## BOOK REVIEW

# GENE CARTELS: BIOTECH PATENTS IN THE AGE OF FREE TRADE

*Luigi Palombi*

Cheltenham, UK; Northampton, MA (USA): Edward Elgar, 2009, 416 pp, £85,

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It is a shame that there are so few existing copies of Luigi Palombi's *Gene Cartels*. The initial press run for this remarkable book was apparently less than 1000, yet this is a book that every policy maker even remotely connected to issues of patents, economics, and biotech should read.

Palombi's background is in law. He worked for years as a patent lawyer, writing and arguing for biotech patents. Over time, he grew disenchanted with the scope and reach of patents being granted on biotechnology "innovations", especially as more and more patents began to be granted further "upstream", over things that were not inventions, but rather discoveries. He is now a researcher with the Regulatory Institutions Network at the Australian National University. He devotes his research and activism to eliminating "gene patents" and his magnum opus on the legal case against gene patents works methodically through not just recent law on the subject but the history of patent law itself.

Palombi traces the history of patent from its historical roots as a mode of privilege granted by sovereigns and places current debates about both the effectiveness and justice of such monopolies into much needed context. Some modern defenders of patents fail to discern that intellectual property is an artificial device which skews free markets, tending instead to ignore the unnatural, state-sponsored nature of the patent monopoly. Palombi deftly shows us otherwise and comes out strongly, backed both by history and legal theory, against patents as either a necessary or efficient economic tool for innovation. He moves deliberately through a useful discussion of modern day patent regimes and the effects of globalisation and harmonisation of IP regimes, primarily with those of the US and western democracies. He then moves on, just about 200 pages in, to grapple with the subject of biotech patents, and specifically those on genes.

Taking a clear stand against the modern trend in US patent law and extending this to other patent regimes, Palombi rejects the central notion that mere "isolation" or an element of nature is sufficiently inventive to warrant a patent. In a pivotal chapter, the "isolation contrivance" is traced through the cases that gave it credence, and destroyed piece by piece as based upon flawed legal reasoning. It is the lynchpin of the argument favouring patents on "isolated" gene sequences and Palombi shows how this now accepted dicta has resulted in legal nonsense that can no longer stand scrutiny – especially the type of methodical scrutiny Palombi provides.

Simply put, Palombi shows, through careful examination of the evolution of the law regarding "isolated and purified" natural products that patents extended to them defy reason as well as the purposes of intellectual property law itself. The remaining hundred and some pages provide the most explicit, detailed, and definitive arguments against the legality of gene patents so far. He takes us through patents on EPO,

adrenaline, genetically-engineered, recombinant bacteria, and then finally through modern-day diagnostic patents on naturally-occurring mutations to naturally-occurring genes, such as Myriad's patents on the BRCA1 and 2 gene mutations whose presence indicates a propensity for breast and ovarian cancers. In each case, he shows through the legal cases how the law has been perverted from its original intention to reward invention to become a prize doled out now for mere discoveries – the age-old territories of the sciences rather than industry.

Critical to Palombi's work is his detailed discussion of both the legal and practical consequences of the current situation. The cartels afforded by gene patents, he argues, are unprecedented in the law, gaining monopolies over much more than the mere sequences but also to any and all protein products of those sequences. These cartels then control every facet of a particular gene's expression, including any treatments that might be developed for genetic diseases, as well as all diagnostic tools. Moreover, as is made clear in the case of the BRCA 1 and 2 patents, research is legally, and sometimes practically, road blocked by such patents.

Palombi's analysis is deep and broad, providing technical, legal details of the gene patent situation around the world. Influenced as it has been by US laws and corporations, gene patents have now spread throughout Europe and other industrialised nations, despite the proclamation of the various partners in the Human Genome Project that the human genome was our "common heritage". He concludes his discussion, having demolished the notion that isolation of genes is inventive in any sense previously necessary for patents, by discussing in depth the history of the BRCA1 and 2 patents, and pondering what the current situation means for research in synthetic biology. His prognosis is bleak and his conclusions are justified by his elaborate recounting of not just the errors but ultimate effects of gene patents for both basic science and clinical practice.

This book is essential ammunition for those who oppose gene patenting, and lays out the legal case expertly. My own book, *Who Owns You?* (Wiley-Blackwell, 2009), was motivated by similar concerns, and makes an ethical case against gene patents from a philosophical perspective but I wish I had had Palombi's book at my disposal when I was writing, because his legal case is iron-clad and unassailable. Not only will the reader be left wondering how we got to the point where unaltered genetic sequences are afforded patents, but he or she will be moved to confront the policy-makers and jurists who now stand poised to be able to finally stop this practice, to follow the dictate of law, logic, and justice, and to liberate the genome as the common heritage that it is once again.

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