PART I

The Natural and the Social

CHAPTER 1

Doing what comes naturally: four metanarratives on what metaphors are for

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> Science is like fiction, you see. We make up stories, we sketch out narratives, we try to find some pattern beneath events. We are interested observers. And we like to go on with the story, we like to advance, we like to make progress. Even though they are stories told in the dark.
>
> But you have your equations. Your mathematics –
>
> Oh. Mathematics. Mathematics is like language. No one knows where it came from. No one really knows how it works. More horses and fishes. Horses and fishes trapped in signs. . . .
>
> Oh my God, he said. I am sorry.
>
> Don't be sorry. There's nothing to be sorry about. I chose this life.
>
> Ackroyd (1989, 159)

There are two basic types of people in academic circles: those who think all the major issues in their discipline are settled and those who don't. The former type tends to be correlated with those who dabble in applied mathematical pursuits, though like all good generalizations, it has a countable infinity of exceptions, whereas the latter type tends to congregate in departments of history, anthropology, comparative literature, and sociology. The first type of person probably will not like this introduction or, indeed, many of the chapters in this volume.

Whenever one of the former types encounters one of the latter in some professional capacity, perhaps allowing him- or herself to be drawn out concerning his or her basic presuppositions, the resulting dispute often travels along well-worn grooves. "There are more things in heaven and earth than are dreamed of in your philosophy," intones the cornered Ms. Context. "How dare you deny your senses! I defy you to argue I have not kicked this stone or stripped you of your NEH grant!" retorts Mr. Integro-Differential Determinist.

"Suppose that I told you that the simplest intuitive categories, like male and female, are not as rock-solid as you think."

"Oh no. Please don't bring up gender roles and all that. While some of my best friends are feminists, and I can be caught off guard by an elaborate transvestite as much as the next man, in the final analysis seeing is believing. Mankind would have died out as a species long ago if they had listened to you."

"No, wait. I really mean that sex, not gender, can be a historically contested category . . ."

"What is it with you people and your neurotic denial of progress? Haven't you heard that the Iron Curtain has fallen, that deconstruction has fallen out of fashion, and yet science marches onward? I don't care about the Middle Ages or a bunch of superstitious rubes in a flutter over some hermaphrodite. In modern science, we understand perfectly well that sex is a matter of X and Y chromosomes, and the matter can be settled in a few minutes with a microscope."

"Well, then, how do you explain this recent news clipping (Kolata 1992)? It reports, "Scientists say that dozens of birth defects can blur gender and impossibly complicate the search for a simple genetic test to certify someone as female." Moreover, far from being an academic question, it has cropped up numerous times in the testing of female athletes in certification trials in major international sporting events. Imagine – all your life you're a woman, and then, in front of the klieg lights of a TV audience – clang! – you're disqualified, counted out by some faceless white-coated employee in a genetic test lab, who, by the way, couldn't be bothered with all the complex issues involved."

"Leave it to you to root up some obscure anomaly. No truth is perfect; nobody has ever claimed that. None of this matters to me or anyone else wrapped up in surviving everyday life. These little stories of yours are just ignored for the time being in my particular science. Eventually, if there is a problem, that problem will be solved by some scientist, just like we discovered that storks don't bring babies and sunspots don't cause business cycles. I think it would be a great boon to the health of the university if we just corraled all the anthropologists and comp lit specialists and historians and sociologists of science into one big Department of Useless Fictions, set them fighting among themselves, and let the marketplace of ideas take hindmost, don't you?"

Neither Schumpeter nor Hollander nor Stigler nor . . .

Ah yes, the marketplace of ideas: the last refuge of the fin-de-siècle scoundrel. In the long run we are all dead, said an eminent economist;

but he didn't say if there was an injunction to pay off all our debts before we departed. The settler of accounts between the Natural and the Social has always been a deadbeat in the annals of Western economic discourse. A generic Nature has borne too heavy a burden in orthodox histories of economics in the twentieth century, maybe because most economists have thought that all the basic issues were definitively settled.

Take Joseph Schumpeter, for example. He set the tone for the postwar textbook of the "history of economic thought" in his magesterial *History of Economic Analysis*. His objective was to rewrite the history as the narrative of inexorable triumph leading up to the neoclassical orthodoxy, separating out the "science" from the ideology, the historical contingency, vagaries of politics and interdisciplinary influences, and so on. He was a living, breathing contradiction: a worldly philosopher who claimed that "the garb of philosophy is removable" to reveal the timeless doctrine underneath; a polymath who flaunted his own breadth only to dismiss its relevance; a German historicist who ultimately sought to negate history. He was, however, acutely aware of the embarrassing postures his intense self-denial would land him in and struggled mightily with his dark daemon until his death (Allen 1991). The posthumous papers that later were incorporated as early chapters of the *History* attest to this heritage of German-Austrian social thought:

> This history as a whole will answer the question whether there actually has been such uncritical copying of the methods [of mathematical physics] that have meaning only within the particular pattern of science that developed them – apart of course from the programmatic utterances . . . [which] mean next to nothing. (1954, 17)

But the sad fact is that, hundreds of pages later, the question remained woefully unanswered. In the fragment just quoted, he suggests vaguely that mathematics bears no implicit content and writes, "The things we are accused of borrowing are merely the reflexes of the fact that all of us, physicists or economists, have only one type of brain to work with and this brain acts in ways that are to some extent similar." Unhappily, nothing in his massive *History* ventures to describe how physicists' brains, nor indeed the brain of any specific scientist, "work"; and from the sound of it, it was not intellectual history but rather depth psychiatry or neurobiology or perhaps our newfangled cognitive science that was called for in Schumpeter's view to answer the question which apparently motivated his project. The promissory note was never paid in full.

Things have not gotten better in the interim. In texts by George Stigler, Jürg Niehans, Samuel Hollander, Donald Walker, Paul Samuelson, and other leading orthodox economists, the narrative of the triumph of neoclassicism is essentially the same, but now all pretense of breadth, intellectual motivation, and philosophical concern is dispensed with as superfluous. "Science" is treated as a natural kind while Nature calls the tune; rival traditions that interrogated the shape and integrity of the Natural and the Social are summarily banished from the history; and all explanation sports a monotonous sameness, be it yesterday or in the seventeenth century. The heirs of Schumpeter have been living off credit for so long they don't even seem to be aware that there are chronic balance-of-trade problems in the land of social science empire building.

Economics, née political economy, née moral philosophy, has been a prime locus of the hashing out of definitions of both the Natural and the Social in Western culture – hence the inspiration for the present collection of essays. One would think that in the vast library of histories and commentaries on the discipline, which extends well back to the eighteenth century, there would be a wealth of meditations on the uses of Nature in the discussion of Society, if not the obverse; but, in fact, the converse is the case.[1] What we find under the rubric of the "history of economic thought" or "economic methodology" are half-baked assessments of the inexorably cumulative character of a disembodied, self-assured inquiry governed by an ill-defined "scientific method" or else anxieties expressing concern over the legitimate intellectual status of the discipline, purportedly to be assuaged by recourse to some philosopher's stone, be the mason of choice Francis Bacon or Isaac Newton or Immanuel Kant or Georg Hegel or William Whewell or John Stuart Mill or Karl Popper or Thomas Kuhn or Imre Lakatos or (fill in the blank). In the process much of the interesting historical content of the constitution of the object of inquiry gets lost. (We decline to comment here on whether the bulk of the orthodox economics profession, those first sort of people in our rough and ready initial dichotomy, would deem it a world well lost.)

The purpose of this volume is the recovery and revival of the heritage of thought banished by the heirs of Schumpeter. We are not interested in holding up economics to a single abstract yardstick or in drawing a rectilinear curve from any arbitrary text to some modern orthodox topic. Instead, essays in this volume generally ask: What did it mean in a specific historical context for a particular text to lay claim to some variant of a "scientific" status?

Old questions, new answers

The ability to ask certain kinds of questions about the evolution of the discipline has very nearly been lost in many economics departments, and therefore it was the goal of the conference entitled "Natural Images in Economics" at the University of Notre Dame in September 1991 to attempt to revive them. These questions ranged from dauntingly global philosophical issues about the place of economics in the archaeology of knowledge to some relatively parochial historical queries about the exact content of the Natural for a particular text at a particular historical juncture. Some of the questions, arrayed from the lofty to the more mundane, can be surveyed here in an abstract manner.

To begin, there was a danger in an event retailed under the title "Natural Images in Economics" of implicitly taking the Natural/Social distinction as given *a priori* and therefore external to the task of describing the impact of the natural sciences on economic discourse. Happily, the long-neglected question of how and when the separate spheres of Nature and of Society came to assume their modern outlines informs many of the specific narratives contained herein. Innovative research in these areas of the history of science by such figures as Bruno Latour, Ted Porter, Joan Richards, I. B. Cohen, Donna Haraway, Adrian Desmond, and Lorraine Daston can and have provided inspiration for parallel inquiries from the vantage point of the history of economics. But more can be done, and the net can potentially be cast much wider. For instance, the intellectual historian Donald Kelley has written a fascinating book entitled *The Human Measure*, which traces the split between a hermeneutical and naturalist study of society to legal traditions dating from the twelfth century. It opens up the tantalyzing possibility that our images of modern science themselves were derived from the model of jurisprudence, so that the subsequent rivalry between the natural and social sciences may be regarded as more of a family feud than the clash of irreconcilable principles (1990, 143, 173). Political economy would then stand in an entirely different relationship to the law than that portrayed by neoclassical imperialists of more recent vintage.[2]

Indeed, one of the conference participants, Margaret Schabas, had earlier asked in another venue whether it makes any sense to maintain a history of economics separate from the disciplinary structures of the history of science.[3] However sanguine one might feel about where inquiries concerning the Natural and the Social might eventually find a home, these are the sorts of long-lost questions encouraged by the

reassertion of a historical sensibility represented at this conference. This volume provides tangible evidence that the two previously isolated communities can, at a minimum, get together in the same room (away from home) and find that there is much common basis for discussion. It should be apparent that a fair acquaintance with the history of the sciences (*plural*) is a prerequisite for even broaching the question of the demarcation of the Natural and the Social; and in a world where the polymath is an endangered species, the only practical solution is closer contact between historians of science and historians of economics.

A salutary effect of becoming acquainted with modern history of science is that participating economists would rapidly become sensitized to various ethnographic and literary devices concocted over the centuries to distance ourselves from our unconscious presuppositions concerning the nature of the Natural. For instance, Michael Adas (1989) has bequeathed us an absorbing study of how Western perceptions of superiority over other cultures shifted from a belief in transcendent truths, perhaps inaccessible to but equally valid for all peoples, to a smugness about proprietary technological and scientific artifacts of Western origin; this surely marks a profound watershed in the Natural–Social distinction, one relevant to economistic notions of "development." Simon Schaffer and Steve Shapin (1985) have written a fascinating narrative of the rise of the "experimental form of life" in the context of seventeenth-century English politics. Or again, the foregrounding of the boundaries between what is "us" and "not-us" in the modern social studies of science literature can jolt readers out of our reverie of detachment, what Thomas Nagel has called "the view from nowhere." The topics that might impinge on the history of economic thought could range from the means by which physical and economic concepts have jointly buttressed and constituted one another (Mirowski 1989; Wise 1989–91), to the origins of aperspectival objectivity in Adam Smith's *Theory of Moral Sentiments* (Daston 1992), to the shifting boundaries of what has historically been regarded as human (Sheehan and Sosna 1991); to the role of mathematics in seemingly banishing the dreaded specter of anthropomorphism (Mirowski 1992).

At a somewhat lower level of generality, another currently repressed question concerns the struggle to constitute a separate political economy out of a proposed generic science of society, or out of a single generic science *tout court*. A recurrent theme in Western discourse is the dream of a single unified science. This program from Comte to Carnap mostly centered on "methods," but the reductionist holy grail was never far from sight, holding out the promise of the

reduction of economics to psychology, psychology to biology, and biology to physics. Frequently in the narratives in this volume, the protagonists tend to elide the distinction between unification of methods and reductionism in subject matter (or as I. B. Cohen puts it, the distinction between form and function), partly due to the implicit rhetorical strategies of their subjects, but also partly due to the conflicting imperatives of appropriating the trappings of another science in order to constitute political economy as separate and self-sufficient science. The chapters by Michael White and Paul Christensen are especially concerned with this phenomenon, while disputing interpretations of Marshall by Schabas, Niman, Limoges and Ménard would seem to pivot on this issue.

Another question that one could search for in vain in the previous canon of the history of economic thought is that of the relationship of political economy to the protracted, and predominantly Germanic, historicist heritage that had argued the desirability and even necessity of a separate and distinct mode for the study of society. In sociology and anthropology, the doctrine of *Verstehen* and Dilthey's insistence upon a distinction between the *Geisteswissenschaften* and the *Naturwissenschaften* are common currency; but in the economic methodology literature, all that has been tendered are dark hints that the dreaded vampire had a stake driven clean through its heart by Carl Menger in the *Methodenstreit* and then had a few silver bullets pumped into its decrepit frame by Karl Popper. Outside of a brief frisson of interest in Gadamerian hermeneutics (Lavoie 1991), there has been no evidence that economists might actually deem such themes relevant to understanding their own history. Here, the chapters by Michael Hutter and James Murphy are particularly relevant.

Finally, we come to the most finely grained set of questions that have not, until now, engaged the talents of historians of economics: What were the local uses of particular images of the Natural in the constitution of specific economic theories? Perhaps not surprisingly, this is the format that many of the chapters herein have assumed. Historians have always excelled in bringing to life the contingent particularities of the chosen event or singular doctrine, and this gathering was no exception. Pointing out the recourse to biological metaphor or physical analogue is the first step in establishing awareness of the pervasive influence of the Natural on the Social, establishing a baseline from which to construct larger and more complex narratives of their twining twinning exfoliation.

Rather than summarize individual chapters, I shall indicate briefly some ways in which the case studies herein might serve in the construc-

tion of more complex narratives of the Natural and the Social. These insights grow out of the uncomfortable experience of witnessing reactions to a book called *More Heat Than Light*. The putative author of this problematic text could not seem to make up his mind whether or not economics ought to imitate physics; whether economists should aspire to be mathematical scientists or literary critics; whether biology or anthropology should constitute the Mecca of economics; whether real physicists are nice guys or pushy parvenus; or even whether any extant economics is a viable intellectual project. To banish this fellow before he spreads discord and drivel thoughout the land, it may clarify matters to lay out all the permutations of possible configurations of the Natural and the Social in Western thought and indicate which ones correlate with potential interpretations of the project embodied in this volume.

Four metaphorical metanarratives

To save space, as well as to placate economists who may have little patience with such distinctions, these four configurations are presented in schematic format in Table 1.1. Some representative names are attached by way of illustration, mainly to signal to philosophers that much more might be said in more self-consciously philosophical contexts. Since we started out in our introductory dialogue positing two basic types of people, and will here allow two states of mind for each type regarding the status of the Natural and the Social, we fashion $2^2 = 4$ broad metanarratives.

I think it fairly transparent that the presuppositions of most neoclassical economists do not venture outside of the ambit of position 1, the only exception being a very few members of the older generation who read German and may have been partisans of position 2a. This clumping of the mass of economic practitioners into more or less a single quadrant cannot be written off completely to herd instincts or severe brainwashing in graduate school, although there is something to be said for each hypothesis (Colander and Klamer 1990). Rather, it is an artifact of the historical genesis of the neoclassical program, as explained in *More Heat Than Light*. In appropriating the formalisms of mid-nineteenth-century energy physics and adapting them to the language of utility and prices, the progenitors and their epigones adopted a certain worldview, one that had to stress the extreme near identity of physics and economics. Veering so close to becoming subsumed in pure identity could be attractive only to a personality who was convinced of a far-reaching unity of science, one necessarily