
“What Innocent Bystanders?”: The Impact of Law and Economics Reasoning on Rural Property Rights

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Abstract: In May 2004, the Supreme Court of Canada denied the Saskatchewan farmer Percy Schmeiser innocent bystander status and ruled in favour of protecting the intellectual property rights of Monsanto, which holds a patent on genetically modified canola seed. Farmers around the world have protested this decision as an attack on their privileged position under national patent legislation, fueling a larger debate about biotechnology, farmer seed systems and intellectual property rights. This article looks at the patent infringement arguments in Canada in the context of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and of potential amendments to the Canada Patent Act. Law and economics scholars have critiqued both “innocent bystander” and “farmer autonomy” as legitimate defenses in such cases of patent infringement. In the process, they have ignored, and perhaps facilitated, wider issues of property transformations in the rural setting.

Keywords: intellectual property rights, biotechnology, farmers' rights

Résumé : En mai 2004, la Cour suprême du Canada a rejeté la demande de statut de spectateur innocent au fermier Percy Schmeiser et a reconnu les droits de propriété intellectuelle de Monsanto, qui détient un brevet d'invention pour les semences de canola génétiquement modifiées. Des fermiers provenant des quatre coins du monde ont protesté contre cette décision, la qualifiant d'attaque contre leur position privilégiée au regard de la législation nationale sur les brevets, alimentant ainsi un débat plus vaste sur les biotechnologies, les systèmes de semences des fermiers et les droits de propriété intellectuelle. Cet article étudie les cas de contrefaçon de brevets au Canada au regard de l'Accord concernant les Aspects des droits de propriété intellectuelle qui touchent au commerce (ADPIC) et des amendements possibles à la Loi canadienne sur les brevets. Les spécialistes en droit et en économie ont critiqué la légitimité des exceptions invoquant le « spectateur innocent » ou « l'autonomie du fermier » dans de tels cas de contrefaçon de brevets. Ce faisant, ils ont ignoré et peut-être même facilité les transformations, dans un cadre plus large, relatives aux questions de propriétés en contexte rural.

Mots-clés : Droits sur la propriété intellectuelle, biotechnologie, droits des fermiers

Introduction

In a recent edited volume on the anthropological contribution to property studies, my co-authors and I argued that new forms of property are transforming traditional property forms in various ways, including the types of social groups that can hold property, the types of valuables considered property, and the ideological constructs that surround property (von Benda-Beckmann et al. 2006). Intellectual property is one of these new forms with wide-ranging impacts on traditional property. One example is the rapid transformation of patent law in many countries under the influence of the international Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Given the influence of neo-liberal economic reasoning on Western legal traditions, traditional rural property rights are being reconstituted as “privilege” rather than as “rights.” Under the impact of TRIPS, this legal change is rapidly spreading to many other countries, leading to a significant erosion of farmer autonomy to employ farmland and seed stocks in the farmer’s own best interests (Wiber 2005). This is the setting in which the Percy Schmeiser case came to the Canadian Supreme Court and one of the reasons that this case has attracted so much interest internationally. In this paper I critically examine some of the law and economics arguments that are contributing to new interpretations of patent law, which in turn are recasting rural property rights.¹

Percy Schmeiser has farmed 1,400 acres in Saskatchewan for 50 years. For the past seven years, he has been locked in a legal battle with the biotech corporation Monsanto (*Monsanto Canada Inc. v. Schmeiser* 2004 SCC 34). Monsanto claims that in 1998, Schmeiser planted illegally-obtained genetically modified canola seed² for which they hold the patent, and that he materially benefitted from that theft. Schmeiser claims that he did not willingly plant Monsanto seed on his land, that he attempted to eradicate invasive plants when he found them, and that he was an innocent bystander.

On the advice of expert testimony provided by Monsanto employees, the Supreme Court of Canada rejected Schmeiser's claim that the origin of the GM canola seed on his farm was accidental, perhaps "blown onto" his land from five neighbouring farms where the seed was being legitimately planted. Based on a licensing fee of \$15 per acre, and on the acreage Schmeiser was accused of planting, he would owe Monsanto approximately CAN\$15,450 to legally plant the genetically modified canola. Monsanto additionally claimed all profits from the 1998 crop plus any seed stock remaining in Schmeiser's possession (CBC News Online 2004). The majority ruling did not require Schmeiser to turn his 1998 profits over, nor did it require that he pay Monsanto's court costs. Schmeiser was ordered to turn all remaining canola crop and seed derived from the patented germplasm over to Monsanto.

One of the questions put before the Supreme Court was whether Monsanto can control the use of a plant because it has patented a gene in the plant. On this question, the majority decision ruled in favour of Monsanto; however, as is consistent with an earlier Canadian Supreme Court ruling on the Harvard OncoMouse, the court agreed with Schmeiser that the plant is a higher life form and cannot be patented.³ So Monsanto cannot control the plant but it can control distribution of the gene. This might be viewed as a rather fine splitting of hairs. Monsanto hailed the decision as one that would set a precedent for the protection of intellectual property rights worldwide, while farmers' organizations argued that it recognized their right to save seed grain from their own crops for use in future plantings.

This case is symptomatic of the growing conflict between farmers' organizations and the rapidly expanding biotech industry (Center for Food Safety 2005). From the point of view of farmers' organizations, national policy designed to protect the property rights of farm enterprises (vital to food security and safety) is increasingly coming under international pressure to conform to a set of trade standards set by Washington. From the biotech industry point of view, years (often decades) of expensive innovation in commercial crop productivity can be undercut by national legislation unsympathetic to strict protection of intellectual property rights.⁴ In Canada, for example, the Supreme Court ruled against patenting higher forms of life in *Harvard College vs. Canada (Commissioner of Patents)* (2002, 4 SCR). Biotech trade publications predicted that one result would be a massive drop-off of investment by the biotech industry in Canada.⁵ Meanwhile, international farmers' groups argue that patenting life has seriously undercut the normal and necessary agricultural practices of both small and large farm-

ers around the world. Farmers are finding it increasingly difficult to save seed, to create hybrid varieties that respond well to field tests in their particular environmental circumstances, to share seed (or field equipment that might harbour seeds), and to make alternative uses of their property such as following organic practices. Many farmers see this infringement as a concerted attack on their autonomy and property rights, one that erodes their economic standing and undercuts other property relations in the rural production system.

In this article I use this conflict to examine Canadian policy advice emanating from the field of law and economics in order to illuminate one of those analytical layers in which property manifests itself, that is, at the level of legal ideology (von Benda-Beckmann et al. 2006). As has been argued elsewhere, various kinds of social practices can create, maintain and change what property is. One of those influential types of practices involves the reproduction or change of legal ideas through discussion or dispute in "interaction settings such as courts, parliaments, universities, the mass media or local forums" (von Benda-Beckmann et al. 2006:15). In Canada, such policy advice, if accepted, would seriously impact both the patent act and related legislation and thus shape future property relations in the rural agricultural sector. Should nation-states protect long-standing farming practices through patent regulation that limits the impact of intellectual property rights? In February 2003, the Canadian Biotechnology Advisory Committee set up by the government to advise it on biotechnology issues, released a series of recommendations on the Patent Act, among them that innocent bystanders be protected and that a privileged provision for farmers be included in the act. This differs from other policy advice, however, which suggests that regulators create a "level playing field" by imposing TRIPS standards, thereby avoiding severe U.S. trade penalties. Some question that there is a good "innocent bystander" case to be made (Siebrasse 2004b). Siebrasse uses an economic logic to argue that such a defense would increase society's ills by creating an incentive for patent-infringement. Further, he argues that farmer autonomy should be of negligent interest to policy makers and to the courts, so long as there are clear mechanisms for providing the correct balance between farmers' property interests and those of the biotech industry. The Supreme Court accepted these economic arguments in the Schmeiser case but I will argue against them here on the grounds that they are based on a perverse⁶ understanding of property and are contributing to a significant erosion of farmer economic viability.

The “Facts” of the Case

In his seminal critique, Clifford (2001:603) wrote of the “systems, or economies, of truth” deployed in the writing of ethnography. Law, of course, has its own “economy of truth”—in searching for clarity, the “facts” are often dealt with selectively. One way to destabilize the resulting analysis, then, is to introduce facts that the law, in its wisdom, has considered irrelevant. In this article, I do not pretend to a level of objectivity that other “fact sifters” have lacked. Instead, in this section of the article, I focus on the web-like structure of the “facts” in order to draw attention to the selective “economies of truth” employed in both court reasoning and in law and economic scholarship. That I deploy my own methodologies of “sifting” is without question. What is questionable is the “superior logic” of one “economy of truth” over another—a point I will return to in the following sections of the paper.

Here then are some selective facts about the Schmeiser case, gleaned not only from court decisions, but also from media reports on the case. Needless to say, interviews with Schmeiser in the media, other media reports and the Supreme Court records contain many divergent dates and interpretations. I have tried to indicate just a few of these disagreements in what follows:

- Beginning in 1996, Monsanto GM varieties were introduced for canola, cotton, potatoes and soy. One of the most important characteristics of many of these varieties was the built-in tolerance for Monsanto herbicides.⁷ Monsanto did not make this or any other genetic modification limited to the first generation.⁸ In other words, these genetic modifications “bred true” and would be found in any plant generation that sprang from a GM parent.
- Percy Schmeiser is a farmer and a businessman who develops and distributes traditional varieties of farm seed.⁹ He has served as Mayor of Bruno and as a member of the Provincial Legislature. Like many farmers worldwide, Schmeiser shares seed with fellow farmers, does field tests on sports or hybrid varieties and markets or lends seed (CBC News Online 2004).
- In 1996, five of Schmeiser’s adjacent neighbours contracted with Monsanto to use Roundup Ready canola seed. In that same year, Schmeiser grew a 370-acre field of canola from which he saved seed to replant in 1997 (*Monsanto v. Schmeiser* 2004:60).
- In 1997, Schmeiser found and sprayed canola plants near a ditch on his property, and subsequently noticed that they were not killed by this application (*Monsanto v. Schmeiser* 2004:61). That fall, he harvested

these surviving plants and kept the seed from them separate (*Monsanto v. Schmeiser* 2004:62).

- Also in 1997, Monsanto received a tip on their “toll-free snitch line,” which they had set up for farmers to turn in neighbours they suspected of growing the seed without paying the licensing fee (CBC News Online 2004).
- Monsanto subsequently directed their “rural auditors” to enter Schmeiser’s fields without permission and take samples of his canola crop (CBC News Online 2004). Alternatively, these samples may have been taken “from the public road allowances bordering on two of Schmeiser’s fields” (*Monsanto v. Schmeiser* 2004:63).
- In March of 1998, Monsanto notified Schmeiser of their belief that he was growing Roundup Ready Canola without a license, based on the samples taken in 1997.
- In 1998, Schmeiser conducted a field test on three acres of his canola crop and discovered 60% of the canola plants sprayed with Roundup survived in clumps—thickest near the ditch, thinning the deeper into the field they were found (CBC News Online 2004). He also had treated and then planted seed from his 1997 crop on 1,000 acres (*Monsanto v. Schmeiser* 2004:63).
- Unbeknownst to Schmeiser, the company that treated this seed held back some of it to turn over to Monsanto’s agents. The resulting “audit” on these samples determined that 95 to 98% of Schmeiser’s canola crop was made up of Roundup Ready Canola (*Monsanto v. Schmeiser* 2004:64).
- In subsequent court proceedings, Monsanto presented evidence from their lab scientists that Schmeiser’s seed contained DNA sequences patented under claims 1, 2, 5 and 6 of the Canadian patent, plus plant cells claimed in 22, 23, 27, 28 and 45 of the Canadian patent for Roundup Ready Canola (*Monsanto v. Schmeiser* 2004:65).

Developing Patent Law for a Fit with International Markets

Many “facts” in addition to those listed above never entered into the Supreme Court analysis, nor do they enter into Siebrasse’s critique of the innocent bystander defense.¹⁰ In this section of my article, I widen the facts under consideration by relying on a recent book entitled *Information Feudalism* in which Drahos and Braithwaite (2002) document the rise and growing influence of an epistemic community¹¹ made up of corporate owners of lucrative patents in the U.S. Drahos and Braithwaite did an

extensive study on this powerful group, and they point out how successfully the group represented various trade imbalances with other nations as being the result of *property theft*. Economic consultants hired by this epistemic community designed a campaign to convince American legislators of the impact of this theft, first by labelling it *piracy*, and second, by providing a quantification of the staggering lost income to American businesses—a difficult and contested undertaking, but one at which they were ultimately successful (Drahos and Braithwaite 2002). The consulting economists also proposed a solution to these financial losses: the U.S. should impose trade sanctions on countries that did not conform to U.S. patent law and that were resisting the TRIPS Agreement—particularly countries in the forefront of that resistance such as Indonesia, Thailand, Korea and Brazil. Given that the piracy was characterized as generating billions of dollars of lost income to American industries, leading in turn to job losses and economic stagnation, this trade sanction solution was quickly endorsed by U.S. legislators. Despite a history of being one of the “greatest patent-infringing nations on earth” (Drahos and Braithwaite 2002:33), the U.S. emerged as the international watchdog for patent protection—and at the same time experienced an explosive growth in patent applications to the U.S. Patent Office (Drahos and Braithwaite 2002:33). Drahos and Braithwaite see it as no accident that this policy also facilitated dominance by a growing sector of the American industrial machine—a sector that increasingly relied on patent law to enable them to gain “cartel-like monopolistic gains” from the market (Drahos and Braithwaite 2002:53; see also DeBièvre 2002).

In their interviews with key players in the development of this U.S. trade policy and in the aggressive promotion of TRIPS internationally, Drahos and Braithwaite (2002:71-73) were told that the main strategy was to get negotiations over international intellectual property law away from the lawyers and into the hands of the economists. This strategy was designed to push past multilateral negotiations that were not moving fast enough for key U.S. players. Informants explicitly reported that the resulting economic calculus of job and productivity losses was very effective in getting U.S. legislators and policymakers on side. This strategy was spearheaded by major corporations in the pharmaceutical (Pfizer), computer (IBM) and entertainment (U.S. Motion Picture Association) industries, but quickly brought on board other industrial players such as biotechnology (Monsanto). While in the short term, the resulting “level playing ground” for intellectual property protection did create the results legislators hoped for (higher levels of innovation and trade,

stronger economic growth), the longer-run outcome has been what Drahos and Braithwaite (2002:166) characterize as “global cartelism.” It has also resulted in a large-scale privatization of the public knowledge domain.¹² In fact, the private property being protected by aggressive trade practices was largely public domain knowledge.¹³ “Patents, instead of being a reward for inventors who place private information into the public domain, have become a means of recycling public information as private monopolies” (Drahos and Braithwaite 2002:165; see also Grajal 1999).

The Canadian Supreme Court Decision

The above strategy for promoting U.S. patent law internationally has had an impact on U.S. legal culture, particularly in terms of property law. For example, in 1981, the Reagan appointee to the Anti-Trust Division, William F. Baxter, instituted a “hands off” policy “when it came to policing the use of intellectual property rights by corporate America” (Drahos and Braithwaite 2002:166). The benefits of this “hands off” policy is now part of the debate over patent reform in Canada, and is being felt in Canadian legal culture as well. In part, this impact can be seen in the Supreme Court decision on the Schmeiser case. The majority opinion ruled that the Schmeiser case was different from the Harvard Onco-Mouse case because the former involved a mammal while the latter involved a plant. Furthermore, the conditions of “use” in the Schmeiser case (that is, the “use” of the patented genetic material in normal farming operations) could not be disputed. Schmeiser’s farming activities in effect “deprive[d] the inventor in whole or in part, directly or indirectly, of full enjoyment of the monopoly conferred by law” (*Monsanto v. Schmeiser* 2004:35).

One is reminded here of Haraway’s (1991) observation that science practices and law are increasingly blurring the distinction between life and machine, particularly through genetic patents. In the majority ruling on the Schmeiser case, an analogy was made between cells and plants, and Lego blocks and structures, such that if an infringement use were alleged in a structure built with patented Lego blocks, it would not be a bar to finding infringement if only the component parts were patented and not the entire structure. Exploitation of the gene, whether or not the special attributes of the gene were part of the exploitation, was the key to discovering an infringement. Whether or not the farmer used the seeds in order to access the special plant characteristics protected under patent, then, was irrelevant. So too was the biological nature of the spread of the patented genes in plants that reproduced.

In reaching this decision, the majority ruling cited Siebrasse (2004a) and his “remedial benefit-based approach to the innocent user problem.” In effect, bystanders were never innocent if a cost-benefit analysis could show harm to the patent holder, or benefit to the one infringing the patent. Siebrasse later emphasized that this strict cost-accounting approach should not result in any extraordinary harm to farmers, arguing that “this article takes the general remedial rule to be that the farmer will be liable, at most, to the extent of the benefit she derives from the patented crop, regardless of knowledge or intent” (2004b:354). This, he feels, is consistent with an assumption that “the overarching goal of the law should be to deliver the greatest net social benefits” (2004b:352). But how are we to calculate these net benefits?

The Greatest Net Social Benefits?

Monsanto begins the process of seizing control of farmers’ practices by getting them to sign the company’s technology agreement upon purchasing patented seeds. This agreement allows Monsanto to conduct property investigations, exposes the farmer to huge financial liability, binds the farmer to Monsanto’s oversight for multiple years, and includes a variety of other conditions that have effectively defined what rights a farmer does and does not have in planting, harvesting, and selling genetically engineered seeds. [Center for Food Safety 2005:3]

Siebrasse (2004b) relies on an assumption that the greatest net social benefits are always easily calculated. Thus, in weighing farmers’ rights against biotech company rights, he is only interested in “which combination of rights will bring about the greatest net social benefits” (2004b:353). But in assessing benefit, Siebrasse and others from the law and economics perspective show a number of biases. For example, Siebrasse (2004b:ft 13) explicitly assumes that “encouraging inventions relating to higher life forms is desirable” and that “patents are necessary to this end.” Challenging either of these assumptions erodes his subsequent argument.¹⁴ Aside from the many questions that civil society organizations have raised about the benefits of GM crops, particularly in Europe, there is significant criticism of the “wider social benefits” enjoyed in North America after the introduction of GM crops—particularly as relates to the impact on farmer property rights.

One of the interesting aspects of this case is that some of the loudest criticisms of Monsanto come from farmers, the very group that it might be argued are benefitting

from patent developments in the biotech industry.¹⁵ Indeed, Siebrasse (2004b) claims that the best measure of the benefits of GM seed must be the willingness of farmers to enter into contract arrangements with Monsanto to gain access to it. But his argument relies on the highly contested image of the fully informed atomistic actor in the free marketplace confronting many available choices. In fact, many farmers are critical of the biotech industry and patents precisely because they reduce their choices, especially as relates to using GM seed. Given cross pollination and seed dispersal, seed contamination has become a severe problem—separate studies done in the U.S. and in Canada found GM traits in 83% of non-GM canola seed stock, over 50% in corn, and 50% in soy (Center for Food Safety 2005).¹⁶ Thus, obtaining seed that contains no genetic modifications has become almost impossible.¹⁷ Despite this, when a non-GM crop shows contamination from genetic traits patented by Monsanto, the courts have viewed this as theft of intellectual property. According to a 2005 Center for Food Safety report, Monsanto has filed over 90 lawsuits against 147 American farmers and 39 small farm businesses in the past few years. They have won millions of dollars in recorded judgments (final monetary awards are not available for most judgments¹⁸), and further undisclosed amounts in confidential out-of-court settlements with farmers. Because of the way patent law has been applied, they have been successful in prosecuting many farmers who claimed that Monsanto genetic materials in their crops were an accidental by-product of normal farming operations. The “chill effect” of such court cases is becoming a decisive factor in North American farm decisions.¹⁹ And, it could be argued that it is no accident that very few alternative sources of clean, traditional seed remain to which farmers can turn.

As von Benda-Beckmann et al. (2006) have argued, understanding the complete “bundle of rights” that a property-holder has accumulated is necessary to understanding their dominance in the wider production process. Monsanto’s tactics to protect their intellectual property rights in GM strains of major food crops must be considered in the context of their growing domination of agricultural seed distribution and herbicide production. For example, they have been very aggressive in buying up domestic and international farm seed businesses,²⁰ and in patenting not only new genetically-modified germplasm but also the laboratory techniques and various proteins that are used to produce them.²¹ Monsanto GM varieties were introduced for canola, cotton, potatoes and soy beginning in 1996, and GM varieties now dominate in each of these important crops in area of acreage planted (Center for Food Safety 2005). Since Monsanto also produces the dom-

inant herbicides used in agriculture, they benefit from their introduction of GM strains that tolerate these; since the introduction of Roundup Ready varieties, Roundup herbicide application in the United States has increased by over 138 million pounds (Center for Food Safety 2005). This dominance in the seed and herbicide marketplace explains why American and international farmers' organizations have filed a private antitrust action against Monsanto claiming that Monsanto and others (including DuPont, Dow Chemical, Novartis and AstraZeneca) used patents and licensing arrangements to "fix prices and restrain trade" in both the GM corn and soybean seed markets (Drahos and Braithwaite 2002:164).

One might be excused then for wondering if an a priori assumption of the good that GM patents do in the world is justified. If we were to measure all the social costs of these types against the benefits of intellectual property protection, the cost-benefit analysis may be a bit more challenging. In order to satisfy shareholders, Monsanto's corporate objective must be to shift as much profit from farmers' pockets to Monsanto as possible; to the extent that their patents allow for this, Monsanto benefits. To the extent that normal farming practices and plant reproduction limits their ability to do this, Monsanto must find ways to constrain farmer choices and to deflect nature from the legal analysis. Interpreting such aggressive and cartel-like behaviours of the biotech industry as of "net social benefit" relies heavily on a law and economics approach, as well as a very narrow interpretation of property theory.

The Property Logic in the Law and Economics Position on Patenting Life

Perhaps the most disturbing trend in Siebrasse's analysis of the conflict between farm systems around the globe and the expanding (overwhelmingly Western) biotechnology industrial complex, is the "unpacking and recasting" of property and rights-based arguments (see Siebrasse 2004b:365) that materially assists (one might argue) continued monopolistic expansion of the latter at the expense of the former. For example, Siebrasse argues that the primary purpose of patent law is to provide appropriate incentives to produce socially valuable inventions, while the benefits of farmer autonomy (recast as respect for farmer's property rights) are appropriate incentives to the socially valuable applications of scarce resources. Balancing these two socially valuable outcomes is not difficult, in Siebrasse's mind, because economic rationality provides remedies when the two property rights can reasonably be said to be in conflict.²² However, as Siebrasse's article unfolds it can be seen that this "objective" eco-

nomics stance reveals to him very little reason to protect farmer autonomy at the expense of patent property rights. Even in cases where a farmer is "organic," there would really be no reason to award either negligence or nuisance damages, for example, as "it is far from obvious that a farmer who decides to set up an organic farm in the midst of neighbours who uniformly use genetically modified crops *should* be able to sue his neighbours or the seed supplier for the contamination of his field" (Siebrasse 2004b:361, emphasis added).²³

As the cost-benefit analysis unfolds, it becomes clear that for Siebrasse, property rights must be subject to constant assessment based on perceived (arguably neo-liberal) "social benefits." Rights should only be protected where there is net benefit to society. In the case of farmers versus biotech corporations, Siebrasse feels that the current Patent Act strikes the appropriate balance of rights and that changes to it would be dangerous. Thus, he writes: "a rule that gives the patentee either more or less than the benefit which is caused by the use of the invention will provide too much or too little incentive to invent" (2004b:355). Such a rule would harm society. Instead, he argues:

the inventor is given a property right, which allows the inventor to reap the benefit of the use of the patent by exacting licensing fees. This makes the reward from the invention proportional to the social benefit conferred by the invention; the more useful the invention, the more people are willing to pay for it, and the greater the incentive to invent. To the extent that the patentee cannot capture all of the benefit flowing from the invention during the term of the patent, the incentives will be distorted, as resources will be directed to inventions with the highest privately appropriable benefit, rather than the greatest social benefit. [2004b:365]

In this unpacking and recasting of property rights, if the greatest net social benefit changes over time, then property rights should be won or lost proportionally.

I was interested to note that the Canadian Biotechnology Advisory Committee, in their recommendations for patent policy change, have followed Siebrasse's economic reasoning to a limited extent. Their report suggests that an economic calculation could guide infringement; for example, where there are no social benefits to be gained from deployment of GM crop seed, or where there is social harm (as in innocent bystanders), then patent rights could be infringed. But Siebrasse does not agree with this limited use of economic rationality. He has calculated that the social costs from the unintended consequences of an innocent bystander defense would be too

high.²⁴ Meanwhile, so long as the courts are judicious with their rewards to patent holders when infringement has taken place, extracting only the benefit gained from the infringement, farmers should not experience any real hardship, nor deterioration of their autonomy (Siebrasse 2004b).

The problem with this economic approach to property is that, taken too far, it undermines the security often touted as the prime advantage of private property, shifting property rights into the realm of state recognized "privilege." And privileges are much more easily revoked than are property rights, as many quota holders in the fishing and dairy sectors can attest (Wiber 1995). More importantly, I would argue that Siebrasse's reasoning is based on a factually incorrect description of the problem. When patent infringement becomes almost inevitable, given pollen distribution and the natural reproductive patterns of canola plants, there is a far more serious problem generated for society than if patent rights are infringed. Patent protection then becomes an effective "chill" mechanism that forces farmers to deal with Monsanto on Monsanto's terms. Siebrasse tries to argue against this conclusion with the analogy that GM canola is like pigs or like commercially-farmed salmon: when there are "escapes" of pigs or salmon onto other people's property, we do not reward the property owner with property rights in the escapees (2004b:360 and *ftnt* 40). But this analogy only works if escaped pigs and salmon had reproductive systems that spread their genetic characteristics over long distances (as do plants that pollinate) causing frequent, accidental insemination of the pigs or salmon held by many other widely dispersed property owners.²⁵ In such a situation, would we think it logical that the owners of the GM pigs or salmon make claims to all resulting progeny until their patent expires? Pigs and salmon notwithstanding, the biased perception of the "objective" observer who calculates the benefits and costs and then advises courts to limit property rights based on (perhaps idiosyncratic) perceptions of net social gain, seem far too precarious a way to settle property disputes.

Conclusions: The Problem of Farmer Autonomy

While Siebrasse relegates farmer autonomy to a respect for property rights, other scholars have interpreted the problem much more broadly. While there may be many advantages from GM crops, as Monsanto and others have argued, these advantages should not blind us to the potential for serious harm to the farming practices of millions of primary producers around the globe—especially if

patents are used to promote cartel-like benefits for the few at the expense of the many. Farm organizations are noting a sharp North–South divide in the impact of GM foods. Particularly in the South, few farmers can afford the high cost of annual seed purchase, and while their national governments attempt to find a reasonable middle ground without attracting U.S. trade sanctions, small-scale farmers push to secure traditional seed saving and sharing practices. But even in the North, farmers are finding their economic position severely eroded under the growing power of the agrobusiness cartels.

As Stone (2002:619) notes, the GM debate has created the opportunity for anthropologists and other scholars to examine "the social life of genetically modified seeds" in real farming systems in many different parts of the world. The "facts" that come to light when we do so, suggest that it is also necessary to study the social life of genetically modified seeds in the boardrooms of international trade, where the North–South divide finds expression in significant power imbalances. From this perspective, it would appear that TRIPS-style patent protection has enhanced the power of the biotech sector to extract maximum trade gains from the global food market. So long as this is the case, the impact of patent law on farmer autonomy will likely be a negative one. When intellectual property rights become the mechanism for turning independent farmers into contract employees of major agrotech industries, particularly given the North–South discrepancy in the distribution of such industries, policy advice on changes to patent acts must consider more needs than those of just the agrotech industries. Where TRIPS protects these cartels and enhances their reach and grasp, we need to be aware of the way that property rights in rural areas will be transformed with long term consequences for the economic health of rural communities. Perhaps a wider interpretation of the (relevant) facts will enable us to better assess where benefit and harm may accrue.

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Notes

- 1 This article was originally prepared for the Rural Property Network Workshop III: "Paradoxical Conjunctions: Access to Rural Resources in a Transnational Environment," Max Planck Institute for Social Anthropology, Halle/Saale, March 31–April 1, 2006. I thank the participants for their helpful comments on the original and the reviewers for *Anthropologica* for their helpful comments on the published version.

- 2 Specifically, the canola was genetically modified to be “glyphosate-resistant”; this allows for the application of the common herbicide Roundup (also produced by Monsanto) without damaging the canola. Thus, the canola seed is marketed as “Roundup Ready Canola.”
- 3 This court decision is confusing even for legal scholars. Siebrasse (2004b), for example, refers frequently to “patented plants.” See Drahos and Braithwaite (2002) on the difficulties presented by living organisms under patent law.
- 4 For a balanced view of the conflicting arguments, see Hardon (2004).
- 5 See *Tory’s Intellectual Property Bulletin* 26 May 2004.
- 6 *Perverse* is used here in the sense of deviating from what has been the standard understanding of what is good, proper or reasonable.
- 7 In the majority opinion, the judges characterized this development as “eliminating the need for tillage and *other* herbicides” to control weeds (*Monsanto v. Schmeiser* 2004:5, emphasis added).
- 8 On this point, see Ziff (2005).
- 9 This long-standing process of seed germplasm expansion has been dramatically affected by genetic modification of major food crops. I will return to this point later in the article.
- 10 To take just one example, Canadian farmers are heavily divided on the benefits of Monsanto products. But it has proven difficult to have an open debate about the issue. For example, when one of the faculty members from the University of Manitoba produced a film on the impact of Monsanto policies on prairie farming communities, the University blocked release of the film for over three years. Only when the Canadian Association of University Teachers got involved in the dispute, did the university allow the film to be distributed (see http://www.caut.ca/en/bulletin/issues/2005_sep/video.asp and http://www.caut.ca/en/bulletin/issues/2005_nov/news_video.asp). CAUT was concerned that the position of the University was prompted by a research funding relationship with Monsanto.
- 11 Haas describes an epistemic community as “a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain” (1992:3).
- 12 This, in turn, has triggered dramatic changes on U.S. and Canadian university campuses as administrators attempted to follow government advice that they secure property rights in the discoveries of academic staff that may have commercial applicability (see CAUT legal reviews at <http://www.caut.ca/en/publications/legalreview/default.asp>).
- 13 One study, for example, found that over 70% of scientific papers cited in biotechnology patents originated in public science institutions (universities, farm extension services) compared with the 16.5% that came from the private sector (Drahos and Braithwaite 2002:165).
- 14 For example, how would the calculus of social benefit change if we had definitive evidence that GM crops represent costs that are not being considered here? Are GM foods safe or do they lead to higher levels of disease, allergy problems and environmental damage? Much more research is being done on being able to detect GM components in crops or in processed food than is being focused on broader food safety questions (see Kuiper et al. 2004).
- 15 Farmers’ groups on record for being critical of Monsanto are legion and in North America include Canada’s National Farmers Union, Canada’s Wheat Board and the U.S. National Family Farm Coalition. International organizations working with farmers such as MISEREOR and the International Food Policy Research Institute have also been critical.
- 16 A number of sharp criticisms of the biotech industry have originated from contamination cases, including a case that pitted upland Mexican peasant farmers against the producers of GM corn varieties (see www.washingtonpost.com/wp-dyn/articles/A37992-2004Nov9.html). Cross species contamination has also threatened the farming industry with “super weeds” that are resistant to major herbicides. Another critique emerged from Monsanto’s recent release of Roundup Ready alfalfa, the first perennial plant seed to be patented. This has led to a lawsuit by the Western Organization of Resource Councils challenging the U.S. Department of Agriculture approvals for the GM forage crop (see www.worc.org/issues/art_issues/gmalfalfa.html).
- 17 One anonymous reviewer of this article pointed out that this problem is restricted to the “global north,” while in the “global south,” traditional seed is still much more widely used. That indeed is the point, as increasing pressure is placed on southern nations to conform to TRIPS, southern farmers may soon find themselves in the same situation.
- 18 Such undisclosed returns from intellectual property protection would need to be high indeed to justify their annual budget of US\$10 million and a full-time staff of 75 devoted solely to investigating and prosecuting American farmers (Center for Food Safety 2005:4).
- 19 The term *chill effect* refers to using the threat of litigation to suppress the behaviour of others. Fear of being subject to legal action leads people to modify their behaviour or curtail expectations (see Eckersley 2004).
- 20 According to the Center for Food Safety (2005), there is only one large competitor with international seed distribution left in the U.S., and they have an agreement with Monsanto to distribute Monsanto GM seeds. Meanwhile, research on and production of conventional seed varieties has sharply declined. The result is that farmers find it very difficult to access high quality, reliable, non-GM seed.
- 21 Drahos and Braithwaite (2002:154-156) document a “herd-like rush to the patent office” aimed at four broad patent targets: units of life, molecules and other elements of those units, the instructions for the assembly of those units, and the methods of manipulation of all of the above. See also Magnus et al. 2002.
- 22 Here Siebrasse follows a well-worn path in economic property theory. Bromley (1989) argues that all property imposes costs on others. The problem, as Furubotn and Pejovich (1972:1142) pose it, is not “how can we constrain A from harming B?,” but rather “should A be allowed to harm B or should B be allowed to harm A?” The goal then is to avoid the more serious harm. For a critique of another policy application of this approach to property see Wiber (2000).
- 23 See the special issue of the journal *Focaal* edited by Müller (2006a) and her contribution to the volume in which she outlines how the Canadian courts dismissed such a case involving organic farmers (Müller 2006b).

- 24 Evidentiary problems, for example, would “make it difficult for the patentee to enforce its rights against *intentional* users” (Siebrasse 2004b:364-365).
- 25 Perhaps if pigs could fly? The logical flaw in the salmon analogy is even more serious. Farmed salmon do not normally escape into the cages of other salmon farms, as Siebrasse points out, but they do escape into the wild where their genetic characteristics cause problems when they become incorporated into wild salmon stocks. How do we calculate the net social benefits or costs of this outcome?

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