

work, economists moved in many directions. Game theory underlay much economic theory, but there were growing branches of theory that did not rely on it. It has been argued that virtually all that united economists working on these various approaches was a commitment to mathematical rigour.

The pursuit of more rigorous theories meant that economists who dissented felt excluded from the profession: journals were not open to their work and professional advancement was difficult. This feeling was particularly strong in the late 1960s and 1970s, when the insistence on rigour had increased but the proliferation of new approaches had yet to occur. For some, the trends in the profession also had political implications to which they objected. A number of groups organized and developed their own identities: radical economics, **Austrian economics, post Keynesianism** and others joined the list of heterodoxies of which Marxian economics had been the most significant example. Towards the end of the 1990s, feeling even more beleaguered, many of these groups appropriated the term 'Heterodox economics' as a banner under which they could coalesce, uniting on a plea for greater pluralism in economics. Ironically, this happened at the time when orthodoxy was, with the emergence of approaches such as the new institutional economics and behavioural economics, becoming more pluralistic than it had been in the 1960s and 1970s.

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ROGER BACKHOUSE

ECONOMICS, SOCIOLOGY OF

The history of economics has long been an academic specialization within economics itself. In recent years, however, a sociologically grounded analysis of the development and operation of economics as a science and as a profession has emerged, which has both expanded the domain of empirical investigation and brought new theoretical questions and analytical tools to bear on the study of economics. More importantly, it has also shown that this 'sociology of economics' has a distinctive role to play within economic sociology.

The history of economic thought tradition

Most of the scholarly research about economics comes from a subfield of the discipline called 'history of economic thought'. Partly because they share a firm and well-institutionalized sense of disciplinary hierarchies and boundaries, economists have always regarded the history of their science as an academic specialty in its own right. As a result, it has always been common practice among economists to contribute to the history of economic ideas and theories one way or another, either through exegesis, biography or intellectual history. The texts produced in this fashion – including textbooks, dictionaries,

encyclopedias – constitute an eclectic yet extraordinary reservoir of facts and insights into the development of the discipline, sometimes – in the most brilliant cases – combined with considerable historical erudition. Hence Schumpeter's *History of Economic Analysis* (1954) remains to this day one of the most compelling efforts at explaining the generation of economic ideas by referring to the larger intellectual and sociological context. Heckscher's *Mercantilism* (1931) masterfully interprets the history of nation-building in Europe from the sixteenth to the eighteenth century in light of the set of beliefs – the mercantilist doctrine – that inspired and sustained it.

Compared with other social scientists, economists have also been remarkably interested in the epistemological underpinnings of their discipline and in the philosophical assessment of its scientific status. Many prominent economic writers were involved in such exercises, which culminated in various efforts to reconstruct the history of economics in Popperian and Lakatosian terms after World War II. Witnessing the mathematization of the discipline, Popper himself celebrated its Newtonian revolution. Friedman's 'instrumentalist' position – or the notion that the scientific character of economics depends not on its assumptions, which can be unrealistic or even false, but solely on its ability to make predictions – seemed to successfully shelter economics from epistemological critique.

This intellectual landscape, however, started to break apart in the 1970s, both on the historical and on the methodological fronts. First, the history of economic thought was progressively purged out of leading American PhD programmes as economics became more formalized and technically oriented. This development, paradoxically, seems to have freed historians of economics from the conventions imposed by their role as gatekeepers of the canon, sometimes leading them to forge

alliances with neighbouring disciplines in order to survive. From a valuable pastime carried out alongside many productive scientific careers, the history of economics turned into a full-time research enterprise, practised at the margins of mainstream economics (hence of top US departments). The new history of economic thought set out to contest traditional interpretations, unearth forgotten authors and texts and broaden its focus. It gave itself an influential medium with the review *History of Political Economy (HOPE)* and an international forum with the *History of Economics Society*. Stimulated by Coats' work on the professionalization of British and American economics (1993), historians of economics started to give increased prominence to sociological and institutional aspects in their work – a trend largely reflected in the evolution of *HOPE*, but also in a new generation of monographs (see Bernstein's (2001) fine study of the rise and fall of the American economics profession's public purpose during the twentieth century).

The second important development is that the positivist epistemological model came under attack from a variety of standpoints, both within and outside the philosophy of science. One of the most creative attempts in this area was the emergence of a research agenda centred on the rhetoric and style of argumentation in economics, showing that economic writing is carefully constructed to make a rather muddled research process look scientifically rational and objective. McCloskey's (1985) well-known study revealed that much of the standard literary forms found in economic papers (e.g. appeals to authority, analogies, hypothetical toy economics, experimental format) are all rhetorical tools that authors mobilize in order to persuade their readers. In a related vein, Mirowski (1989) showed that nineteenth-century neoclassical economics followed closely the evolution of paradigms within physics, mimicking the latter's intellectual procedures and repre-

sentation of the world in order to gain scientific status. Finally, using interviews with graduate students at top economics programs, Klammer and Colander (1990) vividly exposed the distinctive scientific and political ideologies transmitted by each institution.

Economics through the lens of science studies

The maturity of the study of economics as a 'field' is also perceptible in the growing interest of historians and sociologists of science. To a certain extent, this transformation can be considered a remote – and long overdue – consequence of the revolution in science studies initiated by Kuhn's *Structure of Scientific Revolutions*. In Kuhn's view, which became the rallying point for the sociology of scientific knowledge (SSK), scientific production consists mainly of routine activities, which are shaped by a complex nexus of social experiences among the community of scientists.

The new science studies largely defined their agenda around a demystification of research procedures in the *natural* sciences, however, and did not pay much attention to the social sciences, economics among them (the one exception is Richard Whitley 1987). This situation is dramatically changing today, on both the historical (Porter and Ross 2003) and sociological (Callon 1998; MacKenzie and Millo 2003) fronts. Particularly remarkable as a successful attempt to reshape the history of economics from a history of science point of view is Philip Mirowski's 2002 opus on the emergence of game theory. Mirowski (himself an economist) applies to economics the increasingly influential view that cybernetic themes and models, actively engineered and financed by the US Department of Defense and its various spin-offs, came to shape the modern sciences in the wake of World War II and the Cold War. Drawing on a breathtaking

wealth of archival evidence, Mirowski shows that the development of game theory (and even, to a certain extent, of modern general equilibrium analysis) in post-war America is intimately intertwined with the rise of the US military itself.

The work of the Israeli sociologist Yuval Yonay (1998) provides perhaps one of the most explicit applications of SSK concepts and methodologies to the study of economics. Drawing on Bloor's principles of symmetry and impartiality to the history of economics, Yonay resuscitates institutionalism as a major intellectual player in interwar economics. His 1998 book on intellectual competition in American economics during the interwar offers a complex account of the relationship between the knowledge produced, its pretension to a 'scientific' status, and the strategies of the actors sustaining it. Relying on Latour and Callon's actor-network theory, Yonay uses published methodological statements to investigate the controversy between institutionalism and traditional neoclassical theory. The ultimate outcome of the episode (the dismissal of institutionalism and the rise of mathematical economics), he argues, did not inevitably follow from differences in the scientific objectivity of each school's productions, but from repeated 'trials of strength' in which each side sought to forge alliances and convince audiences that it better fit an accepted canon of science.

Breslau and Yonay's (1999) have recently pushed this constructivist line of analysis further. Ambitioning to transfer the model of laboratory studies to the analysis of article writing in economics in order to uncover the field's 'epistemic culture', they have shown that mathematical modelling is a not simply guided by rhetorical rules, but by embedded disciplinary rules that operate at the level of the field's social structure. After repeatedly interviewing economic authors about the process of article writing, they find that 'vaguely defined but generally accepted conventions regarding the

movement from [economic] reality to models' (p. 41) constitute a discursive meta-structure, which effectively constrains the scientific process.

Fields, professions and networks

The above-mentioned body of research is fundamentally 'science-centred': it is concerned with the production, translation and diffusion of particular economic discourses and ideas. Yet, as Foucault insisted, knowledge wields power: the ability to name and define economic reality is inseparable from the ability to act upon this reality. As sociologist of science Michel Callon put it, the distinctiveness of economics as a science is its fundamentally 'performative' character: It is not so much that economists observe and describe how the economy functions. Rather, 'economics, in the broad sense of the term, performs, shapes and formats the economy' (1998: 2). Sociologists, then, should turn their attention towards the 'embeddedness of markets in economics' – and study how economic ideas routinely construct and transform economies.

The study of economics as a professional practice with transformative power was notably developed by institutionalist scholars within sociology and political science (e.g. John Campbell, Peter Hall, Theda Skocpol, Margaret Weir among others), who have shown (1) that administrative structures play a critical role in defining both the economists' academic and professional space, and their relationship with policy; and (2) that, conversely, economic ideas participate in the transformation of state structures and capacities by serving as an intellectual background for institutional change.

What is driving this scholarship, however, is more an interest in political institutions and the substantive conditions and mechanisms that allow for the diffusion of economic policy paradigms than a curiosity

for 'economics' per se. Still, the research produced in this vein (e.g. see Hall 1989) has been of considerable importance in helping foster a body of scholarship that looked beyond the bounded world of disciplinary discourse and scientific production towards politics and administrative organization as mediating social structures. Building on this legacy, an 'externalist' perspective on the economics profession has emerged, which questions how economics itself is socially constructed by the broader social context.

The interesting question, in this perspective, is not so much how people write or do economics any more, but who is authorized to speak about, or act upon, the economy, and why. In other words, it has to do with the social bases of economics as a domain of practice. This, of course, is not to say that the substantive content of economic science has become irrelevant – merely that such 'internal' analysis is now subordinate to a broader understanding of the functioning of the field as a whole and its embeddedness in the larger society. This changed focus has brought to the fore three key contextual elements: institutions, field dynamics and interpersonal networks.

Comparative analysis constitutes a particularly fruitful way to demonstrate the profound inscription of knowledge in local culture and institutions. Fourcade-Gourinchas (forthcoming) shows that being an economist takes on different meanings across nations, as the practice of economics emerges out of different institutional systems. In the United States, a decentralized political culture has produced an economics profession that is market-oriented – both in form and content. The more statist French culture and institutional make-up, on the other hand, has given rise to a fragmented and institutionally weak profession, dominated by the technocratic sector. Finally, the traditional orientation of British elites towards public service helped shape a scientific and hierarchical economics profes-

sion, which nonetheless freely communicates with the broader public through a host of civil society institutions and networks. Relying on the sociology of knowledge claim that discourse and jurisdiction are intimately intertwined, the author then argues that the same patterns also account for certain distinctive characteristics in the *intellectual* trajectory of economics in these countries.

While the comparative approach tends to focus on relatively stable differences *across* nations, what may be called the 'field' approach concentrates on power struggles *within* fields of economic knowledge – whether national or international ones. Best exemplified by the work of Lebaron (2000) and Dezalay and Garth (2002), it provides a powerful reminder that economics remains a contested intellectual and professional enterprise. The argument relies on a systematic mapping of the different segments involved in the quest for legitimacy, an analysis of the social logics behind intellectual positions, and a description of the dynamics that underlie historical transformations in the field's social and intellectual structure. Applying Bourdieusian field theory to the study of French economics, Lebaron (2000) sets out to reveal the sociological mechanisms that preside over the construction of a 'belief in economics in modern societies. One way to achieve this is by showing that economics is eminently a science of power. Through detailed empirical study, Lebaron shows that the social characteristics of economists largely explain their position within the scientific space: occupational location and intellectual stance in economics are basically split along the two Bourdieusian dimensions of the volume and structure of capital, and both spaces are homologically related. Another way is by documenting extensively the progressive construction of a quasi-religious belief in markets, sanctified by the authority of science, and particularly noticeable in the neo-liberal

evolution of French economics training, research and economic policy.

Dezalay and Garth (2002) similarly rely on field analysis – but translate it to the global level. Turning their scientific capital into politico-administrative capital, internationally trained economists, they argue, have entered Latin American public bureaucracies and political elites en masse since the 1970s, ultimately displacing the traditional supremacy of gentlemen-lawyers over economic governance. In part these changes were set in motion by developments within the North American academic field – including power struggles between different segments of the profession that were 'exported' and played out in the South, in a movement the authors dub the 'internationalization of palace wars'. These processes of transformation were highly uneven across countries, however, and largely shaped by domestic institutions (the authors examine closely the cases of Argentina, Chile, Mexico and Brazil).

Though she is more sensitive to the interaction between elite competition and the grassroots context, Babb (2001) conveys a similar point in her important study of the transformations of Mexican economics over the twentieth century (her main reference, however, is Abbott's model of professional competition, not Bourdieu's field dynamics). *Managing Mexico* describes the dramatic evolution of post-war Mexican economic ideology from 'developmentalism' to 'neo-liberalism' as a consequence of ideological struggles in the society at large and, in particular, the radicalization of Mexican student politics in the 1960s and 1970s. Babb shows that the financial side of the technocracy responded to these challenges by actively sponsoring conservative economics training programs and tightening its connections with American universities, thereby engineering the stock of expertise on which the neo-liberal transition would ultimately be built.

The question of transnational linkages and networks, omnipresent in these works, certainly constitutes one of the most exciting research avenues in the sociology of economics today. Yet beyond the fertile ground offered by Latin America the scholarly literature remains scant. A fine illustration of the challenges awaiting sociologists working on other world regions, nonetheless, is Bockman and Eyal's (2002) analysis of the intellectual roots of neo-liberal transitions in Eastern Europe. Their argument underlines the importance of antecedents such as the 1950s transnational debate about socialist economic calculation, and the Cold War era exchanges between economic reformers in Eastern Europe and libertarian social scientists in the United States and Britain. By stressing the role of long-term international networks in the socialist transition to the market, Bockman and Eyal dismiss easy explanations in terms of US-made intellectual exports.

The relevance of the sociology of economics to economic sociology

In these sociological accounts, economic ideas and theories are historically evolved, hybrid products that people use, translate and mobilize strategically in order to foster broader political or scientific purposes. Still, the question of the pervasiveness of such ideas remains unanswered. Callon's urgent injunction to study the performative power of economics goes, indeed, well beyond the influence of *economists* as scientists, experts, professionals or ideologues: It goes to the heart of a modernity – our modernity – which is itself *constituted by* economics. Understanding properly the relationship between economics and the economy – between scientific representations and the construction of economies – starts with the acknowledgement that the production of tools for apprehending and dealing with the world is intimately tied with the redefini-

tion of the world through the tools themselves. The real power of economics, in other words, is ontological – it is the power to 'economicize' the material world through the imposition of a legitimate language and the proliferation of 'calculative agencies'.

In Callon's Polanyian framework, economics produces a world (an economy) in which calculability is a key cultural competence, thereby reinforcing the applicability and performative power of economics itself. Furthermore, this back-and-forth movement between economy and economics is itself constitutive of the stable economic objects that we call 'markets' or 'prices'. Empirical illustrations of such mechanisms can be found in Marie-France Garcia's (1986) analysis of the construction, by a former economics student, of a local strawberries market in France and in MacKenzie and Millo's (2003) study of how the Black-Scholes formula helped bring modern finance into being. The sociology of economics meets economic sociology through this systematic unravelling of the processes whereby particular forms of calculability, particular 'economic' behaviours, are engineered – and through the painful reconstruction of the way in which economic theory routinely creates and recreates *homo economicus* out of real flesh. From this perspective, the task of the sociology of economics has only begun.

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ECONOMY

An economy is an aspect of a wider system of human social behaviour. To the extent that a boundary between the economy and the non-economic aspects of that system can be drawn, we can say that the economy is a subsystem of the wider system and that it thereby has two kinds of environments. On the one hand, whatever is environment to the wider system is also environmental to the economy. On the other hand, any units or processes internal to that system that are not considered part of the economy comprise a kind of 'internal' environment of the economy.

Consider, for instance, 'the world economy'. Clearly, the biophysical units and processes on and around the planet Earth form a significant 'external' environment of the world economy while global political processes are part of the 'internal environment' of the world economy.

As a different example, consider the economy of a university department, treating the latter as the immediate wider system. Then, for instance, the other departments of the university, forming part of the environment of the department, are in the external environment of the specified departmental economy while that department's political processes – notably, the processes of departmental decision-making – are part of the internal environment. In each of these examples, events or actions that are non-economic as such may have important relationships to economic events or actions that are included in the economy.

Thus, several introductory conceptual points are indicated in these remarks. First, 'economy' is a general concept that applies