
Book Reviews

Intellectual Property and Biotechnology: Biological Inventions

Matthew Rimmer

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In this book, Matthew Rimmer, director of Higher Degree Research at the Australian National University College of Law and an associate director of the Australian Centre for Intellectual Property in Agriculture, proposes to contribute to the ever prescient and controversial public debate over the commercialisation of biological inventions. His text aims to ‘document and evaluate the dramatic expansion of intellectual property law to accommodate various forms of biotechnology from micro-organisms, plants, and animals to human genes and stem cells’ (from the back matter). Rimmer admirably documents the debate and provides an even-handed recital of arguments from commentators on both sides; however, some readers may feel that his arguments are too balanced. The text is enlightening as to the subject matter of the debate, but the point, counter-point style is unlikely to change a reader’s mind if they have a strong opinion either way.

Rimmer’s thesis is that the patent system, both locally and globally, needs to reform to accommodate the new technologies of biological inventions; that the current systems,

which worked fine in the earlier industrial-mechanical era, no longer properly serve the ends of law, as the author of the foreword J. Michael Kirby notes, to be ‘a servant of our species’ (p. ix). Ostensibly, patent law does this by ‘grant[ing] exclusive economic rights in respect of the use and exploitation of inventions, in order to benefit society through encouraging innovation, and promoting disclosure of scientific knowledge’ a *quid pro quo* arrangement (p. 2). Throughout, Rimmer addresses such questions as: should ‘anything under the sun’ be subject to patenting; and can a ‘technologically neutral’ patent system continue to encourage innovation? Rimmer’s book provides a valuable resource in addressing these questions and incorporates an extensive bibliography and several annotated chapters that run the gambit from stem cells to medical diagnostics. He utilises a strongly comparative approach, often first tracing the historical development of certain basic patent doctrines, and analysing the approach various jurisdictions, generally Canada, the US, and Australia, have taken with regards to biological inventions.

Substantively, Rimmer notes that there are increasing calls for change to patent systems globally and a desire of law reformers and commentators to fix the ‘tragedy of the anticommons’. Additionally, Rimmer reminds the reader of the increasingly difficult and pressing issue of bioethics in the realm of innovation policy. He suggests a number of progressive changes including raising the threshold of patentability in terms of novelty, utility, and inventive step; increased infringement defences and exceptions for experimental, medical, and certain agricultural uses; and notably, a movement away from technology neutrality. In contributing to this debate, Rimmer documents the development and growth of the biotechnological industry, the impact of patent law on the ‘social norms of scientific communities’ (p. 10) and how important jurisdictions have addressed the legal problems of biotechnology. As he explains, his book ‘draws upon a mixture of methodologies, including the history of science, the sociology of science and a comparative analysis of patent law, policy, and practice’ (p. 9).

Rimmer begins by presenting the seminal decision of *Diamond v Chakrabarty* and traces the legal battle from its initial prosecution in the United States Patent and Trademark Office (USPTO) to the Supreme Court of the United States; presenting the arguments of *amicus curiae*, scholars, and the Justices themselves on the patentability of oil-eating bacteria. While the chapter does chart the history of *Diamond v Chakrabarty* and its significance to the patentability of microorganisms and biotechnological inventions, the chapter foreshadows much of the later book in not delivering a strong position on either side. It does set the stage for the following chapter on plant breeders’ rights wherein Rimmer provides the reader with a comparative overview of the US, Canadian, and Australian approach to plant subject matter. Rimmer ends the chapter with a tantalising proposition: the plant breeders’ rights system may provide an ideal model for

the development of *sui generis* protection of biological inventions.

Rimmer continues by highlighting three patent cases involving higher life forms, from the lowly polyploid oyster, the Harvard oncomouse, to Professor Stuart Newman’s attempt to patent a human–animal chimaera. The arguments generally stalemate as Rimmer presents one side arguing that the naysayers of biotechnology are nothing more than neo-Luddites and then the other, which raises the spectre of biological monsters, ethical subversions, and corporate control of gene pools. As Rimmer shows, the courts split between those judges who read the Patent Acts of their jurisdictions broadly and those who would read it narrowly, at least until the legislators can have their say. The text hints at the oddness of the debate as well. Is the patent system really the arena for such issues or has it become one only because critics of biotechnology do not have another equally effective? While the questions are intriguing, one may feel they are not fully answered in the text.

Rimmer next addresses what limit, if any, a patent system that allows ‘anything under the sun’ to be patented would impose. He illustrates his call for a narrower system with the case of *Lab Corp. of America Holdings v Metabolite Laboratories*. The case, in which a method for detecting vitamin B deficiency was attacked, questions where the line between laws of nature and patentable inventions are to be drawn. A later chapter on genetic testing expands on Rimmer’s thesis that the patenting of certain medical diagnostic tests would have harmful effects on medical research and healthcare. In Rimmer’s subsequent treatment of the human genome project and the patenting of the raw stuff of life, he presents the Federal Circuit’s treatment of Expressed Sequence Tags (ESTs) in *In re Fischer*. Rimmer’s argument that a reliance on utility standards to filter the patentable from the unpatentable is not enough to properly regulate gene patent applications is more forceful and critical than

some of his others because he takes a clear stance in the debate early on; however, readers will again find a very even-handed exposition of the debate. Arguably, this balance of arguments is a compelling feature of the book that some will find desirable. Rimmer has a position but he remains objective throughout the book.

In a later chapter on the patenting of 'junk' DNA, Rimmer expands on his argument that one necessary step for the proper regulation of IPRs in biotechnology will require raising the standards of novelty and obviousness. The reader will find a comparative treatment of such issues in the context of legal battles; Rimmer discusses comparable cases and policy determinations in different jurisdictions. Rimmer next highlights the deficiencies of the current law of experimental use exceptions to infringement: it is an exception, according to him, in need of updating, modernising, and codifying. In the following chapter, Rimmer expands on the problems he finds in patenting medical diagnostics, particularly genetic tests, and points once again to the lack of a meaningful experimental use defence both in the United States and the European Union. Rimmer makes clear that any potential solutions will likely require both national and international efforts. Rimmer's

final main chapter discusses the highly charged debate surrounding stem cells. In the context of patent law, Rimmer contemplates the arguments that stem cell patents will hinder further research and development, that they should not constitute patentable subject matter, and that patenting stem cells would be unethical. Rimmer suggests again the need for proper research exemptions and more active consideration by legislatures of the public policy and ethical considerations of such subject matter.

Throughout, Rimmer presents a panorama of some of the most important issues related to patents and biotechnology. A reader will likely be intrigued to see which way the pendulum swings on these issues in the near future. In conclusion, Rimmer's book is highly recommended for anyone interested in the issues and debate related to biological inventions, regardless of which side the reader is on.

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