

10

DISCOVERY FACTORS OF ECONOMIC FREEDOM

Responsiveness, epiphany, and serendipity

*Daniel B. Klein**

If decisions were a choice between alternatives, decisions would come easy. Decision is the selection and formulation of alternatives.

(Kenneth Burke, 1932: 215)

Abstract: Economists place a heavy emphasis on equilibrium model building, and this emphasis leads them to think of economic freedom as the freedom to choose in a neatly characterized setting. Three other facets of economic freedom, facets that tend to be eclipsed by model building, are the freedom to respond flexibly to opportunities (which I associate with Coase), the freedom to discover opportunities by epiphany (associated with Kirzner), and the freedom to discover opportunities by serendipity (associated with Alchian). Neglect of these discovery factors tends toward an under-appreciation of freedom.

INTRODUCTION

The economics profession as a whole puts a heavy emphasis on formal equilibrium model building. The norms of formal model building do much to give the profession a set of standards for how economic research is to proceed and what constitutes good work. A scientific community can't run without norms and standards. This fact is sometimes neglected by those who complain about formal model building; sometimes they seem to view formal model building as an unnecessary hinderance on discourse. It is as though they see the "true" way of good work, and but for the emphasis on model building that truth would become apparent to all.

If the critics neglect the need for standards, they do, however, have a point about predominant norms possibly restricting discourse. Any mode of

* Associate Professor of Economics, Santa Clara University. The author has benefited from comments by Tyler Cowen, Andrew Dick, Arthur De Vany, Walter Grinder, and Adrian Moore.

discourse, although clarifying, enriching, and expanding knowledge in some respects, is also bound to confine and limit knowledge in other respects. There is no reason to suppose that all important facets of a subject will be amenable to a single well-delineated mode of discourse, or “paradigm” (Kuhn, 1970). Some facets of the subject, especially in the social sciences, are not aptly rendered in the dominant mode of discourse. When rigidly demanding that all discourse conform to that mode, the scientific community throws some facets of its subject into the shadows (Sen, 1977; Hirschman, 1986). This is the “essential tension” of scientific advance, as described by Thomas Kuhn (1959), the tension between one’s commitment to a dominant mode of discourse and one’s understanding of facets of the subject which that mode of discourse cannot capture.¹

This chapter discusses three facets of the market process. More pointedly, I take up the three facets as a way of exploring the economist’s understanding of the free market. I argue that the heavy emphasis on model building has led economists to a somewhat narrow understanding of freedom. Dynamic and particularistic facets of freedom, though of great practical importance, cannot very well be made to shine in formal models, and consequently are underappreciated in economic research and underemphasized in economic education.

FREEDOM TO CHOOSE AS BUT ONE FACET OF THE FREEDOM TO ACT

The economics profession as a whole is accustomed to model-based stories in which it is presumed that the analysts, if not the players in the stories themselves, know the opportunities and objectives that describe the market context. Economists must posit such setting and background material to frame the tale. Such exercises sharpen our eye for strategy, investment, and economizing, but overexposure can impair our vision for other features of economic processes.

In particular, model building sometimes limits our notion of economic freedom. Beginning with introductory courses, the talk of economists is so centered on equilibrium models, as opposed to public issues, that freedom is understood only for what it achieves (or fails to achieve) in blackboard models. Equilibrium stories of price ceilings, price floors, and entry barriers lead us to think of markets as *neatly characterized procedures*, and of freedom as little more than the *freedom to choose* within these characterizations. (Note Kenneth Burke’s use of the word “choice” in the opening quotation.) It may be the freedom of tenants to choose high-rent apartments, of workers to choose low wage employment, or of consumers to choose the services of unlicensed electricians. Because our equilibrium stories posit the industry, the preferences, and the opportunities, all that freedom accomplishes is a more efficient utilization of *given* resources.

DISCOVERY FACTORS OF ECONOMIC FREEDOM

In their professional discourse economists rarely talk of factors of economic change like discovery, imagination, or serendipity, and consequently they tend to neglect these as vital components of economic progress. Trained well in their professional thinking, economists often carry over their habits of analysis to thinking about public policy.² They are left insensible to the fact that government restrictions on freedom tend to choke off the vital components.

For example, the economist might think that in making policy for urban transit, government experts can, after much careful study, adequately determine the transit technologies and systems that would suit the city's needs, and then implement the system. I submit that that approach reveals poor appreciation of how economic freedom functions.

The notion of economic freedom used here is a legalistic notion of the *freedom to act*. I mean Isaiah Berlin's (1969) "negative" and more empirical conception of freedom, with the legal details filled in, so far as is practicable, by the Friedmans (Milton, Rose, and David) (1962, 1989). Specifically, I mean freedom (and reasonable safeguarding) of property, consent, and contract. This is freedom in the flesh, with hair and sweat and pigment. I prefer to call it the "freedom to act," rather than the "freedom to compete," as Hayek (1978) has called it, because, as Frank Knight (1935: 292) notes, this freedom includes "freedom to organize to eliminate competition."

Freedom to choose is but one facet of the freedom to act, and it is heavily emphasized in academic research. I will discuss three underemphasized facets of the freedom to act. These other facets are important in making a full case for freedom, but are difficult, if not impossible, to render in the dominant mode of discourse, namely equilibrium model building.

FREEDOM TO RESPOND AND TO FORM CONTRACTS

Short-lived opportunities or imminent troubles often visit the entrepreneur. Fortune emerges – perhaps at an unexpected time or in an unexpected form – and the entrepreneur needs to respond. The entrepreneur's situation calls for a flexibility – that is, freedom – to respond to the special bits of fortune that come knocking. When confronting the continual gale of change, our economic agent comes to resemble a busy switchboard operator.

Research in the tradition of George Stigler's papers on information (1961, 1962) shows that model building can incorporate search by comparison shoppers and the like who are uncertain about price or quality at a given store. In other models, events come stochastically to the agent, who then carries out planned contingent response. In this sense uncertainty can be incorporated into the model building paradigm of solving for individually optimal behaviors. But stochastic events and appropriate response certainly complicate the model, and typically such complications are not worth the trouble. In practice, the economist does not incorporate such

features into equilibrium storytelling, unless stochasticity and responsiveness are the very focus of the paper.

An economist can best come to understand the element of change and the importance of flexible responsiveness by studying the individuated circumstances of the firm, the industry, or the particular market. Such study grants the economist a view of the variety of possible realizations, and how entrepreneurs in fact cope with not knowing which will come to pass. Exploration of actual economic practices, and appreciation of the freedom to respond, has been greatly advanced by the law and economics community, led by Ronald Coase, Aaron Director, Harold Demsetz, and Armen Alchian (see especially 1977: chapters 1 and 2).³ In "The Problem of Social Cost," Coase (1960: 19) pressed the point that to understand an institutional or regulatory issue we would need "detailed investigation of the actual results of handling the problem in different ways" (see also Coase, 1972).

Coase and his colleagues have encouraged economists to plumb the dark depths of actual institutions and to describe cases where market participants recognize probabilistic events and plan responses for each contingency. Good recent examples are the works of Arthur De Vany and Gail Frey (1981), Dennis Carlton (1991), and Andrew Dick (1992), on the role of stochastic processes in a variety of industries, including steel production, plastics, and semiconductors. These authors explore how basic uncertainty gives rise to economic practices that economists might otherwise have difficulty explaining – practices like queuing, order backlogging, second sourcing, and vertical integration. These papers often show an appreciation for individuation and uncertainty in local conditions, and how infringements on freedom prevent proper response to those conditions.

The freedom to act carries not only a flexibility in making one's choices in isolation, but also the freedom to form elaborate contracts that grant one flexibility in relations with others. Though hoping to follow plan A, one might contract in advance for the *option* of pursuing plan B, or plan C, or whatever plan meets the contingency. Accordingly, Coase has beckoned economists to explore how economic agents form contracts to cope with the stormy seas of commerce and industry. For example, De Vany and Eckert (1991) tell how, in the golden age, motion-picture companies worked on a contract system with film stars and others talents, and vertically integrated into exhibition, because of severe and pervasive uncertainties on both the supply side and the demand side of the industry. They argue that the Supreme Court's *Paramount* decision (1948), which broke up the production house system, was based on an oversimplified notion of "restraint of trade," and resulted in losses for film makers and viewers alike. The Coasian community has generated numerous studies of how restrictions on freedom of contract have hobbled the ability of business to cope with uncertainty.

In the case of free-enterprise urban transit, for example, severe uncertainty and individuation might be fundamental, and adaptation crucial. Carriers

might not expect current conditions to persist. New competitors might invade their routes, or current competitors drop out. The carrier companies may wish to abandon certain routes or add others. For such reasons carriers may wish to lease their buses and vans, and form contracts that permit them to alter vehicle utilization on short notice. Carriers may form flexible contracts with their drivers, allowing the company to alter hours and remuneration. In unregulated private enterprise, flexible response, as common practice, is an important source of both cost containment and effective service delivery. But equilibrium storytelling seldom includes the complicated apparatus of stochastic processes and so on which would be necessary to capture the role of flexible response.

FREEDOM TO HAVE EPIPHANY

It is one thing for the entrepreneur to greet fortune when it comes knocking. It is something else to apprehend fortune in its hidden forms, and seize it. Here we have the distinction between responding to the realization of events within a framework of recognized variables and relationships, and the discovery of a fresh opportunity to embrace a new and better framework. Here is the distinction between information and insight. This element of epiphany, of finding fortune by interpreting the world differently, is the subtle and vital element in human decision making. Yet this element of decision making is absent from equilibrium model building.

An example of epiphany is found in W. Somerset Maugham's short story "The Verger." A new vicar came to St Peter's, Neville Square, and called in the church verger to discuss a troubling matter. "I discovered to my astonishment that you could neither read nor write," he told Albert Edward Foreman, the verger of sixteen years. When directed to learn to read and write, Albert Edward replied "I'm too old a dog," and bid the vicar a friendly farewell. He hung up his verger's gown and went into the street. He was a non-smoker, but with a certain latitude, and it occurred to him that a cigarette would comfort him. He looked up and down the long street without finding a shop that sold cigarettes.

"I can't be the only man as walks along this street and wants a fag," he said. "I shouldn't wonder but what a fellow might do very well with a little shop here. Tobacco and sweets, you know."

He gave a sudden start.

"That's an idea," he said. "Strange 'ow things come to you when you least expect it."

He turned, walked home, and had his tea.

"You're very silent this afternoon, Albert," his wife remarked.

"I'm thinking," he said.

The former verger set up in business as a tobacconist and newsagent. Soon he set up more shops, and in time accumulated a small fortune. The

distinguished gentleman went to the bank to put his wealth into securities and startled the bank manager by announcing that he could not read or write. “Good God, man, what would you be now if you had been able to?” – “I can tell you that, sir,” replied Mr Foreman. “I’d be verger of St Peter’s, Neville Square.”

Maugham’s story tells of a man who not only discovered something he wasn’t looking for, but discovered something *he quite possibly might not have discovered at all*. In Israel Kirzner’s terms, the verger was *alert* to a profit opportunity. The verger’s apprehension of the street as a bad-place-to-find-a-cigarette was a realization in his working framework. Apprehending it as a good-place-to-set-up-a-tobacco-shop was not. The opportunity could have been missed entirely, or noticed only fleetingly.

Economists give some attention to innovation in the sense of significant and identifiable technological advance, but they give very little attention to alertness or epiphany in all its buzzing, blooming – yet very often mundane – manifestations. The verger’s story is material neither for a news headline nor an elegant model, nor is it captured in a variable called “education” or “R and D,” but it is nonetheless the kind of small breakthrough everyone makes now and then, and which, in aggregate, accounts for significant economic improvement. It is creativity and imagination, achieved countless times over, in the individuated worlds of individuals. Whereas Coasian response explores the individual’s adaptation within his or her individuated world, Kirzner’s alertness is the individual’s reformulation of his or her individuated world.⁴ This human experience of reformulating, or *reinterpreting*, one’s world, this element of epiphany, is, by its very nature, *impossible* to capture in an equilibrium model.⁵

Too often economists neglect the effects of public policy on alertness and the discovery process. Kirzner, however, queries: what economic and political institutions can be expected most successfully to evoke entrepreneurial alertness?

In the Somerset Maugham story, the verger noticed something that was now *in his interest to notice*. Here is the heart of Kirzner’s distinctive argument for economic freedom (1985: 28):

Two individuals walk through the same city block teeming with hundreds of people in a variety of garbs, with shops of different kinds, advertising signs of many goods, buildings of different architectural styles. Each of these individuals will notice a different set of items out of these countless impressions impinging on his senses. What is noticed by the one is not what is noticed by the other. The difference will not merely be one of chance. It is a difference that can be ascribed, in part, to the *interests* of the two individuals. Each tends to notice that which is of interest *to him*.

Kirzner claims that “human beings tend to notice that which it is in their interest to notice.”⁶ The claim is natural enough and beyond doubt. It implies

that profit opportunities will be best discovered and seized in a legal framework that gives individuals an interest in discovering them.

Every Ph.D. economist understands that under a regime of economic freedom (and a host of other assumptions), the market generates efficient outcomes; model builders have refined the logic in the “fundamental welfare theorems” of general equilibrium. But Kirzner’s argument for freedom is totally missed by such logic, and arises only because the ancillary assumptions of the model do *not* hold. In real life, many opportunities lie hidden from view; there is no set of “common knowledge.” Not only are preferences, constraints, and opportunities individuated in minute detail, but each actor’s interpretations of them are individuated.

The market process generates a system of human activities each of which is performed in partial ignorance. There are always discrepancies between available opportunities and market recognition of those opportunities. We therefore value, Kirzner argues (1985: 30), a legal system “which offers entrepreneurs the required incentives for the discrepancies to be noticed and corrected.” The legal system that best does so is economic freedom, which keeps individuals alert to profit opportunities because it grants them an interest in seizing them. To Kirzner, the most impressive aspect of the free market system is not its ability to generate efficient allocations within a framework of fully recognized ends and means. Rather, “the most impressive aspect of the market system is the tendency for [previously unrecognized ends and means] to be discovered.” Yet this most impressive aspect, which cannot be captured in the dominant mode of discourse, is poorly recognized in academic economic research and poorly imparted in economic education.

Consider the case of making policy for urban transit. It is typical for local governments to fix the price of taxi services, and to require official meters in taxicabs. An economist might argue that this policy remedies problems of bad consumer information, infrequent dealings, and cabby opportunism. With a model of supply and demand in his or her head, the economist might reason that so long as regulators don’t set the price too far from “the equilibrium price,” the downside of price fixing may not be so bad.

Kirzner would argue that this reasoning is glaringly inadequate. Price competition, Kirzner would argue, is crucial to the vibrancy of the market and should not be seen in isolation from other activities in the market process.

Perhaps an upstart company seeks to enter a sleepy local taxi market. It plans to utilize a new maintenance system to keep the cabs in repair, or a new contracting policy to assure itself loyal drivers, or a new dispatching system to provide prompter service to customers. It might offer new stylish cabs, and bring this new service to the consumer’s attention by a clever advertising campaign. Finally, it plans on cracking the traditional market by offering – at least temporarily – a well-publicized low price – the lowest in town.

Kirzner’s point is that when the government fixes taxi rates, besides running the risk of getting a shortage or surplus, we run the risk of regimenting

the industry and choking off the vital process of discovery. If the upstart company cannot offer a new low price, then it is likely to forgo the campaign altogether. In fact, there would not even be an upstart company to devise such a campaign. Society loses not merely some "quantity supplied," but an entire foray into a local economic terrain, a vital entrepreneurial investigation into new services and new ways of producing services. In carrying out the would-be campaign, the upstart company would have undergone a series of fresh decisions, each of which would have involved entrepreneurial discoveries. (Listen again to Kenneth Burke's words: "Decision is the selection and formulation of alternatives.") The overschooled economic perspective, which sees the freedom to act as little more than the freedom to choose, fails to appreciate this larger social loss from government assaults on freedom (cf. Kirzner, 1992: 53-4).

FREEDOM TO FIND SERENDIPITY

The freedom to choose points up how freedom allows individuals to adapt their strategy to a neatly characterized competitive environment. In our discussion of Coasian response we saw how freedom allows individuals to adapt to individuated conditions, by responding in step with changes in those conditions and forming contracts to cope with those conditions. In our discussion of Kirznerian alertness we saw how freedom sparks individuals to adapt their interpretations of local conditions, to incorporate available-but-undiscovered profit opportunities into their interpretive framework. Thus we have seen three ways in which freedom promotes appropriate adaptation of behavior to underlying opportunity.

There is yet another facet of freedom which helps to achieve a meeting of appropriate behavior and opportunity. In an article entitled "Uncertainty, Evolution, and Economic Theory" (in the *Journal of Political Economy*, 1950), Armen Alchian pointed out that in a market system not only does behavior tend to adapt appropriately to opportunity, but opportunity tends to adopt appropriate behavior. The survivors in a market system, he explains, "may appear to be those having *adapted* themselves to the environment, whereas the truth may well be that the environment has *adopted* them" (1977: 22).

Alchian gives an unreal but useful example:

Assume that thousands of travelers set out from Chicago, selecting their roads completely at random and without foresight. Only our "economist" knows that on but one road are there any gasoline stations. He can state categorically that travelers will *continue* to travel only on that road; those on other roads will soon run out of gas. . . . If gasoline supplies were now moved to a new road, some formerly luckless travelers again would be able to move; and a new pattern of travel would be observed, although none of the travelers had changed his particular

path. . . . All that is needed is a set of varied, risk-taking (adoptable) travelers. The correct direction of travel will be established.

Alchian's point was principally methodological: Economists are so caught up in stories of optimization, stories of appropriate adaptation, that they neglect stories of adoption of the appropriate by the evolutionary process of experimentation and selection. Alchian asks for an economic understanding that does not limit behavior to the tidy forms of optimization that make equilibrium models cohere. He asks for a more evolutionary understanding that allows "imitative, venturesome, innovative, trial-and-error adaptive behavior" (p. 32). Alchian's perspective gives the economist a loose framework for explaining the survival of the fittest that includes, and goes beyond, the idea of fit adaptation to survival requirements. Indeed, some researchers are now using tournaments (Axelrod, 1984), evolutionary games (Maynard Smith, 1982), and models of experimentation and learning in games (Kreps, 1990: 164f.; De Vany, this volume) to illustrate how trial and error behavior may evolve through time and generate emergent conventions.

Alchian's idea of opportunity adopting appropriate behavior points us toward another facet of economic freedom, again a facet eclipsed by equilibrium model building. Whereas the virtues of the freedom to choose, to respond, and to discover were, in each case, predicated on the display of purposive behavior, Alchian's point tells us to value freedom even for human behavior that is foolhardy, romantic, or arbitrary. Economic freedom carries the freedom to act regardless of one's permits, licenses, certification, or other forms of government permission to use one's own property or to enter consensually into affairs with others.

To use Alchian's biological metaphor, economic freedom is the system that generates the widest possible spawning of different phenotypes – that is, different particular expressions of the genotype (pp. 22–3). In conjunction with the freedom to experiment comes the responsibility of failure: only if the "phenotype" carries the responsibility of failure will the selection mechanism of the competitive market operate to adopt appropriate behavior. In Alchian's lesson, "[s]uccess is discovered . . . not by the individual through a converging search . . . [but] by the economic system through a blanketing shotgun process" (p. 31). I think of Jed Clampett, the television character of *The Beverly Hill Billies*, who inadvertently discovered crude oil while out shooting for some food.⁷ Once a particular phenotype – be it a type of restaurant entrepreneur, wholesale distributor, or textile manufacturer – hits upon success, this type is imitated and the social benefits increase. Phenotypes that do not hit upon success perish.

Sometimes beneficial "phenotypic" variation comes about not by random spawning but by positive error. Many of us have had the experience of making a mistake in using our word-processing program, and, in figuring out how to fix the mistake, discovering some wonderful feature we hadn't known

about. Error turns out to be a blessing. The element of serendipity is also present in Maugham's story of the verger, in that the verger in fact had made a wrong turn when he headed down the street where he discovered commercial opportunity.

Serendipity might be said to be an inadvertant discovery which is on net socially beneficial. It need not be beneficial from the point of view of the discoverer, however, or even of his or her long term self. The historian Samuel Eliot Morison tells of such a case in the early pages of *The Oxford History of the American People* (1965: 23): "America was discovered accidentally by a great seaman who was looking for something else; when discovered it was not wanted; and most of the exploration for the next fifty years was done in the hope of getting through or around it." Alchian (1977: 30) points out that a great deal of "pioneering and leadership" in the economic realm occurs by failed attempts at imitation. Economic freedom presses entrepreneurs into contact and experimentation with their environment.

Compare Alchian's idea of spawning with Kirzner's theory of discovery based on interest. In his example of two individuals who walk down the same city block, Kirzner argues that each tends to notice things that the individual would best be able to make use of. But even if discovery is not led by interest but is merely random, there is a definite benefit to having two, rather than one, encounters with the environment, since with two it is more likely that at least one will serendipitously discover an as-yet undiscovered opportunity.⁸ And Alchian's spawning idea is especially important if discovery depends not only on individual interest, as Kirzner maintains, but also on distinctive talents in perceiving the environment; thus it has been argued that immigrant entrepreneurs sometimes succeed by virtue of their peculiar outlook on things.⁹ Each type of mind may have its own special propensity to have beneficial accidents.

In our example of urban transit, market experimentation might mean new modes, new vehicles, new pricing schemes, new routes, new schedules, new aspects of service, new techniques in providing service, etc. These changes might come from within the industry, from newcomers, or from entrepreneurs initially based in other industries, perhaps in hotel services, delivery services, or even used-car dealing. A free-enterprise transit policy would invite all comers to make their bid in the market, and let travelers select the worthy. Depending on their discoveries, niche finders would survive, or prosper, or induce imitation.

CONCLUDING DISCUSSION

Discovery as positive externality

In placing heavy emphasis on equilibrium model building, economists eclipse the discovery factors of economic activity: responsiveness, epiphany, and serendipity. Unlike other important elements of economic activity, like price

DISCOVERY FACTORS OF ECONOMIC FREEDOM

Table 10.1 Facets of decision making, representing economists, and character examples

Static choice Samuelson Max utility	Respondence Coasians Switchboard operator	Epiphany Kirzner The verger	Serendipity Alchian Jed Clampett
No discovery	Small discovery within one's interpretive framework	Discovery that alters one's interpretive framework	
More deliberate		Less deliberate	

competition, strategic commitment, and economizing, which are beautifully rendered by model-building tales of optimizing agents, these more dynamic factors are thrown into the shadows.¹⁰ Coasian respondence to the gale of change can be very rigidly and narrowly worked into equilibrium storytelling, with much cumbersome apparatus. Alchianian serendipity can be mimicked by computer simulation studies, which themselves are outside the optimization mode of discourse, but again the rendering is rigid and mechanical. Kirznerian discovery, the epiphany of the individual to see a new interpretation of what is before him or her, is, virtually by definition, impossible to capture in equilibrium storytelling.

Within the neatly characterized settings of economic models, the opportunities are posited at the outset and often assumed to be common knowledge among homogeneous agents. In such a context, when a producer enters a market or expands output, there is no consumer benefit associated specifically with that producer's activity, since the opportunity would have been filled by some other producer anyway. Consumers get their surplus regardless of the activities of any particular producer. The consumer surplus is virtually an *endowment*, embodied in the initial conditions posited by the analyst.

Once the scholar breaks free from formal model building and admits of discovery in his or her storytelling, we can see that discovery is a lot like a positive externality. Discovery creates differentiated products, new markets, better consumer information, new cost conditions, and so forth. These are not gains that must happen in any event. Discovery generates whole regions of consumer and producer surplus that had not been previously imagined. These fresh blocks of consumer and producer surplus are like "public goods" (Cowen, 1985).

If the economics profession were to allow more attention to the discovery factors, it might find itself in stronger support of economic freedom. The ideas I have associated with Coase, Kirzner, and Alchian are all linked in their illumination of the following two points: (1) knowledge and opportunity are extremely local and individuated, (2) knowledge and opportunity are

constantly changing. These points humble us by telling us, the academicians and intellectuals, that the economy will always be unknowable (Hayek, 1948, 1955, 1988; O'Driscoll and Rizzo, 1985). We really know less about economic processes, transforming inputs into outputs, than we sometimes pretend. Too often we mistake a thorough knowledge of the representations that other intellectuals make of a subject for a thorough knowledge of the subject itself (Schopenhauer, 1851: 199). To the extent that the economy is unknown and opportunity is hidden, the discovery fount of positive externalities gains in importance.

If, despite the best intellectual efforts, economic processes will remain largely unknown, it makes little sense for the regulator, aided by the academic economist, to try to alter the outputs by regulating the inputs. The regulator is apt to specify inappropriate inputs, or presently obsolete inputs, or uniform inputs in a situation that calls for individuated inputs. The regulator is apt to choke off the discovery fount of positive externalities. The wiser course very often is simply to treat outputs directly – notably, by safeguarding the relatively simple tort rules of property, consent, and contract – and leave the inputs free to discover themselves and to dance their own steps within that legal framework.

On giving evidence for discovery

If the Hayekians are correct both about economics and about economists, we should observe the following pattern: economists who neglect the discovery factors underpredicting the harms of regulation and the benefits of deregulation. Needless to say, good data for such a test are elusive. Clifford Winston (1993) reviews the deregulation experience for a number of industries, comparing the benefits as predicted beforehand by economists with the benefits as assessed afterward. The results, not surprisingly, are ambiguous, but perhaps mildly supportive of the Hayekians. For the benefits arising from changes in service quality, which especially eludes quantification, Winston remarks (1993: 1277):

Most of these changes made deregulation more valuable to society. Economists effectively predicted lower bounds by not recognizing further adjustments by firms. These developments were not anticipated because economists' predictions generally rely on models that assume no technological change.

Until we have good data on the ability of economists who neglect discovery to predict the effects of policy changes, data that in effect isolate the significance of the discovery factors, our exploration of this most crucial matter shall have to rely on other scientific methods – introspection, thought experiment, metaphor, parable, case study – like those employed by Coase, Kirzner, and Alchian.

What should economists do?

If a better understanding of discovery is to be had, it would seem that it will not be by virtue of fancier and more advanced model building. Although advanced storytelling of that sort can be instructive, it is likely to generate a somewhat narrow and esoteric understanding of such dynamic features of economic activity. Economics is already suffering from an autarkic specialization, in which researchers are developing highly specialized intellectual products that are not profitably traded to others (McCloskey, 1994: 74f.). Indeed the one form of intellectual specialization that the profession seems to neglect, sometimes with a vengeance, is the middleman.

There are other ways to tell stories, and they may be better suited to the task. Economists might do well to focus more of their energy on learning to tell stories of business and economic history, case studies, or economic biography. An even more radical, but I hope effective, departure from respectability was occasioned in the present chapter by the use of a piece of fiction. Yet another form of discourse that might broaden understanding is open policy dialogue, where serious scholars engage in open advocacy, if they have something to advocate, and submit to public debate. That would certainly be welcome by students, our customers. These suggested other ways of telling stories are probably better suited to the study of discovery.

But, of course, all of these suggestions do exacerbate the problem of deciding standards of good and bad work. That problem recedes when we all insist on model building as the one legitimate way of telling stories.

NOTES

1 Stated differently, and perhaps more directly in line with Kuhn's discussion, the essential tension is that scientists must have enough of a commitment to traditional paradigms that something becomes important because it is anomalous to those paradigms, yet enough flexibility, or lack of commitment to the paradigms, that they are willing to break from them, so that they may capture the anomaly with some innovative mode of speaking. As Kuhn (1959: 227) puts it: "Very often the successful scientist must simultaneously display the characteristics of the traditionalist and the iconoclast." For a valuable discussion of this tension in modern economics, arguing that mainstream economics is logically sound but too paradigmatic, see Boettke (1995).

2 Hayek (1979: 67):

To use as a standard by which we measure the actual achievement of competition the hypothetical arrangements made by an omniscient dictator comes naturally to the economist whose analysis must proceed on the fictitious assumption that *he* knows all the facts which determine the order of the market.

3 On the development of law and economics, see Coase (1993).

4 Kirzner (1985: 7): "The crucial element in behavior expressing entrepreneurial alertness is that it expresses the decision maker's ability spontaneously to transcend an existing framework of perceived opportunities."

- 5 Kirzner (1979: 155) says that the distinctive aspect of entrepreneurial activity is "its inability to be compressed within the equilibrium conception of the market."
- 6 For example, it is not in the interest of economic graduate students to notice discovery.
- 7 The genuine counterpart to Jed Clampett is James Marshall, a frontiersman who undertook to build a sawmill in the Sierra Nevadas in 1848. Instead he struck gold and triggered the California gold rush.
- 8 Compare Kirzner's "Alertness, Luck, and Entrepreneurial Profit," esp. p. 178, in Kirzner (1979).
- 9 Hoselitz (1964: 157). Alchian himself might serve as an example of this point. In his Introduction to Alchian's selected works (1977: 8), Ronald Coase writes:

Armen Alchian was born on April 12, 1914, in Fresno, California. He was brought up in a tightly-knit Armenian community, a community which was subject to intense discrimination. This discrimination, which does not now exist, was not the result, Armen Alchian believes, of any natural unfriendliness or unreasonableness on the part of the other inhabitants of Fresno but was due to the strangeness of the Armenians' manners and customs, which, because they were unusual and not quickly altered, were not understood or tolerated initially.

This led Alchian to think about discrimination as a problem of information costs, and to produce great papers treating information cost issues. Thus, one might argue, it was the peculiar cultural experience of an Armenian American that spawned, within the economics profession, the Alchian phenotype that appreciates information costs, and this type was adopted by the economics profession because of the gains it yielded.

- 10 For a valuable study of the disappearance of the entrepreneur in economics, see Frank Machovec (1995).

REFERENCES

- Alchian, Armen (1977) *Economic Forces at Work*. Indianapolis: Liberty Press.
- Axelrod, Robert (1984) *The Evolution of Cooperation*. New York: Basic Books.
- Berlin, Isaiah (1969) "Two Concepts of Liberty," in *Four Essays on Liberty*. New York: Oxford University Press. From his lecture in 1958, pp. 118-72.
- Boettke, Peter J. (1995) "What Is Wrong with Neoclassical Economics?," Ms., New York University.
- Burke, Kenneth (1966 (1932)) *Towards a Better Life*. Berkeley, CA: University of California Press.
- Carlton, Dennis W. (1991) "The Theory of Allocation and Its Implications for Marketing and Industrial Structure: Why Rationing is Efficient," *Journal of Law and Economics* 34: 231-62.
- Coase, Ronald H. (1960) "The Problem of Social Cost," *Journal of Law and Economics* 3: 1-44.
- (1972) "Industrial Organization: A Proposal for Research," in *Policy Issues and Research Opportunities in Industrial Organization*, ed. Victor R. Fuchs. New York: National Bureau of Economic Research, pp. 59-73.
- (1993) "Law and Economics at Chicago," *Journal of Law and Economics* 36: 239-54.
- Cowen, Tyler (1985) "Public Goods Definitions and their Institutional Context: A Critique of Public Goods Theory," *Review of Social Economy* 43: 53-63.

DISCOVERY FACTORS OF ECONOMIC FREEDOM

- De Vany, Arthur and Ross D. Eckert (1991) "Motion Picture Antitrust: The Paramount Case Revisited," *Research in Law and Economics* 14: 51–112.
- De Vany, Arthur and N. G. Frey (1981) "Stochastic Equilibrium and Capacity Utilization in the Steel Industry," *American Economic Review* 71: 53–7.
- Dick, Andrew R. (1992) "An Efficiency Explanation for Why Firms Second Source," *Economic Inquiry*, 30: 332–54.
- Friedman, David (1989) *The Machinery of Freedom: Guide to Radical Capitalism*, 2nd edn. La Salle, IL: Open Court.
- Friedman, Milton (1962, with Rose D. Friedman) *Capitalism and Freedom*. Chicago: University of Chicago Press.
- Hayek, Friedrich A. (1948) *Individualism and Economic Order*. Chicago: University of Chicago Press.
- (1955) *The Counter-Revolution of Science: Studies on the Abuse of Reason*. New York: Free Press.
- (1978) "Competition as a Discovery Procedure," in *New Studies in Philosophy, Politics, Economics and the History of Ideas*. Chicago: University of Chicago Press, pp. 179–90.
- (1979) "Law, Legislation and Liberty," in *The Political Order of a Free People*. Chicago: University of Chicago Press, p. 3.
- (1988) *The Fatal Conceit: The Errors of Socialism*. Chicago: University of Chicago Press.
- Hirschman, Albert O. (1986) "Against Parsimony: Three Easy Ways of Complicating Some Categories of Economic Discourse," in *Rival Views of Market Society*, ed. Albert O. Hirschman. New York: Viking, pp. 142–60.
- Hoselitz, Bert F. (1964) "A Sociological Approach to Economic Development," in *Development and Society: The Dynamics of Economic Change*, ed. David E. Novack and Robert Lekachman. New York: St Martins Press, pp. 150–63.
- Kirzner, Israel M. (1979) *Perception, Opportunity, and Profit: Studies in the Theory of Entrepreneurship*. Chicago: University of Chicago Press.
- (1985) *Discovery and the Capitalist Process*. Chicago: University of Chicago Press.
- (1992) *The Meaning of the Market Process: Essays in the Development of Modern Austrian Economics*. London: Routledge.
- Knight, Frank H. (1935) "Economic Theory and Nationalism," in *The Ethics of Competition and Other Essays*. London: Allen and Unwin, pp. 277–359.
- Kreps, David M. (1990) *Game Theory and Economic Modelling*. Oxford: Clarendon Press.
- Kuhn, Thomas S. (1977, essay appeared in 1959) "The Essential Tension: Tradition and Innovation in Scientific Research," in *The Essential Tension: Selected Studies in Scientific Tradition and Change*. Chicago: University of Chicago Press, pp. 225–39.
- (1970) *The Structure of Scientific Revolutions*, 2nd edn. Chicago: University of Chicago Press.
- McCloskey, Donald N. (1994) *Knowledge and Persuasion in Economics*. New York: Cambridge University Press.
- Machovec, Frank M. (1995) *Perfect Competition and the Transformation of Economics*. London: Routledge.
- Maugham, W. Somerset (1952) "The Verger," in *The Complete Short Stories of W. Somerset Maugham*, Vol. III. Garden City, NY: Doubleday, pp. 572–8.
- Maynard Smith, John (1982) *Evolution and the Theory of Games*. Cambridge: Cambridge University Press.
- Morison, Samuel Eliot (1965) *The Oxford History of the American People*. New York: Oxford University Press.
- O'Driscoll, Gerald P. and Mario J. Rizzo (1985) *The Economics of Time and Ignorance*. New York: Basil Blackwell.

DANIEL B. KLEIN

- Schopenhauer, Arthur (1790, 1851) *Essays and Aphorisms*. New York: Penguin.
- Sen, Amartya K. (1977) "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory," *Philosophy and Public Affairs* 6: 317-44.
- Stigler, George J. (1961) "Economics of Information," *Journal of Political Economy* 69: 213-25.
- (1962) "Information in the Labor Market," *Journal of Political Economy* 70: 94-105.
- Winston, Clifford (1993) "Economic Deregulation: Days of Reckoning for Microeconomists," *Journal of Economic Literature* 31: 1263-89.