

Review

## SCIENCE, MARKETS, AND THE LAW

Helga Nowotny, Dominique Pestre, Eberhard Schmidt-Aßmann, Helmut Schulze-Fielitz, and Hans-Heinrich Trute, *The Public Nature of Science under Assault: Politics, Markets, Science and the Law* (Berlin–Heidelberg–New York: Springer, 2005), 148 pp., ISBN: 10 3-540-25791-8

It is often said that the social sciences should limit themselves to observed phenomena.<sup>1</sup> *The Public Nature of Science under Assault* fits a different intellectual trend, one that pre-empts the phenomena, and tries to reconcile scientific and social perspectives.<sup>2</sup> The work consists of seven contributions from an interdisciplinary group that met in 2003–2004, at the Wissenschaftskolleg of Berlin, to consider the changing relations of science and society. Helga Nowotny and Dominique Pestre take a macroscopic approach; while Hans-Heinrich Trute, Helmuth Schulze-Fielitz, and Eberhard Schmidt-Aßmann – scholars in constitutional and administrative law – introduce many refinements.

Moving ‘behind’ the phenomena, the book analyses relationships between science and law that have emerged during the past thirty years. But coming ‘in front’ of the phenomena, this book usefully appears at a time when the evolution and harmonization of European laws on science and technology have become a subject of public controversy. Trute, for example, proposes a ‘juridification of the context’ of science, referring to the ties emerging between science and law. Nowotny analyses the ‘extension of the regime of private ownership rights’, in which the ‘market relations invasion’ – which Pestre traces to the 1980s – has led to redefinitions of patent law and intel-

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<sup>1</sup> The author acknowledges Roy MacLeod and Jonathon Lane for their contribution to the form as well as to the substance of this review.

<sup>2</sup> See Terry Shinn, ‘Nouvelle production du savoir et triple hélice’, *Actes de la recherche en sciences sociales*, 141–142 (March 2002), 21–30.

lectual property rights, and the privatization of knowledge.<sup>3</sup> Concepts once considered part of basic research – genes, algorithms, and databases – now figure as new entrants into the patents field, which is no longer confined to invention and innovation. Science, coming under the constitutional guarantees of property, is becoming based on the law of individual rights.

At the same time, science, once a ‘public good’, has become a ‘financial good’. Pestre believes a ‘financial markets-driven regime’ has come to replace the ‘nationalization of science’. Still, science retains an aura of freedom, as Trute and Schmidt-Aßmann suggest. The law has to bring these contradictory interests into harmony, according to the principle of proportionality and equal treatment, as Schmidt-Aßmann puts it (p. 123). But this equilibrium, which seems to involve ‘the privatization of the commons of the mind’ (Pestre), is unstable, and negotiable (p. 34). What lies ahead?

The editors are sceptical. Nowotny wonders if the extension of the private property regime can continue without endangering the autonomy of science; she also asks if the new regime will be politically acceptable. Pestre argues that the privatization of knowledge endangers the plurality of knowledge-producing institutions. So far, so good. But these thoughts raise further questions.

The book begins from the standpoint of knowing about a succession of regimes that have historically determined the relations between science and society. But it neglects to consider the *coexistence* of such regimes at any given time. Terry Shinn, studying French science policy between 1975 and 1999, identified four coexistent and interdependent regimes of scientific production.<sup>4</sup> One may ask whether the ‘market relations economy’, of which we hear so much, is actually replacing a ‘gift exchange economy’, as they may easily co-exist. The question then becomes, how, and where?

The new regime we are entering is driven not just by privatization; it also reflects a demand for democratization, accountability, and transparency. As Trute observes, it involves the ‘inclusion of lay people in research, participation of the public in scientific controversies, in political processes as well as administrative procedure concerning

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<sup>3</sup> The analysis of Helga Nowotny (and co-authors) is impregnated with concepts developed in Michael Gibbons *et al.*, *The New Production of Knowledge* (London: Sage, 1994) and Nowotny *et al.*, *Re-thinking Science* (London: Polity Press, 2001). Dominique Pestre has responded to the contextualization thesis in ‘Regimes of Knowledge Production in Society: Towards a More Political and Social Reading’, *Minerva*, 4 (3), (2003), 245–261, and in *Science, argent et politique* (Paris: Inra Éditions, 2003).

<sup>4</sup> Terry Shinn, ‘Axes thématiques et marchés de diffusion: La science en France, 1975–1999’, *Sociologie et Société*, 32 (1), (2000), 43–69.

scientific matters, observation of science by media and the like' (p. 87). As Nowotny writes, 'in the demand for greater public participation in civil society, the public nature of science – in the sense of serving the public good – is no longer taken for granted. Rather, science is challenged publicly as not being public enough' (p. 1).

However, democratization implies that the public has the requisite expertise and information. This seems more apparent in some fields than in others. Indeed, Schmidt-Aßmann argues that norms of access have replaced esoteric norms more in administration than in science. 'Companies and administrations have long since betaken themselves to the *Agora* and it is time for science to follow', he claims (p. 112). The regulation of science has also been modified in the light of uncertainty and risk, as Trute and Schulze-Fielitz observe. And as Trute notes, since the 1970s, risk decisions have developed normative criteria, such as the precautionary principle; procedures for providing legal certainty; and participation in decision-making (pp. 94–96).

Despite these changes, public inclusion has not necessarily led to public acceptance. Taking as a model the EU directive on the deliberate release into the environment of genetically modified organisms (GMOs), Trute pleads for the separation of scientific and public debate. But, as Schulze-Fielitz observes, some scientific controversies, particularly in the biosciences, remain inimical to compromise (p. 68). Based on the search for 'overlapping consensus' (the equal coexistence of differing ethical convictions, as John Rawls defined it), ethics councils and commissions have replaced scientists in making authoritative decisions, and have been integrated into the legal order (Schulze-Fielitz, p. 78).

In Europe, the legal order has evolved to deal with scientific conflicts of different kinds – including risks associated with biotechnology, nuclear power, and mobile telephones. The German Constitution even offers four 'guiding aspects' to deal with scientific conflicts (Schulze-Fielitz pp. 76–77) by (1) specifying the limits of entrepreneurial and scientific freedom; (2) protecting science by assuring its independence; (3) encouraging a plurality of approaches so as to encompass the diverse social interests at stake; and (4) by increasing the transparency, influence, and timeliness of public participation. Thus, we are beginning to see not only how law responds to knowledge production, but also the 'intersections of science and law', as Sheila Jasanoff puts it, and their 'reflective alliance', in both content and process.<sup>5</sup>

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<sup>5</sup> Sheila Jasanoff, *Science at the Bar* (Cambridge, MA: Harvard University Press, 1995), 1–23, 204–226.

*The Public Nature of Science under Assault* is an important study because of the quality of its essays and because of its mix of socio-historical and legal perspectives. As Nowotny argues, 'When science is faced with contradictory pressures from politics, markets, and society, the law can play a role not only in the solution of conflicts, but also in helping to shape a social reality with new institutional arrangements to be put in place' (p. 4). The editors see, as do many, signs of change. But many questions remain. For example, what changes in European legal systems actually show evidence of the privatization and propertization of science? Is privatization *the* new regime of science, or merely *a* new regime that co-exists with others, within and between different legal systems? Whatever the answers, such questions presage the emergence of a new field of scholarship, in which the alliance of science and law is bound to acquire a new form.

JULIE BOUCHARD

#### ABOUT THE AUTHOR

Julie Bouchard is a Chercheur Associé in the social studies of science, based at the CNRS Laboratoire Communication et Politique, Paris. She also teaches at the University of Vincennes-Saint-Denis and at the University of Versailles-Saint-Quentin-en-Yvelines.

*Laboratoire 'Communication et politique'*  
*CNRS FRE 2613*

*France*

*E-mail: juliebouchard@chez.com*