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## **Book Review: Intellectual Property and the Life Science Industries: A Twentieth Century History, by Graham Dutfield**

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Book Review

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**Book Review: Intellectual Property and the Life Science Industries: A Twentieth Century History, by Graham Dutfield**

*INTELLECTUAL PROPERTY AND THE LIFE SCIENCE INDUSTRIES: A TWENTIETH CENTURY HISTORY* BY GRAHAM DUTFIELD (BURLINGTON, VERMONT: ASHGATE, 2003) 288 pages.<sup>1</sup>

BY IKECHI MGBEOJI<sup>2</sup>

## I. INTRODUCTION

In recent times, extravagant claims have been made regarding the miraculous achievements of modern science. Prior to the return of sobriety in the past few years, the media and other mainstream commentators had with giddy excitement announced the obituary of the “old economy.”<sup>3</sup> In its place, the world was to await the birth of the “new economy.”<sup>4</sup> In language reminiscent of Thomas More’s *Utopia*, the new economy was promoted as “a world in which people work with their brains instead of their hands ... a world in which innovation is more important than mass production ... a world so different its emergence can only be described as a revolution.”<sup>5</sup> The new economy was supposed to be the age in which labour and raw materials would yield to information and technology. Although this new economy has taken a rather long time to arrive, its engine of locomotion came in the form of intellectual property rights (IPRs), especially patents.

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<sup>1</sup> [*Intellectual Property and the Life Science Industries: A Twentieth Century History*].

<sup>2</sup> Assistant Professor, Osgoode Hall Law School, York University.

<sup>3</sup> See Peter F. Drucker, “The Age of Social Transformation” *The Atlantic Monthly* 274:5 (November 1994) 53 at 53.

<sup>4</sup> John Browning & Spencer Reiss, “So What is the New Economy?” online: Encyclopedia of the New Economy <<http://hotwired.com/special/ene>>.

<sup>5</sup> *Ibid.*

Many patent lawyers and economists recount with evident satisfaction the axiom that patents are the inspirational, omni-present, indispensable, and even-handed legal mechanism for promoting socially useful inventions in an economically efficient manner. In this narrative—often retold with little critical analysis, let alone historical context—intellectual property (IP) systems are presented as the valiant protectors of ingenious minds from the nefarious activities of pilferers, imitators, and free riders. In short, the doctrine of IPRs is a religion and criticisms of its dogma are considered heresy. Arguably, no other legal mechanism in our time has enjoyed such uncritical adulation. In fact, lawyers have tirelessly heaped praises on IPRs, and most scholars have turned their critical gaze away from an historical and contextualized examination of the development and (in)utility of IPRs in the past century.

It is in this context that Graham Dutfield's book fills an important lacuna in contemporary literature on the nature, character, and development of IPRs in the last two centuries. This book has much to offer the reader, primarily because it avoids the infamous tunnel vision characteristic of most IPR law texts. In the absence of contextualized analysis, many studies of IPRs are narrow in scope, dogmatic in argumentation, vague in reasoning, and simplistic in resolution of complex issues of IPR law. Fortunately, Dutfield's book departs from this depressing genre of scholarship and narrates the development and universalization of IPRs in an historical context that takes into account the political and economic environment that has historically shaped IPRs. Dutfield's ability to narrate the influences of these factors on the development of IPRs is the text's singular and most important achievement.

## II. HISTORICAL ANALYSIS

From the first page, the book leaves no doubt as to its purpose: to describe and analyze the transformation of IPRs and the reasons that led to the unprecedented protection of the fruits of life science research and development. Implicated in this transformation, Dutfield argues, is the ubiquitous presence and influence of big business. But why focus on the life science industries? Dutfield offers the reader some answers. First, according to the author, "the applied life sciences constitute one of the two major high-technology fields expected to underpin the global economy of the twenty-first century, and whose advancement has justified many of the most radical and controversial changes to IP regulation in recent years."<sup>6</sup>

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<sup>6</sup> *Supra* note 1 at 6.

Indeed, in no other sector of the IPR regime has the influence of big business been so profound.

Second,

[t]he accusation that patents were always meant to protect ingenious new devices and not chemicals, drugs, or living things is often made by critics who use this point to argue that patents are fundamentally inappropriate, and that big business, in lobbying for such changes, has perverted the patent system for its own ends. This allegation requires closer investigation.<sup>7</sup>

In tracing the history of the overbearing influence of big corporations on IP regimes, the author locates the origins of the life science industries in the technologies of early organic chemistry in Western Europe, especially Germany. The science of elucidating, synthesizing, manipulating, and commercially exploiting the molecular properties of micro-organisms, plants, animals—including humans—and other organic raw materials marked the shift of the patent system from one focused on ingenious devices to one that sought property rights over products of the life sciences.

By transforming the patent system in that manner, the dyestuff industry in Germany, owned by chemical companies, left an indelible imprint on patent law and policy across the Western world. In fact, the most remarkable achievement of these emergent corporate research laboratories involved changing the *raison d'être* of the patent system from the protection of the individual inventor to the protection of the corporate owner of inventions. This marked a significant rewriting of the ethos and jurisprudence of patent law as patent rights were now being granted to fictitious legal personalities such as corporations. Put simply, the romantic notions that inventiveness is a solitary process and that the patent system is designed to protect the individual inventor labouring in the basement were mortally wounded by the emergence of in-house research.

Not surprisingly, the law turned a blind eye to this radical redefinition of both inventiveness and inventor. Today, over 80 per cent of patents are issued to corporations instead of individual inventors. In many countries, particularly those where industrial and university complexes have converged, the individual inventor, so beloved by the romanticists of the patent system, is an endangered species.

Apart from analyzing the historical consequences of emerging laboratory research on IPRs, Dutfield also discusses how pharmaceutical companies became implicated in regulating IP law. He points out that the modern pharmaceutical industry actually developed as a result of the

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<sup>7</sup> *Ibid.*

“fruitful marriage between the synthetic dyestuff industry and microbiology.”<sup>8</sup> Interestingly, “some of the largest life science corporations that dominate the chemical, pharmaceutical and agribusiness sectors of the modern global economy are direct descendants of the original ... dyestuff companies.”<sup>9</sup>

It is therefore no coincidence that these industries are the most reliant on IPRs, especially patents, for their survival. Consequently, as Dutfield theorizes, the descendants of these dyestuff companies have continued to exercise remarkable influence on global IP regulation. Indeed, many critics have expressed alarm over what they see as complete corporate domination over the IP agenda.<sup>10</sup>

Parallels between corporate domination of IP laws and the globalization of IPRs are unmistakable: powerful states have, with the active participation and inspiration of big business, shaped IP regulations and universalized their preferences and biases through global institutions. As Dutfield argues, the history of the development of IP regulation in the context of the life science industries has “present-day relevance since it suggests that today’s developing countries have much to gain from a global regime that affords them an equivalent amount of freedom, and a great deal to lose from one that unduly restricts their room for manoeuvre.”<sup>11</sup>

### III. DISCUSSION

The book is divided into ten chapters. Chapters 1 and 2 articulate the growing importance of IPRs in the modern economy. Dutfield argues that IPRs are a manifestation of economic regulation and the maintenance of economic pre-eminence among competing states. In other words, as an analytical model, Dutfield replaces the natural rights theory or rhetoric in which IPRs are often cloaked with a theory of “new institutionalism,”<sup>12</sup> which offers an economic explanation of the development and modern status of IPRs. New institutionalism treats property rights as state-regulated institutions, for which the state is not only a major stakeholder but a grantor of rights as well. Naturally, the structures of such regulation have

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<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid.*

<sup>10</sup> Adronico Adede, “Origins and History of the TRIPS Negotiations” in Christophe Bellmann, Graham Dutfield & Ricardo Melendez-Ortiz, eds., *Trading in Knowledge: Development Perspectives on TRIPS, Trade and Sustainability* (London: Earthscan, 2003) 23 at 35 [*Trading in Knowledge*].

<sup>11</sup> *Supra* note 1 at 7.

<sup>12</sup> *Supra* note 1 at 10.

significant impacts on rights holders and the economy as a whole. More importantly, the model of new institutionalism explains the formation, constituencies, interests, and influences of stakeholders in the IPR world.

Dutfield argues that some stakeholders possess disproportionate degrees of influence on the development of IPRs in both the local and international legal sphere. In theory, IPRs are available to everyone, regardless of economic influence in the state; they are meant to create a “win-win” situation for all. More importantly, IP norms ought to proceed from democratic institutions that are respectful of various viewpoints and cultures. In reality, at the national level, Dutfield’s analysis shows that consumer groups have little or no influence on IP regulation. Rather, owners of patent rights and other IPRs have a disproportionate share of the benefits of strong IP protection. There is a similar imbalance at the global level. The unfortunate reality is that marginalized stakeholders such as newly industrializing states and traditional societies are short-changed in the processes through which IP norms are created and institutionalized. While the intellectual contributions of powerful states and privileged cultures are protected, those of indigenous peoples are denied and, in some cases, brazenly appropriated due to institutional indifference and culturally insensitive IP norms.<sup>13</sup> Consequently, as Dutfield acutely observes, the capacity of weak states to compete in a global economy has significantly diminished. Bullied by “coercion, propaganda, and forum shifting,”<sup>14</sup> less industrialized states have been forced into a harmful global framework of IPRs.<sup>15</sup> The hegemony of the West is alive and well.<sup>16</sup>

Chapter 3 takes the analysis further by examining the history of patents from the late nineteenth century to the beginning of the twenty-first. Although the patent system originated in Venice in 1474,<sup>17</sup> it was in continental Europe and in the United States that a multilateral approach to patents took root. European countries had varied laws on patents and other forms of IPRs. Such laws largely reflected national priorities and policy preferences of states. A number of factors, however, including: the

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<sup>13</sup> Jakkrit Kuanpoth, “The Political Economy of the TRIPS Agreement: Lessons From Asian Countries” in Christophe Bellmann, Graham Dutfield & Ricardo Meléndez-Ortiz, eds., *Trading in Knowledge*, *supra* note 10, 44 at 55.

<sup>14</sup> *Supra* note 1 at 44.

<sup>15</sup> Vandana Shiva, “Appropriation of Indigenous Knowledge and Culture” in Peter Drahos, ed., *Intellectual Property* (Aldershot: Ashgate, 1999) 145 at 158.

<sup>16</sup> Susan Strange, “The Persistent Myth of Lost Hegemony” (1987) 41 *Int’l Org.* 551.

<sup>17</sup> For a more detailed account of the origins and development of the patent system, see Ikechi Mgbeoji, “The Juridical Origins of the International Patent System: Towards a Historiography of the Role of Patents in Industrialization” (2003) 5 *J. Hist. Int’l L.* 403.

expansion of international trade and investment; the birth of the European and American industrial revolutions; the change in national trade and development policy; and the onset of the economic recession of the late nineteenth century all combined to inspire the business classes and budding multinational corporations to move toward an international framework on patents and other forms of IPRs.<sup>18</sup> Interestingly, the historiography of IPRs remains one of the most ideologically motivated narratives of legal history, and no account of IPR development has undergone worse distortion than that of patents. As I have observed elsewhere, although many patent lawyers and other strong proponents of the patent system generally assume that its origins stem from the British Revolution and the *Statute of Monopolies*, historical evidence of a causal link between inventiveness and industrialization and indeed, inventiveness and patents, is in fact wanting.<sup>19</sup>

The historical narrative of copyright law has not been spared this distortion. Ideologues have been eager to tweak facts to create the myth that copyrights arose to protect the interests of writers and artists. In reality however, modern copyright law arose from the agitations of printers, publishers and retailers of books, who assembled their crying wives and unclad children in Parliament to excite compassion and sympathy for their cause.<sup>20</sup>

Today, big business owners no longer need to extort such sympathy from legislative bodies. Rather, compliance is aroused through co-option; wrapping their economically entrenched arguments in national flags, corporate owners capture governments' attention by stimulating their sense of patriotic duty. In effect, while the objective remains the same, the mechanisms for promoting robust IP regimes have become far more sophisticated.

Although egregious injustices are no longer rampant in today's world of copyright law, still too few full-time self-employed writers rely on the copyright system for their sustenance. Indeed, the case of the inventor is arguably worse. Nowadays, inventors are employed by industry or public research institutions that carry out largely inventive functions. Consequently, more than 90 per cent of all patents are granted to employers, which deprives the employee of all benefits associated with a

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<sup>18</sup> *Supra* note 1 at 51.

<sup>19</sup> *Supra* note 17 at 404-05.

<sup>20</sup> David Vaver, "Intellectual Property Today: Of Myths and Paradoxes" (1990) 69 Can. Bar Rev. 104. For a more detailed account of the theatrical blackmail to which the stationers and publishers of the day subjected the British Parliament in their agitations for a copyright law, see John Feather, "The Book Trade in Politics: The Making of the Copyright Act of 1710" (1980) 8 Publ. Hist. 19.



patent.<sup>21</sup>

The underlying assumptions of this system are that: (a) more robust patent laws will stimulate inventiveness; and (b) the benefits of those inventions will eventually “trickle down” to the inventor. With regard to the former point, it is difficult to disagree with Bhupinder Singh Chimni’s retort: “To say ... that the potential availability of a patent actually stimulates invention ‘is a lot like saying that you can spur the donkey on by offering a carrot to its rider.’”<sup>22</sup> The self-interest of states—not the individual inventor—has always determined and shaped patent law<sup>23</sup> and Dutfield’s narrative further elucidates this point.

With regard to the modern era, Dutfield poses the perennial question regarding the relationship between patents, protectionism, and free trade: does supporting free trade mean opposing patent rights, or is the opposite true? Should countries seeking to catch up with the most developed countries adopt protectionist policies and oppose patent rights?<sup>24</sup> There are no easy answers to these questions. Indeed, Dutfield’s response clearly refutes the contention of some developmental theorists that at this stage, IPRs are of benefit to the newly industrializing countries of the world. As Dutfield reminds us, opponents of patents denounce them as anachronistic and unfairly monopolistic:

J. Geigy-Merian, founder of a Swiss chemical firm that later merged with Ciba to form Ciba-Geigy and an opponent of an 1882 attempt to revise the constitution in order that a patent law could be enacted, was particularly vitriolic: “patents are a paradise of parasites ... Patent protection forms a stumbling block against the development of trade and industry ... The patent system is a playground for plundering patent agents and lawyers.”<sup>25</sup>

Notwithstanding many attacks on the patent system, its survival has been nothing less than remarkable. Dutfield attributes this survival to developments in both industrialization and trade policy. While much scholarship has already been devoted to the alleged relationship between patents and industrialization, Dutfield’s original contribution stems from his emphasis on the development of multilateral treaties as frameworks for the growing proportion of IPRs.

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<sup>21</sup> S.J. Soltysinski, “New Forms of Protection for Intellectual Property in the Soviet Union and Czechoslovakia” (1969) 32 *Mod. L. Rev.* 408 at 408.

<sup>22</sup> “Hard Patent Regime Completely Unjustifiable” in Subrata Roy Chowdhury, Erik M.G. Denters & Paul J.I.M. de Waart, eds., *The Right to Development in International Law* (Dordrecht: Martinus Nijhoff, 1992) 313 at 320.

<sup>23</sup> *Supra* note 1 at 51.

<sup>24</sup> *Supra* note 1 at 52.

<sup>25</sup> *Supra* note 1 at 53.

In Chapter 4, Dutfield examines in greater detail the historical development of the synthetic dyestuff industry. As discussed earlier, these developments spurred the growth of the first pharmaceutical companies. More importantly, as Dutfield demonstrates in Chapter 5, patent law began to change significantly to accommodate the needs and maximize the profit margins of these chemical and pharmaceutical industries. In fact, Dutfield exposes the lamentable lack of principle in the development of patent rules on pharmaceutical products by examining the historical tensions between patent policy focused on developing medicinal products for the purposes of improving health, and those focused on development for the purposes of increasing profitability. Echoes of this debate still resonate in the hallways of government offices. In fact, those familiar with patent law on chemicals and drugs are keenly aware of the many concessions and allowances that the patent system makes for chemical pharmaceuticals.

In Chapter 6, Dutfield extends the inquiry to the impact of biotechnology on IP regulation and reveals the alarming rate at which dubious patents are issued to genetic products of unknown utility. As discussed by scholars such as Bruce Alberts and Sir Aaron Klug, this exercise may be in current shareholders' interests, but it does not serve society well.<sup>26</sup>

The problem here seems to be the unprincipled manner in which the patent system and other forms of IPRs defer to the interests of big business. Dutfield details the many instances in which the courts have deferred to big business on matters pertaining to patents.<sup>27</sup> It is remarkable that over the past few decades, various judicial bodies have, without legislative support, changed patent law, particularly in relation to what is patentable subject matter.<sup>28</sup> Consequently, public domain over the decision-making process has reduced significantly, and dubious patents now litter the research and legal landscape. Indeed, the patent system itself is increasingly becoming the butt of jokes. More ominously, the consolidation of biotech-related patents in the hands of a few corporations threatens global food security and limits the ability of private researchers to engage in cutting-edge research.<sup>29</sup>

Chapter 7 deals with the overlapping issues of plant breeding, the seed industry, and plant breeders' rights. On the surface, the topics covered

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<sup>26</sup> "The Human Genome Itself Must be Freely Available to All Humankind" (2000) 404 *Nature* 325 at 325.

<sup>27</sup> *Supra* note 1 at 154.

<sup>28</sup> *Re: Application of Abitibi Co.* (1982), 62 C.P.R. (2d) 81 (Patent App. Bd. and Comm. of Patents).

<sup>29</sup> *Supra* note 1 at 170.

by Dutfield in Chapters 4-7 seem unwieldy and unconnected, but they are indeed interlinked. While the dyestuff industry is the mother of the pharmaceutical industry, it is becoming increasingly clear that the latter is the mother of biotechnology and that furthermore, a significant number of seed businesses are controlled by chemical and biotechnological giants. In effect, a few grandchildren of the original dyestuff companies have gradually consolidated power and control over the life science industry. Most of the modern seed companies today are subsidiaries of giant multinational chemical firms<sup>30</sup> such as Hoescht, ICI, Sandoz, et cetera, all of which are involved in the genetic modification of plants.<sup>31</sup> The implication of this power on global governance and food security is profound. As Holly Saigo notes, “The world’s food supply is primarily controlled by three dominant food chains—Cargill/Pharmacia, ConAgra, and Novartis/ADM—which all hold large shares of the ‘gene to dinner table’ market.”<sup>32</sup> If the patent system is to fulfill its role, states must seriously re-evaluate this excessive exploitation by big business.

Chapter 8 evaluates the roles that trade and diplomacy play in the modern movement toward a global IP regime. Dutfield’s analysis of the processes through which big business has shifted forums from UNCTAD to WTO/GATT is significant. More importantly, this chapter poignantly reveals the negative impact of this shift on the weaker states of the world.

In Chapter 9, Dutfield explores the emerging backlash against the totalitarianism of modern IPRs. While more work needs to be done, Dutfield does highlight a few successful accomplishments, notably the creation of the Convention on Biological Diversity and the FAO Treaty on Plant Genetic Resources for Food and Agriculture.

Finally, Chapter 10 concludes the book by posing the question of whether the life science industry might have developed differently had no patent laws ever existed.

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<sup>30</sup> “Suicide Seeds on the Fast Track” *RAFI Communiqué* 64 (February/March 2000) online: ETC Group <[http://www.etcgroup.org/documents/com\\_suicideseed.pdf](http://www.etcgroup.org/documents/com_suicideseed.pdf)>.

<sup>31</sup> Dominance over the patent business by multinational chemical companies is nearly absolute. In fact, by the end of 1995, over 90 per cent of the approximately 3.84 million patents in force worldwide were held or owned by big business. The Hoescht group alone held 86,000 of these patents and patent applications. In 1997, Novartis held more than 40,000 patents worldwide. See The Crucible II Group, *Seeding Solutions: Policy Options for Genetic Resources (People, Plants and Patents Revisited)*, (Ottawa: IDRC, 2000) vol. 1 at 16-17. For a detailed listing of corporate controllers of the global seed industry, see “The Seed Industry Giants: Who Owns Whom?” *RAFI News Release* (3 September 1999), online: ETC Group <[http://www.etcgroup.org/documents/news\\_worldseed.pdf](http://www.etcgroup.org/documents/news_worldseed.pdf)>.

<sup>32</sup> “Agricultural Biotechnology and the Negotiation of the Biosafety Protocol” (2000) 12 *Geo. Int’l Env’tl. L. Rev.* 779 at 796-97.

Graham Dutfield writes without the cloyed, convoluted tedium of many writers in the area of patent law. The book is highly informative, the research is meticulous, and the analysis is rigorous. This book should be read by everyone working in the field of patent protection and policy.

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