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Shobita Parthasarathy. *Patent Politics: Life Forms, Markets, and the Public Interest in the United States and Europe.* Chicago: University of Chicago Press, 2017. 304 pp. $25.00, cloth, ISBN 978-0-226-43785-9.

Reviewed by Graham M. Dutfield

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Commissioned by Dominic J. Berry (London School of Economics and Political Science)

In 2006 efforts to harmonize substantive patent law under the auspices of the United Nations agency responsible for promoting intellectual property rights globally, the World Intellectual Property Organization, ended in failure.[1] This was despite considerable efforts on the part of the United States and Europe to globalize their patent standards. In doing so they ran into determined opposition from other countries concerned, for example, about the effects of these standards on access to medicines and to other technologies useful to their development. Most probably, it did not help the Americans' and Europeans' cause that there remained significant differences between their own patent systems—differences which, as Parthasarathy's excellent book amply demonstrates, in certain respects seem to be increasing.

Patents are legal monopolies on inventions, normally for twenty years. As such they are important legal tools for securing market power. They are granted by governments in exchange for a written disclosure of the invention. An invention may comprise anything from a new open-close device on a coffee lid to a life-saving drug. Thus, the social and economic implications of a patent range from inconsequential or mildly convenient, to utterly transformative with the lives of millions at stake. Efforts to standardize national patent laws are nothing new, the 1883 Paris Convention for the Protection of Industrial Property being the first. However, the Convention allowed ample space for countries to tailor their own patent laws to suit the industrial policies of national governments. Admittedly, national policy frequently was determined by patent attorneys and businesses with their own vested interests. Substantive harmonization is a lot more ambitious as it would lead to fundamentally identical rules to which signatory countries would have to adhere.

The United States and Europe are broadly alike in terms of their economic development, their levels of innovation, and their value systems. Yet their patent systems are quite different and the way they handle biotechnological inventions makes this especially evident. As Parthasarathy notes (p. 21), the differences are if anything increasing, suggesting, as she also observes, that global harmonization may be unattainable in the near future. Thus, cloned animals are patentable in Europe but not in the United States. The same is true for isolated DNA sequences. On the other hand, in Europe you cannot patent a plant variety or an invention whose practical use requires the destruction of human embryos. You can patent both in the United States. From a strictly legal perspective, the US excludes only that which is a product or law of nature, a

natural phenomenon, or an abstract idea. In other words, those falling within the domain of nature, and "things" irreducible to a physical embodiment, are excluded. Otherwise pretty much anything goes as long as there is novelty, utility, and a disclosure of the invention that is both enabling and unobvious. Europe excludes discoveries, scientific theories, methods of medical treatment and of diagnosis, as well as plant and animal varieties. Immoral inventions and those contrary to ***ordre public*** are strictly excluded from protection too. So far this seems rather ungenerous compared to the United States. However, Europe allows patents on inventions that are "technical," whether in their inherent character or their effect; hence, for example, the patentability of isolated DNA and cloned mammals whose genetic identity is identical to the genome-donating existing animal.

It is one thing to know what these differences in scope of patentability are. It is another to understand ***why*** they are there, and what social and political implications arise in consequence. If we want to know these things, we need a wider perspective, one that looks at patent systems as "institutions" which evolve over time and which attract competing interests, both internal and external, which are likely to seek to influence their establishment, design and redesign.[2] Court decisions that expand or limit the scope of patentability are one part of a much bigger picture. In this sense patent "systems," and in fact intellectual property systems generally, comprise not just laws, regulations and the responsible government agencies for granting rights but also the courts, judges, patent attorneys and other legal practitioners, companies and business associations, political lobbyists, and consumer groups and other civil society organizations that keep the system running or that affect it in some way or another. Scientists are part of it too. Parthasarty notes how scientists concerned about the effects of DNA patents on basic research and the wide availability of diagnostic and predictive testing did get involved in changing law and policy (pp. 119-120). This is not to imply that scientists are necessarily patent skeptics. Indeed, European scientists had worries of their own about patent restrictions' potentially negative impacts on their pursuit of new discoveries in the field of stem cell research.

Vested interests help to shape the stances taken by these groups, but ideology underpins and frames the way different participants argue and act. Indeed, as this book illustrates in so much detail, patent debates are inherently ideological and, whether participants stop to think about this or not, are embedded in wider perspectives on markets, capital, and the state. If we accept that to understand where we are we need know how we got here—and the patent systems of the United States and Europe do have long histories—then history is likely to matter.

The author laudably adopts such a wider perspective, investigating "the assumptions, rhetoric, formal rules, informal practices, institutional structures and politics, and organized interests that constitute each patent system's political order, and shape its law and understanding of patents" (p. 9). Parthasarathy is not the first scholar to look at patent systems in this way. Several scholars who observe national, regional, or international patent institutions as inherently political in nature, have produced valuable work. Susan Sell has focused on the corporate capture of efforts in recent decades to reshape patent law (and intellectual property law more generally) internationally, as has Peter Drahos.[3] Drahos has also shown how national patent offices worldwide have formed networks which the United States and Europe have been using as a means for exporting their technical standards around the work.[4] This is harmonization through the back door as it were. Carolyn Deere, Christopher May, Jean-Frederic Morin, and Ingrid Schneider have also produced valuable works on the politics of patent policymaking.[5] As for history, various scholars have identified historical lessons that

shine a critical light on the present-day dynamics of patent law-making and help to explain the contemporary character of patent systems, including their contours, and apparent biases and imbalances, for example Ha-Joon Chang, May and Sell, and this reviewer.[6]

Parthasarathy focuses exclusively on the United States and Europe, and her findings are based on a wealth of published and grey literature, and a large number of interviews. She has a science and technology studies background but she delves into history in an effort to discover fundamental and enduring assumptions about patents embedded in political cultures and ideologies that may help explain why the US and European patent systems are so different, especially in the field of biotechnology. She claims that much of the difference between the two arises from her finding that the United States, uniquely, has what she calls a "market making" ideology that presumes markets work best when they are left alone, as if free markets by themselves are inherently morally good. It follows that once government frames a system of property rights in inventions, owners should be allowed freely to enjoy them. Patents create markets in information embodied in new and useful things, and society benefits richly from this, so it is assumed. This ideology has not always gone unchallenged. For much of the twentieth century, courts were often suspicious of patents. At one point the Supreme Court required patents to show evidence of a flash of genius, a test which had the potential to render most inventions unpatentable. Compulsory and government-use licenses were not infrequently issued to enable government noncommercial use and to block misuse of patents and antitrust violations.[7] Once in a while politicians and interest groups called for limitations on the monopoly power of patent owners. Nonetheless, Parthasarathy's claim is true. Indeed, as a European one is struck by the way politicians in the United States can be quite patriotic about the country's patent system as something that has considerably benefited the US economy, and (implicitly at least) which should be favorable primarily to US businesses. This perhaps explains the name of the 2011 patent reform legislation: the America Invents Act. It is difficult to imagine legislation in Europe being given a similarly patriotic title. Indeed, one sometimes hears complaints that the US Patent and Trademark Office favors US inventors over foreign ones. Perhaps this is due not just to pro-market ideology, but also to a long-standing and deep-seated popular patent culture. As Zorina Khan has shown us, the US patent system was for a long period quite democratic in the sense of being available to underprivileged individual inventors at a time when Britain's patent system—and Charles Dickens's short story ***A Poor Man's Tale of a Patent*** (1850) amply corroborates this—was effectively closed to the general public due to Byzantine bureaucratic obstacles and the high costs involved.[8]

For Europe Parthasarathy coins the term "market shaping" to capture a very different approach whereby markets, including the grant of property rights, in inventions are seen as requiring more regulatory oversight. Granting a patent is not a morally neutral act, and neither are free markets assumed automatically to produce social welfare-enhancing outcomes. Patents are an element of technology regulation. Thus we find that most European countries fund and support embryonic stem cell research, as does the European Commission, but that patents on related inventions necessarily involving the destruction of embryos are banned. In the United States, such inventions are patentable and this is not controversial even through the research itself ***is*** controversial. In a European country like the United Kingdom, which is quite permissive about stem cell research, scientists must accept the inherent dignity of human blastocysts as a reason not to file a patent application, but otherwise may carry out the research once licensed by the Human Fertilisation and Embryology Authority.

Parthasarathy is correct to say that European patent law exclusions of immoral inventions and those contrary to what the English, French, and German official versions of the European Patent Convention all call ***ordre public*** have deep historical roots. However, their persistence in European patent law as the continent began work to harmonize from the late 1940s, initially through the good offices of the Council of Europe, surely also had much to do with the politics of early postwar Europe. Much of Europe was in ruins; poverty, ill health, and hunger were rife; and countries generally chose left of center governments, or else center-right ones. Welfare state ideology was quite dominant and populations were not necessarily keen to hand overwhelming market power over to corporations trading in food and health products. Of course, politics has changed in Europe and so has patent law. In terms of political culture and ideology Europe has become more similar to the United States, but Parthasarthy's market making/market shaping dichotomy still largely holds; hence the persistence of the various patent law exclusions, including plant and animal varieties and immoral inventions, and the much higher levels of civil society engagement. What is less clear of course is why European patent law is currently more permissive about DNA and cloned animals. Perhaps it just proves that civil society organizations do not necessarily get their way. Meanwhile the success of the campaign in the United States to restrict patents on human DNA may suggest a surprising area of potential convergence in terms of civil society involvement.

Parthasarathy's book is meticulously researched and is very readable. It forms a perfect starting point for anybody seeking to understand the modern history of patent systems in the United States and Europe, which differ even though they certainly did not evolve in glorious isolation from each other. It uncovers their political character and the underlying dynamics that lead to change and resistance to change. She is right to conclude that further harmonization efforts are likely to struggle due to distinctive and often quite different and hard-to-reconcile political cultures, and that innovation governance needs to be rethought in light of the fact that patent law is just one element of the regulatory regime. Moreover, the regulation of innovation needs to embrace public engagement concerning not just patents but technology, human values, and the public good.

Notes

[1]. Graham Dutfield, "The Limits of Substantial Patent Law Harmonization," in ***Patent Law in Global Perspective*** (New York: Oxford University Press, 2014), 127-146.

[2]. Graham Dutfield, "Patent Systems as Regulatory Institutions," ***Indian Economic Journal*** 54 (2006): 62-90.

[3]. Susan K. Sell, ***Private Power, Public Law: The Globalization of Intellectual Property Rights*** (Cambridge: Cambridge University Press, 2003); and Peter Drahos, "Global Property Rights in Information: The Story of TRIPS at the GATT," ***Prometheus*** 13 (1995): 6-19.

[4]. Peter Drahos, ***The Global Governance of Knowledge: Patent Offices and Their Clients*** (Cambridge: Cambridge University Press, 2010).

[5]. Carolyn Deere, ***The Implementation Game: The TRIPS Agreement & the Global Politics of Intellectual Property Reform in Developing Countries*** (Cambridge: Cambridge University Press, 2009); Christopher May, ***A Global Economy of Intellectual Property Rights: The New Enclosures*** (London: Routledge, 2000); Jean-Frederic Morin, "Rhetorical Discourses in International Patent Lawmaking: Property, Fairness, and Well-Being," ***Asian Journal of WTO and International Health Law and Policy*** 3 (2008): 505-537; and Ingrid Schneider, "Governing the Patent System in Europe: The EPO's Supranational Autonomy and Its Need for a Regulatory Perspective," ***Science and Public Policy*** 36 (2009): 619-629.

[6]. Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (London: Anthem Press, 2002); Christopher May and Susan Sell, *Intellectual Property Rights: A Critical History* (Boulder: Lynne Rienner Publishers, 2006); and Graham Dutfield, "Is the World Ready for Substantive Patent Law Harmonisation? A Lesson from History," in *Death of Patents*, ed. Peter Drahos (Witney, Oxon: Lawtext, 2005), 227-248.

[7]. Jerome H. Reichman with Catherine Hasenzahl, "Non-voluntary Licensing of Patented Inventions: Historical Perspective, Legal Framework under TRIIPS, and an Overview of the Practice of Canada and the USA," ICTSD and UNCTAD Issue Paper No. 5 (Geneva: ICTSD & UNCTAD, 2003).

[8]. B. Zorina Khan, *The Democratization of Invention: Patent and Copyright in American Economic Development, 1790-1920* (New York: Cambridge University Press, 2005).