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U.B.C. LAW REVIEW

Volume 40 · Number 1 · May 2007

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I. INTRODUCTION

One thing about biotechnological innovations that sets them apart from traditional objects is that they can, and do, copy themselves. Transgenic organisms—plants and animals that have had their genes molecularly engineered with recombinant DNA technology—are impulsively self-propagating. This fact has created some legal challenges.

Property law, specifically intellectual property (IP) law, has had to face questions such as: What rights does a patentee have concerning the second, third and subsequent generations of progeny of transgenic organisms containing a patented biotechnological invention? Among the questions faced in tort law is the inverse: What are the responsibilities of a patentee when such things cause harm to persons, property or economic interests? Both questions are reflective of the social, legal, ethical

† Assistant Professor, University of Ottawa, Faculty of Law. Thanks to the Law Foundation of Ontario and the University of Ottawa, Faculty of Law (Common Law Section) for funding this research, to Matthew Rimmer, Karthik Ashwin Thiagarajan, Katharine Garforth, Keith Ferguson, Jennifer Chandler, Heather McLeod-Kilmurry, Martin Phillipson, participants at various conferences/seminars where this work was presented, and several anonymous peers for their comments, and to Mark Magro, Saleh Al Sharieh, Patrick Cleyn, Katrina Marciniak, Alison Minard, Livia Aumann, Tim Jolly, Mary Mitsios, Jeff Murray, Mary Auxi Guiao, Natasha Palaccio, David Lam, Annette Uetrecht, and Adrienne Moir for their research assistance on this and closely related projects.
and commercial controversies that permeate the topic of biotechnology.

These questions were considered, separately, in two recent Canadian cases about agricultural biotechnology. In *Monsanto v. Schmeiser*,¹ Monsanto argued successfully that ownership of a patent for a molecularly engineered plant gene and transgenic plant seed entitled it to full control over stray plants and progeny containing the gene, even though a plant itself is not patentable subject matter under Canadian law. In *Hoffman v. Monsanto*,² a group of organic farmers argued unsuccessfully that patent ownership also entails responsibility for damages to organic crops and crop markets caused by straying genetically modified organisms. In short, Canadian courts have held that a patent entitles its owner to all of the rights but none of the responsibilities of ownership.

These two cases demonstrate why biotechnology issues must be studied as part of a bigger picture. Looking at them through the lens of patent law or tort law in isolation is inadequate, yet little work has been done on the link between IP rights and tort liabilities in the field of biotechnology.³ Only a handful of scholars have juxtaposed these issues.⁴ No judge has yet

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conducted a thorough and comprehensive legal analysis.\(^5\) Questions about rights and responsibilities are too often examined independently of each other. Moreover, extra-legal considerations, including philosophical, ethical, economic, environmental and other social concerns, are too often ignored.\(^6\)

Seen in a broader light the lack of legal liability that results from the *Hoffman* decision is part of a trend away from accountability for technological innovation. At the same time, there is a trend toward according technological innovators more numerous and powerful property rights. Patentees are quick to invoke the power of property rhetoric to expand and protect their rights, but when it comes to the liabilities ordinarily associated with ownership, the tune suddenly changes.

Agricultural biotechnology companies are not unregulated. Biotechnological innovations exist in a complex policy matrix of legal regulation, social norms and economic realities. Legal regulations cut across intellectual property, contract, tort, environmental law, competition law, trade law, food labeling and other forms of specialized rules. But in terms of ownership duties specifically, patent owners have, at least according to two recent cases, broad rights and few or no property-related responsibilities.

Comparing and contrasting the *Schmeiser* and *Hoffman* decisions reveals the existence of a legal disequilibrium. There are various ways to restore equilibrium. One option is to narrow the scope of patent rights. Another is to recognize responsibilities. For reasons discussed below, the latter is the more realistic way to remedy the current imbalance.

I suggest the reason that Canadian courts, thus far, have been unable to appropriately balance rights and responsibilities stems from conceptual ambiguity about the relationship between

\(^5\) This is perhaps understandable as a result of the nature of the litigation and adjudication processes, which often turn on particular facts and pleadings, and are unsuited to addressing broader issues.

principles of property, intellectual property and tort law. It must be understood specifically which facts are linked to which causes of action. The existence of a patent, for example, is immaterial to a finding of negligence, especially a products liability claim. Negligence in this context is based upon the principle that the designer, manufacturer or distributor of transgenic crops has created an unreasonable risk. Other torts, however, impose liability based on the principle that a patent owner has control, through a combination of patent and contract law, over the object causing harm. These ownership obligations are most appropriately enforced through causes of action such as nuisance, trespass, the rule in *Rylands v. Fletcher*[^7] or breach of statute.

This novel insight explains why courts and commentators are often overwhelmed and confused when multiple causes of action are applied to multiple different parties. An appreciation of the principles at stake will lay the foundation for a more precise analysis leading to more satisfactory results. The practical result will be to encourage biotech companies to own up to their ownership obligations.

II. DISEQUILIBRIUM

A. *MONSANTO V. SCHMEISER*[^8]

Monsanto markets agricultural systems—the farmer provides land and labour, and the company provides seeds, chemicals, or other tools for crop growing.[^9] Monsanto’s system involves Roundup glyphosate herbicide, which, in short, kills plants. Monsanto has also engineered a gene that causes a plant and its progeny to be glyphosate-resistant. Farmers can therefore spray Roundup on a growing crop, killing weeds but leaving the transgenic plants

[^7]: (1868), L.R. 3 H.L. 330, aff’g (1866) L.R. 1 Ex. 265.
unharmed. Monsanto has a Canadian patent for glyphosate-resistant plants, including Roundup Ready canola.\(^\text{10}\)

Monsanto accused Percy Schmeiser, a Saskatchewan farmer, of making, using and selling its patented invention without licence. Monsanto’s private investigators discovered glyphosate-resistant canola in Schmeiser’s 1998 crop, which he had planted with seed saved from the previous year, as was his customary practice. Schmeiser never purchased seeds from Monsanto; that would have required contracting not to save new seeds generated from his crop.\(^\text{11}\) He argued that he was not responsible for, nor did he want, Roundup Ready canola on his land. He proposed various explanations for its presence, including adventitious spread by wind or insects.

Justice McKay of the Federal Court Trial Division did not accept Schmeiser’s explanations. However, he declined to decide how and why Monsanto’s gene did appear in Schmeiser’s crop. He held that this was “really not significant” because Schmeiser knew or should have known the seeds he saved and replanted were glyphosate-resistant.\(^\text{12}\) Planting and growing transgenic seeds under these circumstances made Schmeiser liable for infringement of Monsanto’s patent.\(^\text{13}\) A unanimous panel of the Federal Court of Appeal, and five of nine Justices of the Supreme Court of Canada upheld this ruling.

Schmeiser made several arguments to the Supreme Court.\(^\text{14}\) First, he argued that Monsanto’s patent was invalid, as it concerns a higher life form, which is not patentable in Canada.\(^\text{15}\) Second, because he did not spray his crop with Roundup herbicide, he

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\(^{10}\) “Glyphosate Resistant Plants”, Can. Patent No. 1, 313,830, (6 August 1986). Generally, the claims pertain to a molecularly engineered gene, a molecularly engineered gene expressed in a glyphosate-resistant plant cell and, more particularly, in a glyphosate-resistant rape seed (canola) cell.

\(^{11}\) Licensed growers must sign a technology use agreement. See Schmeiser (SCC), \textit{supra} note 1 at para. 11.

\(^{12}\) Schmeiser (FCT), \textit{supra} note 1 at paras. 119–20.

\(^{13}\) \textit{Ibid.} at para. 127.

\(^{14}\) Schmeiser (SCC), \textit{supra} note 1 (Factum of the Appellant at paras. 44-78 and 132-46 [FOA]).

claimed he did not “use” or exploit the patent’s only novel utility. Schmeiser also argued that the correct damages, if any, represent only his enrichment from exploiting the patent (that is, nothing), not his entire profit.

The majority of the Supreme Court held that the patent was valid, as it did not concern a higher life form, but merely a gene and cell contained within a higher life form. The majority also found that possession of a plant containing a patented gene constitutes “use”, and therefore infringement. Schmeiser’s failure to spray his crop with herbicide was immaterial because of the patent’s “stand-by utility”. The majority did, however, accept Schmeiser’s argument regarding damages. The dissent’s solution to the whole dilemma would have been to uphold the patent’s validity insofar as it protects only the gene as used in a laboratory setting, which would in effect give Monsanto a monopoly vis-à-vis industry competitors but leave farmers free to use the plants and seeds that they own.

In describing Monsanto’s patent rights, the Trial Division, Court of Appeal and Supreme Court all embraced the loaded language of classic property. The Supreme Court called Monsanto Canada and Monsanto the “licensee and owner, respectively, of Canadian patent No. 1,313,830.” According to the Court, “The Patent Act confers on the patent owner ‘the exclusive right, privilege and liberty of making, constructing and using the invention and selling it to others to be used’.” To determine infringement, one must ask: “did the defendant’s activity deprive the inventor in whole or in part, directly or indirectly, of full

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17 Schmeiser (SCC), supra note 1 at para. 58.
18 Ibid. at paras. 47, 50, 83–85.
20 Schmeiser (SCC), supra note 1 at paras. 140–163.
21 Ibid. at para. 8.
22 Ibid. at para. 25.
enjoyment of the monopoly conferred by law?"\textsuperscript{23} The Court went on to say that “the main purpose of patent protection is to prevent others from depriving the inventor, even in part and even indirectly, of the monopoly that the law intends to be theirs: only the inventor is entitled, by virtue of the patent and as a matter of law, to the full enjoyment of the monopoly conferred.”\textsuperscript{24} Such a broad interpretation of the rights conferred upon patent owners was surprising, given the Supreme Court’s balanced reading of other intellectual property rights in recent cases.\textsuperscript{25}

When the time came to consider Mr. Schmeiser’s argument that he also had an ownership interest at stake—what I have called a “classic” property right in the seed itself\textsuperscript{26}—the Courts paid little attention. Schmeiser had argued that Monsanto forfeited its IP rights by virtue of the unconfined release of its product into the environment; that innocent bystanders should not suffer from the adventitious spread of Monsanto’s gene; and that the solution to this dilemma is through the doctrines of waiver or implied licence. The upshot was that Schmeiser’s classic property rights in the plants and seeds should not be subordinated to Monsanto’s IP rights. Schmeiser tried to show how the law traditionally reconciles competing property claims by citing the basic law of

\textsuperscript{23} Ibid. at para. 35 [emphasis in original].

\textsuperscript{24} Ibid. at para. 43 [emphasis in orginal]. See also paras. 46, 49, 54, 71, 72, 79, 80 and 85.


\textsuperscript{26} De Beer, “Reconciling Property Rights”, supra note 8.
admixture, and referencing well established case law dealing with ownership of the progeny of stray bulls.

The Courts were unwilling to accept these analogies. Both the Trial Division and the Court of Appeal disposed of Schmeiser’s classic property claim in a few lines. The Supreme Court missed the point entirely, bluntly and ineloquently remarking: “the issue is not property rights, but patent protection. Ownership is no defence to a breach of the Patent Act.” In short, the Court broadly interpreted Monsanto’s rights as a patent owner so as to trump Schmeiser’s rights as a classic property owner. Monsanto has been granted a sort of super-property right that overrides all others.

In a postscript to the Schmeiser case, it was recently reported that Schmeiser has again discovered Roundup Ready canola growing in his fields. Monsanto had promised the Supreme Court that problems involving volunteer plants are “quickly and satisfactorily resolved by Monsanto and the farmer”, and that those “who notified Monsanto of the undesired presence of Roundup Ready canola on their property were dealt with fairly and responsibly by Monsanto. The occasional and limited Roundup Ready canola plants, growing on their property were removed by Monsanto on terms satisfactory to the farmers.” But the company’s lawyers told Schmeiser that Monsanto would only hand-pick offending plants if he signed a contract that forever releases Monsanto from any lawsuits associated with their

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29 Schmeiser (FCT), supra note 1 at paras. 91–92; Schmeiser (FCA), supra note 1 at para. 51.
31 Schmeiser (SCC), supra note 1 at para. 96 (emphasis added).
33 Schmeiser (SCC), supra note 1 (Factum of the Respondents at para. 5).
34 Ibid. at para. 103.
products and forbids him from disclosing the terms of that settlement.

Monsanto’s spokesperson defended the company’s offer by saying that it was under no legal obligation to assist in the first place. Monsanto’s attitude raises an interesting question for discussion: what exactly are its legal obligations concerning its patented genes? In *Hoffman v. Monsanto*, a group of Saskatchewan organic farmers tried to find out.

B. *HOFFMAN V. MONSANTO*

On 10 January 2002, Larry Hoffman and Dale Beaudoin made an application to the Saskatchewan Court of Queen’s Bench to certify a class action lawsuit on behalf of organic farmers against Monsanto Canada and Bayer CropScience (BCS). Because canola is an open-pollinating crop, Monsanto’s “Roundup Ready” and BCS’s “Liberty Link” brands of canola drifted predictably onto organic farmers’ fields and into their organic crops. As a result, these farmers allegedly incurred substantial losses. Damages included the loss of ability to use canola in crop rotations without risking contamination, the loss of ability to participate in a certified organic canola market and past and future cleanup costs such as identifying and removing transgenic plants and seeds from fields and equipment.  

To be certified as a class, the plaintiffs had to show that there was a cause of action, an identifiable class, common issues best resolved through a class action, and a suitable representative plaintiff. In a 177-page judgment on this preliminary application for certification, Madam Justice Smith rejected the plaintiffs’ application on nearly every point.

The most controversial aspects of the decision relate to the Court’s attitude toward possible causes of action. The Court held, in effect, that it was plain and obvious there was no reasonable prospect for success establishing a cause of action based on the plaintiffs’ pleadings.

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35 *Hoffman (QB)*, supra note 2 at para. 39.
37 *Hoffman (QB)*, supra note 2 at paras. 38-195.
The core negligence claim was rejected because the plaintiffs conceded that this was a novel case requiring the creation of a new duty of care. According to the Court, the plaintiffs’ pleadings failed to establish that the alleged harms were foreseeable. The Court decided that there was no proximate relationship between organic farmers and these agrichemical corporations. Finally, in any event, the Court felt that there were policy reasons to negate a duty to take reasonable care in these circumstances. Other allegations of negligence, based on a duty to warn and/or reliance on undertakings by Monsanto and BCS, were similarly rebuffed.

The Court decided that this was not an appropriate case to impose strict liability under the rule of *Rylands v. Fletcher*. The plaintiffs submitted that the defendants engaged in a non-natural use of the land during field trials of transgenic crops and in that process allowed the escape of something likely to do mischief and damage. The Court, however, concluded that there was no reasonable way it could be argued that testing and commercial release of transgenic canola could be an escape of a substance within the meaning of the rule.

The Court acknowledged that liability for nuisance is not limited to occupiers of adjoining land, but questioned settled authorities on this point. Justice Smith speculated as to the reasons for imposing such liability before considering American jurisprudence, and consequently introduced into Canadian law the idea that independent malfeasance or direct causation is required in cases where the defendant does not occupy nearby

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38 Ibid. at paras. 52, 57, 59, 81.
39 Ibid. at paras. 61-66.
40 Ibid. at paras. 67-70.
41 Ibid. at paras. 71-80.
42 Ibid. at paras. 57-51 and 82-88.
43 Ibid. at paras. 89-97.
44 Ibid. at paras. 89.
45 Ibid. at paras. 95-97.
46 Ibid. at paras. 115-116.
land. She concluded that the implications of holding Monsanto and BCS liable in nuisance would be too sweeping, and thus rejected the plaintiffs’ arguments as plainly and obviously flawed.

The Court rejected the trespass argument because, according to the Court, any interference was indirect. It was in this context that the Court rejected an analogy to case law imposing strict liability for damages caused by stray bulls. According to the Court, the plaintiffs could point to no public policy reason why the defendants should not have commercially released transgenic canola.

According to the Judge, no cause of action could be founded on the Environmental Management and Protection Act before it was amended, because it could not be shown that the defendants were owners or in control of a pollutant before its discharge. But the EMPA as amended in 2002 did create a possible albeit limited cause of action. Similarly, the plaintiffs’ claim under the Environmental Assessment Act, which alleged that the defendants’ development of molecularly engineered genes and genetically modified seeds required ministerial approval, was not clearly unreasonable.

In sum, the Court rejected nearly all of the plaintiffs’ arguments regarding potential causes of action. The plaintiffs were also unable to convince the Court that they satisfied any of the other prerequisites to certification.

On the issue of whether there was an identifiable class, the Court concluded, among other things, that there were many reasons why an organic farmer might choose not to grow canola, which vary according to the circumstances of the farmer, and there were no objective criteria with which to distinguish those farmers who would have grown canola but for the risk of

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48 Hoffman, supra note 2 at para. 122.
49 Ibid. at para. 124.
50 Ibid. at para. 133.
51 Ibid. at para. 132.
52 S.S. 1983-84, c. E-10.1 [EMPA].
53 S.S. 1979-80, c. E-10.1 [EAA].
transgenic contamination. There was no evidence that the same problems were widespread among members of the proposed class, and most of the members of the proposed class did not share in the causes of action asserted in the statement of claim.

The Court found that many of the common issues among the proposed class related to the causes of action that had just been rejected. Any other proposed common issues, the Court held, could not be identified without individual inquiry. Furthermore, with a degree of circularity, the Court reasoned that it was difficult or impossible to establish commonality of issues since there was no identifiable class.

When considering whether a class action was the preferable procedure for the action, the Court concluded that the proceeding would inevitably break down into individual proceedings, requiring full rights of discovery and a trial to resolve many unique factual issues.

The Court also found flaws with the representative plaintiffs because they had assigned significant rights and duties to the Saskatchewan Organic Directorate. In effect, these plaintiffs were not directing the litigation but had relinquished control to a committee that was not answerable to the court, in a way that was inconsistent with their fiduciary duties to the proposed class.

There is no doubt that on balance the plaintiffs were handed an overwhelming defeat. Martin Phillipson has characterized the denial of certification as “an enormous blow” that “may well bring an end to the lawsuit”. After, the Saskatchewan Court of Appeal upheld nearly every aspect of the Queen’s Bench decision and dismissed the farmer’s appeal. Only leave to the Supreme Court of Canada could breathe life back into this case.

54 Hoffman (QB), supra note 2 at paras. 218, 234.
55 Ibid. at para. 242.
56 Ibid. at para. 243.
57 Ibid. at para. 310.
58 Ibid. at paras. 244 and 324.
59 Ibid. at para. 310.
60 Ibid. at para. 326.
61 Ibid. at paras. 329-339.
62 Phillipson, “Giving Away the Farm”, supra note 4 at 368.
III. RESTORING EQUILIBRIUM

When the results of the decisions in Schmeiser and Hoffman are juxtaposed, a serious problem becomes apparent. Entities that patent biotechnological innovations have all of the rights associated with property ownership, yet have been relieved of the responsibilities traditionally imposed upon property owners.

The most obvious problem with this legal disequilibrium is the injustice done to farmers who are harmed, economically or otherwise, by transgenic organisms. Another problem is the hostility toward the biotechnology industry, and the agricultural biotechnology industry in particular, stemming from the current legal imbalance. Farmers, consumers, non-governmental organizations and the public understandably resent the contradictory positions taken by agrochemical firms like Monsanto. Perceived and actual inequities generate disdain for these firms and undermine consumer confidence in their products. This, in turn, further hinders social acceptance of transgenic organisms, undermining biotechnology’s potential benefits. Moreover, hostile attitudes toward biotechnological innovations help to create an unstable legal, economic and political environment. The associated uncertainty creates unnecessary risks for biotechnology firms.

Therefore, the disequilibrium identified above is a problem, not just for organic farmers, but also for agrochemical companies. Indeed, this imbalance affects the whole biotechnology industry as well as society at large.

Equilibrium could be restored in several ways. One option is to narrow or eliminate patent rights in respect of biotechnological innovations. Another possibility is to preserve patent rights but recognize corresponding responsibilities.

A. LIMITING RIGHTS

It is possible to balance the rights and responsibilities of patent owners by adjusting the rights side of the equation. This would require revisiting the scope of patentable subject matter and/or the scope of patent rights.

The evolution of Canadian law on the patentability of higher life forms has been complicated, controversial, and at times
contradictory. In 1982, Canada’s Patent Appeal Board held that living organisms are patentable.\(^{63}\) For the next 20 years, the Supreme Court managed to duck the issue,\(^{64}\) but in Harvard College\(^{65}\) dealt with it head on. A five-to-four majority of the Supreme Court held that a higher life form is not a patentable invention.\(^{66}\) In Schmeiser, all judges purported to agree that higher life forms are not patentable in Canada, but a five-to-four majority rendered this proposition meaningless. The decision allowed for patents on the genes and cells that constitute higher life forms, and held that the patent protects the whole of any organism containing patented genes and cells.

So, the current law in Canada is that life is not patentable per se, but its building blocks are. It is notable, however, that three of nine judges on the Court have been replaced since Schmeiser, one of whom sided with the majority and two of whom dissented. To add yet another variable, the newest appointee, Justice Rothstein, presided over the Harvard College case at the Federal Court of Appeal and ruled in favour of the patentee.\(^{67}\) Those who might have thought that it does not matter which judges would decide the next biotechnology patent case before the Supreme Court received a lesson in legal realism following the Harvard College and Schmeiser decisions.

Nevertheless, in the future, significant legal changes in this area would probably come from Parliament and not the courts. Both the majority and minority decisions in Schmeiser and Harvard College acknowledged that Parliament could change Canadian patent law if it wishes.\(^{68}\) Canada’s international IP treaty obligations would permit Parliament to do so.

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\(^{64}\) In Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents), [1989] 1 S.C.R. 1623, 60 D.L.R. (4) 223, 25 C.P.R. (3d) 257, the Supreme Court of Canada could have tackled the question, but instead decided only that the patent at issue in that case was invalid because of insufficient disclosure.

\(^{65}\) Harvard College, supra note 15.


\(^{67}\) [2000] 4 F.C. 528.

\(^{68}\) Schmeiser (SCC), supra note 1 at paras. 93-94, 159; Harvard College, supra note 14 at paras. 114, 206.
Under the *Agreement on Trade-Related Aspects of Intellectual Property Rights* members of the World Trade Organization must make patents available for any invention, whether products or processes, in all fields of technology provided the inventions are new, result from an inventive step, and are capable of industrial application. There are, however, exceptions to this general rule. Member states can exclude inventions from patentable subject matter if doing so is necessary to protect *ordre public* or morality, human, animal or plant life, health or the environment. Moreover, member states can also exclude from patentability plants and animals other than micro-organisms, as well as naturally occurring breeding methods, but there must be an effective *sui generis* system in place. Canada has such a system in the *Plant Breeders‘ Rights Act*. 

Rather than excluding higher life forms from patentability altogether, it is also possible for Canada to enact limited exceptions to the exclusive rights conferred by a patent. In making a limited exception, member countries must not unreasonably interfere with the normal exploitation of the patent and must not prejudice the legitimate interests of a patent owner.

Although the *TRIPS Agreement* would permit Canada to narrow the scope of patent law, multilateral treaties also affect this debate. Specifically, legislative reform could constitute an

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69 Set out as Annex 1C of the *Marrakesh Agreement establishing the World Trade Organization*, 15 April 1994, 33 I.L.M. 1125 [*TRIPs Agreement*].

70 *Ibid.*, art. 27.


72 *Ibid.*, art. 24:3(b). Member countries are required to allow the patentability of non-biological and microbiological processes such as biotechnological gene manipulation, gene transfer and so on, but other patent exceptions are permitted for diagnostic, therapeutic and surgical methods for the treatment of humans or animals. *Ibid.*, art. 27:3(a). Also, general exceptions to the IP regime under the *TRIPs Agreement* would permit measures “consistent with the *TRIPs Agreement*” necessary to protect public health and nutrition, to promote the public interest in sectors of vital importance to socio-economic and technological development or to prevent practices that unreasonably restrain trade or adversely affect the international transfer of technology.


74 *TRIPs Agreement*, supra note 69, art. 30.
expropriation of foreign investors’ property rights under the *North American Free Trade Agreement*. Bruce Ziff explains:

Under article 1110 of NAFTA, foreign investors from the signatory states are protected against both direct and regulatory takings. Legislation that terminates extant patents such as the one for Round-Up Ready Canola triggers a right of compensation in favour of Monsanto, a foreign investor. So, it is true that Parliament is free – as in *libre* – to reverse the Supreme Court of Canada ruling tomorrow. Such legislation would be unimpeachable. Nonetheless, it would not be free—as in *gratis*—since the measure would cost Canadians billions if enacted.

Therefore, the government must be cautious before taking away foreign biotechnology firms’ IP rights. This makes a lengthy discussion of whether or not it would be an appropriate policy to curtail patent rights somewhat moot. Even if such a move were politically saleable, it would not be economically feasible in the short-term. A longer-term solution might be to deny or limit patent rights prospectively, although that would not address the pressing issue of imbalanced rights and responsibilities.

In sum, judicial narrowing of the scope of patent law is possible but unpredictable. Parliament is the appropriate venue in which to debate the rights of patentees, but policy questions about legislative changes to patent law are dwarfed by the practicalities of narrowing the scope of protection. Canadian law concerning the rights of patentees is unlikely to undergo significant change anytime soon.

**B. RECOGNIZING RESPONSIBILITIES**

If, for reasons just discussed, rights granted under Canadian patent law are unlikely to change, equilibrium could be obtained by recognizing corresponding ownership obligations. After all, property rights normally entail responsibilities as well.

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76 Bruce Ziff, “Travels with My Plant”, *supra* note 30.
As a preliminary matter, it could be suggested that patents and other IP rights are not really “property” rights, and that patentees are not really “owners”. Although Monsanto pitched this as a self-serving argument in the *Hoffman* case, sometimes IP critics take this view in order to undermine the rhetorical use of powerful property metaphors. The proposition that IP is not really property might help to rationalize the combined result of *Schmeiser* and *Hoffman*, and therefore deserves careful consideration.

There are important theoretical and practical differences between IP and classic property. The fundamental distinctions relate to the inherent characteristics of ideational resources: they are not scarce, rivalrous or possessable. It is somewhat awkward, therefore, to transpose classic property theory onto public goods such as ideas, although there have been numerous attempts to do so. No doubt the distinct characteristics of ideational resources go the heart of why we recognise IP rights, and how we define the scope of IP protection. However, looking closely, they actually have little to do with whether IP is a type of property. That is a subtle but crucial distinction, which helps to highlight the importance of property-related responsibilities in IP law.

In *Schmeiser* the Supreme Court interpreted the scope of patent protection like a typical classic property right. Patents, according to the Court, provide their owners with full monopoly

77 *Hoffman (QB)*, *supra* note 2 at para. 132.


79 See further de Beer, “Reconciling Property Rights”, *supra* note 8 at 14, and the sources cited therein.

powers, which cannot be interfered with in whole or in part, directly or indirectly.\textsuperscript{81} Patent owners have, among other things, broad rights to exclude others from the resource in question, to use the resource and to transfer such rights by way of sale or gift. The rights may be time limited and the resource intangible, but many other classic property rights, such as a life estate or a chose in action, share these features.

Patent rights are at least as strong as many other classic private property rights. The essential characteristics of patents bring them within almost every conception of the concept\textsuperscript{82} of property to clearly resemble a “full-blooded ownership”\textsuperscript{83} interest.\textsuperscript{84} The most popular definitions of property either consider exclusivity as its \textit{sine qua non},\textsuperscript{85} or view it as comprising a variety of sufficient but not necessary features.\textsuperscript{86} Some authors have defined a property right as a state-endorsed dictum from a private citizen to the world at large, demanding that everyone keep off a given resource unless permission is granted.\textsuperscript{87} On any widely accepted definition, a patent is a property right.

\textsuperscript{81} \textit{Schmeiser} (SCC), supra note 1 at paras. 35, 43, 46, 49, 54, 71, 72, 79, 80, 85.


\textsuperscript{85} T.W. Merrill, “Property and the Right to Exclude” (1998) 77 Neb. L. Rev. 730.

\textsuperscript{86} Merrill, \textit{ibid.}, calls this school of thought “multiple variable essentialism.” Merrill’s taxonomy also includes “nominalism”, which sees the term property as merely a malleable shell.

Patentees cannot, therefore, escape their responsibilities by arguing that to label them as property owners is “a misunderstanding of the nature of their interest under patent law.”\(^{88}\) That position is untenable as it is inconsistent with assertions patentees typically make when it comes to enforcing their IP rights. More importantly, from a philosophical, legal and ethical perspective, the argument that patentees are not owners is patently wrong.

Ownership of property entails both rights and duties. Often when we talk theoretically about property-related duties we mean to say that non-owners owe a duty not to interfere with property owners’ correlative rights, as explained in Hohfeld’s seminal work on jural relations.\(^{89}\) But also, property owners themselves have duties associated with the things that they own.\(^{90}\)

The most dominant property metaphor, which views ownership as a “bundle of rights”\(^{91}\) acknowledges the existence of various rights and responsibilities. Unfortunately, restating Honoré’s “standard incidents” of “the full liberal concept of

\(^{88}\) Hoffman (QB), supra note 2 at para. 132.

\(^{89}\) See e.g. Wesley N. Hohfeld, Fundamental Legal Conceptions, as Applied in Judicial Reasoning, and Other Legal Essays, W.W. Cook, ed., (New Haven: Yale University Press, 1919).


“ownership” tends to downplay the importance of property duties. Remember that one of Honoré’s standard incidents is “the duty to prevent harm”. Jeremy Waldron states this as “a duty to refrain from using X in a way that harms others”. James Penner characterizes it as a prohibition on the harmful use of property. The essential point, as Ziff explains, is that “the bitter accompanies the sweet”, and “it is common to find a large number of ownership-based duties, scattered though they may be throughout the law.”

Although the precise nature of property-related rights and duties varies depending on the object of social wealth in question, basic responsibilities apply to both tangible and ideational resources. In other words, ownership obligations attach to both classic and intellectual property rights.

Before shifting from a theoretical discussion of property responsibilities to an analysis of specific legal doctrines under which liability is imposed, it is worthwhile to consider this debate from an even wider perspective. Recognizing that IP ownership, like property ownership generally, entails both rights and responsibilities is part of a broader reconstitution of the modern liberal rights-based paradigm. Subjecting rights to internal responsibilities as well as external duties protects a multiplicity of interests that are not otherwise safeguarded.

The traditional liberal framework would acknowledge the interests of those who are harmed by the exercise of another’s

95 Waldron, *The Right to Private Property*, *supra* note 82 at 49.
96 Penner, “The Bundle of Rights Picture”, *supra* note 91 at 761.
rights only to the extent they have countervailing rights of their own. Conflict is resolved by reordering competing rights in a hierarchical fashion. In the context of transgenic crops, this would mean that the rights of a patent owner might be checked by other rights, such as a farmer’s classic private property rights. Rights with responsibilities, however, take account of important social values and other interests not necessarily crystallized as countervailing rights. Responsibilities are simply an inherent aspect of rights, including IP rights such as patents. This view suggests that patent owners may have responsibilities in addition to and beyond those discussed here. For example, there may be a responsibility to preserve biodiversity or there may be other obligations of environment stewardship.

Responsibilities also flow inevitably from Canada’s attitude toward biotechnological risks and our implementation of the precautionary principle in this context. In general, North American law and policy reflects the belief that transgenic organisms are “substantially equivalent” to non-transgenic organisms unless proven otherwise. Although there is not yet reliable scientific evidence of increased health risks associated with transgenic organisms, other sorts of concerns have begun to be realized. The Hoffman case, for instance, illustrates some of the social, cultural and economic risks of biotechnology.

Canada has chosen to accept these risks, in order to encourage economic development and scientific progress through biotechnological innovation. The primary beneficiaries of Canadian biotechnology policy, biotechnology firms, cannot now say in good faith that they bear no responsibility when accepted risks eventually materialize. As Patricia Farnese puts it: “there is no justification for allowing a patentee to profit, without consequence, from the state-granted monopoly over her technology and then leave society with the long-term consequences of the technology’s introduction.”

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100 See e.g. de Beer, “Reconciling Property Rights”, supra note 8.
101 Ibid.
102 This contrasts with, for example, the European approach, which presumes the opposite.
103 Farnese, supra note 87 at 3.
Such a problem is not unique to the agricultural biotechnology industry. Helen Nissenbaum has identified a similar lack of accountability in the software engineering business. She notes that software patent owners tend to claim broad IP rights yet typically try to disclaim any liabilities normally associated with ownership.\(^{104}\)

Jaqueline Lipton also notes that we tend to adopt property language when talking about rights in information, but overlook property duties when talking about “information property” generally.\(^{105}\) She says that information property law has “borrowed too little” from traditional notions of property, by failing to notice that: “traditional Property rights entail significant concurrent obligations or responsibilities imposed on the proprietary owner as an incident of their Property ownership.”\(^{106}\) She agrees that we need to start thinking about an overarching framework for information property that incorporates concurrent legal duties.\(^{107}\)

Lipton talks about the duty to mitigate harms such as inhibited access to information resources. Although the duties addressed in this article are more like the concerns discussed by Nissenbaum, a common thread can be identified. There is a trend toward establishing stronger property rights in ideational resources and a simultaneous trend away from recognizing basic ownership obligations. IP owners have been allowed to shirk their property-related duties.

The systemic imbalance is, in part, a natural consequence of the technology product development cycle. The promise of IP rights tends to precede research, development and commercialization, and liabilities tend to accrue following distribution and use. This has led to a lag between the granting of proprietary rights in respect of technological innovations and the imposition of responsibility for harms caused by such products.


\(^{106}\) Ibid. at 148.

\(^{107}\) Ibid. at 165.
However, there are good economic reasons to attempt to crystallize property rights and liabilities simultaneously, or at least as early as possible. Clear IP rights are designed to facilitate investment in the development and marketing of new and useful products. The predictability of potential liabilities would seem to be an equally important consideration for would-be investors. This underscores the need to ensure insofar as possible that traditional rules are applied, and if necessary adapted, to technology industries if and when harms are realized.

One commentator has dismissed the fear that imposing liabilities upon patentees might diminish incentives to invent, and therefore contradict the basic purpose of patent law. That argument was premised on the beliefs that some people would still invent out of pure pleasure, and that “as long as there is a potential for economic gain, invention will occur notwithstanding economic risks.” This underestimates the economic complexity of the patent regime, and overlooks the tremendous financial importance of patent protection to biotechnology industry investors.

I agree, however, that ownership obligations will not undermine investment incentives and are not inconsistent with the purpose of patents. The reason is that if patentees’ rights and responsibilities are appropriately correlated at an early stage, fair and predictable obligations can actually enhance, rather than undermine, the economic incentives to invest in technological innovation. It is not just the existence but also the clarity of these rights and responsibilities that creates investment incentives. If economic risks are predictable, it will be possible to plan for and insure against these risks.

Continuing with a consequentialist perspective, there are moral and ethical reasons to recognize patentees’ property-related duties. Professors Gold and Caulfield have argued that imposing liabilities on patentees is a useful deterrent against harmful and unethical behaviour in the biomedical context. This insight would seem to be equally applicable to agricultural biotechnology

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108 Farnese, supra note 87 at 30.
109 Caulfield & Gold, supra note 3 at 373.
companies. There is a need for moral accountability in this
industry.\textsuperscript{110}

All of the macro concerns discussed above are intimately
related to the more concrete legal question of patent owners’
responsibilities toward farmers in cases involving transgenic crop
drift. In light of the foregoing contextual discussion, it is not
surprising that most of the commentators who have studied this
issue have concluded that companies like Monsanto bear some
responsibility in such circumstances.

One can discern in the literature several different approaches
that have been used to reach that conclusion. Some authors have
looked at a number of different torts and different parties, and
appraised various potential liabilities.\textsuperscript{111} Some authors have
focused their analysis on a specific cause of action, such as
nuisance,\textsuperscript{112} breach of statute,\textsuperscript{113} or the rule in \textit{Rylands v.
Fletcher}.\textsuperscript{114} Others have looked exclusively at negligence
including strict products liability, or have concluded that an action
in negligence is most likely to succeed.\textsuperscript{115}

The general legal consensus that patent owners may be liable
for harms caused by patented biotechnological innovations is
correct. However, in my view, patent owners ought to be held

\textsuperscript{110} See e.g. Gold, Castle & Cloutier, “Ag-biotech in the Courts: Patents,
Privileges and Presumptions”, \textit{supra} note 6.

\textsuperscript{111} See e.g. Jane Matthews Glenn, “Footloose: Civil Responsibility for

\textsuperscript{112} See e.g. Christopher P. Rodgers, “Liability for the Release of GMOs
into the Environment: Exploring the Boundaries of Nuisance” (2003) 62
Cambridge L.J. 371; and Thomas Redick and Christina Bernstein, “Nuisance
Law and the Prevention of ‘Genetic Pollution’: Declining a Dinner Date with

\textsuperscript{113} See e.g. Jodi McNaughton, “GMO Contamination: Are GMOs
66 Sask. L. Rev. 183 (QL).

\textsuperscript{114} See e.g. J.W. Loone, “Rylands v. Fletcher Revisited: A Comparison of
English, Australian and American Approaches to Common Law Liability for
Dangerous Agricultural Activities” (1996) 1 Drake J. Agric. L. 149.

\textsuperscript{115} See e.g. Farnese, \textit{supra} note 87; Sharon Mascher, “Sowing the Seeds of
Prac. 341 at 371; and Gold, Castle & Cloutier, “Ag-biotech in the Courts:
Patents, Privileges and Presumptions”, \textit{supra} note 6.
liable not necessarily on the basis of negligence, but rather pursuant to other causes of action, such as nuisance, trespass, breach of statute or the rule in *Rylands v. Fletcher*. This is an important distinction.

Liability for negligence is most likely to succeed as a claim under the existing category of products liability, or perhaps other existing categories such as cases of reliance, or the duty to warn. In this light, the *Hoffman* case is just a simple twist on well-settled legal principles. That the product in question is a biotechnological product is not significant. The key fact in establishing products liability is that the defendant was the designer, manufacturer or distributor of the product in question. The designer, manufacturer or distributor’s liability arises in part because that person was in a position to avoid creating a risk of harm, either by producing a product that would not cause harm or by warning potential victims of the harms that might occur.

The existence of a patent is immaterial to a finding of liability for negligence. It may be that a person who is liable for creating an unreasonable risk happens to have obtained a patent, but it may also be that the designer, manufacturer or distributor is not the patentee. Products liability for negligence is entirely unrelated to whether the designer, manufacturer or distributor has applied for, obtained or enforced a patent. In light of this, it makes perfect sense that no court has yet considered whether a patentee owes a duty of care to a consumer who is injured by the patented invention.\(^\text{116}\)

The existence of a patent is, however, material to finding liability on other grounds. The maxim *sic utere tuo ut alienum non laedas*, meaning *use your own property so as not to harm others* is often associated with the law of nuisance, although the law of trespass also imposes obligations upon property owners, as does the rule in *Rylands v. Fletcher*. Even more precisely, these causes of action are premised less on ownership per se than on the degree of control that property owners, by definition, exercise over the source of the harm.\(^\text{117}\) For that reason, liability may

\(^{116}\) Farnese, *ibid.* at 10-11.

\(^{117}\) Ownership and/or possession inevitably involve some level of control. Control, on the other hand, does not always amount to ownership.
attach to the occupier or possessor of property, in addition to or instead of the owner. Likewise, liability may be imposed upon a patentee in the right circumstances.

The reason a patentee might be held liable for damages caused by a patented invention is because, as explained above, a patent provides its owner with exclusive control over making, constructing, using and selling the invention.118 According to the Supreme Court of Canada, the patentee is entitled to fully enjoy this right, privilege and liberty, and cannot be deprived of the monopoly, in whole or in part, directly or indirectly.119 Moreover, a patentee is entitled to protect and enforce these rights both under the Patent Act and through the common law of contract. Put briefly, a patentee may exercise an extraordinary degree of control over their patented invention. If a patentee chooses to exercise its rights of control after a product has been manufactured and distributed to the public, it is appropriate to impose liability on that basis.

It is crucial to be precise about how and why liability might arise. The particular principle underpinning legal liability has significant implications in terms of the existence, scope and duration of legal responsibilities. For example, if the existence of a patent were material to establishing liability for negligence, such liability could conceivably cease to exist following the expiration of the patent 20 years from the date the patent application was filed. Similarly, failing to appreciate this distinction could result in variable liability depending on whether the product’s inventor had rights under the Plant Breeder’s Rights Act or other IP regimes. What if a defendant had chosen not to seek patent protection but instead guarded its intangible assets as trade secrets? Unless we are clear about the basis for imposing liabilities, the fact that an inventor has never sought or enforced patent rights could eliminate legal responsibility altogether.

The facts of the Hoffman case underscore these points. Monsanto is the owner of Canadian Patent No. 1,313,830, and has rigorously asserted its rights via contract and patent law. In

118 Patent Act, supra note 66, s. 42.
119 Schmeiser (SCC), supra note 1 at paras. 35, 43, 46, 49, 54, 71, 72, 79, 80, 85.
Schmesier, the Supreme Court of Canada vindicated Monsanto’s property interest in the molecularly engineered gene and transgenic seeds that caused damage to the Hoffman plaintiffs. On the other hand, Monsanto’s co-defendant in the Hoffman case, BCS, is arguably in a somewhat different position. The BCS product in question, Liberty Link canola, is hybrid seed. Its rights, therefore, are likely more limited than Monsanto’s. Moreover, it seems that BCS has not pursued its IP rights in the courts as aggressively as Monsanto has.

Consequently, depending on the principle underpinning the causes of action invoked by the plaintiffs, the two co-defendants in Hoffman might find themselves facing different legal liabilities. As product designers, manufacturers and distributors, both defendants may be equally liable. If, however, one is considering their respective liabilities based upon the existence and enforcement of patent rights, it may be appropriate to treat these defendants somewhat differently.

It is true that there may be overlap between liability in negligence, nuisance, trespass, the rule in Rylands v. Fletcher and various statutory causes of action. Yet fundamentally, there are two related but separate legal principles regarding liability for harms done by transgenic crops. Liability may be premised upon the basis of “control over property” and/or “creation of risk”.

In general, property-related responsibilities are reflected through causes of action other than negligence, such as breach of statute, nuisance, trespass, and/or the rule in Rylands v. Fletcher. Unlike negligence, these other torts do not require a finding of fault in order to impose liability. Liability is based upon control rather than fault.

Some might see aspects of the law of negligence as founded on the principle of control over property, rather than or in addition to creation of risk. The doctrine of occupier’s liability is one possible example, although the rules governing occupiers of property have been largely subsumed by statute. 120 Employers or parents may be held vicariously liable on the basis of control over their employees or children, but those examples involve control over

120 See Linden, Canadian Tort Law, 7th ed., (Markham, Ont: Butterworths, 2001) at 650-82.
persons, not property. Product manufacturers do, of course, exercise control over the design and manufacture of a good. Again, however, this control is not over property but over a process. Simply put, control over property is not a typical basis for a finding of liability in negligence. In cases where negligence and property issues happen to be found together, liability can usually be attributed to principles other than ownership.

This insight represents a breakthrough in analyses of liability for harms caused by transgenic crops. The temptation in the past has been to look at the applicability of particular torts to particular parties using fairly traditional doctrinal methodologies. Common law rules or statutes have been explained and applied somewhat blindly, without asking how or why the rules are the way they are.

The shotgun approach, splattering causes of action around in the hope that something will stick, has proved to be overwhelming and confusing. As a proposition of fairness and equity, the idea that patent owners have both rights and responsibilities should be relatively non-controversial. The broader contextual factors discussed above also confirm this. Yet at the concrete stage of legal analysis, in the Hoffman case for example, particular rules were applied with unsatisfactory results.

The judge was confused about which specific facts are relevant to which specific causes of action. For instance, when analyzing the nuisance claim, the judge stated that: “The implications of holding a manufacturer, or even inventor, liable in nuisance for damage caused by the use of its product or invention by another would be very sweeping indeed.” 121 When later summarizing her conclusion about liability in nuisance, Justice Smith said: “There is simply no legal basis for claiming that mere ownership..., let alone mere patent protection, without more, creates liability for nuisance....” 122 She was seemingly unaware of the importance of distinguishing between the defendants’ roles as inventors and patentees, and manufacturers and distributors. Similarly, she dismissed the argument the defendants could be liable for trespass for “merely marketing GM canola.” 123 In this respect, she failed to

121 Hoffman (QB), supra note 2 at para. 122 [emphasis added].
122 Ibid. at para. 301.
123 Ibid. at para. 131.
appreciate the relevance of the control the defendants exercise through patents and contract.

One reason for the confusion may be that farmers lack access to the legal resources necessary to tackle the tangled web of transgenic crop liability issues. In fact, it was the same lawyer from Saskatoon who acted for Schmeiser in the first case and the organic farmers in the second. He has likely staked much on these cases, and his diligence and dedication is admirable. But it is unreasonable to expect that individual farmers, or even a group of farmers, are able to match the wealth of subject-specific experience and expertise retained in the deep pockets of opposing parties in both cases.

Of course, the complex interrelationship between principles of tort and property is difficult to for anyone to distil adequately in the space allotted in trial or appellate pleadings, when there are so many other issues that must be addressed. Hopefully, my analysis here will assist policymakers, practitioners and judges grappling with the nuances of these issues.

In my view, the solution to the problem of establishing the proper cause of action lies in formulating more precisely the basic principles and policies at issue, and situating these within the socio-legal landscape. As a practical matter, this may mean that plaintiffs should resist the tendency to plead everything and offer courts a litany of legal claims from which to choose. Or it may mean that only certain causes of action are appropriate for certification on facts alleged in a particular class action. It does not mean that plaintiffs should not plead and judges should not consider multiple or alternative causes of action.

Arguments and decisions should be made based upon first principles. These principles can then be aligned with the concepts underpinning specific legal rules to demonstrate why liability should be imposed. This is not a purely property-based, IP-based or tort-based approach. The analysis requires a far more textured and nuanced understanding of the relationship between these legal rubrics. There must be an appreciation of the subtleties amongst the principles underlying the legal rules, and how these might affect the particular defendants in a particular case. When one appreciates the subtle relationships between socio-legal context,
basic principles and specific rules, it becomes much easier to see how the existing law is capable of balancing IP rights and responsibilities. The result should be a demonstrable difference in the outcome of cases such as *Hoffman*.

IV. CONCLUSION

There is an imbalance between the rights and responsibilities of biotech patent owners. The legal disequilibrium is demonstrated through two recent Canadian cases: *Schmeiser* and *Hoffman*. In *Schmeiser* the Supreme Court of Canada expansively construed patent rights in respect of transgenic crops. In *Hoffman* a Saskatchewan court narrowly construed liabilities for harms caused by such products.

There are several ways to restore equilibrium. It is possible to narrow the scope of patent rights. Judicial reconsideration of Canadian patent law is a possibility, but is more likely that potential changes will come from Parliament. Although Canada’s obligations under the *TRIPs Agreement* would permit adjustments to the nature of patent rights in Canada, the need under *NAFTA* to compensate foreign investors for interference with their interests renders this solution problematic.

Alternatively, obligations can be more clearly recognized. Patent rights are property rights, and property rights also entail responsibilities. Recognizing rights with responsibilities is part of a reconstitution of the liberal rights-based paradigm. Responsibilities are also an inescapable consequence of Canada’s implementation of the precautionary principle. Shirking responsibility is not unique to the agricultural sector or even the biotechnology industry. There is a trend among IP owners generally toward arguing for greater property rights yet fewer ownership obligations. There are economic and ethical reasons to recalibrate rights and responsibilities, which can only be accomplished through a clearer understanding of the principles underpinning liabilities.

Ownership obligations are most appropriately enforced through causes of action such as nuisance, trespass, the rule in *Rylands v. Fletcher* or breach of statute. The existence of a patent is immaterial to a finding of negligence, especially a products
liability claim. Negligence in this context is based upon the principle that the designer, manufacturer or distributor of transgenic crops has created or failed to warn about an unreasonable risk. Other torts impose liability based on the principle that a patent owner has control over property. This unique insight explains why courts and commentators are often overwhelmed and confused when multiple causes of action are applied to multiple different parties. An appreciation of the relevant principles should help to restore the balance between rights and responsibilities.