

Will the Supreme Court extend patents to cover animal life? Let's hope not: Patents may actually restrict research says scientist JONATHAN KIMMELMAN

Look up "patent" in your dictionary and you'll find "plain and evident" among its definitions. But because patents seethe with contradictions, questions surrounding them are hardly plain, and their answers hardly evident. Those contradictions are evident in the case of the so-called Harvard mouse, which will be decided by the Supreme Court of Canada tomorrow.

Patents shrink one public domain (by granting exclusionary rights to inventors), while expanding another (by requiring inventors to disclose their designs). They create economic incentives for innovation (by allowing inventors to "own" their ideas), while at the same time generating economic disincentives (by increasing transaction and litigation costs as users negotiate with inventors). Patents suspend liberal economic doctrine (by granting a temporary monopoly to inventors) in order to promote a marketplace of ideas. And like many market-oriented policy instruments, patents paradoxically aim at producing a public good (innovation) by rewarding private gain (providing a means for realizing profits for inventing).

Like other industrialized countries, Canada awards patents on genes, genetic tests, proteins and cells. Two forums have taken up Canada's biotechnology patent policies in the past few months with the goal of determining whether Canada should extend patents to animals, plants, and maybe more.

Tomorrow, the Supreme Court of Canada will rule on whether to reverse a federal appeals court decision that would award a patent for the OncoMouse, a research animal genetically engineered to develop cancer. Harvard University won patents on the OncoMouse in the United States, Europe and Japan more than a decade ago; Canada stands alone among affluent nations in not granting patents on animals and plants.

Canada has also revisited biotechnology patent policies through the Canadian Biotechnology Advisory Committee (CBAC), which was established in 1998 to advise federal ministries on their biotechnology policies. Like the appeals court, CBAC recommended last June that Canada open its doors to animal and plant patents.

Before Canada reworks its biotechnology patent policies, however, policymakers would do well to mind the gaps between the perception and reality of what biotechnology patents do.

Patents sometimes actually deter innovation. Inventions that involve many patented components (as many biotechnologies do) require that their creators divert time and money from innovation into negotiating -- and often litigating -- licences and royalties. In addition, holders of patents occasionally use them strategically to prevent competitors from developing new products. Ironically, the OncoMouse has recently re-emerged as a news item in the United States as leading cancer researchers charge that the meddlesome licencing policies of DuPont (which holds exclusive rights to the OncoMouse) are deterring scientists from undertaking studies with it.

Patents do not necessarily increase openness. Those favouring a liberalized patent regime argue that, because patents require inventors to disclose their inventions, they encourage open sharing of innovation. While this is true in principle, there is also evidence to the contrary. One study showed that a fifth of life-scientists delay disseminating their research findings in order to file patents.

Those who would broaden what patents can cover say this is essential for the viability of Canada's biotechnology industry. In fact, their case is unclear. A 1995 survey conducted on behalf of Industry Canada indicated that Canada's weak intellectual property regimes were not regarded by Canada's biotechnology sector as an important obstacle. The big markets for biotechnology are in the United States, Japan and Europe, and these countries all allow patenting on higher life.

More biotechnology patents might erode Canada's health-care system. Assuming, for the moment, that patents encourage life-saving medical innovations, they also enable their holders to charge what the market will bear. The most rapidly increasing health-care costs -- pharmaceuticals -- are notorious for their dependence on patent protection. Moreover, there is evidence that gene patents have on occasion discouraged U.S. hospitals from offering genetic diagnostic services to their patients.

How might biotechnology patents be steered to better serve the Canadian public?

We might begin by defending the value of a public space for knowledge. Such a commons -- combined with heavy taxpayer support -- allowed the discoveries that have made biotechnology possible in the first place. Yet a knowledge commons seems increasingly endangered as patents parcel up the biological world into a myriad of private deeds.

Secondly, we might consider the Hippocratic dictum "First, do no harm" before enacting patent policies that could adversely affect universal health care. The effects of patents on medicare are not currently clear. Why, then, should the Canadian Biotechnology Advisory Committee and others assume that liberalizing patents will have no ill effects?

One change Canada might consider to its patent policies would be to bring them in line with European laws that ban patents on morally problematic inventions, such as human reproductive cloning. If patents can be used to promote socially useful innovations, why not use patent bans to deter socially questionable inventions?

In my dictionary, there's yet another meaning of "patent": It means "open to all; generally accessible." One can only hope that Canada will heed such alternative definitions as it revisits its biotechnology patent policies. Giving patents too freely and uncritically means paying pittance to such common goods as knowledge, health care and morality.

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