action can take an implicit as well as an explicit form: the externalities generated by public education represent a public good, and, in general, racial and ethnic diversity tend to lower contributions to public-good provision (Alesina and La Ferrara 2005). As Poterba (1997) famously showed, government spending on K–12 education is negatively related to the fraction of the population aged 65 and above, especially when the fraction of the nonwhite population aged 5–17 and 65 and over is included among the controls. More recent research updates this finding, controlling for the possibility that elderly voters have simply relocated toward lower tax communities (Figlio and Fletcher 2012).

As Daniel Lichter emphasizes in his recent presidential address to the Population Association of America, recent demographic trends, including faster fertility decline among white non-Hispanic families, are increasing the minority share of children—especially compared to the predominantly white composition of the population over age 65. As of 2013, minorities accounted for the majority of the U.S. population under age 1 (Lichter 2013). While increased public investment in

education may promise large returns for the United States as a whole, it would offer particularly significant benefits for blacks and Hispanics, possibly undermining racial and ethnic earnings differences that have proved remarkably persistent and consistently advantageous for whites.

The distributional consequences of public investments in education are by no means limited to the incidence of taxation or the anticipated receipt of direct benefits to family members in the form of subsidized services. They also include effects of increases in the supply of highly educated labor on job opportunities and earnings, especially in circumstances where human capital “rents”—that is, premiums related to excess demand in the face of limited supply—are declining. They may also be affected by employers’ projections of the anticipated demand for specific skills, and the potential for expanded sources of labor supply outside the United States.

The human capital intellectual paradigm is sometimes mistakenly labeled a purely individualist approach. But while it does emphasize self-investment, it clearly acknowledges the role of market failures and the need for public provision. A more distinctive feature of the paradigm is its optimistic emphasis on convergent interests in which both private and public actors benefit from increased education, because technological change voraciously demands ever higher levels of skill. As the next section will show, this assumption is misplaced: evidence that we may be entering an era of relative oversupply of college-educated workers now looms large.

A BRIEF SUMMARY OF RECENT EMPIRICAL RESEARCH

In their magisterial history of the expansion of education in the United States, Goldin and Katz (2008) describe a race between education and technology that is, effectively, a race between shifts on the supply side and the demand side of the market for highly skilled workers. During most of the latter half of the twentieth century, demand grew faster than supply, generating significant earnings premiums for the college-educated in particular. Hence there arose the “golden age” of human capital, one in which individuals willing and able to invest in their own productive skills through higher education could be assured

of a generous reward, and countries willing and able to develop their public higher education systems could capture significant economic gains.

It is worth noting that educators—at every level and in every nook and cranny of the education system—stand to gain both psychologically and economically from the promise that human capital will always be a scarce commodity. Yet today that promise is beginning to seem quite shaky. Four stylized facts illustrate the problem:

- 1) The absolute earnings of college graduates are declining.
- 2) The college premium—or the earnings of college graduates relative to high school graduates—has not increased in recent years.
- 3) College completion rates long ago leveled out for men (though not for women).
- 4) Evidence of mismatch between educational credentials and occupational requirements is growing.

As Figure 3.1, Panel A, indicates, college-educated women saw their median inflation-adjusted earnings fall after 2002, even though their advantage relative to women with only a high-school diploma increased. These figures understate the downward trend because (for the sake of historical continuity) the estimates for college graduates include all those with a college degree or higher, and postgraduate degrees were richly rewarded over much of this time period. College-educated men fared even worse in absolute terms, with a median in 2011 lower than that in 1971. College-educated men experienced a high relative premium only because the earnings of men with only high-school diplomas fell so drastically. The relative earnings premiums for both college-educated women and men changed most visibly between the early 1980s and the late 1990s and have since evened out. Figure 3.2 shows that the average annual earnings of all young college graduates aged 25–34 with a bachelor of arts degree (BA) but no other degree began to rise in 2013 but remained lower in 2016 than they were in 2002.

Many influential estimates of the college premium emphasize cumulative differences in lifetime earnings (Baum 2014; Baum, Ma, and Payea 2013; Carnevale, Rose, and Cheah 2011). But such estimates

Figure 3.1 Median Earnings by Education for Young Women and Men

NOTE: Inflation-adjusted in 2011 \$; full-time year-round workers aged 25–34.
SOURCE: Baum, Ma, and Payea (2013).

Figure 3.2 Average Annual Earnings of Individuals Aged 25–34 Working Full-Time with Bachelor’s Degree Only (in 2015 \$)

SOURCE: Author’s calculations from the Current Population Survey (CPS) Integrated Public Use Microdata Series (IPUMS), March Supplement of the Annual Social and Economic Supplement (ASEC).

are essentially projections based on the past relationship between education and earnings, which may or may not hold over years to come.

The stock of college-educated Americans is high, which makes it difficult to see differences in the flow over time unless attention is focused on the younger cohorts. As Figure 3.3 shows, the percentage of young men with a bachelor’s degree or higher leveled off in the late 1970s, but it began moving up again in about 2006; over the same period the percentage of young women attaining this degree or higher increased fairly steadily, albeit at a slower rate after the late 1970s. This trend may well reflect the problems on the supply side—a more heterogeneous population, school quality problems, and higher education costs—that Goldin and Katz (2008) emphasize. But this highlights the public choice problem: why didn’t the business community, or state and federal governments, take steps to solve the supply-side problem? Perhaps because the demand side was also sagging.

Figure 3.3 Percentage of Men and Women Aged 25–29 with a Bachelor’s Degree or Higher

SOURCE: U.S. Census Bureau (2016).

Evidence of mismatch between education credentials and job requirements became apparent even before the Great Recession of 2007. In 1970, only 1 in 100 taxi drivers and chauffeurs in the United States had a college degree, compared to about 15 out of 100 today; a similar trend is evident in other occupations such as bartending and firefighting (Vedder, Denhart, and Robe 2013). Andrew Sum and Paul Harrington of the Center for Labor Market Studies at Northeastern University estimate that in 2010, fewer than half of all BA holders aged 25 and below held a job requiring a college degree (Sum 2010).

Unemployment rates may be much lower among college graduates than others, but they remain high by historic standards. Nor is the United States the only country in which a once-privileged sector of the labor force finds itself at the mercy of the unemployment line. Youth unemployment is at record levels in southern Europe, where college graduates have been very hard hit. According to a recent article in the *New York Times*, “An estimated 100,000 university graduates have left Spain, and hundreds of thousands more from Europe’s crisis-hit coun-

tries have gone to Germany, Britain, and the Nordic states for jobs in engineering, science, and medicine” (Alderman 2013).

The rate of return to a college degree has always varied significantly by institution, choice of major, and personal characteristics. But a robust demand for the general college credential and for general rather than job-specific skills once overshadowed these differences, and it also reduced the risk to an individual college student of choosing the “wrong” major. Today, the variance in rates of return is so high that some economists widely regarded as advocates for public investments in human capital, such as Isabel Sawhill, warn that not everyone should go to college (Owen and Sawhill 2013).

The apparent mismatch between the credentials that colleges and universities are supplying and what the labor market is demanding could be explained by the poor performance of our institutions of higher learning or the self-indulgent choices of students who insist on majoring in English or philosophy despite the implications for both personal and social returns on investment. Some economists suggest that a college degree is simply not as good a measure of “skill” as it has been in the past (Cowen 2013). Others insist that students who major in science, technology, engineering, and math (the so-called STEM fields) are guaranteed a rosy economic future. On the other hand, a growing chorus of voices suggests that even homegrown STEM majors are in oversupply (Anft 2013).

One unfortunate legacy of the human capital literature is its tendency to refer to human capital, skill, and educational credentials as though they all represent one relatively undifferentiated substance that can be easily measured in quantitative terms such as years of education. Now it seems apparent that we need to pay more attention to specific differences in specific skill sets needed for specific tasks. Our changing technological environment has intensified our intellectual division of labor, increasing the need for specialization in some areas and decreasing it in others.

The title of a recent analysis of the impact of information technology by Brynjolfsson and McAfee (2011) is telling: *Race against the Machine* tells a story rather different from that told by Goldin and Katz in *The Race between Education and Technology*. Education is not racing to keep up with technology; rather, individuals are racing to cope with their own potential obsolescence. The digital revolution is not increas-

ing the demand for skill in general but rather offering bigger rewards for high skill and lower rewards for what might be termed medium skill, bringing about a polarization of demand. Polarization does not necessarily imply an overall decline in the demand for college-educated workers; one could imagine a scenario in which declining demand for medium skill is completely counterbalanced by increasing demand for high skill. That is not the scenario they describe. Rather, Brynjolfsson and McAfee argue that the overall demand for labor has declined, and will likely continue to decline, as a result of information technology.

The implications for job growth, earnings inequality, and the canonical human capital model are spelled out in more detail by Acemoglu and Autor (2012) in their gently critical review of Goldin and Katz. They point to overreliance on the assumption that technological change is always skill-intensive, and they emphasize that distinct forms of human capital realize their value only in the performance of specific tasks. In other words, technological change can lower the demand for certain types of human capital, which becomes far less productive when dissociated from those tasks. Furthermore, Acemoglu and Autor (here, and in other research) offer evidence of a declining demand for “mid-level” skills that is almost certainly affecting rates of return to a college degree.

Further evidence along these lines is offered by Beaudry, Green, and Sand (2013), who add a stock/flow analysis to the argument, suggesting that burgeoning information technology required large inputs of skilled labor but, once a stock of it was put in place, began to require far less to maintain itself. They also offer a simple and direct explanation for why the college premium remains high despite declining demand for college-educated workers, based on a queueing theory of the labor market. High-skilled workers go to the head of the employment line, accepting lower-level jobs and pushing less-credentialed workers down the line or out of the labor force.

The precise impact of declining demand for college-educated workers is difficult to measure because shifts in the supply of college-educated workers on the global level have also been momentous. Digital outsourcing, facilitated by the very trends in information technology that may have affected the demand side of the labor market, is one of three major avenues by which global educational trends affect the U.S. labor market. The other two are immigration and offshoring, or relocation of production facilities overseas.

The sheer pace of expansion in the global supply of college graduates—a process that economist Richard Freeman terms “human capital leapfrogging”—is astounding. In 2005, Chinese universities awarded five times as many bachelor’s degrees as they did in 1999 (Freeman 2006). Indeed, Freeman reports that the abrupt increase in supply created a domestic political crisis in China in 2008, when a large percentage of the graduating class—about 20 percent—was unable to find employment within a year. In 1970, the United States accounted for 29 percent of the world’s college students (despite representing only about 6 percent of the world’s population). By 2005–2006, the U.S. share had dropped to 12 percent. Almost 75 percent of global postsecondary education enrollments were in developing countries, including China, India, and Mexico.

Much of the expansion in higher education in China and elsewhere was driven by national political priorities rather than by individual decisions. The econometric link between private rates of return to education and both college graduation and higher degree completion rates is not very strong. This finding corroborates the Goldin and Katz (2008) argument that decreased public spending on higher education (and the unequal structure of education funding in general) may have constricted the supply of college graduates in the United States in recent years. Institutional factors, in other words, have proved quite influential compared to individual decisions to “self-invest.”

At the same time, the finding suggests that educational outcomes in the United States may matter less for businesses than increased access to college graduates and highly trained science and technology PhDs from other countries. Discussing trends in immigration to the United States, Freeman (2009, p. 21) notes that “the supply of highly able programmers from India and other developing countries willing to work at lower pay than Americans has dampened the growth of supply of programmers in the U.S.” Many other economists, including Blinder (2006), have emphasized the potential labor market impact of offshoring, noting that it may reduce the demand for highly educated labor and put a greater premium on jobs that require face-to-face contact and are therefore more difficult to relocate. Tonelson (2002, p. 100) argues persuasively that “a substantial share of outsourcing-produced job flight is high-tech job flight, and not even the most sophisticated U.S. industries—and workers—have been exempt.”

Increased access to global college graduates can influence U.S. labor market outcomes directly by contributing to slower employment and wage growth. But it may also have the indirect effect of reducing incentives for the business community to support increased spending on public higher education (Folbre 2010). Economists like Richard Vedder who are bearish on human capital are already warning of public overinvestment in education (Vedder, Denhart, and Robe 2013). As the prospect of a persistent oversupply of college-educated workers begins to loom large, the narrow economic rationale for greater collective investments in human capital begins to weaken. This is perhaps the most ominous signal that the golden age of human capital has come to an end.

A BRIEF CONSIDERATION OF POLITICAL IMPLICATIONS

So what? College professors will, of course, feel demoralized by lack of enthusiasm for the products they produce. But the potential political implications reach much deeper, into the very heart of beliefs in a just world and promises of upward mobility for the smart and hard-working. Getting a college education in the United States will no longer be a ticket to ride the train to economic prosperity—and certainly not in the first-class compartment. Much recent debate has focused on declining earnings and opportunities in the middle class, with Acemoglu and Autor emphasizing the role of technological change, and Bivens and Mishel (2013) placing more blame on political and institutional factors that have lowered the bargaining power of wage earners in general.² But the causes of increased earnings inequality are probably of less interest to most Americans than the consequences of diminished opportunity.

The golden age of human capital itself encouraged everyone to think more about climbing the ladder than studying its length or position. But if the ladder is lifted visibly out of reach, attention is likely to shift. One result could be heightened political conflict, with intensified competition for the fewer rungs remaining within reach. In general, periods of economic growth and increased opportunity have tended to reduce distributional conflict. The years between the end of World War II and 1970 are sometimes dubbed the golden age of American capital-

ism for that reason (Marglin and Schor 1990). Alba (2009) has written hopefully of a new age of declining racial and ethnic inequality as baby boomers retire and create more space for younger workers. However, the economic trends described above may outweigh the demographics of retirement. Slower economic growth and persistent unemployment in Western Europe have fostered a new populist politics there based on opposition to immigration and globalization.

On the other hand, the decline of the professional-managerial class concomitant with a reduced payoff to a college degree could lead to political realignment. Increased inequality between the top 10 percent and everyone else could be accompanied by decreased inequality between those at the 70th percentile and those at the 30th. The middle class is declining in size only if it is defined in terms of some absolute standard. Defined instead as the middle four deciles of the income distribution, its size is fixed, even if its relative income—and the variance of that income—declines.

Individuals who see no clear path to upward mobility through the labor market tend to become less enthusiastic about market forces. College-educated workers in the United States may begin to identify themselves as members of a working class that is collectively disadvantaged by technological change and globalization. As they begin to occupy an ever larger share of relatively low-wage jobs, the relative college premium may decline, a factor that could diminish racial and ethnic inequalities by bringing down the wages of many white workers.

So the golden age may be over. What comes next? Perhaps the classical succession of the Ages of Man in Greek mythology, from gold to silver to bronze to iron, as chronicled by the poet Hesiod, should be augmented by a new term: silicon. Perhaps, as Isaac Asimov envisioned, robots will come to the fore. Human capital will never entirely lose its value. In *Race against the Machine*, Brynjolfsson and McAfee cite a 1965 National Aeronautic and Space Administration report explaining why astronauts were so useful: “Man is the lowest-cost, 150 pound, nonlinear, all-purpose computer system that can be mass-produced by unskilled labor.” The big question is whether these nonlinear all-purpose computer systems can work together to configure an economic system that will treat them as valuable outputs rather than merely as useful inputs. That system would invest heavily in human capital whatever its private rate of return in the labor market.

Notes

The title of this chapter derives from a blog post I wrote for the *New York Times* Economix blog on June 10, 2013, which outlined some of the issues raised here.

1. Moretti (2005) provides an excellent summary of his research on this topic.
2. For a readable account of this debate, see Davidson (2013).

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4

Society and State in Determining Economic Outcomes

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A core question in the social sciences is whether culture, political power, or networks explain economic outcomes. Two important lines of research have provided distinct answers to this question. Economic sociology has argued that the main determinants of economic outcomes are interactions among economic actors and the culture and networks that coordinate and enable them. In contrast, comparative political economics has asserted that the state's power is the main determinant of economic outcomes. Many empirical analyses have substantiated the merit of both these forces—society and state—in shaping economic outcomes.

What is the relative importance of the society and the state in determining economic outcomes? Do culture and social networks on the one hand, or the state's power on the other, shape behavior and outcomes? Do rules regulating economic behavior reflect interactions among economic or political actors? Addressing these questions promises to enhance our understanding of the determinants of economic outcomes.

In micro terms, these questions ask, “What causes people to take the actions they do? Is behavior *culturally driven* or *formal-rule-driven*? What are the relationships between behavior that reflects cultural beliefs, norms, and networks, and behavior that reflects formal rules, laws, and procedures?” To advance toward addressing these questions, we need to have a theory of action, which this chapter presents, that accommodates both formal-rule and culturally driven behavior.

First the chapter asks why economic institutionalists—who in the past considered only formal-rule-driven behavior—have developed a theory of institutionalized behavior that also accommodates culturally driven behavior. The chapter then, in the following two sections, pres-

ents this theory and the associated theory of institutional dynamic.¹ This presentation highlights the variety of interrelationships between formal-rule and culturally driven behavior. In the section following that, the chapter then provides some empirical examples of the importance of these interrelationships. These examples particularly suggest that culture influences the sources and details of formal rules, while the resulting rules further reinforce the cultural aspects that they embody and reflect. The conclusion is a discussion of some of the implied research questions.

INSTITUTIONS AS RULES AND CONTRACTS

According to institutional economists, behavior reflects institutions. Until the early 1990s, these economists' main approach to positive institutional analysis defined institutions as either rules or contractual relationships. This approach, dating back to Adam Smith, posits that the operation of markets is the key to growth (Smith [1776] 1991), and that their operation depends on a clear specification of property rights (Coase 1960). The most important rules, therefore, are those that allocate property rights (North 1981). Given an allocation of property rights, economic agents use contracts and establish organizations to minimize the transaction costs of exchange (Coase 1937; Williamson 1985). Contractual relationships among individuals and within and across organizations are established based on the attributes of the relevant transactions in an optimal manner. Distinct property rights allocations, however, can have distinct efficiency implications because of the transaction costs of transferring rights to those who can use them most efficiently. Rules influencing the cost of transferring rights, and more generally exchange, are thus important in determining outcomes.

Following Hobbes's assertion that without a state, life would be "solitary, poor, nasty, brutish and short," the emphasis in this chapter has been on rules specified and enforced by the state. The state has been conceptualized as an entity—a decision maker—with a monopoly over coercive power. The rules that the state advances, in turn, reflect a political economy process centered on rules governing collective decision

making in organizations, such as Congress, and the political influence of organizations, such as interest groups and labor unions.²

The perspective that defines institutions as rules that minimize transaction costs (henceforth, institutions-as-rules) has contributed a great deal to institutional analysis. It is a departure from a long research tradition that considered institutions as exogenous and historically determined. In contrast, conceptualizing institutions as politically determined rules and contractual relationships led to studying them as endogenous by examining the political process of rule making and the relationship between the attributes of transactions and individuals' choices of contracts. In short, the institutions-as-rules perspective advanced institutional analysis by integrating two additional variables into the analysis—1) political rules and 2) transactions and their attributes—and by providing analytical frameworks (particularly those of political economy and transaction-cost economics) for their analyses.

While the contributions of the institutions-as-rules approach are beyond doubt, the approach has serious limitations. For one thing, treating rules as analogous to behavior limits the scope of the issues the approach could address. Why, for example, are some state-mandated rules followed but not others? As a first approximation, one can assert that individuals follow rules because there are other rules specifying punishment if they fail to do so. However, this amounts to pushing the question of institutional effectiveness backwards one level. It assumes that those who are supposed to enforce the rules are able and motivated to do so. But then who monitors the monitor? A comprehensive understanding of the influence of state-mandated rules requires examining how the motivation and ability to follow and enforce them are endogenously created. More generally, focusing on rules can only go so far toward understanding the relationship between the environment and behavior. Why are some behavioral rules followed while others are not? Rules are behavioral instructions that can be ignored, implying that for any prescriptive rules of behavior to have an impact, individuals must be motivated to follow them.

More generally, examining endogenous motivation is necessary for studying a host of critical issues, because motivation mediates between the environment and behavior. In past and contemporary economies, social order characterized by exchange and property rights security has

often been achieved in situations in which the state was only partially effective, if at all.

Such situations prevail when there is no state, when the economic agents expect the state to expropriate rather than protect their property, and when the state is unwilling or unable to provide the enforcement required for exchange and securing property rights, because of such factors as asymmetric information, incomplete contracts, legal costs, or organizational limitations. Studying economic outcomes in these situations requires examining social norms where motivation is endogenously created through the interactions among the economic agents. To understand the institutional foundations of markets, we need to examine private-order institutions based on social norms and their interrelationships with public-order institutions provided by the state.

Similarly, studying the state itself—and, more generally, the polity—requires that we consider endogenous motivation. (Henceforth, I use the terms *state* and *polity* interchangeably.) The institution-as-rules approach adopted Max Weber's definition of the state as having a monopoly over coercive power. But in reality, political actors can, and sometimes do, resort to violence and invest in obtaining coercive power, the use of which leads to political disorder or overturning the state. The welfare implications of political order or disorder, and exactly how political order is achieved, are immense. Similarly, understanding the impact of the state on economic behavior necessitates examining the motivation of its agents. The effectiveness of state-mandated rules depends on two things: 1) the endogenous provision of motivation to agents in the bureaucracy and 2) the legal system responsible for enforcing them. An analysis of political order and the behavior of the state's agents must view the behavior of its political agents and the state's agents as endogenous outcomes rather than exogenous. Examining the institutional foundations of the state is therefore necessary.

In short, the institutions-as-rules approach has not provided an appropriate framework for studying the endogenous provision of motivation to follow a particular rule of behavior. Yet studying endogenous motivation is central to understanding social order, political order, and the effectiveness of the state in influencing the behavior of its subjects and agents.

Similarly, neither the view of institutions as rules nor reliance on the political economy and on analytical frameworks that looked at the

efficiency of contracting proved satisfactory in studying institutional dynamics. Political economy concentrates on the formation of rules within the political system. It postulates that rules governing economic life change when the lawmakers consider the benefits of changing them to be larger than the costs. Transaction-cost economics argues that contractual and organizational forms are altered in response to technologically determined changes in the attributes of transactions designed to optimize transaction costs. The merits of these insights notwithstanding, they nevertheless fall short of accounting for why societies often fail to adopt the institutions of more economically successful societies, and why they evolve along distinct trajectories of institutional development. Arguably, this is the case because the institutions-as-rules framework does not consider how and why institutions enable, guide, and affect behavior in addition to constraining it.

Studying endogenous motivation and how institutions enable and guide behavior, however, promises to further the examination of the questions regarding institutional dynamics that are at the heart of social science and history. Is institutional dynamics a historical process in which past institutions influenced the rate and direction of institutional change? If so, why and how do we study this historical process? These questions have bedeviled institutional analysis in economics, political science, and sociology for a long time, because addressing them requires simultaneously accounting for stability, change, and the influence of the past on subsequent outcomes (DiMaggio and Powell 1991; North 1990; Scott 1995; Thelen 1999).

INSTITUTIONS: A DEFINITION

In response to these concerns, it has become apparent that we need to study institutions from a broader, socioeconomic perspective that captures the role of institutions not only as motivating but also as enabling and guiding behavior.³ The resulting approach goes beyond the economic and political variables emphasized in the institutions-as-rules approach. Instead, it focuses more generally on the behavioral implications of factors that are *social* by virtue of being man-made,

nonphysical factors that are exogenous to *each* individual whose behavior they influence.⁴

An institution is a system of social factors that conjointly generate a regularity of behavior (in a social situation).⁵ Together, these factors motivate, enable, and guide individuals in various social positions to follow one behavior among the many that are technologically feasible in social situations.⁶ (It is convenient to refer to such social factors as *institutional elements*.) Analysis of institutions from this perspective emphasizes the importance of rules, beliefs, and norms as well as their manifestation as organizations. Thus, we can slightly adapt the wording of our definition at the beginning of this paragraph to say that an institution is a system of rules, beliefs, norms, and organizations that conjointly generates a regularity of (social) behavior. Each of these elements satisfies the conditions stated above.

Considering an institution as a system departs from the common practice of considering it a monolithic entity such as a rule.⁷ Yet to understand regularities of behavior in the most general case, we need to study a system of interrelated elements, because in an institution, different elements have distinct roles. Each has a distinct contribution to generating regularities of behavior. Rules specify norms and provide a shared cognitive system, coordination, and information, whereas beliefs and norms provide the motivation to follow these rules, whether this behavior is rational, imitative, or habitual. Organizations, whether formal, such as parliaments and firms, or informal, such as communities and business networks, have three interrelated roles: they 1) produce and disseminate rules, 2) perpetuate beliefs and norms, and 3) influence the set of feasible behavioral beliefs. In situations where institutions generate behavior, rules correspond to the beliefs and norms that motivated the behavior, while organizations contribute to this outcome in the manner mentioned above.

How, for example, do regularities of behavior prevail among drivers? The rules of the road create a shared cognitive understanding of the symbols drivers encounter (red lights, yield signs) and definitions of various concepts and situations (passing, yielding, having the right-of-way). Rules also include prescriptive instructions on expected behavior in various situations by individuals with different social positions, such as law enforcement officials, pedestrians, and other drivers. The belief that others will follow these rules of behavior motivates most drivers

most of the time to follow them also, and thus regularities of behavior are generated. Motor vehicle departments and law enforcement agencies are organizations that generate and disseminate these rules and facilitate the creation of the corresponding beliefs. To comprehend drivers' behavior requires studying the three institutional elements that constitute the interrelated components of an integrated system in which rules correspond to beliefs about behavior and the behavior itself.

In this conceptualization of institutions, socially articulated and disseminated rules are central in providing individuals with the cognitive, coordinative, and informational microfoundations of behavior. These social rules provide an individual with the information and the cognitive model (mental models or internalized belief system) required to choose or mimic behavior. Similarly, social rules coordinate behavior by providing a public signal regarding the behavior that is expected of individuals in various circumstances. In short, social rules constitute the heuristics that enable and guide behavior by helping individuals form beliefs about the world around them and what to expect from it.

Commonly known social rules enable and guide behavior, and retrospective individuals with limited rationality and cognition respond to them. On the one hand, each individual takes the cognitive, coordinative, and informational content of institutionalized rules as a given; he responds to, or plays against, the rules, accepting them as they are. On the other hand, because each individual responds to these rules based on his private information, knowledge, and preferences, these rules aggregate information and knowledge and distribute it in a compressed form.

The only social rules that can be institutionalized—that can be considered to be common knowledge, expected to be followed, and that correspond to behavior—are those that each individual, by and large, finds optimal to follow given his private information, knowledge, and preference. In situations in which institutions generate behavior, institutionalized rules and the associated beliefs and norms correspond to self-enforcing behavior. Finally, because behavior corresponds to the institutionalized rules and associated beliefs, these rules and beliefs are reproduced—not refuted—by behavior.

In situations in which institutions generate behavior, institutionalized rules, the corresponding beliefs regarding causal relationships and others' behavior, and the behavior that these beliefs motivate, constitute an equilibrium. A structure made up of institutionalized rules and

beliefs enables, guides, and motivates the self-enforcing behavior that reproduces it. Most individuals, most of the time, follow the behavior that is expected of them.

The discussion so far has ignored the social and normative foundations of behavior. But humans are social, moral creatures whose behavior is also shaped by the impact of institutions on the social and moral underpinnings of behavior. Everything else being equal, people seek to act in a manner that generates positive social responses from the people they know, elevates their social status and esteem in the broader society, provides them with an identity, and is consistent with their (internalized) norms.⁸ In modern sociology, the argument over the behavioral importance of social exchange, belief in others' social responses, or the loss of esteem following a particular action is associated with Granovetter (1985), Homans (1961), and Wrong 1999. Another line of research, associated with Parsons (1951), emphasizes the importance of norms in motivating behavior by influencing intrinsic utility.⁹ Internalization of norms, or the incorporation of behavioral standards into one's superego, essentially means to develop an internal system of sanctions that supports the same behavior as the external system.¹⁰ In this theory, "values and norms were regarded as the basis of a stable social order" (Scott 1995, p. 40).¹¹

The extension of the above discussion to incorporate these important considerations is straightforward. Extending the analysis to incorporate social considerations, for example, recognizes that individuals care about others' perceptions of them and hence are motivated by beliefs regarding these perceptions. In institutionalized situations, such beliefs constitute an equilibrium in these social relationships, given the social and materialistic implications of various technologically possible actions.

For a long time, the difficulty of analytically and empirically studying institutions from this equilibrium perspective was due to the dual nature of social factors as endogenous to society yet exogenous to each of the individuals whose behavior they influence. Their analysis therefore has had to combine two seemingly contradictory views of institutions. The first is the "agency" view, common in economics and political economy, which emphasizes that institutions are produced by individuals to constrain behavior. These are "the humanly devised constraints that structure political, economic, and social interactions"

(North 1990, p. 97). In contrast, the second, called the “structural” view of institutions, is common in sociology and emphasizes that institutions transcend individual actors. Institutions enable and motivate behavior while constituting the properties of societies that “impose themselves upon” individuals (Durkheim [1895] 1950, p. 2), and they “consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior” (Scott 1995, p. 33).

The difficulty of developing an analytical framework that could bridge the agency and structural views proved daunting to those who advocated integrating factors such as beliefs and norms into institutional analysis. Durkheim ([1895] 1950, p. 45), for example, defined institutions as “all the beliefs and modes of behavior instituted by the collectivity,” while Parsons (1951, pp. 38–40) has taken the position that full institutionalization of a behavioral standard requires its internalization—namely, its transformation into a norm. Yet, since they have not combined the agency and structural views, they have not proposed a way to analytically restrict the set of admissible beliefs and norms. Hence, because beliefs and norms are not directly observable, any behavior can be justified based on ad hoc assertions regarding the beliefs and norms that motivated it.

In recent years, however, analytical frameworks and empirical methods suitable for studying institutions from an equilibrium perspective have been developed. They rely extensively on microlevel models that enable researchers, particularly by using classical, experimental, and evolutionary game theory, to restrict the set of admissible institutionalized outcomes in social situations.¹² The related empirical frameworks mostly use context-specific case studies that utilize models to capture the particularities of the transactions under consideration and recognize the importance of the broader institutional context and history.¹³

INSTITUTIONAL DYNAMICS AS A HISTORICAL PROCESS

The study of the dynamics of institutions has gone through three phases in economics. Traditionally, economic institutions were considered immutable cultural features. In the 1970s, the “new institutional economics” challenged this view. It considered them as rules, organiza-

tions, contractual forms, or patterns of behavior and employed the tools of microeconomic theory to argue that institutions change in response to environmental changes. Property rights, contracts, and behavior, for example, would adjust to changes in relative prices in an optimal manner or in a way that best served those who dictated rules or chose contracts. More recently, attention has been given to factors causing institutions to exhibit path-dependence. This view emphasizes that once a particular institution prevails, it will tend to perpetuate itself in a changing environment because of such factors as sunken costs in specifying rules, learning effects, or activities of the interest groups to which the existing rules give rise.

Endogenous Institutional Change

Recognizing the distinction between an institution and institutional elements and studying institutions from an equilibrium perspective highlight why and how institutional dynamics is a historical process in which past institutions influence the rate and direction of institutional change. Analytically examining institutions as self-enforcing captures how particular beliefs, norms, and behavior can *reproduce* each other and hence the institution. Beliefs and norms motivate behavior, and observed behavior confirms the relevance of beliefs and the appropriateness of the norms that led to this behavior. Taken together, self-enforcing beliefs, norms, and behavior are in a steady-state equilibrium. The analysis thereby exposes which exogenous changes in the environment or knowledge bring this reproduction process to an end.

Studying institutions as self-enforcing and reproducing does not seem to be a promising starting point for studying endogenous institutional dynamics. After all, if all beliefs and behavior are self-enforcing and confirmed by their observable implications, one would imagine that all changes must have an exogenous origin. However, this is not the case. A theory of institutional stability facilitates studying how institutions can endogenously change.

An institution is *reinforcing* (undermining) when its implications, beyond behavior in the governed transaction, (weakly) increase (decrease) the range of situations (parameters) in which the behavior associated with the institution is self-enforcing. Reinforcing processes can reflect, for example, individuals' intentional responses to the incen-

tives the institution entails, or the unintentional feedback from behavior to factors that influence behavior in the situation under consideration, such as preference and habit formation, knowledge, information, demography, ideology, wealth distribution, political power, or social networks.

To illustrate this idea, consider the following example. Suppose that belief regarding collective punishment within a community leads to a particular regularity of behavior (e.g., as in Greif [1993]). To study the institution, we must examine this community, its beliefs, and its behavioral rules as a self-enforcing system of institutional elements that generated this behavior. We must examine why each member of the community is endogenously motivated to retain his membership in it, why he holds these beliefs, follows the behavioral rules, and participates in collective punishment. But even when this is the case at a particular point in time, the institution can still undermine itself. For example, the economic success of the community implied by collective punishment may lead to its growth over time. This can undermine the self-enforceability of beliefs in collective punishment, because information transmission within a larger group may be too slow to deter deviation. Similarly, each member of the community can become, over time, sufficiently wealthy so that the threat of communal punishment will no longer be enough to make past patterns of behavior self-enforcing.

The argument can be seen more clearly by resorting to a game-theoretic framework. The game-theoretic analysis of institutions focuses on studying the relationships between the rules of the game and how regularities of behavior—cooperation, wars, political mobilization, social unrest—affect the particular transaction under consideration. When we say that an institution is self-enforcing, we mean that the behavior and expected behavior in the transaction under consideration corresponds to an equilibrium. Yet, an institution usually has other ramifications that go beyond the behavior it implies in the transaction under consideration. Institutions influence factors such as wealth, identity, ability, knowledge, beliefs, residential distribution, and occupational specialization that are usually assumed as parametric in the rules of the game.

Although it is not possible to prove that institutions generally have such ramifications, it is difficult to think of any institution that in the long run does not have implications beyond the behavior in the trans-

action it governs. In the game-theoretical framework, this influence implies a dynamic adjustment of *variables* that, had this influence been ignored, would have been considered as *parameters* in the stage game.

Game theorists have long recognized that game theory does not *predict* a behavioral change following a parametric change. If a strategy combination is an equilibrium, it will generically be an equilibrium in some parameter *set*. As long as the actual parameters are in this set, game theory does not predict that the associated beliefs and behavior will not prevail. Indeed, as Schelling's (1960) seminal work on focal points reminds us, there are good reasons for individuals to continue to follow past patterns of behavior even under conditions of marginal parametric change. This is the case for at least three interrelated reasons: 1) knowledge, 2) attention, and 3) coordination.

Recall that institutionalized rules constitute an equilibrium in individuals' responses to them. They not only assist individuals when choosing behavior, but they also aggregate, in equilibrium, each individual's dispersed information. In other words, these rules not only provide individuals with the information they need to make decisions regarding how to act, they also aggregate the information privately held by each decision maker. Institutional rules similarly reflect and embody knowledge. The information compressed in socially transmitted rules permits individuals without knowledge of all the relevant parameters and causal mechanisms, and with limited computational ability, to act in a manner that leads to equilibrium behavior. Because individuals do not observe the relevant parameters and lack full comprehension of causal relationships—because they *play against a social rule* rather than follow the rules of the game—the best they can do is perceive the world as stationary as long as observations (including those conveyed through others' behavior) do not contradict this perception.

Regarding the above implies that the persistence of past behavior despite marginal parametric changes occurs because institutionalized rules enable individuals with limited knowledge and information to choose behavior. Behavioral rules learned in the past are the best predictors of future behavior. As long as the behavior of others does not reflect a change in the parameters or causal relations that one does not observe, one will not change his own behavior, either. Similarly, acquiring additional knowledge is demanding. An observed marginal parametric shift is not likely to induce decision makers to devote the

necessary cognitive resources to consider whether to change their own behavior. People don't stop to consider the optimal response to every choice they make in their lives (DiMaggio and Powell 1991).

Past patterns persist as well because what one sees, knows, and understands in a given situation also reflects the amount of attention one devotes to the task. Attention is a scarce resource. Institutionalized rules come to the rescue. They enable one to choose behavior in complicated situations without paying much attention, so that one's limited attention resources can be devoted to decision making in noninstitutionalized situations. Because we pay little attention to institutionalized situations, parametric shifts that might have been noted, had more attention been devoted to observing them, may go unnoticed, further contributing to the lack of behavioral change in response to marginal parametric changes. Moreover, those who do observe parametric shifts and bring this to the attention of others may have little incentive for doing so. People will be induced to devote attention to a situation only if the behavior or observed outcomes of others differ sufficiently from the expected.

Coordination failure is the third reason a marginal parametric shift does not necessarily lead to behavioral change. When one observes that a situation marginally changes, the problem arises of how to behave in the new situation, given the multiplicity of self-enforcing behaviors. Because people do not share expectations that a new equilibrium behavior will be followed, they are likely to rely on past rules of behavior to guide them and continue to follow past patterns of self-enforcing behavior. With that expectation, one is likely to continue following the past patterns of self-enforcing behavior as well.

Coordination problems prevail even when there are individuals and organizations with the ability to coordinate on new behavior. There are many reasons for even beneficial coordination to fail to transpire. Sunken costs associated with coordinating change, free-rider problems, distributional issues, uncertainties, limited understanding of alternatives, and asymmetric information can all hinder coordination on new behavior.

Hence, the many features that are usually taken as parameters in the repeated game formulation share two properties: first, they can gradually be altered by the implications of the institution under study, and second, their marginal changes will not necessarily cause the behavior

associated with that institution to change. These two properties imply that we can consider them as parametric—exogenous and fixed—when studying the self-enforcing property of an institution in the short run, but we must consider them as endogenous and variable when studying the same institutions in the long run. These features can be referred to as “quasi-parameters.” We can ignore their long-run implications in studying self-enforceability when these long-run implications are not *ex ante* recognized or appropriately understood and in situations in which such recognition will not influence behavior in the short run for the reasons stated above.

Changes to an institution’s quasi-parameters can reinforce or undermine it. An institution reinforces itself when, over time, the changes in the quasi-parameters it entails imply that the associated behavior is self-enforcing in a larger set of situations (parameters) than would otherwise have been the case. A self-enforcing institution that reinforces itself is known as a “self-reinforcing institution.” But a self-enforcing institution can also undermine itself when the changes in the quasi-parameters it entails imply that the associated behavior will be self-enforcing in a smaller set of situations.

The dynamics of self-enforcing beliefs and behavior are therefore central to endogenous institutional changes. An institutional change is one of changing beliefs, and it occurs when the associated behavior is no longer self-enforcing and leads individuals to act in a manner that does not reproduce the associated beliefs.¹⁴ Undermining processes can cause previously self-enforcing behavior to cease being so, leading to institutional change. A sufficient condition for endogenous institutional change is that the institution’s implications constantly undermine the associated behavior. Conversely, a necessary condition for an institution to prevail over time is that the types of situations in which the associated behavior is self-enforcing do not decrease over time: the institution’s behavioral implications must reinforce it, at least weakly. Hence, unless an institution is (weakly) self-reinforced, it will eventually reach a point where its associated behavior is no longer self-enforcing. Endogenous institutional change will follow.

Considering reinforcement highlights the importance of another, indirect way in which an institution endogenously influences its own change—when it influences the magnitude and nature of the exogenous shocks that are necessary to cause the associated beliefs and behavior

to change. When an institution reinforces itself, its associated behavior does not change. But the reinforced institution is nevertheless more robust than the previous one. The behavior associated with it will be self-enforcing even in situations where this would not have been the case previously. The opposite holds true in cases where an institution undermines itself. An institution, whether by reinforcing or by undermining itself, indirectly influences its rate of change by determining the size of the external parametric change required to render its associated behavior as no longer self-enforcing.

Institutions can change because of endogenous processes, exogenous shocks, and combinations of both. The exact mechanism that brings about institutional change, once the associated institutional behavior is no longer self-enforcing, depends on the nature of the quasi-parameters that delimit self-reinforcement. If these quasi-parameters are observable and their importance well understood, decision makers may actually realize that past behavior is no longer self-enforcing, and institutional change will be intentional. Intentional selection of alternative behavior, specification of new rules through collective decision making, and the intentional introduction of organizations are common manifestations of the ways in which intentional selection comes about.

But an institution can cease to be self-enforcing because of changes in quasi-parameters that are unobservable, uncertain, and unrecognizable. In such cases, the mechanism of institutional change is likely to be unintentional. It may reflect individuals' willingness to experiment and risk deviating from past behavior, or it may reflect the actions of a few individuals with better knowledge of the situation. In either case, learning is slow and institutional change is rare. It may take a long time for self-undermining to lead to new behavior.

The Influence of Past Institutions on the Direction of Institutional Change

Recognizing the distinction between institutions and institutional elements provides the basis for studying how past institutions influence the direction of institutional change. Institutional elements inherited from the past, such as shared beliefs, networks, political and economic organizations, and internalized norms, transcend the situations that led to their emergence. They are what members of a society bring with

them to new situations, providing them with the motivation to bring about various new situations through technological, organizational, and institutional inventions. New institutions do not simply emerge in the context of existing ones; they draw on the historical heritage encapsulated in institutional elements inherited from the past.

Past institutional elements influence the direction of change because there is a fundamental asymmetry between these past institutional elements and those alternatives that are technologically possible. Past institutional elements reflect and embody shared beliefs and knowledge among members of the society and constitute legitimate mechanisms to coordinate their actions and expectations. They are embodied in their utility functions and shared cognitive understanding of the environment. Unlike rules of the game that reflect physical possibilities, past institutional elements are properties of individuals and societies. Therefore they do not vanish once a new situation prevails, but rather they influence the processes that lead to new institutions. Indeed, relying on institutional heritage confines the complexity of new problems that people face to an order they can cope with.

Hence, new institutions do not reflect only environmental conditions and the interests of relevant decision makers. They evolve over time in a spiral-like manner, building on existing institutional elements. For example, communities, networks, and political organizations that were formed in the past constitute part of the (“endogenous”) rules of the game in new situations. Beliefs that were crystalized in the past and embodied within existing institutions become the cultural beliefs that individuals bring with them to new situations and influence the selection of new institutions. They are part of the initial conditions in processes selecting among alternative self-enforcing behavior and beliefs in new situations. Although agents thus act strategically and pursue their interests in these processes, they do so within the context implied by past institutions. Past institutions and institutional elements present both constraints and opportunities to individuals who are attempting to pursue their interests in new situations.

Specifically, past institutions influence the direction of institutional change—they impact the details of new institutions—through what can be referred to as *environmental*, *coordination*, and *inclusion effects*. First, past institutions and institutional elements constitute part of the environment within which processes leading to new institutions tran-

spire. This environment is composed of other institutions and institutional elements (such as marriage or political institutions) that are parametric in relation to the new institution. Second, past institutions and institutional elements provide the means to coordinate within this environment. This coordination may be unintentional, occurring through the impact of cultural beliefs inherited from the past (Greif 1994), or intentional, occurring through coordinating organizations inherited from the past, such as parliaments or the council of elders. The ability to coordinate, in turn, depends on the norms of legitimacy inherited from the past. A legitimate coordinator's ability to influence behavior depends, however, on the network and organizations inherited from the past that the coordinator can draw on in disseminating the new rules of behavior.

Third, past institutional elements bias the processes leading to new institutions. Creating new institutional elements, such as shared cognitive systems, shared beliefs, and shared organizations (which themselves include such systems and beliefs), is a time-consuming and costly endeavor with uncertain results. Similarly, institutions that embody existing norms are much more likely to emerge and are easier to establish than those that do not.

Consider, for example, two identical societies that differ only in their contract-enforcement institutions. In the first, economic exchange has always been supported by legal contract enforcement. This society has the appropriate legal organizations (a court and a police force), and the prevailing belief is that people will not renege on their contractual obligations because they fear legal sanctions. In the second society, however, exchange is supported by an informal collective punishment, a social network for the transmission of information, and a shared understanding of what actions constitute a breach of contract. Now suppose that in these two societies a new transaction is possible and in both societies it is technologically feasible to govern it, either by legal or communal contract-enforcement institutions.

It is intuitive that legal enforcement and communal enforcement will be used to govern the new transaction in the first and the second societies, respectively. After all, members of the first society share the knowledge that the legal system can provide contract enforcement, the belief that it will enforce contracts, and the confidence that the punishment is sufficient to deter contractual breaches. Introducing an alternative contract-enforcement institution based on communal punishment

would require creating an appropriate network making the members' identity and their past actions common knowledge so that one can be punished when necessary.

Furthermore, it would require generating a shared understanding of what actions constitute a breach of contract and the belief that individuals would participate in communal punishment and that the threat of such punishment would deter cheating. Yet the process of building relationships, knowledge, and reputations is costly, time-consuming, and uncertain. Similarly, in the second society, establishing an impartial legal system requires much more than knowledge of how to accomplish it, hire judges and policemen, and specify a code of conduct: it also requires that the system gain a reputation for operating effectively and impartially. In other words, people must believe that the legal system will function properly.

However, past institutions and institutional elements *influence* but do not *determine* new institutions. This is so because environmental factors and functional considerations, such as simplicity, efficiency, and distribution, also direct institutional change. The extent of their influence, in turn, depends on institutions inherited from the past. This is the case because existing institutions influence the institutional transaction costs involved in changing institutional elements inherited from the past. Belief in religious law prevailed in the Ottoman Empire but not in premodern Japan. Adopting Western laws was correspondingly more difficult in the former than in the latter. Finally, unless institutional elements inherited from the past become part of a new self-enforcing institution, they will decay and vanish over time. Institutions are outcomes that emerge from within and interact with the legacy of past institutional elements, but for these elements to persist, they must become a part of the new institutions.

This view of institutional evolution as a historical process does not deny the importance of agency (the pursuit of institutional change by goal-oriented actors) in influencing institutional selection. It recognizes, however, that history provides agents—even political agents—with constraints and opportunities in their ability to influence the institutional dynamic. The past influences the future, not because agents are passive but because they find it necessary, useful, and desirable to draw on the past. They do so to determine the best way to behave in new situations when intentionally pursuing institutional change, when contem-

plating the development or adoption of institutional and organizational innovations, or when they are engaged in conflicts over institutional selection. Analytically, it is possible to capture important aspects of the interplay between history and agency by recognizing that past institutions and institutional elements constitute beliefs in and the rules of the game within which interactions lead to new institutions (see discussion in Greif [2006], Chapter 7).

Past institutional elements are incorporated into new institutions, and new institutions emerge within the context of—and hence are complementary to—existing institutions. This implies that they will form an institutional complex, which is a set of institutions that govern various transactions, share common institutional elements, and are complementary to each other. The exact attributes of such complexes, in turn, also influence both the rate and direction of institutional change. These attachments determine, for example, the speed and scope of change, whether it will be continuous and encompass many institutions, and whether new institutions will be more or less likely to include past institutional elements. This implies the need to study a society's institutions from a holistic, systemic perspective.

This view of institutional dynamics considers endogenous institutional change and the impact of institutional heritage on individuals' abilities to influence the direction of institutional change. As such, this view occupies a middle ground between alternative positions. In economics, transaction-cost economics assumes that institutions are instrumental transaction costs optimizing responses to environmental conditions (e.g., Williamson [1985]), but in evolutionary economics it is common to identify them with history-dependent, and not necessarily functional, behavior (e.g., Hodgson [1998]). Similarly, in political science, rational choice analysis examines institutions as instrumental outcomes using equilibrium analysis, while historical institutionalism emphasizes that they reflect a historical process (Thelen 1999).

CULTURE, INSTITUTIONS, AND ECONOMIC OUTCOMES

The importance of integrating the “cultural” and “social” factors into institutional analysis has been recognized by many students of

institutions in economics, sociology, and political science (Hall and Taylor 1996; North 1990; Scott 1995; Williamson 2000). Yet, as noted by Williamson, the social and cultural factors were either ignored or taken as exogenous in the institutions-as-rules perspective. Recognizing that institutions are composed of social factors breaks the conceptual divide between studying institutions as formal rules and studying them as cultural phenomena. In both cases, behavior is guided and enabled by rules providing shared cultural frames, cognition, and behavioral instructions; is motivated by beliefs and norms; and is facilitated by social structures (such as networks and bureaucracies) and procedures.

Consider, for example, beliefs. Whether behavior is formal-rule or culturally driven, one's choice of behavior is constrained by shared beliefs regarding actions that others, such as agents of the state or economic agents, will take in various circumstances. In both cases, when the underlying situation is one of pure coordination, the institutionalized beliefs are self-enforcing. Each decision maker's best response to believing that others will follow the rules is to follow them also. In other situations, such as when the underlying situation is characterized by a free-rider problem, the behavior specified by the rules is not self-enforcing. Hence, rules will be followed only if the decision makers believe that failing to follow them will entail sufficiently costly sanctions imposed by the relevant agents. The credibility of the threat of punishment and its magnitude are essential.

Yet the sources, and hence the nature of rules, beliefs, and norms, differ between the formal-rule-driven and the culturally driven cases. Again, consider beliefs. When behavior is formal-rule-driven, the rules articulated by the state coordinate on beliefs regarding how others will behave. This requires the state to have the organizational capacity to generate and disseminate rules and the necessary legitimacy to induce a sufficient number of individuals to believe others will follow the behavior the rules specify.

When behavior is culturally driven, it is motivated by cultural beliefs.¹⁵ Cultural beliefs are the shared ideas and thoughts that govern interactions among individuals and between them, their gods, and other groups. Cultural beliefs differ from knowledge in that they are not empirically discovered or analytically proved. They usually evolve spontaneously without purposeful design and become identical and

commonly known through the socialization process by which culture is unified, maintained, and communicated.

Such differences notwithstanding, recognizing that a unified theory of action underlies behavior in both cases highlights the many interrelationships between the analysis of formal-rule and culturally driven behavior. Indeed, the analysis of each of these cases complements—rather than substitutes for—the other.

There are two types of interrelationships—1) static and 2) dynamic—between formal-rule-driven and culturally driven behavior. When studying formal-rule-driven behavior, understanding actions and outcomes requires examining the microprocess by which rules and beliefs are enacted. After all, if rules specified by the state are to be followed, it is not enough for them just to be announced. They must be acted upon by the economic agents and, if necessary, enforced by agents of the state. The agents' cultural, social, and organizational attributes and capacities thereby will influence whether the formal rules will be followed or not. The opposite is also true: cultural and social features that were integrated into formal rules are reproduced by the associated behavior. In other words, a society's cultural and organizational aspects are embedded in formal rules that lead to the reproduction of these aspects.

In terms of their dynamic interrelationships, the fundamental asymmetry implies that the past matters, whether behavior is culturally or formal-rule-driven. In either case, beliefs, norms, and social structures inherited from the past affect the processes, leading to new institutions. In particular, they affect the behavior through which the formal rules regulating economic life are enacted, and they have an effect on the resulting rules on behavior. Indeed, the process of reaching formal rules and the rules that are thereby articulated reflect a society's cultural and social features.

This historical heritage influences politically determined rules, is integrated into the resulting institutions, and influences the rate and direction of subsequent institutional change.

The opposite causal relationships also prevail. Formal rules shape culture and social features by influencing behavior and incentives. They have an impact on the formation of networks and other social structures by influencing whose interests are aligned, who interacts with whom, when, and in what contexts. The associated behavior implies particu-

lar role models, the motivation to socialize one's children in a specific manner, perceptions of fairness, feelings of entitlement, informational feedback, and the development of knowledge and beliefs.

To understand economic outcomes, the static and dynamic interplay between formal, state-mandated rules and a society's cultural and social features must be examined.¹⁶ In particular, the rules articulated by the state, and the effectiveness of such rules, reflect social and cultural features inherited from the past. Conversely, past rules influence the trajectory of cultural and social development. Ample evidence reveals such causal relationships.

The following few examples illustrate the impact of cultural beliefs, social structures, and norms on political institutions and the rules the state articulates. Cultural beliefs regarding the objectives and intentions of various groups in a society influence the set of political institutions that support political order. In late medieval Genoa, for example, each of the city's two main clans expected the other to be willing to use military force to gain control over Genoa if the opportunity arose. These beliefs limited their ability to cooperate in the expansion of Genoa's commerce because such expansion threatened to alter the balance of military power between them. After a long and costly learning period, this problem was mitigated by hiring an outside noble with a military force that provided a balance of power among the clans. While successful in the short run, this arrangement sustained the beliefs and clan structure that made the arrangement necessary (Greif 1998, 2006).

Distinct cultural beliefs create different demands for formal-rule behavior supported by state-provided formal contract-enforcement institutions. For example, Greif (1994) documented how, during the late medieval period, collectivist cultural beliefs among Maghribi traders led to an economic self-enforcing collective punishment, horizontal agency relations, segregation, and an ingroup social communication network. In this collectivist society, individuals could be induced to forgo "improper" behavior by credibly threatening informal collective economic punishment. This implied there was relatively little demand for state-provided contract enforcement.

This was not the case among the contemporary Genoese, however. Their individualistic cultural beliefs led to an individualist society with a vertical and integrated social structure, a relatively low level of communication, and no economic self-enforcing collective punishment. In

this society, a relatively low level of informal economic enforcement could be achieved because there was an absence of economic self-enforcing collective punishment and networks for information transmission. Furthermore, the integrated social structure and low level of communication hindered social and moral enforcement mechanisms. To support collective actions and to facilitate exchange, individualist societies need to develop formal enforcement mechanisms. Furthermore, a formal legal code is likely to be required to facilitate exchange through coordinating expectations and enhancing the deterrence effect of formal organizations.

The impact of cultural beliefs on the role of the state did not end in the premodern world. In the nineteenth century, different cultural beliefs in America and Germany led to distinct forms of legislation and laws regulating the interrelations among corporations. Americans believed large corporations were corrupt in nature. They were perceived to be motivated by greed and likely to collude and influence officials to increase their profits. Strict antitrust laws and regulations to curtail their power were therefore enacted in the United States, but in Germany, the opposite view was held. There, corporations were considered responsible entities whose prosperity would benefit the nation as a whole. Antitrust legislation was absent; indeed, collusive agreements were legally binding.

Distinct cultural beliefs regarding the relationship between effort and material success have led to different welfare policies in the United States and Europe. In the United States, the prevailing belief has been that individual effort determines income, and that all have a right to enjoy the fruits of their efforts. The political economy outcome has therefore been one of low distribution and low taxes. In equilibrium, effort is high and the role of luck is indeed limited. Consequently, outcomes are relatively fair, and beliefs are reproduced. In Europe, however, the initial beliefs were that luck, birth, connections, and corruption determined wealth. The political economy outcome was therefore one of high taxation and distorted allocations that reproduced these beliefs (Alesina and Angeletos 2005). Platteau and Hayami (1998) argued that inefficient sharing norms in Africa reflected the belief that personal gain was due to luck and not effort.

The set of rules that a state can effectively enact (and that can be followed with relatively low enforcement costs) is limited by legiti-

macy norms—i.e., norms specifying the confines of the domain within which the state has regulatory rights over behavior. The failure of Prohibition in the United States, which was in effect between 1920 and 1933, reflects more than a love of drinking alcohol. It reflects the belief by individuals that they had the right to consume alcohol and that the government was illegitimately regulating its consumption. Prohibition is much more effective in some contemporary Muslim countries, where different beliefs and norms prevail.

In Muslim countries, legitimacy norms have hindered changes in other rules. Consider slavery, for example. Slavery was eliminated *de facto* within Europe during the late medieval period. Later, of course, it was reintroduced in the European colonies and only abolished *de jure* and *de facto* around the mid-nineteenth century. The elimination of slavery in Europe was “one of the great landmarks in labor history” (Duby 1974, p. 40). This profound change—the early endogenous elimination of slavery—did not occur in many Muslim countries, where legal slavery remained until after World War II. Some Muslim countries abolished slavery as late as 1962, and the institution still exists *de facto* in various contemporary Muslim countries (Lewis 1990; Segal 2001).

Why did the Christian world lead the Muslim world in abolishing slavery? The reason concerns the distinct institutional complexes of the two civilizations. The historical roots of this distinction date back to the rise of Christianity within the Roman Empire. Since the Roman Empire had a unified code of law and a rather effective legal system, Christianity did not have to provide a code of law governing everyday life when creating its own communities of believers. Christianity developed as a religion of orthodoxy and proper beliefs; in earthly matters, Christians followed Roman law and later other secular laws. During the late medieval period, this legacy enabled the new European states to gradually reassert control over civil legal matters, including slavery.

Islam followed a very different process, in which Muhammad established both a religion and a political, economic, and social unit. Islam therefore had to provide and oblige adherents to follow the Islamic code of law, Sharia law. Like Judaism, therefore, Islam is a religion that regulates its adherents’ behavior in their everyday economic, political, and social lives.

The Christian and Islamic holy scriptures discuss behavior toward slaves, giving it moral legitimacy (see, e.g., Leviticus 25:46, Ephesians

6; Quran 16:71, 4:36, 30:28). But in each civilization, the institutions governing slavery were part of distinct institutional complexes. In the Christian world, laws governing slavery fell within the institutional complex, at the center of which were legal and political organizations. Given the European tradition of man-made law, abolishing slavery did not alter the central organization, beliefs, or norms of Christianity.

This was not true in the Islamic world, where slavery was part of an institutional complex at the center of which were beliefs regarding the holiness of religious law. The legal tradition in Islam considers law as “the moral status of an act in the eyes of God” while “assessing the moral status of human acts was the work of the [religious] jurists” (Crone 2004, p. 9). Sharia law recognized slavery; thus, abolishing it implied an action that contradicted a central internalized belief of Muslims—that the Sharia is a sacred law sanctioned by God. Abolishing slavery challenged the faith’s moral authority, the legal authority of the Sharia, and the stature and power of those responsible for administering it.¹⁷ A difficulty in abolishing slavery was that “from a Muslim point of view, to forbid what God permits is almost as great an offense as to permit what God forbids—and slavery was authorized and regulated by the holy law” (Lewis 1990, p. 78). The institutional elements relevant to slavery were central to Muslim religious beliefs.

Past institutional elements provide opportunities as well as constraints in the process of institutional change for able rule makers. Franklin D. Roosevelt insisted that the U.S. Social Security system be defined as insurance and not a welfare system. This was much more than semantic. Framing the issue in a way that linked the system to beliefs associated with the institution of insurance (the belief that one has the right to be paid after paying one’s premiums) was intentional. Roosevelt knew that this would render Social Security self-enforcing in a larger set of circumstances in the future (Romer 1996).

Effective rules also change cultural and social features, which, in turn, influence what other rules can be effectively enacted. Consider, for example, the case of premodern Venice, which, unlike Genoa, devised rules that reduced, over time, the political importance of clans and fostered beliefs in cooperation rather than confrontation. The history of Venice during its early days parallels Genoa’s. After an initial period of interclan cooperation, Venetian history was characterized by interclan rivalries over capturing the office of the Doge (Lane 1973; Norwich

1977). Originally the Doge was a Byzantine official, but shortly after Venice was established in 679, the post became that of an elected monarch. For the next few hundred years, clans fought in Venice for control of the Doge's post. As in Genoa, economic cooperation was hindered by the lack of an institution to contain interclan rivalry.

Changes around the Mediterranean increased the cost of these confrontations. Toward the end of the eleventh century, the decline of Byzantine naval power increased the gains to the Venetians, leading to the formation of a political institution enabling cooperation. As a response to this opportunity, they established a new self-enforcing institution. At its center was the belief that clans would join together to fight against any renegade clan that would attempt to gain political dominance over the city and its economic resources. This belief was sustained by a set of rules whose prescribed behavior was made self-enforcing by that belief. The rules limited the Doge's power to distribute economic and political rents, curtailed each clan's ability to influence the election of a Doge (or any other officer), established tight administrative control over gains from interclan political cooperation, and allocated rents fairly among all the important Venetian clans so that all had a share regardless of clan affiliation. This allocative rule therefore did not provide clans with incentives to increase their military strength and plan interclan military conflicts.

The belief that clans would join together to confront those that attempted to use military power to gain control over the city was made self-enforceable because each clan had a stake in the implementation of these rules. But these rules and the associated beliefs were also reinforcing: they provided clans with few incentives to invest their resources in fortifying their residences or instilling norms of clan loyalty in their members rather than loyalty to the city.

There was therefore a positive feedback from rules to culture. By weakening the clans and fostering a common Venetian identity, Venice's republican magistracy over time increased the range of situations in which it was self-enforcing. This institution also prevented the endogenous formation of a political faction among nonnoble elements of the city, the *popoli*, because the magistracy as an institution did not motivate clans to establish patronage networks that would have channeled rents from political control over Venice's overseas possessions to nonnoble clans.¹⁸

Similar interplay between state-mandated rules and cleavage structures operate in modern states (Greif and Laitin 2004). Rules reflect existing social structures and cultural beliefs, which, in turn, reproduce these structures. In newly independent Nigeria, which gained its independence in 1960, political parties were regionally based, and they catered to the needs and aspirations of the majority tribal groups in their regions. In the Western region, the Action Group catered to the interests of the dominant Yoruba population, and Yorubas largely associated themselves as supporters of that party. Within the Yoruba region, factions of the Action Group represented the interests of Yoruba's subtribes, associated with different ancestral cities. Similarly, the NPC, the party of the Northern Region, catered to Hausa interests, and the NCNC, the party of the Eastern Region, catered to Ibo interests. We can summarize the dominant cleavage structure of newly independent Nigeria as tribally based, with three principal groups dividing the political pie.

In Nigeria, political leaders present platforms and lists of candidates that reflect the interests of nationality constituencies, and voters tend to respond to symbols and messages that speak to them as members of a particular tribal or nationality group. This cleavage structure is sustained by beliefs that have been dubbed "everyday primordialism" (Fearon and Laitin 2000). Primordialism reflects the belief that ethnic or nationality differences are biologically established and ultimately more important than any other possible identification when it comes to social, political, or economic transactions. Primordial beliefs of this sort are hardly universal and were inherited from Nigeria's history. They were created and sustained under previous political structures. British colonialism ruled "indirectly" through tribal chiefs, who were paid by the British colonial state. These tribal chiefs were granted levels of authority they had rarely achieved in the precolonial period, and Nigerians had to petition through tribal authority structures to get a hearing from the British overrulers. Thus, colonialism played an important role in delineating tribal boundaries, clarifying tribal cleavages, and generating primordial beliefs.

Federal institutions that were built into the constitution ratified at the time of independence responded to the existing cleavages and beliefs. Political distributions were made based on formulae that returned federal funds to the original three regions. In 1967, the eastern region (whose leaders were opposed to the formula for the distribution

of newly gained oil revenues) attempted secession, but the region lost a bloody three-year war fought against federal forces. Subsequently, several minority tribes were given their own federal units (then called states). Each of the 12 states had a budget supported in large part by federally collected oil revenues. Since each state got a base allocation to cover the provision of public goods, smaller and smaller nationality groups, spurred by this incentive, demanded their own states. By 1999, there were 36 separate states, almost all dominated by a single tribal group.

While the above discussion emphasizes the importance of social structures and cultural beliefs, the same argument can be made regarding norms. Laws protecting labor evolved in Europe for various economic and political reasons following World War II. After prevailing for a long period, however, such laws began to be viewed by people not as a protection but as an entitlement. As the recent labor riots in France indicate, this drastically altered the ability of the state to change them by fiat. These laws became a right, not a privilege.

CONCLUDING COMMENTS

This chapter provides a sketch of a theory of action (Greif 1994, 2006) that accommodates both formal-rule and culturally driven behavior. In both cases, the same social factors—rules, beliefs, and norms that often manifest themselves as organizations (social structures)—generate regularities of behavior. This theory of action does not presuppose that behavior is formal-rule or culturally driven. It restricts the set of permissible behavior by requiring that each individual is guided, able, and motivated to adopt a certain behavior, given the social factors influencing his actions, while these social factors must be reproduced in a similar manner.

From this perspective, asking whether society or the state is more important in determining economic outcomes understates the complexity of studying the sources of economic behavior. Society and state intertwine in generating behavior. In particular, for the formal-rule approach to influence behavior, the state has to be sufficiently effective in formulating and disseminating rules and creating the self-enforcing

and reproducing beliefs, norms, and organizations that are required to motivate and enable the corresponding behavior. Yet, society—its cultural beliefs, norms, networks, and other social structures—influences a state's effectiveness in achieving this task. The ability to institute rule-driven behavior is affected by culturally driven behavior. The converse also holds: effective formal rules shape society.

It is sufficient to note that a functioning state is an outcome, and its ability to formulate rules depends on the cultural beliefs of various groups regarding not only their interests but also the goals and expected behavior of other groups. The difficulties in creating a functioning government in Iraq after the American occupation reveal the extent of this problem. Similarly, compliance with state-mandated rules depends on cultural beliefs and norms regarding sources of legitimacy, appropriate behavior, and obligations toward kin and members of other social structures, such as tribes and ethnic groups. The limits the modern state faces in ensuring compliance to formal rules in the absence of complementary beliefs and norms is well reflected in the large size of the informal sector and the prevalence of corruption in many modern economies.

Studying the many varieties of capitalism is an important line of research in comparative political economy and sociology (Hall and Soskice 2001). Focusing on developing countries, this research has successfully examined the distinct formal rules that enabled various types of capitalism to flourish. The argument presented above suggests that a complementary useful line of analysis would be to explore the common factors in these societies that render these formal rules relatively effective in influencing behavior. Such an investigation would be likely to enhance our understanding of why capitalism—in any form—has failed to emerge in so many societies, leaving their members in relative, if not absolute, poverty.

Notes

1. The discussion in this chapter draws on Greif (2006) and, more generally, on an approach to institutional analysis known as comparative and historical institutional analysis. For related discussions of this approach, see also Greif (1997, 1998) and Aoki (2001).
2. Barzel (1989), North (1990), Eggertsson (1990), Furubotn and Richter (1997), and Williamson (1985, 1996) are classic expositions in economics.
3. This approach is sociological in nature because it accommodates the four main

distinctions between the economic and the sociological views as summarized by Smelser and Swedberg (1994, pp. 4–8) in the *Handbook of Economic Sociology*. The socioeconomic perspective does not presuppose methodological individualism (namely, that actors' preferences can always be studied as uninfluenced by the actions of others); rather, it holds that the allocation of resources reflects only formal rationality adopted in neoclassical economics, that social structures and meaning are not important in constraining behavior, and that the economy is not an integral part of the society. As a matter of fact, the perspective adopted here—as is now so common in economics in general—accepts that preferences and rationality are socially constructed, that social structures and meaning are important, and that the economy is an integral part of the society and has to be studied accordingly.

4. In a sense, this analysis follows a well-established sociological tradition (e.g., Berger and Luckmann [1967]) by concentrating on the social construction of what each individual considers the environment in which he acts.
5. I use the term *system* to highlight the interrelations among an institution's various elements, but an institution that need not have all of the elements of the system (rules, beliefs, norms, and organizations).
6. The term *guide*, in this case, means to provide the knowledge required to take and coordinate a particular action. The term *motivate* here means to induce behavior based on external or intrinsic rewards and punishments.
7. Scott (1995, p. 33) advances a different, nonunitary notion of institutions, according to which institutions "consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior." Chapter 5 clarifies the relationships between the two definitions.
8. Sociologists have explored this foundation (for reviews, see Wrong [1999] and Scott [1995]). Its importance has also been stressed by many prominent economists, including Akerlof (1984), Arrow (1981), Becker (1974), Hirshleifer (1985), Lal (1998), North (1990), Platteau (1994), and Samuelson (1993).
9. Psychologists define an intrinsically motivated act as one that is taken without any reward but the value of the action itself (see Frey [1997], pp. 13–14).
10. On norms and their transmission, see Cavalli-Sforza, Luca, and Feldman (1981); Davis (1949); and Witt (1986).
11. I use the term *norms* to note both the values specifying the preferred or the desirable (e.g., winning the game) and norms specifying the legitimate means of achieving these goals (e.g., winning by playing fair).
12. The classical game-theoretic framework, for example, assumes a complete model and common knowledge and focuses on equilibrium strategies played by highly rational individuals. This corresponds to a situation in which institutionalized rules that aggregate private knowledge and information provide shared cognition, information, and coordination. The analysis thus restricts the set of admissible rules, beliefs, and behavior to those in which each limitedly rational individual, responding to the cognitive, coordinative, and informational content of the institutionalized rules, follows the behavior expected of him. In situations in which an institution generates behavior, the knowledge and information that are compressed into the institutionalized rules enable and guide individuals, despite their limited

- perception, knowledge, and computational ability, to act in a manner that leads to behavior (and reflects the constraints on admissible beliefs and behavior) that the game-theoretic equilibrium analysis captures. Classical game theory can be usefully employed to study situations in which it is reasonable to assert that social rules were institutionalized. See Greif (2006, Chapter 5).
13. For an extensive recent discussion, see Greif (2006), Chapters 10–11 and the references therein.
 14. The focus here is only on the issue of endogenous institutional change due to self-reinforcement and undermining, but the above observations regarding the nature of institutions, institutionalized rules, and beliefs also enable addressing related issues—e.g., intentional, coordinated action by individuals to change others' beliefs, draw attention to change, coordinate actions by some to influence others' optimal behavior, and establish organizations to foster or halt reinforcement or undermining.
 15. On cultural beliefs in general, see, for example, Davis (1949, in particular pp. 52ff., 192ff.). Regarding their importance in influencing institutional change, see Greif (1994) and Nee and Ingram (1998).
 16. Even symbols, terms, and gestures associated with past institutions, such as “signing a contract” or “the crown,” influence institutional selection. They constitute commonly known external representations of encapsulated knowledge on which individuals condition their behavior. Sociologists have long emphasized the importance of a shared cultural understanding (script, cognition, or interpretive frames) in constraining the behavior that leads to new institutions by determining what actors can conceive (DiMaggio and Powell 1991; Dobbin 1994; Meyer and Rowan 1991; Scott 1995).
 17. I do not argue that the laws specified in the Sharia were static and immutable to change. This definitely was not the case. The argument is that different constraints and opportunities for legal changes exist in societies with and without religious law. More broadly, legal dynamics are distinct among systems in which the law has different normative contents and in which different decision makers influence legal development.
 18. This group had been extended several times to absorb emerging nonnoble families. The system therefore had the flexibility required for its perpetuation.

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5

Motivating Consummate Effort

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What is the best way to motivate consummate effort?

By “consummate effort,” I mean effort undertaken by a worker within an organization that goes well beyond any nominal job description, in a manner that is desired by the organization, at a job that has some if not all of the following characteristics:

- The individual worker must attend to several different tasks and must allocate her time among them.
- The tasks to be done are, *ex ante*, ambiguous. What to do next involves the results of work done so far and the resolution of environmental uncertainty, in ways that neither the worker nor her supervisors can anticipate initially.
- The tasks involve creativity by the worker or, at least, thinking and then acting “outside the box” on occasion.
- Outcomes are hard to describe, let alone measure, in the short run.
- Insofar as outcomes *can* be measured, they are the result of the efforts of multiple workers.
- Cooperation among workers is important to the organization.
- The worker has substantial effective autonomy; the technology is such that she makes on-the-job choices with little supervision or even guidance from her supervisors.

For lack of a better term, let me call such jobs Type-K jobs, for Knowledge (or Knowledge Worker). Such jobs are particularly prevalent in organizations in the so-called new economy. But even in the old economy of manufacture, a firm that employs high-commitment human-resource management (see Baron and Kreps [1999], Chap-

ter 9) will have workers assigned to jobs with at least some of these characteristics. Therefore, the question that leads off this chapter is of importance, both to practicing managers who wish to be successful and to economists (and other social scientists) who wish to understand the practice-performance link in both new-economy organizations and organizations that embrace high-commitment human resources (HR).

Unhappily, the dominant economic theory of motivation— incentive theory, a.k.a. agency theory—is of little help. Or, more accurately, agency theory is of negative help. Starting from the basic agency-theory model—i.e., rewards for (apparent) performance that balance effort and risk aversion (Grossman and Hart 1983; Holmstrom 1979)—analyses of job models that incorporate some Type-K characteristics generally come to the conclusion that rewards-for-performance will be ineffective.¹

Let me be clear here: I'm not saying that mainstream economics cannot explain how to motivate consummate effort. But, at least as formulated in much of the literature, it tells us that, for Type-K jobs, schemes based on pay (and other forms of tangible personal rewards) for performance as measured by outcomes are difficult to get right and, if gotten right, expensive for the level of motivation provided.

So, what are the alternatives? Social psychologists propose a number of motivational channels beyond tangible personal rewards, and they offer theories as to how effective these channels are. Inspired by their theories, I report some survey data in which successful executives are (essentially) asked to give their impressions about what is the best way to motivate consummate effort. After a brief recounting of two things—1) various psychological theories of motivation and 2) some data on human resource management (HRM) practices in high-tech start-ups—I compare and contrast how an economist and a social psychologist might explain these data. Many of the perspectives I attribute to the psychologist can be incorporated into economics, but one important feature of some psychological theories—the notion that, in terms an economist would use, employee preferences are malleable—goes beyond orthodox economic theory. I close by arguing that this important feature of real-life motivation of consummate effort should become part of economic orthodoxy.

SOME MOTIVATING SURVEY DATA

The ideal research strategy to address the opening question of this chapter, on how to motivate consummate effort, is (probably) to conduct controlled field experiments. But organizations are rarely willing to allow social scientists to experiment in a controlled fashion with the motivational channels the organizations employ.² So, bearing in mind the many deficiencies of retrospective survey research, we can instead ask successful managers how effective (in their view) are some possible alternatives.

Each summer for the past 15 years or so, I've surveyed the participants of the Stanford Executive Program (SEP) on this matter. The SEP is a six-week general-management program, typically bringing to Stanford between 120 and 160 top-level executives.³ The summer of 2013 was fairly typical: of 158 participants, 124 responded to my survey. Table 5.1 gives some demographics volunteered by the 124 respondents, but here are some quick summary statistics: The participants are from around the world, with 20 to 30 percent each from three areas: 1) the United States and Canada, 2) Europe, and 3) East and South Asia. The median age is around 45. Most (85 percent) are men. About half hold ranks in their home institutions of chair or chief executive officer, chief operating officer, or head of a staff function; the rest are less senior (but, we infer, are rising in their organizations, since their organizations paid the exorbitant fees that Stanford charges participants).⁴ Functionally, half consider themselves to be general managers, with the rest in a variety of specialized functions (only 2.4 percent are in HRM). And they come from a variety of different industries.

The survey has several parts, but the part of immediate interest begins with the following prologue: "The next five questions concern what motivates 'best work' or 'consummate effort' in your organization back home. To be clear, by 'best work' or 'consummate effort,' I mean effort that goes above and beyond the nominal specs of the job. I'm interested both in what motivates you and in what motivates your direct reports, and in this part of the survey, I am interested in the following sorts of motivators:

Table 5.1 Demographics of the SEP Participants Who Filled Out the Survey

	<i>n</i>	%
Home location		
United States/Canada	31	25.0
Latin America	10	8.1
Europe	37	29.8
East or South Asia	27	21.8
Africa/Middle East	4	3.2
Australia/New Zealand/Pacific Islands	15	12.1
Age		
Less than 40	18	14.5
40 to 44	45	36.3
45 to 49	35	28.2
50 and older	26	21.0
Sex		
Men	105	84.7
Women	19	15.3
Rank		
Chair/CEO/managing partner/president	25	20.2
COO	11	8.9
Head of a staff function: CFO/CPO/CIO/etc.	26	21.0
Senior VP/senior partner	14	11.3
VP/partner	23	18.5
General manager	25	20.2
Functional field		
General management	54	43.5
Finance	15	12.1
Accounting	2	1.6
Marketing	9	7.3
Operations/production/manufacturing	10	8.1
Information technology	5	4.0
Human resource management	3	2.4
Strategic planning	8	6.5
Other	18	14.5
Industry		
Financial services/investments	17	13.7
IT/Electronics/computer technology	27	21.8
Manufacturing/construction	24	19.4
Health care/pharma/biotech	2	1.6
Marketing/retail	12	9.7
Public sector	6	4.8
Consulting/advisory/education	5	4.0
Other	31	25.0

SOURCE: Author's compilation.

- a direct connection between providing consummate effort and tangible rewards for the individual, such as higher pay, better promotion prospects, higher status, and so forth
- work that is personally interesting and exciting
- a direct connection between providing consummate effort and success for the organization (or work group)
- work that contributes to society, transcending both the personal interests and rewards of the individual doing the work and the well-being of associates and the organization for which the individual works.

Then, concerning these four motivational channels, I ask four questions:

- 1) How effective are each of the four motivational channels in motivating the best work of the people that report to you? The survey provides respondents with a five-point scale on which to respond: “Not at all effective”; “Of limited effectiveness”; “Effective, but not very effective”; “Very effective”; and “Only this is effective for eliciting best work.”
- 2) Which of the following statements is most descriptive of what motivates the best work of your direct reports?
 - They do their best work when they perceive a direct connection between providing consummate effort and personal rewards for them.
 - They do their best work when the work is personally interesting and exciting.
 - They do their best work when they see a direct connection between their consummate effort and success for the organization.
 - They do their best work when their work contributes to society, transcending . . . both the personal interests and rewards of the individual doing the work and the well-being of associates and the organization for which the individual works.
- 3) This question is the same as Question 1 but asked in terms of motivating the respondent’s own best work.

- 4) The final question reprises Question 2 but, as in Question 3, in the context of motivating the respondent's own best work.

Of course, we have no guarantee that the jobs of either the SEP participants or those who report directly to them are Type-K jobs. But because the participants are generally members of upper management in their organizations, as are their direct reports, I believe it is safe to assume that most of the jobs have some if not all of the characteristics of a Type-K job. Be that as it may, the responses collected are shown in Table 5.2. Note that the upper half of the table contains the answers given to Questions 1 and 2—that is, answers concerning the respondents' perceptions of their direct reports. It also gives mean scores for answers to the first question, averaging over all responses, where "Not at all effective" = 1, "Of limited effectiveness" = 2, and so on. And, in similar format, the bottom half gives the responses for Questions 3 and 4—i.e., for the respondent's own sense of what motivates him or her.

There is a lot going on in these data (some of which concerns correlations in responses, which I'll get to in a bit), but here are a few (relevant) highlights:

- The economic theory of incentives is best represented by the tangible rewards responses, and while tangible rewards as a motivational device are perceived as having some power, they are certainly not the be-all and end-all of motivational channels: over 40 percent of respondents say that when it comes to motivating their direct reports or themselves, tangible rewards are less than "very effective." Moreover, tangible rewards as motivator are "most descriptive" (of the four channels) around 20 percent of the time for the direct reports and 10 percent of the time for "own motivation."
- In contrast, for direct reports, exciting work as a motivator is perceived as being at least "very effective" by nearly 80 percent of the respondents; for the respondents themselves, exciting work is at least "very effective" for nearly 85 percent. And exciting work wins as "most descriptive" in both halves of the survey.
- Motivation by success of the organization is perceived to be especially effective for the respondents themselves, being "very effective" or better in 90 percent of the cases.

Table 5.2 Responses to the Survey on Motivation by SEP Participants, 2013*What motivates best work by the people who report directly to you?*

(n = 124)	Not at all effective (%)	Of limited effectiveness (%)	Effective, but not very effective (%)	Very effective (%)	Only this is effective for eliciting best work (%)	Mean score	Most descriptive (n = 123) (%)
Tangible rewards	0.8	8.9	32.3	54.0	4.0	3.52	21.1
Exciting work	0.0	1.6	9.7	78.2	10.5	3.98	40.7
Success of organization	0.0	3.2	30.6	53.2	12.9	3.76	24.4
Work is socially important	4.8	38.7	33.1	21.8	1.6	2.77	13.8

And what motivates your own best work?

(n = 120, 121)	Not at all effective (%)	Of limited effectiveness (%)	Effective, but not very effective (%)	Very effective (%)	Only this is effective for eliciting best work (%)	Mean score	Most descriptive (n = 123) (%)
Tangible rewards	0.8	12.5	28.3	55.0	3.3	3.48	10.8
Exciting work	0.0	0.0	5.8	79.3	14.9	4.09	33.3
Success of organization	0.0	0.8	9.2	63.3	26.7	4.16	32.5
Work is socially important	1.7	18.3	38.3	36.7	5.0	3.25	23.3

SOURCE: Author's compilation.

- Motivation by socially important work is seen by many respondents as being less effective in both halves of the survey than the other three motivational channels. However, nearly a quarter of the respondents saw socially important work as being “most descriptive” of what motivates them—more than double the number who saw tangible rewards as the most descriptive self-motivator.
- One expects that perceptions of what motivates oneself would be “nobler” than perceptions of what motivates others. We see some of this in the data: organizational success and socially important work are perceived as being more effective on self than on direct reports.^{5,6}
- One might attribute this difference in perceptions to differences in rank in the organization: The more senior “self,” being higher in the organization and, presumably, older and wealthier, is better able to afford being motivated by the work, or by success of the organization, or by doing something regarded as socially important. If this is true, it should (presumably) show up in how the mean scores for self-motivation change as we move across the various demographic characteristics of the respondent. That is, chief executive officers (CEOs) or chairs should be less self-motivated (on average) by tangible rewards than are those respondents who identify as general manager. See Table 5.3; the data on mean scores don’t support this explanation, although the “most descriptive” data do, especially for the category of motivation by organizational success.
- There could also be some selection bias at work: the respondents chose to spend six weeks away from their homes, families, and jobs to take courses at Stanford University. While Stanford is a very nice place to spend six weeks in the summer and participants are treated extraordinarily well in terms of creature comforts, the cost of this program—both the dollar cost and the personal cost to the participant of being away from home and work for six weeks—is substantial. The participants, by choosing to attend the program despite its costs, are clearly indicating “unusual” aspects of their characters and preferences, which is (of course) the hallmark of sample selection bias.

- But, in line with the results of Heath (1999) (in which the selection bias explanation cannot be applied), I conjecture that these differences in the top and bottom halves of Table 5.2 reflect a misperception of what motivates either others or oneself or both. In fact, my prejudices (and they are just prejudices) are that there is misperception on both sides: the participants are somewhat “flattering” themselves as being more organizational- and social-minded than they really are, while they are being too harsh in this respect on their direct reports.
- More generally, we can wonder whether any of the demographic characteristics have a discernible impact on either the average scores or the percentages of the most effective channel, for self or for direct reports. See Tables 5.3 and 5.4 for the numbers; make of them what you will.⁷
- In due course, I’ll explain why, but for now let me stipulate that it is interesting to look at the correlations in how respondents answered Questions 1 and 3 and how they responded to Questions 2 and 4. For Question 1 versus Question 3, the correlation matrix is given in Table 5.5, Panel A. We see that the strength of motivator X on direct reports (as perceived by a respondent) is strongly correlated with the strength of X on self in all cases of X, while the mixed correlations (X on direct reports versus Y on self for $X \neq Y$) are much less positive—and are, in many cases, negative. Panels B and C report on the internal correlations of answers to Question 1 and Question 3.

As for Questions 2 and 4, we can look, say, at the conditional frequency that X is most descriptive as the best motivator for self, given that it is most descriptive for direct reports, and compare this to the marginal frequencies. We get the following:

- For “Tangible rewards,” the conditional frequency is 25 percent, versus 11 percent on the margin.
- For “Exciting work,” the conditional frequency is 45 percent, versus 33 percent for the entire population. For “Success of organization,” the conditional frequency is 62 percent, versus 33 percent overall.

Table 5.3 Cross-Tabulations of Mean Score for the Motivators and Percentages of “Most Descriptive” Motivator for Self against Demographic Characteristics

	<i>n</i>	Average impact on five-point scale				% saying this is most effective			
		Tangible rewards	Interesting work	Organiz. Success	Social importance	Tangible rewards	Interesting work	Organiz. Success	Social importance
United States/Canada	27	3.67	4.94	3.96	3.00	18.5	33.3	25.9	22.2
Latin America	9	3.44	4.33	4.44	3.56	11.1	22.2	33.3	33.3
Europe	35	3.26	4.03	4.17	3.29	2.9	31.4	37.1	28.6
East or South Asia	24	3.46	4.13	4.33	3.50	12.5	33.3	25.0	29.2
Australia/New Zealand/Pacific Islands	14	3.57	4.07	4.00	2.93	14.3	28.6	42.9	14.3
Less than 40 years old	17	3.47	4.06	4.18	3.34	0.0	47.1	41.2	11.8
40 to 44 years old	39	3.72	4.21	4.03	3.00	15.4	38.5	35.9	10.3
45 to 49 years old	33	3.36	4.03	4.12	3.55	15.2	21.2	24.2	39.4
50 and older	24	3.21	4.00	4.38	3.21	4.2	25.0	33.3	37.5
Male	98	3.49	4.07	4.14	3.21	10.2	33.7	33.7	22.4
Female	15	3.33	4.20	4.20	3.53	13.3	20.0	26.7	40.0
Chair/CEO/managing partner/president	23	3.35	4.13	4.26	3.43	4.3	21.7	47.8	26.1
COO	11	3.45	4.09	4.18	3.36	0.0	45.5	45.5	9.1
Head of a staff function: CFO/CPO/CIO/etc.	25	3.28	4.08	4.16	3.36	0.0	40.0	28.0	32.0
Senior VP/senior partner	13	3.54	4.08	4.00	3.15	30.8	15.4	23.1	30.8
VP/partner	19	3.89	3.95	4.05	3.16	15.8	36.8	31.6	15.8
General manager	22	3.41	4.18	4.18	3.05	18.2	31.8	22.7	27.3

General management	50	3.42	4.20	4.22	3.32	8.0	26.0	44.0	22.0
Finance	14	3.36	4.14	4.07	3.00	14.3	57.1	21.4	7.1
Marketing	7	3.29	4.14	4.00	3.29	14.3	28.6	14.3	42.9
Operations/production/manufacturing	9	3.78	3.78	4.00	2.78	11.1	55.6	22.2	11.1
Strategic planning	8	3.50	4.00	3.75	3.50	25.0	25.0	25.0	25.0
Other	16	3.69	3.88	4.25	3.06	12.5	31.3	31.3	25.0
Financial services/investments	16	3.75	4.44	4.38	3.19	0.0	50.0	37.5	12.5
IT/electronics/computer technology	24	3.42	3.96	4.08	3.42	16.7	12.5	25.0	45.8
Manufacturing/construction	22	3.50	4.14	4.14	2.86	13.6	36.4	22.7	27.3
Marketing/retail	12	3.58	4.00	4.17	3.58	16.7	8.3	58.3	16.7
Public sector	6	3.00	4.17	4.17	3.33	0.0	33.3	33.3	33.3
Other	28	3.46	4.00	4.11	3.25	10.7	42.9	32.1	14.3

NOTE: Only those characteristics for which there are six or more respondents are given. Please note carefully: the demographic characteristics are those of the respondent and not (necessarily) his or her direct reports.

SOURCE: Author's compilation.

Table 5.4 Cross-Tabulations of Mean Score for the Motivators and Percentages of “Most Descriptive” Motivator for Direct Reports against Demographic Characteristics

	<i>n</i>	Average impact on five-point scale				% saying this is most effective			
		Tangible rewards	Interesting work	Organiz. Success	Social importance	Tangible rewards	Interesting work	Organiz. Success	Social importance
United States/Canada	31	3.68	3.97	3.61	2.61	25.8	38.7	22.6	12.9
Latin America	11	3.73	4.27	3.91	3.00	10.0	50.0	20.0	20.0
Europe	38	3.39	3.89	3.76	2.58	10.5	39.5	36.8	13.2
East or South Asia	27	3.63	3.96	4.04	3.04	33.3	25.9	22.2	18.5
Australia/New Zealand/Pacific Islands	16	3.00	4.00	3.63	2.94	12.5	62.5	18.8	6.3
Less than 40 years old	18	3.50	3.83	3.72	2.56	16.7	55.6	22.2	5.6
40 to 44 years old	47	3.57	4.06	3.79	2.57	23.9	41.3	28.3	6.5
45 to 49 years old	35	3.40	3.91	3.66	3.11	20.0	31.4	25.7	22.9
50 and older	27	3.56	3.96	3.89	2.81	22.2	37.0	22.2	18.5
Male	108	3.52	3.94	3.79	2.71	23.1	39.8	25.9	11.1
Female	19	3.47	4.11	3.63	3.11	11.1	38.9	22.2	27.8
Chair/CEO/managing partner/president	25	3.48	4.04	3.76	2.76	16.0	40.0	24.0	20.0
COO	11	3.36	3.91	4.18	2.73	18.2	36.4	45.5	0.0
Head of a staff function: CFO/CPO/CIO/etc.	28	3.32	3.96	3.75	2.89	21.4	46.4	21.4	10.7
Senior VP/senior partner	14	3.50	4.07	3.71	2.79	21.4	42.9	14.3	21.4
VP/partner	24	3.71	4.00	3.67	2.54	25.0	45.8	16.7	12.5
General manager	25	3.64	3.84	3.72	2.88	25.0	25.0	37.5	12.5

General management	55	3.53	4.02	3.80	2.69	18.5	38.9	27.8	14.8
Finance	16	3.56	3.88	3.56	2.56	31.3	50.0	18.8	0.0
Marketing	9	3.11	4.00	3.89	3.33	22.2	33.3	22.2	22.2
Operations/production/manufacturing	10	3.90	3.80	4.00	2.60	30.0	30.0	20.0	20.0
Strategic planning	8	3.50	3.88	3.25	3.00	25.0	50.0	0.0	25.0
Other	19	3.53	3.95	3.89	2.63	26.3	36.8	31.6	5.3
Financial services/investments	17	3.71	3.82	3.65	2.65	29.4	29.4	29.4	11.8
IT/electronics/computer technology	27	3.41	4.04	3.63	2.78	30.8	38.5	11.5	19.2
Manufacturing/construction	25	3.44	4.08	3.88	2.52	12.0	48.0	32.0	8.0
Marketing/retail	12	3.75	4.00	4.08	3.00	25.0	16.7	33.3	25.0
Public sector	6	2.83	4.00	3.67	3.17	33.3	33.3	0.0	33.3
Other	33	3.67	3.85	3.73	2.73	18.2	48.5	27.3	6.1

NOTE: Only those characteristics for which there are six or more respondents are given. Please note carefully: the demographic characteristics are those of the respondent and not (necessarily) his or her direct reports.

SOURCE: Author's compilation.

Table 5.5 Correlations in Effectiveness of Different Channels on Direct Reports versus Self (Panel A), on Self versus Self (Panel B), and on Direct Reports versus Direct Reports (Panel C)

Panel A: Correlations of score for self-motivation versus direct reports

		Score for self			
		Rewards	Exciting work	Success of organization	Work is socially important
Score for direct reports	Tangible rewards	0.515	0.153	0.001	−0.118
	Exciting work	−0.055	0.379	0.074	0.063
	Success of organization	−0.100	−0.102	0.437	0.103
	Work is socially important	−0.354	−0.057	−0.030	0.594

Panel B: Correlations of score for self-motivation versus self-motivation

		Score for self		
		Exciting work	Success of organization	Work is socially important
Score for self	Tangible rewards	0.007	−0.038	−0.300
	Exciting work		0.080	0.057
	Success of organization			0.249

Panel C: Correlations of score for direct-report motivation versus direct-report motivation

		Score for direct reports		
		Exciting work	Success of organization	Work is socially important
Score for direct reports	Tangible rewards	−0.076	−0.083	−0.362
	Exciting work		0.114	0.145
	Success of organization			0.252

SOURCE: Author’s compilation.

- For “Social importance,” while only 23 percent of the respondents said it was most descriptive of the best way to motivate themselves, a whopping 88 percent of those who said it was most descriptive of the best way to motivate their direct reports said the same for themselves.

There are some other interesting “descriptive statistics” buried in the data from this survey, but this is enough: I’m not going to claim that this is a scientifically conducted survey (but I will point out that the respondents took the survey long, long before they heard from me on any of these topics). But having run similar surveys on the SEP participants in previous summers, I’m confident that the main results (not those reported in Note 7) replicate themselves, at least for SEP participants. And I strongly hypothesize that they will be replicated for other groups of senior executives.⁸

I reiterate that retrospective survey data of this sort—in particular survey data on what respondents believe motivates them and their direct reports—should be taken with a large grain of salt. But in what follows, I take these descriptive statistics at face value and ask: What is driving them? And, since this is meant to be an essay in economics, how do we explain them (if at all) using economics?

Colleagues who are social psychologists have no problem explaining these data. Their explanations derive from various theories they have about motivation in general, theories that are generally unfamiliar to economists. So before giving their possible explanations of these data, and comparing those explanations to what an orthodox economist might say, I first briefly describe some of the psychological accounts of motivation, with special attention given to one of these, self-perception theory. Then I describe some further data gathered by colleagues of mine concerning the HR practices (and subsequent economic outcomes) of high-tech start-ups in Silicon Valley. And then I have these data discussed by a fictional economist and a fictional social psychologist.

A FAST TOUR OF SOCIAL-PSYCHOLOGICAL ACCOUNTS OF MOTIVATION

Economists like to show how things that seem different are really the same. Psychologists like to show how things that seem the same are really different. —Dale Miller (professor, Stanford Graduate School of Business), in discussion with the author, 2014

Economics—or, at least, mainstream economics—is based on one model of human behavior: utility maximization. Hence, the dominant account in mainstream economics of motivation is incentive theory. The theory may be applied to a diverse array of (modeled) circumstances—to jobs where relative-performance evaluation is possible, or where the agent must attend to several tasks—but the basic model of behavior stays the same.

Psychologists—and, in particular, social psychologists who are concerned with work settings—have a number of distinct accounts of on-the-job motivation, based on what drives behavior. Some accounts involve conscious analysis and choice by the worker; others appeal more to subconscious and unconscious behaviors. My specific interest is in one particular account, called *self-perception theory*. But here is a quick tour of some of the other accounts:⁹

Expectancy Theory

Expectancy theory presents a conscious-cognition model of how people decide what to do or how hard to work.

- The employee has expectations about whether effort or specific actions on her part will lead to the results that (she perceives) management wants. This is called *expectancy*.
- She has expectations concerning whether fulfilling what is perceived as management's desires will lead to rewards for herself. This is *instrumentality*.
- She attaches value to the rewards she thinks she may get. This is called *valence*.

The actions she will take are, roughly, those that maximize her chances of receiving the rewards that she values the most. Some formulations of this hypothesis try to make this prediction exact, by taking the product of the two probabilities times a measure of value of the prize. But we don't need anything so rigid. We simply note that, everything else being equal, she will take action A instead of B if she believes that A is more likely to lead to what she perceives as management's desires; she will take action C over D if she believes that the likely outcome of C is more likely to be rewarded; and she will take action E over F if the rewards associated with E are more valuable to her.

This is a theory about employee expectations.¹⁰ Accordingly, the managerial implications of this theory begin with clarity:

- Clarity or transparency of what management desires and what will be the rewards the employee will receive if she performs well enhances instrumentality, hence helps to motivate desired behavior.
- While the theory emphasizes expectations, it is something of a necessary (but not sufficient) condition that employees can in fact achieve the desired outcomes. Beyond this, employees should *believe* that they are capable of achieving the outcomes management desires if they behave as desired, enhancing expectancy.
- The rewards that are on offer should be valued by the employees, enhancing valence. Note in this regard that insofar as employees engage in social comparisons or otherwise value procedural and distributive justice, rewards should be equitably awarded (see the subsection "Equity Theory," further on).
- Insofar as an employee's conscious expectations drive his or her behavior, management should keep close tabs on those expectations. And management should strive to understand what employees value, rather than assuming that it is monetary compensation.

Expectancy theory is illustrated by Tracy Kidder's classic book *The Soul of a New Machine* (Kidder 1981). The young engineers who were working on designing a next-generation computer (by designing both the hardware and the microcode that would run it) worked long hours, because they believed that this is what it would take to get the machine ready for market in the time required (expectancy). They were

convinced that this was what management wanted. They believed that if they succeeded in these terms, they would be allowed to work on yet another new machine (instrumentality)—what Kidder calls “pinball effects.” And, for reasons that we’ll try to explain later in this chapter, they valued the opportunity to work on a new machine (valence). This last part may seem mysterious: the story essentially is that they are willing to work incredibly hard for the opportunity to keep working incredibly hard. Why would they value that? It was *not* for any financial reward that they had been promised. So that is what remains to be explained.

Goal-Setting Theory

Goal-setting theory is a version of expectancy theory in which the reward is achievement of some artificial goal: Management sets for the employees a goal to achieve, and, if certain conditions are met, achieving the goal is, for the employees, its own reward.

The acronym SMART as a modifier of the goals describes some of the conditions that should be met if goal setting is to be effective: The goal should be Specific (not vague), Measurable (you know when you get there and, along the way, you know when you are making progress toward the goal), Achievable (you should be able to get there), Relevant (the goal should “make sense” as something that is important to achieve), and Time-bound (the time it will take to achieve the goal should be relatively clear; “you’ll get there eventually” is not SMART).

In addition, goals should be somewhat challenging; if the employee is to feel a sense of satisfaction from achieving the goal, it can’t be something that requires little or no effort. (But, it can’t be so challenging that the individual doubts that she can achieve it.) And, at least in some accounts, the goal should be viewed as legitimate (which may be subsumed under Relevant); it *may* enhance perceptions of legitimacy to have the employee participate in the setting of her goals.

The notion that achieving a goal that has been set provides its own satisfaction seems quite reasonable to me, at least based on my own behavior (which, I hasten to add, is a terrible way to validate psychological theories; be assured that the proponents of this theory have backed it up with a lot of careful empirical work). But I have some issues with this theory when it comes to Type-K jobs. These issues are, roughly,

related to the multitasking issues that arise in the economic theory of incentives: When the employee's job involves several distinct tasks, how does one set a goal that encompasses all the tasks? Presumably, you set goals related to each task, but does that then cause the individual to allocate her time so as to increase her chances of meeting them all? And is that necessarily what the organization desires? Goal-setting theory (I'm told by colleagues) has been criticized along precisely these lines (although I haven't consumed the relevant literature yet). So my bottom line on goal setting is that I believe it can be a good, even powerful motivational tool *if* you can meet the requirements of SMART, plus challenge and legitimacy. But in some jobs and for some employees—for Type-K jobs, in particular—this isn't going to be easy.

Equity Theory

Equity theory posits that employees are *demotivated* by inequitable distributions of rewards. Very roughly speaking, each employee looks at the ratio of the rewards received by herself and her fellow workers to her perception of how much she and they have contributed to the organization, and she is demotivated when those ratios are quite different from each other. In operationalizing this, “rewards” is broadly defined; we include not only financial compensation, but things like praise and recognition. And the hypothesized demotivation is meant to occur at both ends of the spectrum: someone who receives too much reward in proportion to her contributions feels shame or embarrassment and is demotivated, while someone who receives too little feels anger. In fact, according to this theory, someone whose ratio is in the middle will be demotivated, if she sees peer A with a much higher ratio than peer B.¹¹

Variations on this basic theme involve

- a distinction between distributional and procedural equity—the first concerns the rewards actually received by the different employees, while the second concerns whether the process that determines rewards is judged to be fair, even if it sometimes produces results that seem skewed;
- social comparisons, where individuals in comparing the ratios for various employees tend to confine their attention to those who are socially similar to themselves;¹²

- the confounding effects of social distinctions: partners in, say, a law firm may be disproportionately rewarded relative to legal associates, but this may be “okay” if legal associates view their current efforts as moving them up to the ranks of partnership.

If you buy this theory, the obvious managerial implication is to engage in equitable rewards. But this is not always easy to do, because it is the perception by individuals of these ratios that is important in the theory, and perceptions of different employees about who is making what level of contribution do not always agree.

Reinforcement Theory

In comparison with expectancy theory, goal-setting theory, and equity theory, reinforcement theory involves (perhaps!) less conscious forms of behavior. The term *operant conditioning* is used; behavior of a certain sort triggers a change in one’s “conditions.” If the change is a net positive, the form of behavior is strengthened; if the change is a net negative, the behavior is weakened.

- *Positive reinforcement* is where a valued behavior is rewarded, strengthening the behavior; e.g., if a rat pushes the appropriate lever, it gets food. So it “learns” to push the lever.
- In *negative reinforcement*, a desired behavior causes a negative condition to stop or lessen, also strengthening the behavior. Example: a rat is subjected to mild electrical shocks, which cease for a while if it pushes a lever. So it learns to push the lever.
- *Punishment* is where an undesirable behavior leads to a negative condition (the punishment), which lessens the undesirable behavior. Example: When a rat pushes a lever, it receives a shock. It learns not to push the lever.
- *Extinction* is where a (formerly desirable and now undesirable) behavior that previously was rewarded is no longer rewarded, lessening the behavior. Example: The rat in the positive reinforcement story suddenly finds that pushing the food lever no longer results in food. So it learns that it is no longer worthwhile to push the lever.

Note the parenthetical “(perhaps!)” in the first sentence of this section; I don’t know enough about the intelligence of rats to know whether a conscious connection is made, or whether the rat is just conditioned to push the lever.

Applied to employees, presumably the odds are higher that a conscious connection is made; my (perhaps uneducated) understanding is that the basic theory is agnostic as to whether the learned behavior is learned (or unlearned) through conscious reasoning or a less conscious process.

To be effective, reinforcement rewards (or punishments, or cessation of negative conditions) should be clearly connected to the behavior being strengthened or weakened. This means, for one thing, that the “rewards” should be temporally contiguous with the behavior—in employment settings, shorter review-and-reward periods would be better. Some accounts hold that, for job-related applications, the key to positive reinforcement is transparency—i.e., more information about what’s expected and what’s rewarded. This suggests that applications to on-the-job motivation are probably more of the conscious variety.

Self-Determination Theory

In the theories explored so far, motivation is tied to external stimulus of some sort or other: In expectancy theory, behavior is consciously undertaken to fulfill what is perceived by the employee to be the organization’s desires, leading (one hopes) to a valued reward. Goal-setting theory, at least in employment contexts, seems to be rooted in the idea that a goal is set externally (although I imagine the theory works in similar fashion for self-set goals). In equity theory, rewards are determined by an external authority. In reinforcement theory, good behavior is rewarded and bad behavior punished by an external party.

Self-determination theory concerns motivation that, in contrast, is intrinsic to the individual. The individual acts in a particular way because she wants to do so, even absent external rewards or stimulus. In particular, the theory holds that the more an individual is likely to be self-motivated (hence perform better?), the greater are

- her ability to act with *autonomy*—the ability to control her own actions;

- her ability to gain and exhibit *competence*—to control the outcome and exhibit (if only to herself) her mastery of the situation; and
- her ability to be socially *related* to others—to interact with, be connected to, and to help others and be helped in turn.¹³

Essentially, the managerial implications are that, to enhance performance through intrinsic motivation, one should increase employee autonomy, give employees greater opportunities to enhance their skills and demonstrate competence with those skills, and increase a sense of “belonging” and “helping” others.

Given the problems in incentive systems that fit under the rubric of multitasking (and other problems in getting externally applied incentives “right”), intrinsic motivation might seem like a silver bullet (i.e., a simple and seemingly magical solution to a complicated problem) when it can be enlisted: the employee does the right thing, all by herself.

Of course, it isn’t that simple, which explains the parenthetical “(hence perform better?)” in the second paragraph of this section. An employee who is intrinsically motivated is motivated to do those things for which she has a lot of intrinsic motivation—that’s a tautology—which may or may not be the things that the organization desires her to do. If the employee’s intrinsic motivation aligns with what the organization wants, it can be the proverbial silver bullet mentioned a moment ago. But that’s a mighty big *if*. If employees come intrinsically motivated to do what the organization desires, great. But, in other cases, a key to enlisting intrinsic motivation is to find ways and means to get the employee’s intrinsically motivated behavior aligned with what the organization values. Which takes us to my favorite among the psychological accounts I discuss:

Self-Perception Theory

Self-perception theory (Bem 1972) has a very different account of behavior from the usual utility maximization of economics; it is based on a process of retrospective justification leading to future behavior. The basic notion is that individuals sometimes (often?) act without having clearly defined objectives; after the action is taken, the individual looks for a “story” that explains why she acted as she did, and the story

she adopts affects her future behavior. If, for example, she justifies her efforts with the story that the work she did serves some social goal *and that she cares about achieving that goal*, then, in the future, her behavior will reflect enhanced care for that social goal.¹⁴

Consider the young engineers in *The Soul of a New Machine*. At first, perhaps, working long and onerous hours was no big deal; perhaps they were carried along by enthusiasm for a new project. But as they continued to work under exhausting and stressful conditions, they looked for a reason: How could they rationalize to themselves why they were doing this? They weren't going to be paid a big bonus if they succeeded, so that wasn't it. At least as Kidder tells the story, they didn't have a lot of affection for the firm for which they worked (although they did have affection for each other and for the leadership of their group). No particular social purpose was served by what they were doing. But a story that did scan for them is, they were working those onerous hours because the work itself was fun, interesting, and exciting. And, if they perceived that this was what had motivated them in the past, it becomes a piece of their "identity"; they perceive that the work *is* fun, hence they desire to continue to have the opportunity to do it. This fills in the missing piece of the expectancy-theory story of their behavior.

Employees in some cases will have a choice of how they rationalize their past behavior; depending on their choice, we get different values, hence different future behavior. Salience of a particular "story" makes it more likely to be the chosen rationale; hence, to the extent that management wishes to employ self-perception theory to its own ends, it should determine which story is the one it wants employees to embrace, and it should set conditions to make that story the most salient.

Primary Nursing at Beth Israel Hospital

An anecdotal example illustrates how this process is meant to work, as well as problems it can cause. In the 1970s, Beth Israel Hospital in Boston embraced the then-new practice of primary nursing.¹⁵ In primary nursing, each admitted patient (referred to here as "he") is assigned a primary nurse (a senior registered nurse [RN], referred to here as "she") from the floor or ward in which the patient will stay. Each nurse given such duties is, at any point in time, assigned as primary nurse for a small handful of patients—three would be a typical number. A patient's pri-

mary nurse is responsible for coordinating all care for the patient. When the patient is admitted, he meets with his assigned primary nurse, who takes the full history of the patient. When she is on duty, she performs most routine nursing duties for “her” patients. When off duty, she is still on call for her patients. She works closely with the admitting doctor and other docs and staff who might be providing services to the patient, but she is “in charge” (of course, in consultation with the admitting doc and attending specialists for decisions that require the approval of a physician); it is her name and not that of the doc that is on the patient’s bed. If a patient is readmitted to Beth Israel, every effort is made to assign to him the RN who was his primary nurse during his earlier stay. The culture strongly encourages her to make a personal connection with her patients and, indeed, to think of them as “hers.”

Nursing is, of course, a Type-K job.¹⁶ Primary nursing, by encouraging a personal connection between a patient and his primary nurse, leads the nurse to internalize strongly the welfare of her patients, which in turn leads her to go above and beyond her normal duties in giving and securing the best possible care (in a caring manner) for them. The practice worked like a charm: Beth Israel gained a reputation in Boston as being the best hospital at which to be a patient because of the extraordinary level of care it provided; among RNs, it gained a reputation as the best hospital at which to work. A psychologist could appeal to self-determination theory to explain this outcome: primary nursing scores well in providing the RN with autonomy, by giving her opportunities to exhibit competence and to be socially related. And a psychologist could appeal to self-perception theory: over time, an RN, for whom primary nursing means hard work, attributes her efforts as “I really do care about the welfare of my patients,” which, going forward, lessens the cost and increases the personal benefit she perceives in going above and beyond the normal effort and hours.

This story has a less-than-happy ending.¹⁷ Because a patient’s primary nurse was motivated first and foremost to help her patients, she directed care for them based on her perception of what was best for them. In the fee-for-service financial environment of the 1970s, this was not a major problem. But as insurance companies moved from fee-for-service to diagnosis-resource-group and capitation-based reimbursement schemes, Beth Israel, now called (following a merger with Deaconess Hospital) Beth Israel Deaconess Medical Center (BIDMC), faced

considerable financial pressure to cut costs. Primary nurses were asked to make “financially sensible” decisions about services provided to their patients; BIDMC considered schemes that would take this decision-making authority out of the hands of the RNs altogether or, at least, would make it a shared authority of all nurses on a floor or ward. The patient load placed on the primary nurses was increased; the ability of a primary nurse to make a personal connection with each of “her” patients was weakened. One can imagine that, given the culture of nursing that had built up over decades of primary nursing, this was far from easy.

The Undermining Effect: Does Extrinsic Motivation Drive Out Intrinsic Motivation?

A well-established meme within psychological theories of motivation is that the imposition of extrinsic motivation can dull intrinsic motivation, to such an extent that valuable intrinsic motivation virtually disappears. A typically cited manifestation of this concerns blood donations: historically, donating blood has been done for no particular compensation, except (perhaps) the ability to draw on the blood bank, if a donor finds himself in need at some later date. At one point in England, blood banks, seeking to increase donations, decided to offer a small monetary payment for a donation, the idea being that people would be more likely to give blood if some extrinsic motivation was loaded on top of whatever intrinsic motivation caused people to give blood previously. But instead, blood donation rates decreased. Making a small payment for donations caused something adverse to happen to whatever was motivating folks to give blood previously.

Both self-determination and self-perception theory give accounts that can explain this. Taking self-determination theory first, it might be that autonomy is perceived as having been reduced, insofar as potential donors feel that the financial reward is an attempt to control their behavior. The sense of social relatedness may be reduced. Before the extrinsic payment was offered, donating one’s blood was a very social act; now it seems more of a market exchange, motivated by a desire for payment. And the sense that blood donation achieves something important and valued is, at least, shifted, on much the same grounds.

As for self-perception theory, loading on extrinsic rewards in a setting where individuals come with significant intrinsic motivation gives

the individual a number of “stories” to explain why she acted as she did. Before, perhaps she rationalized her behavior by attributing it to the enjoyment she takes from the task, or because she values the success of the organization and is willing to sacrifice her self-interest to some extent to help the organization succeed, or because she perceived that her efforts were helping to achieve some greater goal. Now, competing with her previously held self-perception is the story that she did it for the reward. Indeed, when the extrinsic reward is added, its novelty may enhance its salience. Hence her self-perceived reason for acting as she did changes, and now (perhaps) she strives to maximize her extrinsic rewards, and the silver bullet of intrinsic motivation is minimized. In a word, the extrinsic rewards *undermine* the intrinsic motivation she might have had; hence, this is called the *undermining effect*.¹⁸

A variation on undermining concerns the impact of extrinsic rewards on intrinsic motivation when the extrinsic rewards are removed. To give an example, many readers will know of work done by Roland Fryer and associates concerning the motivation of inner-city schoolchildren to achieve more in their studies; see, for instance, Fryer (2011). Much of the attention in this work has been on what a psychologist would think of as enhancing expectancy: rewards for grades worked less well in improving grades than did rewards for reading books, because the students were unclear on what to do to improve their grades. But also from a psychologist’s perspective, Fryer’s work raises questions about what will happen when the experiment ends. While his financial rewards for, say, reading books have worked in the short run, should we be concerned that the learned behavior by students is that you read for the financial rewards and not for pleasure or knowledge?

Attribution Theory and the Sad Tale of Company Z

Self-perception theory is a subset of attribution theory. In the basic account of attribution theory, Person X observes Person Y taking some action A. Person X then tries to answer the question for herself: why did Y do A? She tries, in other words, to *attribute* Y’s action to some underlying motive M. And, having attributed the behavior to M, her expectations about future actions by Y are that Y will continue to act in ways that serve motive M. Self-perception theory, then, is attribution theory for the special case of $X = Y$.¹⁹

When X is distinct from Y, X's attributions about Y's motives can be extended to third parties, especially third parties who are, in X's view, similar to Y.²⁰ But, at least in some accounts, X's attributions about Y can affect X's self-perception.

The sad tale of Company Z illustrates this.²¹ Company Z is a reasonably young company (on the order of five years old) that was founded to accomplish a "mission": to change the face of Industry I. Industry I provides services to various companies, but it does so in particularly opaque fashion: most clients of Industry I are in the dark when they shop for the services that firms in Industry I offer; they don't know where to find the best quality-to-price ratios for specific services that they require.

Company Z's mission is to change this by bringing transparency to Industry I. The firm hired both professionals who understand the intricacies of Industry I and professionals who design web-based information systems, and set for these two groups the task of designing accessible web-based tools that would allow the clients of Industry I to shop intelligently and knowledgeably.

Company Z paid these professionals submarket wages, giving them no stock options or other forms of incentive pay. And this all took place in a local labor economy where the professionals employed by Company Z had lots of outside opportunities. Nonetheless, Company Z got from its employees consummate effort, with minimal turnover. The reason: Company Z stressed the "mission" it was on, and it hired professionals who bought into this mission. "Changing the face of Industry I" became the strong motivator of these employees, a motivator that (according to self-perception theory) grew even stronger, as the professionals in Company Z could only justify their efforts with the attribution "I'm doing this because the mission is important to me." And the fact that employees of Company Z were surrounded by and interacted with peers, all of whom seemed to be acting for the same reason, further strengthened this effect.

Recently, Company Z has developed its product and, after some testing with a few lead clients, is seeking to sell the product broadly. This takes salespersons, and the leadership at Company Z decided that the mission demanded the best sales force they could find. The choice of company leaders was not salespersons who bought into the mission, but salespersons with proven track records of success in sales of related

products. Salespersons come from a professional culture whose members expect incentive pay in the form of commissions on sales made, with the further expectation of making a lot of money if they succeed. Since that is what it takes to get the best salespersons (i.e., those that have compiled the most successful track records in the past), that is what Company Z offered. The salespersons hired had base salaries higher than the salaries other professionals in the firm made, with incentive-pay possibilities that would lead to total compensation far in excess of what those other professionals could obtain.

Of course, to be effective, the salespersons had to interact with the other professionals, both to learn about Industry I and about how the product worked. And when the other professionals learned how much the salespersons were making, inevitable social comparisons were made, and the other professionals became demotivated. Indeed, the company's HR folks surveyed all employees to gauge satisfaction, and, department by department, the closer the staff in a department was to the sales staff (in terms of both social categories and frequency of interaction), the lower was their self-reported level of satisfaction.

Equity theory provides one simple account of what happened at Company Z: the other professionals looked at the ratios of contributions to compensation and saw blatant (distributive) inequities. But the attribution-theory account also provides an explanation: When surrounded by other employees, all of whom were mission-driven, the mission was a powerful motivator for each employee. When faced with (socially similar) employees who seemed to require personal rewards to motivate them, the previously mission-driven employees at Company Z began to question their own motivation.

THE STANFORD PROJECT ON EMERGING COMPANIES

A second set of data will finish setting the table for the discussion to come between the psychologist and economist. These data come from the Stanford Project on Emerging Companies (SPEC).²²

SPEC was a project conducted by three colleagues, James Baron, Diane Burton, and Michael Hannan. They assembled a sample of 154

high-tech start-ups in Silicon Valley and, through a combination of retrospective interviews and available financial data, tried to answer questions such as “What clusters of human-resource-management (HRM) practices are prevalent in these firms?” “What is the HRM practice-performance link?” and “How do changes in HRM practices (as the firms grow and evolve) affect performance?”

They started, through interviews with the firms’ founders, by identifying the founders’ HRM vision. They characterized what they learned from the interviews in terms of three questions and a set of answers. Then, based on the interviews with the founders, they chose for each question the answer that best fit what they had heard:

- 1) What was (the founder’s vision of) the basis of attachment of employees to the firm? Was it
 - a) love of the firm or coworkers,
 - b) the interesting and exciting work that the employee was doing, or
 - c) the money the employee received?
- 2) How were employees selected? Was it
 - a) on the basis of cultural fit,
 - b) based on the possession of skills needed to perform a list of immediately required tasks, or
 - c) based on the individual’s longer-run potential to contribute?
- 3) How were employees coordinated or controlled? Was it
 - a) by adherence to professional norms of appropriate behavior,
 - b) by adherence to a set of organizational norms specific to the firm,
 - c) by adherence to a set of formal rules and procedures, or
 - d) by direct oversight by one’s superior?

This gives $3 \times 3 \times 4 = 36$ different “founding visions” or models for the start-ups. The data revealed that nearly 60 percent of the 154 firms in the sample conformed to one of only five models, with characteristics and names (given by the researchers) as shown in Table 5.6. The most

Table 5.6 The Five “Pure Type” Models from the Stanford Project on Emerging Companies

Name of model	Attachment	Dimensions	
		Selection	Control method
Engineering	Work	Skills	Organizational norms
Commitment	Love	Fit	Organizational norms
Star	Work	Potential	Professional norms
Bureaucracy	Work	Skills	Formal rules
Autocracy	Money	Skills	Direct

SOURCE: Author’s compilation.

popular by far was the Engineering model, accounting for 32.5 percent of the firms.²³ But both the Commitment and Star models appeared frequently: 7.1 percent of the firms were Commitment model firms; 8.4 percent were Star model firms.

These five “pure types” or models were created in part based on the data, but also because they conformed to the researchers’ sense of bundles of HRM practices that are internally consistent. Following the work of Milgrom and Roberts (1990), the term *complementary* might be used, but the complementarity here is at least as much psychological as technological: the idea is that employees at a firm adhering to one of these five types would see the different practices as conforming to common organizational models; e.g., the Commitment model resembles a family, the Star model an academic department at an elite university.

The SPEC research explores a number of questions with this typology as a starting point; for instance, it looks at how the initial (or founder’s) vision influenced the evolution of HRM practices. But two questions addressed by this research will come into play in the dialogue of the next section:

- 1) What correlations did the research find between the founder’s vision and the product strategies of the firm?
- 2) Did the founder’s vision have any effect (on average) on the subsequent financial performance of the firm?

A PSYCHOLOGIST AND AN ECONOMIST DISCUSS THE SURVEY DATA, COMPANY Z, SPEC, AND MORE

We can now listen in as a (fictional) psychologist (P) and an (equally fictional) orthodox economist (E) discuss the survey results and related matters. Since (I assume) most readers of this chapter will be economists, I will have the psychologist use terms that are not typically in a psychologist's standard vocabulary but that "translate" into the language spoken by economists.

P: The data from the SEP survey are not in the least bit surprising. People can be motivated in many different ways, so I'm not surprised that we see as much variation in the answers as we do. But surely these data are surprising to an economist like you. Doesn't economics hold that only money (and perhaps power) can motivate people, since that is the only thing they value?

E: That's a bad misreading of what economics says. Economics is based on the idea that people act in a way that maximizes their "utility." But many arguments can enter into an individual's utility function in a positive way (that is, with a positive partial derivative), including the joy of working on a challenging problem, a desire to see one's team or organization succeed, or the achievement of some goal that is socially valuable.

P: I don't remember those sorts of things in the utility functions in my old economics textbooks.

E: It's true that textbook models tend to emphasize money or, even more fundamentally, goods that are literally consumed. But that's just textbook stuff, done to keep the story simple. Utility is a reflection of what the individual values, and no one can deny that different people value different things. Economists even have a bit of Latin to describe the situation: *De gustibus non disputandum est* ("There is no arguing about tastes").

P: Okay, I'll accept that. But not everyone values challenging problems or success of the organization or contributing to social good, while surely almost everyone values more income and other forms of tangible, personal rewards. So why don't all these high-powered execs

see tangible rewards as the best all-purpose way to motivate their direct reports?

E: That's a good question, and the answer is actually provided by the economic theory of incentives. If we are talking about Type-K jobs, all those characteristics that make for a Type-K job are characteristics that make "pay for performance"—style incentives hard to devise and ineffective in practice. *If* you can find another way to motivate workers, a way that avoids some of the problems with pay-for-performance schemes, that other way may well be superior in terms of motivational bang for the buck.

Let me give you a "for instance." Two of the characteristics of a Type-K job are 1) what economists call multitasking—the need for the worker to do several things and to allocate her time among the tasks—and 2) outcomes that are hard to measure or can only be measured in the somewhat distant future. Both of these characteristics can be killing to a pay-for-performance incentive scheme.²⁴ Now suppose—and it is a strong supposition—the individual worker has a good sense of what she *should* be doing from the perspective of the organization at the time that she must take action; that is, she knows what sorts of efforts are in the best interests of the organization, including her allocation of time among different activities. An employee who knows these things *and* who has internalized the welfare of the organization—who wants to see the organization succeed—will do the right thing (more or less) automatically, avoiding agency costs, *as long as the firm doesn't screw things up by trying to load an ill-fitting rewards-for-results scheme on top*. That is, even if this worker has a utility function that is much more responsive to personal rewards than to doing right by the firm, if her personal-rewards compensation is insensitive to measures of performance, she'll choose to do right by the firm. Of course, if the firm could find a personal-rewards incentive scheme that reinforced doing the right thing, that would improve matters. But the latter is hard to do (the theory tells us), so why not rely on the "second order" desire to see the firm succeed?

And, in this regard, note that there are two keys here: The individual must understand how her efforts connect with organizational success. And she must value the organization's success. The first of

these fits in well with how the survey phrased things: It asks for the relative efficacy in terms of motivation of establishing a direct connection between providing consummate effort and success for the organization. It isn't *just* an appeal to the employee to "do right by the organization." Implicitly it is that, but, explicitly, it is about being sure that the employee recognizes what that entails.

P: And the second key? Are we to believe that so many workers have internalized in their preferences the success of the organization for which they work? From my perspective, I believe that the organization can *foster* such preferences. But my sense is that *de gustibus*, when incanted by an economist, means that the tastes of each individual are innate and immutable; economics as a discipline takes them as a given. Do so many workers come with these innate preferences? And, if so, why do all those textbooks ignore what would be a powerful and common factor in workers' utility functions?

E: Well, remember that the population we're speaking of consists of SEP participants and their direct reports. These are all people pretty high up on the organizational ladder. Maybe what is going on here is that organizations, when deciding whom to promote into high positions, screen in particular for workers who have a track record of doing the right thing for the organization, which would favor people who do have the welfare of the organization as a powerful factor in their preferences.²⁵

In this regard, I call your attention to the survey of Stanford MBA students, referenced in Note 7. They gave better scores (on average) to tangible rewards. They are younger and less senior. If my hypothesis is correct that the organization screens over time for people who value the welfare of the organization or interesting work, then as people are or are not put in positions of greater authority, you would expect that less screening has taken place for MBA students and their peers. Hence, on the margin, appealing to the universal desire for personal goodies becomes more effective.²⁶

P: How about this? If the problem in Type-K jobs is that we don't know a priori what the employee should be doing—if we can't devise a formula a priori that will link outcomes to rewards—then surely, after the fact, the boss can ask "What did you do?" judge whether this was what was desired, and provide a monetary reward if what the

employee did was judged, ex post, to be “the right thing.” Doesn’t that sort of ex post evaluation coupled with tangible rewards get around the difficulties in designing ex ante incentive schemes for Type-K jobs?

- E: It would, *if* the boss can meet Conditions A, B, and C: A) discern what the employee did do ex post, B) know what the information state of the employee was when the employee made work choices, and C) *credibly* commit to rewarding “doing the right thing.” Each of those is somewhat problematic, but not entirely unreasonable. In a sense, what you are proposing is a scheme of *subjective ex post evaluation*, which has been studied in the economics literature; early papers include Prendergast and Topel (1993) and Baker, Gibbons, and Murphy (1994). But, as is very well known (and one of the main points in Prendergast and Topel), tangible reward schemes that are based on subjective ex post evaluation of performance invite what economists call *influence activities* and what you probably call *arguing or pleading one’s case, instead of getting on with productive work*. The more a job is Type-K, I believe, the less likely it is that Conditions A through C will hold, and the greater will be the cost of influence activities.²⁷
- P: Let’s talk about Beth Israel Hospital, then. My explanation for the problems the hospital faces is that, through the practice of primary nursing, supervisors inculcated in their nurses a regard for the welfare of the nurses’ patients as primary. I guess, to use your terminology, I would say that Beth Israel increased the importance that that factor has in the utility functions of their nurses. Having done so, they have found it hard to “redirect” their nurses to balance what is ideal for the patient with what it costs the hospital.
- E: I’m not keen on this notion that the nurses’ preferences were somehow changed, but I’d offer a closely related explanation. The hard work associated with primary nursing for a nurse is a very effective screen. Only RNs who have tremendous innate concern for the well-being of their patients would put up with phone calls at 3:00 a.m. from a patient complaining about something or other. RNs without such a strong concern would look for work elsewhere. So, over the years, Beth Israel wound up with RNs with that sort of preference, and RNs with those sorts of preferences are *not* going to be very

good at the balancing act that is now required. Indeed, since I don't think preferences of an individual are malleable, I think BIDMC is in worse shape than do you: They are stuck with a nursing staff whose preferences don't fit the new economic realities. You, I gather, believe that, while it may take time and be painful, BIDMC may be able to "remake" its RNs' preferences to fit better with what those new realities require.

P: I certainly do believe that, although I'm not saying it will be easy. But let's move on. I'm pretty sure I know what you will say, but what do you make of the correlations found in the survey answers, as reported in Table 5.5 and in the discussion following that table? Before you answer, let me tell you how I view them. While I'd be happier if some of the negative correlations in the bottom parts of the table were even more negative, they fit quite well with how I see things. Take the top part of the table first. I think what we are seeing here is a strong organizational fixed effect. Some organizations employ tangible rewards as a motivational device. Others employ "love of work." And so forth. The SPEC data suggest as much, but I think that any level of casual empiricism would tell you that different organizations in similar situations employ different motivational channels. Since each SEP participant and his or her direct reports work in the same organization, whatever is viewed as a strong, or most descriptive, motivator for the direct reports is more likely to be a strong or most descriptive motivator for the respondent. Hence, in the top half of the table, strong positive correlations are found down the diagonal, and not much correlation or even negative correlation is found on all off-diagonals.

E: I agree with you that there is an organizational fixed effect here, and I think the ultimate explanation for it is equilibrium screening. If you are the sort of person who gets a lot of juice out of being a "member of the team," you join an organization that rewards behavior that is directed at team success. If you love to work on challenging problems, you join an organization that rewards its employees with challenge. Of course, this is an equilibrium phenomenon: Organization A attracts people who want to be part of a team and work for the team's success, so at Organization A, that becomes the most effective way to motivate the workforce it gets, which (to complete the loop) attracts the type of people who want to be part of a team.

P: Just what I expected you to say. I agree that what you call screening plays a role, but I'd go further: Once you join, say, your Organization A, with everyone around you doing stuff so that the team will succeed, your desire to do what is best for the team is enhanced, as per the attribution-theory extension of self-perception. Indeed, if the company "rewards" your efforts by celebrating the team's success, self-perception theory alone predicts that this motivating factor will be strengthened through time.

E: Let me ask you: The most negative off-diagonal entry is motivation by social importance for the direct reports, and motivation by tangible rewards for the respondents. How do your theories explain that?

P: To explain that, I want to look at Panels B and C of the table. Most of the correlations here are close to zero, with two exceptions: motivation by tangible rewards has substantial negative correlation with socially important work, and motivation by success of the organization is substantially positively correlated with socially important work. I admit, I'd like to have seen the close-to-zero entries be more negative. In part, this should have been built in to the way the survey was worded. The highest category of answer is "Only this is effective" for eliciting best work, and we see percentages of around 10 percent or more selecting this answer, at least for exciting work and success of the organization. The plain language of that answer should certainly imply that the respondent who picks this answer for one of the four motivational channels would give a very low score to the other three. But it turns out that this isn't how the respondents responded. I looked at the detailed data and found that the average score given to the other three motivational channels by someone who gave one of the four an "only this" rating was 3.34, versus an average score in the entire sample of 3.50. There is even one respondent who gave two of the four motivational channels an "only this" rating and the other two a "very effective."

But even without this—that is, even if the top category had been called "extremely effective," so that it was phrased in a way that didn't preclude high scores for the other motivational channels—I would have liked to see more negative correlations. My theories of motivation, and in particular self-perception, suggest that one motivational channel will be particularly effective if it is the sole

ex post rationalization available as to why individuals give consummate effort, which would then go along with low scores for the other channels. So I can't say that the data are what I'd want to see, ideally.

That said, I think the correlations in Panels B and C between tangible rewards and socially important work and between success of the organization and socially important work are, respectively, an extreme case of what I was hoping for and the results of an ambiguously worded survey. To explain: If I had to guess which of the four motivational channels are "furthest apart" in terms of basic motivational forces, I'd guess tangible rewards—the "What's in it for me?" motivation—and socially important work, or "What's in it for society?" So, being strongly motivated by one ought to go with being poorly motivated by the other. As for organizational success versus socially important work, I imagine that socially important work is a strong motivator in organizations whose mission is the accomplishment of some socially important goal. Indeed, the notion that a subset of organizations are "social purpose" organizations is quite consistent with socially important work getting low average scores but being characterized as "most powerful" or "descriptive" in a fraction of the organizations. Now, if your organization is built to achieve some social purpose, achieving that purpose and having your organization succeed are naturally confounded. Put it this way: if "success of the organization" had instead been worded as "financial viability" or "financial success" of the organization, the confounding would be less, and I'd expect those strong positive correlations to be smaller. And to get back to your question about the cross-correlations in Panel A, what we're seeing here is a consequence of what I just described.

So we agree that different organizations employ different motivational channels, and we agree that whichever channel is powerful for one employee in a given organization is relatively more likely to be more powerful for other employees in the same organization. You explain the last part by screening. I think it is something more—namely, the impact an organizational environment will have on the preferences of its employees. We also agree, I think, that different motivational channels are better or worse suited to specific jobs or, at the organizational level, to the constellation of tasks facing employees who are (and see themselves as) socially similar.

E: Uh, that last bit is a bit mysterious to me. What's this "constellation" stuff?

P: I can explain with an analogy. Oliver Williamson's *Economizing Principle*, in his theory of transaction-cost economics, says that a transaction will tend to be structured in whatever manner maximizes the benefits it creates, *net of its transaction costs*.²⁸ Williamson's focus is on different aspects of those transaction costs, which is fine. But his unit of analysis is the individual transaction. So if, say, Firm F is engaged in separate long-term transactions with Firms G1 and G2, we should (the principle says) look separately at the two transactions, trying to discern what structure is optimal for each one. But insofar as we think that G1 makes inferences about how F behaves and will behave in the future based on what G1 sees happening between F and G2 and vice versa, then that cognitive or informational link may mean that the structure of the F-G2 transaction should take into account the "externalities" it imposes on the costs and benefits of the F-G1 transaction.

For the same basic reason, how Firm X motivates Employee A1—and, more generally, how X treats A1 in all aspects of their relationship—can have an impact on the perceptions, assessments, and behavior of Employee A2, the more so to the extent that A2 is socially similar to A1. The attribution-theory extension of self-perception mentioned in conjunction with the story about Company Z is one example of this at work, but this is part and parcel of the full theory of social comparisons. And, turning this a bit on its head, suppose Firm X has two categories of employees: A1, A2, and so on are all engineers, while B1, B2, and so forth are clerical assistants. This sort of consideration will (probably) lead X to rely on the same motivational channels for all the A's. But X may be able to get away with a different sort of motivation altogether for the B's. So, when asking "Which motivational channel or method is best for motivating Employee A1?," you probably need to think at the level of the characteristics of the jobs of all the Type A employees.

E: Hmmm. And since you posed the question, which motivational channel do you see as best for, say, engineers or other categories of employees in Type-K jobs? Incentive theory tells me when rewards-for-performance will work well—see for instance Lazear (2000)—

and it also tells me that it will be problematic for more complex, Type-K jobs. But the survey introduces three alternatives, and I'm sure there are more. Why and when would an organization choose interesting work instead of organizational success or social mission? If you think that through self-perception processes employees can be molded into whatever preferences the organization wishes [P shakes her head]—okay, I see that you don't believe that, quite—what makes one of those more or less fit? After all, that's the question posed at the start of this chapter.

P: I don't have a complete answer to that question, and I don't think you do, either. But SPEC gives us some alluring hypotheses. For one thing, the SPEC researchers looked at correlations between the firm's strategic objectives and the founder's HRM vision and, while the data set wasn't large enough to draw robust conclusions, they found that firms whose strategic plan was to be the low-cost producer of a more or less established product were much more likely in the sample to choose Bureaucracy. Firms that aimed at wide-open technological innovation—creating a novel product that met a “need” as yet unrecognized by the intended clientele—were very much the most likely to be Star-model organizations. And their data on financial performance give some clues: All five models were basically fit (in the situations in which they were chosen) in terms of financial outcomes; none dominated any other. But the Commitment model had a slight edge, on average and overall, and the Star model was best if you looked only at the subsample of firms that made it to the IPO. Here's a hypothesized explanation for this: Since, in these sorts of start-ups, key employees' jobs are likely to have a lot of Type-K to them, the silver bullet of motivating by “love” of the organization might have a slight edge, *if* you can make it work. But in the culture of Silicon Valley, with its very high rate of labor mobility, this might be a hard sell. Being motivated by challenging and exciting work probably comes more naturally to more of the young engineers and technology types that make up a large part of the key workforce at high-tech start-ups. But we all know stories of engineers whose drive for technological perfection gets in the way of the financial success of the organization; remember Voltaire's adage, “Better is the enemy of good.”²⁹ Star-type firms, where attachment or motivation through work is allied to professional and not organizational

norms, are at risk of having employees pursuing perfection when “good enough” is what they need for economic success. By looking only at the Star-type firms that reach the stage of an IPO, you are probably censoring out a lot of technological wins but economic failures; you are looking at cases where technological wins meant at least a measure of economic success—hence this subsample does best of all. So: Commitment is best overall, if you can pull it off. But censor out the cases of motivation-through-work that go off the rails, and you have a conditional winner.

E: Okay, I can see how to build an economic model of that sort. But let’s wrap up. What separates our views on the data?

P: We agree on a lot, but we disagree on one potentially important point. I think an individual employee’s sources of motivation will be affected—I might even say manipulated *to some perhaps limited extent*—by the organizational environment in which she finds herself. You seem to resist this; instead, you invoke screening to explain the connection between what motivates an employee and the type of organization in which she is found.

So I ask, how do you explain what happened at Firm Z? Employees previously motivated by the mission soured on this because of interactions they had with the sales force. Have you got a story for that?

E: I do indeed. I’ll explain their initial strong motivation by a desire to achieve the goal of changing Industry I *and* their belief that top management at Firm Z shared in that goal. When the salespersons were hired and compensated, the rest of the professional staff learned to their dismay that top management at Firm Z had been playing them—top management just wanted to make a lot of money. This did change their motivation, but through a shift in their beliefs, not a change in their tastes.

You would no doubt attribute changes in behavior associated with what you call the undermining effect to changes in tastes caused by a change in self-perception. [P nods in agreement.] Let me tell you how an economist views this. The basic story is this: Person Y (he) has been doing a task, and doing it well, for little to no financial reward. His boss, X (she), offers him some financial compensation if he will continue. And this causes him to stop or, at least, to do a more slipshod job.

Two economists, Bénabou and Tirole, provide two explanations for such behavior. In the first of these (Bénabou and Tirole 2003), the story is that X knows how hard the job is, and Y infers from the offer of financial compensation that, at least this time, the job is going to be a lot harder. Not wanting to kill himself, especially if the financial compensation is small, he decides not to do it. And in the second story (Bénabou and Tirole 2006), Y has been doing the job to convince X and others that he likes this sort of work for its own sake. When X offers him some financial compensation, doing the job is no longer a clear signal that Y is that sort of person—in the language of game theory, X's offer has jammed the signal that Y was sending—so it is no longer worthwhile for Y to do the job.

Now, these are simplified caricatures of the two papers—you'll need to read them to see the details—but in each case, what you explain by changing tastes is easily explained by strategic behavior and rational inferences, with a completely stable set of preferences.

P: Wow! Those are some pretty clever explanations. I might say to you that I find them a wee bit incredible, at least in the context in which the undermining effect was first discussed in the literature: the context there was nursery school children drawing detailed pictures, seemingly for the fun of it, whose motivation was undermined with the offer of cookies.³⁰

But let me describe to you one other experiment that, it seems to me, can only be explained as a shift in tastes. This doesn't concern motivation in a work setting, but it does seem to me to pose a challenge to anyone who believes in utterly stable preferences, tastes, or utility. The experiment is described in Liu and Aaker (2008). Subjects were told about a particular charity, then asked how likely it was that they would donate some of their time to work for the charity and how likely it was that they would donate money. Finally, they were given the opportunity to make a financial donation. (I'm simplifying a bit; read the paper!) There were two treatments: In one treatment, they were asked "How likely is it that you'd donate time to the charity?" and then "How likely is it that you'd donate money?" In the second treatment, the money-ask came first, then the time-ask. The dependent variable was the amount of money actually given, and Liu and Aaker find that in the time-ask-first treatment, subjects gave more on

average than in the money-ask-first treatment—statistically significantly more.³¹ They explain this by saying that the question asked first creates a state of mind in the subject—it primes or frames the behavior that is later observed—and they explain why a time-ask-first primes the subjects to give more, when it comes time to give.

And I would observe that this phenomenon is not only some manifestation of a psych lab experiment. University development (fundraising) departments are well aware that financial donations from alumni increase if and when the alums are first induced to give some of their time to their alma mater. For instance, the Stanford Graduate School of Business has alumni conduct interviews of prospective students. The information gathered in these interviews is not of zero value; only candidates with a high likelihood of admission are interviewed, and a really bad interview can turn acceptance into rejection. But for the most part, the admissions office does this as a favor to the development people.

Getting back to Liu and Aaker, maybe you can tell a story about how the first question asked provides some sort of information to the subjects, and how that changes their beliefs in a way that, in the first treatment, makes them conclude the charity is more worthwhile. Or something. But it seems to me that if both questions are asked—and both are asked—telling an information-inference-based story is going to be difficult. Preferences change. They can be manipulated, to some extent. And, in terms of what motivates consummate effort, this is probably a significant effect.

BUT IS IT ECONOMICS?

Since I gave her most of the good lines and allowed her the final word,³² I doubt that anyone will be surprised to learn that my sympathies in this discussion are with my imaginary psychologist. This isn't to say that the economist is incapable of explaining the data in the SEP survey with orthodox economic models. At the least, orthodox economics can do a good job with those data, *if* one permits employees to value interesting problems, to internalize the welfare of the team or organiza-

tion to which they belong, or to devote effort to improving the social weal. And while utility functions that have these sorts of things as arguments with positive partial derivatives are not exactly rampant in the literature, there is nothing unorthodox about them.

Indeed, I believe that a nice orthodox principal-agent model can be devised along these lines: Have a (possibly diverse) set of agents, all of whom are powerfully affected by their take-home pay, but all of whom also attach some weight to success of the organization. Give them Type-K jobs, with (say) multiple tasks, some of which can be judged in terms of outcomes only after a lot of time has passed or with a lot of noise. In these circumstances, the principal may well opt to avoid pay for performance, out of fear of getting it wrong, and let the agents' (even slight) desire to see their organization succeed provide motivation, as long as that desire is sufficient to overcome any "disutility of effort" on the part of the employee.³³

But once we abandon the notion that each employee comes with time-consistent, present-at-birth preferences, we are (as far as I can judge) firmly doing unorthodox (heterodox?) economics. Mainstream economists have—for the most part—resisted enlisting models with changing tastes, preferring to explain phenomena while eschewing this modeling device. Witness, for instance, the characteristically ingenious pair of papers by Bénabou and Tirole (2003, 2006) that the fictitious economist cited.

"For the most part" does not mean "entirely," of course. Work of this general sort makes up a fair bit of so-called behavioral economics, dealing with time inconsistency that manifests itself as hyperbolic discounting. And Akerlof and Kranton have published papers and even a book (Akerlof and Kranton 2010) on what they call identity economics, which breaks the taboo against models with changing tastes.³⁴ But one might characterize such efforts as isolated brush fires in the vast forest of economic models, rather than as an increasingly encompassing conflagration.

A classic paper by Stigler and Becker (1977) makes the argument for the orthodox position. As a matter of mathematical fact, one can pose dynamic choice behavior that cannot be accommodated with a model of unchanging individual preferences; this concerns behavior in which the decision maker chooses to put constraints on the choices he will have available later, with no compensating improvement (and even

with a corresponding decrement) in what he consumes today.³⁵ But, Stigler and Becker argue, *empirically important* phenomena do not require this sort of modeling innovation. And, at least implicitly, they make the value judgment that this modeling innovation should be avoided if it can be.

I think the last step in this argument—the value judgment—is defective. The standard argument for modeling agents as utility-maximizing is an “as-if” argument: *if* the choice behavior of an agent satisfies certain properties, her choices are *as if* she is maximizing some utility function that maps her options into real numbers. Most microeconomic textbooks, at least at the graduate level, start with this result; see, for instance, Kreps (2013, Chapter 1). The required properties, though, are posed in the context of choice from opportunity sets (drawn from some larger set of all possible choices that might be made) at a single point in time. Talk of “unchanging preferences” concerns dynamic choice behavior, and while additional properties can be found that knit together choices made at different points in time and that then guarantee that dynamic choices are *as if* the agent had unchanging preferences,³⁶ those additional properties are even less reasonable empirically than the properties that give utility maximization as an as-if model for static choice.

Even if economists can devise clever models with unchanging preferences that account for some of the phenomena described in this chapter,³⁷ the models we employ to explore important empirical phenomena should be as simple and straightforward as we can make them, while being consistent with the phenomena. If the subject is motivating consummate effort in work settings, I believe the psychologist, backed up by her literature, makes a case for changing preferences that is very hard to dismiss. Economists should, instead, embrace these ideas.

Notes

I am very grateful to Jennifer Aaker, Jim Baron, Frank Flynn, Deb Gruenfeld, Wendy Liu, and Dale Miller for their assistance in helping me understand social psychological approaches to motivation and related topics. Of course, any errors in translation or transcription that appear in this chapter are entirely my fault. This chapter has evolved from discussions I’ve had over the years with Bengt Holmstrom; additional valuable comments (from economist colleagues) have been made by Bob Gibbons, Jean Kimmel, and Paul Oyer. Versions of it were presented as the Karl Borch Lec-

ture for 2013 and at a conference honoring Richard Cyert and James March's classic book, *A Behavioral Model of the Firm*; comments from participants at both presentations, as well as the financial support of the Stanford Graduate School of Business, are gratefully acknowledged.

It will be obvious that this chapter does not stem from a research paper in the usual sense of the word, but instead from an essay intended to raise issues (and controversy) among economists. Given its purpose, I am more than usually interested in hearing from readers; my e-mail address is kreps@stanford.edu.

1. Some of these characteristics, such as ambiguity, preclude any modeling with mainstream techniques at all.
2. And, for just the reason that it is hard to get pay-for-performance right in Type-K jobs, it would take a lot of data, a lot of time, or both, to come to reliable conclusions.
3. I lead sessions that begin with the economics of relationships (reciprocity, reputation, and credibility; transaction costs; and vertical strategic partnerships) and then go on to motivation on the job.
4. For the summer of 2014, the six-week program, including room, board, and instruction, cost \$61,500 per participant.
5. Using the five-point numerical scale, a paired-sample test of difference in means between "how effective is X in motivating my direct reports" and "... in motivating me" gives a one-sided critical probability of 2×10^{-8} for X = "Success of organization" and 1.97×10^{-10} for X = "Work is socially important." For "Exciting work," the difference in means is still quite significant, with a one-tailed critical probability of 0.0065.
6. For a stark example of this phenomenon, see Heath (1999). In a different part of this survey, I replicate the Heath results with SEP participants and have done so every year for the past 12; along these lines, it is surely one of the easier-to-replicate empirical results about motivation.
7. The numbers of respondents in each category in these two tables differ, and they differ from the numbers in Tables 5.1 and 5.2. This happens because the tables were created at different points of time; tables created at a later time have more respondents. This, however, has no material impact on the qualitative results.

Without claiming that any of the following are "established," and recognizing the possibility of data mining in this sort of exercise, the data in Table A2 that are consistent with things I've seen in years past and that I would *conjecture* might be stable results are as follows: Europeans perceive themselves as less self-motivated by tangible rewards and more by organizational success than do U.S. citizens and Canadians, with East Asians in the middle. The U-shape seen in age versus tangible rewards has recurred; perhaps young participants feel they have time to make their fortunes, while older participants on average have made theirs. Or perhaps young participants selected to go to SEP feel so certain of their eventual (financial) success that they are unmotivated by the marginal bit of incentive pay. General managers certainly perceive themselves as more motivated by contributing to the

success of their organization than do functional specialists, an effect that largely disappears when we look at their perceptions of their direct reports. (Presumably, chairs, CEOs, and chief operating officers [COOs] regard themselves as general managers, with direct reports who are more likely to be functional specialists, such as chief financial officers [CFOs], chief information officers [CIOs], and so forth. Hence the observation that general managers see themselves as more motivated by organizational success than do functional specialists is consistent with the observation that chairs, CEOs, and COOs see themselves as similarly motivated but to a greater extent than is true for their direct reports.)

Note that *no* participants in the financial services industry said that tangible rewards were the most descriptive of what motivates their own best work. Perhaps this is an example of folks reacting against stereotype: “I’m in financial services, so everyone assumes all I want is to make money, so I’ll show them.” If you look instead at the respondents from financial services and what they said was most descriptive of how to motivate their direct reports, five said tangible rewards, five said interesting work, five said organizational success, and two said social importance. (Of course, these are all very small numbers.)

Contrast these data with results I got a few years ago when I conducted a similar survey of first-year MBA students. I won’t present the MBA data, but among the 140 respondents, tangible rewards were perceived by them in two ways: 1) as being significantly more powerful, on average, and 2) as being most descriptive of what motivated both their organizational peers (instead of direct reports) and themselves. The MBA students were asked to supply demographic details on age, sex, geography, industry (the one in which they were last employed), and undergraduate major. And in the cross-tabs, the power of tangible rewards increased markedly for two types of students: 1) those from the financial services industry and 2) those who had majored as undergraduates in economics. Geography, sex, and age showed no marked pattern.

8. I surveyed responses of a smaller and more homogenous group of upper-tier managers from a different executive education program; these participants are all connected to the financial services industry and all come from Australia. The group was relatively small, $n = 38$, so there are added reasons to distrust the results. But this group conformed to the pattern described in the text in nearly all important respects.
9. It is probably obvious, but I’ll say anyway that these are not *alternative* theories in the sense that if one is true, the others must be false. Different motivational channels or pathways can happily coexist in specific circumstances. (Those circumstances may be a factor in determining how powerfully any one of these theories applies.) Indeed, from a normative perspective—the perspective of the practicing manager—enlisting several of these theories simultaneously to motivate desired behavior is good practice. Therefore, one is interested in knowing which of these can happily coexist and even reinforce the others, as well as knowing which of these may weaken the impact of the others. See further on for the discussion on the undermining effect.

10. An economist colleague, reading this section, objected that this was “just economics.” The idea that employees take those actions that maximize the chance they will get a reward that they value (and even more, the “formal formulation” of an objective function that maximizes the probability of getting a reward times the “value” of the reward) is, to an economist, simple expected-utility maximization. I understand why an economist would *observe* these things; I’m unsure why an economist would *object* to a psychological theory that has a very close counterpart in the dominant economic theory of choice under uncertainty.
11. I confess that I’m somewhat unclear on the demotivating impact of inequitable rewards on those at the top end of the distribution of ratios. That wasn’t my experience as associate dean at the Stanford Graduate School of Business.
12. The theory of social comparisons is broader than its application to equity theory. It holds that, when person X tries to evaluate how well she is doing and how well she is being treated, she will look at her performance and treatment relative to others and, in particular, to others who are socially similar to herself.
13. Recent work by Grant et al. (2007) adds a fourth item to this list: her perceived *purpose*, a sense that the task achieves something important and valued.
14. I am told by colleagues who are psychologists that this paragraph doesn’t quite capture self-perception theory; it sounds more like *dissonance* theory. I gather that my use of the term *justification* is key; according to dissonance theory, when X works hard at some task, and when X is unable to perceive a clear purpose for doing so, X is afflicted with psychological disequilibrium. To resolve or mitigate this unhappy state, X looks for (and finds) justification for her actions: “I did it because . . .,” and then whatever fills in the blank becomes part of X’s self-image. In self-perception theory, in contrast, X is simply and naturally curious about what motivated her actions. The young engineers at Data General look at their efforts and those of their peers, see that these cannot be due to the promise of tangible financial rewards if they succeed, nor to a desire to see Data General succeed, and so are left with, “We are doing this because it is fun.” And, then, they regard the activity *as* fun. The two theories give the same observed behavior (it seems to me); hence this is an excellent example of what Dale Miller (quoted at the top of p. 108) calls the psychologist’s effort to see two things that seem the same as different; in fact, I’m told that when Bem first advanced self-perception theory, something of an intellectual spitting contest with dissonance theorists was the immediate result.
15. For details, see Friedman and Deinard (1991a,b), Koloroutis (2004), and Vitello (2011). The last is the *New York Times* obituary of Joyce Clifford, who was head nurse at Beth Israel when primary nursing was introduced.
16. Well, it used to be, in the 1970s. Changes in how hospitals are compensated for patient care have pushed nursing somewhat in the direction of an assembly-line job. Keep reading.
17. See Harvard Business Review’s case study *Beth Israel Deaconess Medical Center: Coordinating Patient Care* (Gittell, Wimbush, and Shu 1999).
18. Readers well versed in the literature may know of a work by Bénabou and Tirole that provides orthodox-economics explanations for this empirical phenomenon. I will discuss their work later in this chapter.

19. As long as $X \neq Y$, an economist could regard attribution theory as a straightforward (Bayesian or otherwise) inference by X about Y 's preferences and desires. It is when $X = Y$, when X attributes her own motives *ex post* to why she took some action, and then is influenced in future behavior by the attribution on which she settles, that an orthodox economist becomes squeamish at least.
20. Just more (Bayesian) inference—in this case about what motivates Y and people like him.
21. This is a real-life story. I have tried to persuade the real-life company to let me write a case about it, but for reasons that will become apparent, they do not want this story told. So I must be careful not to identify the company and will resort to calling them Company Z in Industry I .
22. Links to the output of SPEC can be found at <http://www.gsb.stanford.edu/ces/research/specproject.html>.
23. Another 28 percent of the firms were what the researchers called a “hybrid engineering” model, a model that varied from the engineering model in only one dimension. There are seven hybrid-engineering models, one of which is Bureaucracy. Of the 36 possible models, eight differ from each of the five pure types along two dimensions, and of the 154 firms in the sample, only two were one of these eight anomalous models.
24. On multitasking, the classic reference is Holmstrom and Milgrom (1991).
25. I'm not going to build formal models of any of this, but on this point I should note that if early-career employees understand that the organization screens for this characteristic in deciding whom to promote, the incentive to act early on “as if” the organization matters to the individual is increased. This will be good for the organization with respect to early-career employees, but it will make it more difficult to do the desired screening. Load on top of this a tournament model for who is promoted, and you have an interesting model to explore.
26. And, to follow up on the previous note, as prospective MBA students, they presumably have less interest in taking actions that make it appear “as if” they have the organization's best interests at heart, since they will probably leave the organization before such behavior would bear fruit.
27. To add a technical point here: Credibility of the commitment—Condition C —is usually explained by economists as arising from the employer's desire to maintain a reputation for behaving in a certain way. But the analysis of reputations—at least, the game-theoretic analysis of reputations—makes clear that the hinge on which a reputation hangs is whether interested third parties can tell when, in this context, the employer fails to live up to his reputation. For this to work, then, it isn't enough that the employee and employer meet Conditions A and B ; third parties must meet these conditions as well, *and* have an understanding of what is “the right thing to have done.”
28. See, for example, Williamson (1996).
29. The English variant of Voltaire's saying is “Perfect is the enemy of good.”
30. Or consider the following completely hypothetical thought experiment. Suppose hospitals began to offer cash rewards for the donation from the dead of usable organs—so much for eyes, etc.—with the cash paid to the deceased's estate.

- Would this increase the number of people who indicate (say, on their driver's licenses) that they are willing organ donors? Notwithstanding the bequest motive, which is well-established mainstream economics, I suspect not, at least among the relatively well-to-do. And it is hard to tell either Bénabou and Tirole story in this case, unless one supposes either that the living care to publicize that they are potential donors while alive, or that they care about their reputation when dead.
31. The subjects could donate up to \$10. In the time-ask-first treatment, the average donation was \$5.85, versus \$3.07 in the money-ask-first treatment. In a difference-of-means test, the two-sided critical probability for the hypothesis of equal means was $p < 0.001$. Although not reported in the paper, Liu and Aaker (2008) also collected data on the answers to the (somewhat hypothetical) questions about the likelihood of donating time and/or money. Letting $T1$ be the average likelihood of volunteering time (on a scale of 1 to 7) in the time-ask-first treatment, letting $M1$ be the average likelihood of volunteering money, and letting $T2$ and $M2$ be the corresponding means for the money-ask-first treatment, they found $T1 = 4.12 > T2 = 2.94$ and $M1 = 4.34 > M2 = 3.72$. To put this mathematical representation into words, in the time-ask-first treatment, the indicated likelihood of giving both time and money was higher than the likelihoods in the money-ask-first treatment. The difference in means in $T1$ and $T2$ has a critical probability < 0.001 , while for the difference in means between $M1$ and $M2$ the critical probability is $p = 0.06$. In both treatments, the indicated willingness to give was positively correlated: in the time-ask-first treatment, $\text{corr}(T1, M1) = 0.462$; and in the money-ask-first treatment, $\text{corr}(T2, M2) = 0.459$ (Wendy Liu, associate professor of marketing, University of California San Diego, in discussion with the author, 2014).
 32. Since beauty is in the eye of the beholder, I add here that a psychologist colleague who read an early draft of this chapter was concerned that the representative of his tribe, P, comes off as "something of a twit." I don't see it, but, after all, *de gustibus*
 33. If papers along these lines have been written, I am unaware of them, and I would be grateful if readers would direct me to them.
 34. In fact, even Gary Becker sometimes built models in which preferences are manipulable, albeit the manipulable preferences are those of children (Becker, Murphy, and Spenkuch 2014). I say "even Gary Becker" here because of Stigler and Becker (1977), to be discussed momentarily.
 35. Stigler and Becker (1977, p. 76) seem to recognize this when they write, "[No need for models of changing tastes] is a thesis that does not permit of direct proof because it is an assertion about the world, not a proposition in logic."
 36. See, for instance, Kreps (2013), Section 7.3 and, in particular, Proposition 7.1.
 37. And I'm hard-pressed to see how even a very clever economist could explain away Liu and Aaker (2008).

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6

Efficient and Effective Economic Regulation in a Confusing Technological Environment

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This chapter focuses on the role of government in a market economy and the balance between government regulation and the “free” market. I examine this problem through the lens of several research projects in which I have recently been engaged, particularly a project on alternative approaches to the administration of labor standards, but also several studies in a very different domain—the organization of product design and product development. I hope, however, to make clear the relationship between these disparate activities. And, indeed, an important part of my goal in this chapter is to widen the lens through which we think about economic activity.

The debate about the market and the role of government in its regulation is an old one, stretching back to the Industrial Revolution at the beginning of the nineteenth century (Polanyi 1944). But the contemporary variant is really rooted in the Great Depression of the 1930s. The Great Depression was widely viewed as the product of an unregulated market economy run amok, and most of the regulatory institutions debated today are a product of the reaction to the unregulated market in that period. In the interim, between the origins of these institutions in the 1930s and the debate today, opinion on the need for them has oscillated back and forth in what Polanyi, writing at the beginning of the period but looking back at industrial history, calls the “double movement.” The prosperity of the immediate postwar period as mediated by the institutions of the 1930s seemed to vindicate the regulatory movement. The stagnation of the 1970s produced a reaction, not simply against regulation but against government in general, and with the elec-

tion of Ronald Reagan in 1980 a process of deregulation was initiated that continued through the next 30 years. One can in fact argue that the process of deregulation had begun even earlier in telecommunications and the airlines, but it was at first focused on those particular industries and not on economic regulation more broadly. Following the financial crisis of 2008, the pendulum started to swing back in the other direction. There was a widely shared perception that deregulation had gone too far, a renewed appreciation that the market operates within an institutional framework created by government and managed by government agencies, and a recognition that the failure to maintain this framework makes the society vulnerable to a variety of excesses and abuses. In this sense, there is agreement about the need for some regulation. But there is nothing like a consensus about what that framework of regulation should look like.

REGULATION IN THE LABOR MARKET

But while the emphasis in the debate has oscillated widely with changes in the economic environment over the course of the postwar period, the underlying arguments for and against regulation have not varied. The case in favor of the unregulated market is that it leaves prices free to reflect relative scarcity, and it places businesses under competitive pressure to pick the most efficient way to use limited resources. Regulation introduces rigidities, which interfere with these adjustment mechanisms (Hayek 1948). In so doing, it limits the ability of the economy to respond to variations in supply and demand, variations that occur for numerous reasons that cannot be anticipated. These variations are occasioned in the short run by accidents of weather, sudden changes in tastes, or the misfortunes of particular businesses or sectors; in the intermediate run they are produced by the ebb and flow of economic activity over the business cycle; and in the long run by technological changes that render older approaches obsolete and require the constant accommodation and adjustment of business practices and institutional structures.

In the case of work regulation, the argument is that it leads to rigidities in wages and in employment obligations in general, and that these

rigidities in turn lead to the inefficient deployment of labor and specifically to unemployment. These effects are especially strong at the bottom of the labor market, where the regulations are binding; hence, regulation will distort the income distribution. These basic concerns have been compounded in recent years by the belief that new technologies and expanding global competition have so changed the economic environment that the particular regulations that were developed in the 1930s are outdated and, in some versions, irrelevant (Weil 2014).

Forms of Work Regulation

The image of work regulation that underlies this argument is, however, derived from the administrative system that is characteristic of the United States, and that system is far from universal. An alternative administrative approach (and one that is a good deal more flexible) is found in France, most of southern Europe, and Latin America—what I will call in this chapter the Franco-Latin system. The contrast offers a very different perspective on regulation, one in which regulations can work along with market forces and not necessarily against them. The contrast here is between a specialized sanctioning system (as it is termed in the shorthand vocabulary used by the International Labour Organization) and a general compliance one (von Richthofen 2002).

The U.S. system is specialized and sanctioning. Work regulations are spread out over almost a dozen different federal agencies: the Wages and Hours Division of the Department of Labor, the Occupational Safety and Health Administration (OSHA), the Employee Retirement Income Security Act of 1974 (ERISA), several agencies that deal with immigration, the National Labor Relations Board (NLRB), the Federal Mediation Service, the Equal Employment Opportunity Commission (EEOC), and so on. Many of these federal agencies have analogues at the state level which share the same territory. Each agency thus has a narrow jurisdiction and a limited mandate. It specializes in and focuses upon that dimension of work with which it is directly concerned. The underlying model of enforcement and compliance is one of deterrence through sanctions. Violations of regulations are penalized—usually through a fine, much more rarely through a prison sentence. The penalty basically discharges the obligation of the enterprise, and the penalty also serves in theory as a deterrent to violation. The size of the penalty and

the probability of discovering a violation through complaints or inspections determine the incentive to comply with the law. When compliance is inadequate, these can be adjusted accordingly, either by raising the fine (also by possibly increasing the prison sentence) or by increasing the chances of getting caught—by, for example, increasing the number of inspectors. The level of fines and the number of inspectors are the basic parameters which control the effectiveness of the system.

The Franco-Latin system of work regulation is by contrast built on a general conciliation/remediation model (Piore and Schrank 2006, 2008; Schrank and Piore 2007). The model is general in the sense that the whole of the labor code is administered by a single organization. The line agents of that organization (the labor inspectors), when they enter a given enterprise, can cite the organization for violations of any part of the code. But more basically, the employer cannot discharge his or her obligations by payment of a penalty alone. Employers are supposed to come into compliance with the law. The role of the inspector is to help them do so. Toward that end, the inspector is empowered to develop a plan that corrects violations of the law—if necessary, through reforms in technology and managerial practice. He or she also has the power to grant the enterprise the space to implement these reforms gradually over time.

The system gives the inspectors wide discretion in how the regulations are actually administered. The discretion derives from the very wide variety of provisions of the law over which the inspector has jurisdiction. He or she could not possibly inspect for every one of these provisions and hence must pick and choose those provisions upon which to focus. The ability of the inspector to institute a plan that brings about compliance gradually over time further expands that inspector's effective powers and discretion. In sum, the capacity for the inspector to adapt the rules and regulations in this way gives the system a potential flexibility to adjust to the peculiarities of particular enterprises and to the economic and social environment in which they operate—a potential that the U.S. system completely lacks. The inspector can, in effect, focus on health and safety violations when unemployment is low and alternative jobs are readily available if the enterprise has trouble bearing the cost of correcting these, but he or she can look the other way when unemployment is high and the competitive environment in which the firm is operating is tight. Similarly, the inspector can enforce wage

laws less stringently when unemployment is high and the market pressures would normally lead to lower wages.

But additionally, and significantly, the emphasis on compliance should lead the inspector to look for the underlying causes of the violations and seek remedies in managerial practice or technology that actually address the problem at its root. In this way, the system encourages inspectors to look for support from other government programs that address these problems, such as manufacturing extension programs or employment and training. The U.S. system, by contrast, leads the inspectors to focus narrowly on what are, in effect, symptoms of the way the company does business. It is like the difference between a doctor focusing on the symptoms and one focusing on the disease.

Whether or not the labor inspection system actually exhibits this kind of flexibility depends on how the inspectors make their decisions and how the system is managed. Interviews with inspectors in France, Spain, and Latin America suggest that they are best understood as “street-level” bureaucrats. They belong to a class of public servants who work in organizations where substantial discretion is lodged in the agents at the bottom of the organizational hierarchy (Lipsky 1980). Organizations of this kind that have been studied in the academic literature include social workers, classroom teachers, and forest rangers. But they also include civil servants whose power and discretion is not generally recognized, such as immigration agents or program auditors (Piore 2011).

The canonical street-level bureaucrat is the police patrolman on the beat (Wilson 1968). In principle, the police are charged with enforcing the law. But in fact much of police work is really about maintaining social order. The law becomes an instrument in the pursuit of order and is evoked situationally. Social order, moreover, is an ambiguous concept that is dependent on context and varies with the moral code of the community. Thus, technically, prostitution is illegal at all times and in all places, and prostitutes in middle-class, suburban neighborhoods will be arrested on sight, but *de facto* prostitution is generally tolerated in the downtown entertainment districts of most large cities.

How do street-level bureaucrats make these decisions? In some part, these decisions are idiosyncratic; each agent has his or her own moral code. But in most such organizations, when the agents work with each other for a prolonged period, they develop a common code of

behavior. The agents come to judge each other by the degree to which their actions conform to that code, and agents themselves seek to act in conformity with the code because they value the opinions of their colleagues; their own sense of self-worth is bound up with the judgment of the group. The code of behavior that governs their decisions is something like a language—a simile to which we will return below—and, like a language, it evolves through use. But the code also reflects a set of values that new recruits bring with them to the job, as these values are refracted through the process of training and socialization to which the recruits are subject once they are selected to join the organization. And the code then evolves over time through continual interaction among members of the organization as they discuss cases, particularly new and unusual cases. Those discussions proceed continually and informally through employees' interacting on the job or relating "war stories" as they socialize with each other on breaks in the work routine or while relaxing together after work. In some organizations, these discussions are formalized in group meetings with higher levels of management, where the priorities of the organizations are presented and conflicts among organizational goals are debated and resolved.

The behavior of street-level bureaucrats can be contrasted to two other models that dominate discussions of organizational behavior. One is the economist's model of self-interested rational choice—ideally, in a market economy, constrained by the "prices" generated by the interaction of the actors in competition with each other. The agents in a street-level bureaucracy are not less self-interested than in the economist's formulation, but their interest is centered on the judgment of their colleagues. Their prestige in their own mind is dependent on how their fellow workers perceive their work. The new public management is an attempt to simulate the market by identifying quantitative measures of organizational goals and rewarding the agents in accordance with their achievements. One can think of this approach as trying to substitute monetary rewards for the judgment of peers. It fails in part because collegial approval is not fungible and cannot be reduced to monetary compensation. The model also fails in street-level bureaucracies because the objectives that measure what the organization is trying to achieve are too numerous and complex to be reduced to quantitative measures, and the weights attached to the different goals vary too widely with the economic and social environment. How do you measure the effective-

ness of the police? Is it by the amount of crime? And if so what kinds of crime? Or is it by the sense of an orderly community? Or a feeling of safety they engender in the citizenry? And if the last, how do you weigh the concerns of the different citizens? How do you compare the white woman's fear of the black teenager in the ghetto to the sense of insecurity and the humiliation felt by those teenagers when subjected to continual police "stop and frisk" encounters?

The alternative to the market in the conventional formulation is a classic Weberian bureaucracy, where the agents are instructed in how to behave by directives from above and are punished when they fail to comply. Such bureaucratic regulations produce precisely the rigidities that are the subject of the conventional critique of regulation (Crozier 1964). The higher-level directives do not adjust—or do not adjust fast enough—to the flux and uncertainties of a market economy or to the peculiarities of particular enterprises and the socioeconomic environments in which they are operating. They end up, for example, treating an enterprise in temporary distress because of accidents of nature or of the market in the same way as a firm that seeks a competitive advantage by exploiting its workforce and violating the protective rules and regulations. They apply the same regulations in regions with high unemployment and in regions with very tight labor markets that can afford to lose the jobs that a strict enforcement of health and safety regulations or of wages and hours laws might imply would be lost.

But while street-level bureaucracies do not lend themselves to either hierarchical control or to management through simulated market incentives, the social environment that governs the decisions the agents make can be "managed" (Piore 2011). The organization actually possesses a number of instruments for doing so. For convenience, we would group these instruments under four headings. First, management controls the processes of recruitment and selection of new candidates, and hence the values that new agents bring with them when they enter the service. In the case of labor inspectors, the social codes seem especially susceptible to the mix of candidates from working-class families relative to those from middle-class backgrounds more sympathetic to business; other dimensions stressed in our field interviews with labor inspectors include the mix between lawyers, engineers, medical doctors, union officials, ex-military, and women versus men.

Second, management controls the processes of socialization and training once the new recruits enter the service. The mix between formal training on the one hand and apprenticeship on the other is especially important. In the latter, new recruits are sent out into the field with experienced inspectors, and in this way values and behavioral patterns are passed on directly from one generation to another. Apprenticeship also emphasizes tacit knowledge. Formal training, on the other hand, can stress or counteract the biases introduced in the recruiting process by emphasizing explicit, formal criteria of evaluation.

A third range of variables that management controls is that of how self-contained the organization is, how open it is to outside influences and values, and how dependent upon the judgment of their colleagues the agents actually are relative to other groups in society with whom they interact. At one extreme in this regard is the military, whose members typically live and work in closed environments, with their own recreational facilities, medical care facilities, schools for their children, etc. This environment insulates military personnel from outside contacts that might compete with military values in judging their self-worth. In addition, members of military organizations become dependent on their colleagues not only for social validation but for physical protection in hostile environments, thus reinforcing their concern with the approval and support of their colleagues. This is true of police work as well. The balance between the support that line officers receive from their colleagues versus that offered by their supervisors in dangerous situations is also an important variable in determining how much influence the latter can exert over the decisions of their subordinates. Actually, in some environments, it is also true of labor inspectors. In France several years ago, two labor inspectors were shot dead by an irate farmer whose premises they were inspecting, and the failure of the government to speak out forcefully condemning the killings has colored the relationship between the line inspectors and their supervisors ever since.

The fourth way—and in many regards the most interesting way—in which management can exert influence over the decisions of street-level bureaucrats is through the ongoing conversation surrounding the regulation process. My own sense of the importance of this conversation and what it means to “manage” it actually comes from a series of studies on product design and development, studies of what might be termed, in a very loose sense, “innovation.” Conventional economics

does not yield a clear theory of “innovation.” It deals primarily with how choices are made among a known set of alternative technologies. The properties of such technologies may not be known with certainty, but they are assumed to be sufficiently well identified that one can assign probabilities or expectations to key characteristics and then work to develop the characteristics of the alternatives so as to minimize their costs or maximize their contribution to a specified set of goals. But new product development often involves *radical uncertainty* (Knightian uncertainty) of choices in a situation where one does not even know what the alternatives really are.

Among the products that emerged in our own studies, the canonical case is the cellular telephone (Lester and Piore 2004). The cellular phone is a combination of radio and telephone technologies, inspired by the two-way radios used by police and by taxis. The first such devices were bulky car-mounted instruments. People had only the vaguest idea of why one might want one or how they might be used. The device had to be developed to be commercially viable, but none of the developers knew exactly what he or she was developing. In addition, the radio and telephone companies that had to cooperate to work out the mechanics of the device were from completely different engineering and business cultures. Telephony had a tradition of quality engineering, of making almost perfect products, sold to expert customers. Emblematic of the ethos of the industry was the fact that the dial tone was always there when you picked up the phone, and calls were virtually never lost. Radio engineers were by comparison cowboys; they understood the technology empirically; they accepted a reality in which the signal faded in and out and failure was corrected on an ad hoc basis. Radios were produced by large, expert companies, but they were sold to consumers for whom the product was ancillary to their main concerns.

How did these two antagonistic business and engineering cultures learn to work together? How did the product they produced evolve from a clunky car radio to a perfectly portable instrument that people carried around in their pockets and to which were attached a range of functions that included not only two-way vocal communication but an ever-expanding list of other capabilities, from video games and written messages to still and video photography?

The cellular phone as it exists today emerged out of what I term in my organizational research an ongoing conversation—a conversation

not only among the disparate engineers and managers who ultimately had to collaborate to produce the new product, but also between the producers and the consumers who would ultimately purchase and use it. The conversation proceeded in two phases. In the first phase, the participants were basically developing a common language in which they could understand each other and could tolerate and ultimately appreciate their differences. In the second phase, they used the new language to discuss various ideas as to how the product they were developing might be used. We called this process interpretative; it was open-ended and did not involve commitment to any particular model or design. Out of this ongoing interpretative conversation, at various points in time, particular product ideas were selected. These were then developed in a totally different process, an analytical process in which the engineers sought the optimal design. But it was the interpretative process through which they handled the radical uncertainty involved in the creation of a totally new product.

We came to think of that interpretative process as being like a cocktail party. Like guests at a party, the engineers and managers engaged in seemingly idle conversation, moving back and forth from what we would classify in a rational choice framework as ends (what is the “thing” good for? how will it be used?) and means (how could it be powered if we move it out of the car? what kinds of material would make it light enough to be carried but durable enough to withstand being banged around in a pocket or purse?). The role of the manager in this process then becomes like that of a host at a party: invite the guests, introduce them to each other, stimulate conversation among them, break up conversations that become too antagonistic, and introduce new guests to conversations that seem to be becoming stale and repetitive—making sure at all times that the discussions are moving forward, that the guests are engaged, that new perspectives are emerging.

A parallel set of conclusions are emerging in a series of studies of federal agencies that fund research and development with which I am currently involved. The agency that is closest to the innovative frontier, generating new products continuously, is DARPA (the Defense Advanced Research Projects Agency). Since its creation in 1958 in response to the surprise launching of the Soviet space satellite Sputnik, DARPA has been key in the creation of a wide array of revolutionary technologies, from the World Wide Web, the cellular phone, and a

host of new materials, to more narrowly military technologies such as the stealth bomber. Other major federal agencies funding research—the National Science Foundation, for example, or the National Institutes of Health—select projects and allocate funds through a peer review process. DARPA projects, by contrast, are created and managed by a project manager. The project manager has wide discretion to pick the particular area and type of technology that he or she is going to develop and the process through which that development is going to take place. The process that the DARPA program manager uses to do this parallels the process that emerged in our case studies in design and product development (Fuchs 2010).

The process begins with an often vague idea of a new technology—usually with some potential military application—but often an application that is so ill-defined that one might think of it as an excuse rather than a target. The project manager then seeks to identify industries and areas of science and technology that might contribute in one way or another to the development of the idea, very often finding people who are strangers to one another and who in the normal course of events might never communicate—not unlike the radio and the telephone engineers who were brought together to create the cellular phone. These potential collaborators, once identified, are brought together in informal meetings, seminars, and conferences to discuss the project and their potential contribution to it. Only after this discussion has proceeded to the point where these people have, first, developed a common language and, second, worked together to identify specific technological issues that must be addressed does the project manager formulate a set of research tasks and issue requests for proposals (RFPs). Most notably, at DARPA the discussions surrounding the project continue even as specific research is taking place. The agency as a whole, and the project managers individually, are forever convening seminars and colloquia in which the contractors are required to present their results to each other and review and comment on the work of their colleagues. In this way, an open-ended interpretative conversation is always ongoing in the background, however specific, narrowly focused, and goal-oriented the research itself becomes.

How does this understanding of innovation map onto the Franco-Latin work inspectors or to street-level bureaucrats more broadly? The street-level bureaucrats have been variously described as “the reflective

practitioner” (Schön 1983) or “the sociological citizens” (Silbey 2011). At its best, their task is to craft solutions to the particulars of each case. The DARPA project manager is in this sense a street-level bureaucrat. Or, the other way around, each work inspector becomes an innovator, and each case that he or she handles becomes like an innovation. The material out of which that innovation is constructed—the substance but also the practice—is drawn out of the ongoing conversation occurring in the background of the work process. And one can imagine management in a street-level bureaucracy managing the conversation in much the same way as product-development managers in private industry or the project manager at DARPA: like a host at a cocktail party. The singular exception is that, in most cases, when the manager arrives on the scene, the cocktail party is already in process—a conversation is already ongoing among the agents; the work group has already developed a language and vocabulary in which they are accustomed to talk to each other.

Finally, the analogue to innovation is not limited to day-to-day operations; there are often cases that are quite literally innovative situations, where the problem is fundamentally different from those that have arisen before, and where even experienced inspectors lack a vocabulary for defining what the underlying problem is and how to address it. Where this is the case, the analogy to the DARPA project manager is even stronger. This is especially true at the current moment, in which the advent of information technology, new forms of communication and transport, and new global trading regimes make existing work regulations appear anachronistic.

The interpretive conversation among street-level bureaucrats—and in our case labor inspectors in the Franco-Latin model—goes on spontaneously, often informally, in the background of day-to-day life in the organization as the agents go about their work. And one can say that the solutions they fashion to the problems they encounter are drawn out of this ongoing conversation in the same way that the succession of cellular telephone models are drawn out of the interpretive conversation among managers and engineers. But that conversation can also become a tool that management can organize and direct by playing the host at the cocktail party—convening formal meetings, inviting outside experts to participate and interact with the front-line agents, introducing particular topics that would not otherwise be discussed or, at least,

made the explicit focus of the conversation, even supporting academic research on different forms of work organization, technical processes, and business strategies that could inform the discussion.

It is admittedly hard to imagine the United States adopting the Franco-Latin model of work regulation. The current state of labor market regulation favors the power of business, and the alignment of political forces favors the status quo. One could imagine a greater coordination among the various agencies but not a wholesale reform that would create a unified system. But in other regulatory arenas, the U.S. system is more unified, and the agents of the regulatory agencies operate with considerable discretion, much like a street-level bureaucracy. Examples include public prosecutors' offices at both the state and the national levels (Chattin 1996; Misner 1996), the Forest Service (USDA 2002), drug and medical device regulation (Carpenter 2010), and energy.

Paradoxically, the regulatory domain that in the United States is closest to work regulation is finance. Here too, regulatory authority is dispersed among numerous federal organizations and in many areas is shared with the states as well. Here too, as well, there has been an intense debate about the relevance of the regulations initially conceived in the 1930s for the contemporary economy. But a major difference between finance and work regulation is that, despite the dispersion in finance, there is a single agency that oversees the sector as a whole: the Federal Reserve. The Fed may not have the power to coordinate the regulatory structure through administrative directives outside its own jurisdiction, but it does animate a debate, an interpretative conversation, that resonates throughout the sector and the many agencies that impinge upon it. This conversation concerns the goals of financial regulation, the "means" or instruments available to achieve those goals, and the relative weights to be assigned to alternative, possibly competing goals, explicitly weighing full employment, price stability, and risk management against each other and adjusting the balance among them over the business cycle.

The financial service sector and the Fed's role in managing the ongoing conversation within it in recent years is, however, a cautionary tale (Reinhart and Rogoff 2009). As chairman of the Fed, Alan Greenspan argued that new technologies had rendered obsolete the regulatory structures of the past, and the discussion under his leadership and direction completely failed to anticipate the financial crisis of 2008. It failed

to do so, I believe, because the people invited to the “cocktail party” came from too narrow a segment of society. But the point here is less the particular failings of the past than the recognition of the importance of the ongoing conversation and the way it is organized as a critical instrument of public policy in a dynamic but also uncertain economy (Bernanke 2015).

CONCLUSION

This chapter’s discussion of regulation has extended well beyond typical economics discussions of this topic. Why is this the case? Economics is virtually alone among the social sciences in taking as its mission not only to develop a better understanding of the world but, through that understanding, to better human welfare within it. In that mission we have in recent years failed—and by some measures failed miserably, at enormous cost to human life and welfare, both individual and social. In work regulation, the most conspicuous failure is represented by the factory building collapse in Bangladesh in 2013, the worst industrial accident in history. Over 1,000 workers died in a factory producing goods for the U.S. market, commissioned by and later sold under U.S. brand-name firms competing in market conditions created by the abrupt end of the Multi-Fiber Arrangement, which regulated worldwide trade in textiles and clothing from 1974 to 2004. The United States promoted the end of this agreement as part of a policy of globalization, designed and supported by the backing of virtually the whole of the economics profession. The building collapse was preceded by a factory fire that was in many ways a replica of the New York City Triangle Shirtwaist fire 100 years earlier, which we in the economics profession believed had taught the lessons of the dangers of unregulated work in the garment industry and how to prevent such dangers (Bhasin 2014). In the United States itself, we have just lived through the worst financial crisis since the Great Depression and barely averted a comparable crisis in the real economy. With very few exceptions, the profession failed to anticipate the crisis and, as just noted, promoted the elimination of regulations that might have moderated it or even prevented it. And we addressed the crisis by subsidizing a long list of major companies in finance and

manufacturing, while letting a host of rank-and-file workers go bankrupt, which meant they lost their housing and lifetime savings (Mian and Sufi 2014). We are now left with a legacy of unemployment and economic insecurity that is probably more acute than at any other time in the postwar period. All of this after four decades of slow economic growth in which average incomes have stagnated while earnings at the very top of the distribution have been allowed to rise progressively, so that the chief executives of major corporations (the kinds of major corporations that were the beneficiaries of the financial bailout) have risen from 40 times the incomes of the average employee to 250–300 times (Mishel et al. 2012).

Economics has created a framework that is designed to speak directly to public policy, but the analytical apparatus that we have brought to bear within that framework is inadequate to the problems we have set out to solve. We need a broader-based analysis, a broader understanding, first of human motivation and behavior and second of how knowledge develops and evolves in an uncertain world. I have tried here to point out instances of other social sciences from which those understandings might come, and how they might be applied to the formulation of public policy. I believe that that is the task economists face today. The basic lesson that emerges from the examination of the Franco-Latin model of work regulation, then, is that we need to turn much more deliberately and self-consciously to the question of how to manage that discretion, to understand the sociology of such regulatory systems, and to draw from sociology in a more self-conscious and deliberate way to develop and deploy the instruments' potential in such systems for supplementing the market to overcome some of the limits of a market economy.

Note

The argument of this chapter was developed in collaboration with Andrew Schrank and is presented in detail in our forthcoming book *Root Cause Regulation*.

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