

Commentary

Containing the GMO Genie: Cattle Trespass and the Rights and Responsibilities of Biotechnology Owners

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Genetically modified organisms (GMOs) have caused substantial economic losses by contaminating non-GMO crops and threatening the economic self-determination of non-GMO farmers. After *Monsanto v. Schmeiser*, biotech IP owners hold most of the rights in the property “bundle” with respect to bioengineered organisms. This commentary highlights the disequilibrium between these broad patent rights and the lack of legal responsibility for harms caused by GMO products. The authors propose that there is a role for tort law—specifically the tort of cattle trespass—in fairly allocating risk and responsibility.

The doctrine of cattle trespass reflects a policy of distributive justice, positing that the unique risks associated with keeping living creatures ought to import liability based on the owner’s creation and control of those risks. We suggest that GM canola and its bioengineered kin represent the next generation of “livestock,” and that biotechnology companies release their transgenic organisms onto the market in the knowledge that these organisms may escape and do harm. As such, biotech creators and patent holders are properly liable when risk ripens into harm.

Les organismes génétiquement modifiés (OGM) ont provoqué des pertes économiques substantielles en contaminant les cultures qui ne renfermaient pas d’OGM et en présentant une menace pour l’autodétermination économique des exploitants agricoles autres que ceux de OGM. Dans *Monsanto c. Schmeiser*, les titulaires de la propriété intellectuelle se rapportant à la biotechnologie détiennent la majorité des droits dans la propriété « collective » à l’égard des organismes de bio-ingénierie. Ce commentaire met en lumière le déséquilibre entre ces droits de brevets étendus et le manque de responsabilité judiciaire pour les préjudices causés par les produits de OGM. Les auteurs proposent qu’il existe un rôle pour le droit de la responsabilité délictuelle – plus particulièrement le délit civil de l’intrusion de propriété par le bétail – en répartissant équitablement les risques et la responsabilité.

La doctrine de l’intrusion de propriété par le bétail reflète une politique de justice distributive, adoptant le principe que les risques particuliers associés à la garde de créatures vivantes doit comprendre la responsabilité en fonction de la création et du contrôle de ces risques par le propriétaire. Nous suggérons que le canola à OGM, et le fait qu’il soit apparenté à la bio-ingénierie, représentent la génération suivante de « bétail », et que les sociétés de biotechnologie mettent leurs organismes transgéniques sur le marché,

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en sachant que ces organismes peuvent s'échapper et causer des dégâts. À ce titre, les créateurs de biotechnologie et les titulaires de brevets sont suffisamment responsables lorsque des risques se transforment en dégâts.

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ON 13 DECEMBER 2007, the Supreme Court of Canada passed up its first opportunity to craft a common law approach to the growing problem of genetic contamination of conventional and organic farm products by genetically modified organisms (GMOs).¹ The Court's denial of leave in *Hoffman v. Monsanto Canada Inc.*² ended an application for class certification by a group of Saskatchewan organic farmers who alleged that the development and distribution of genetically modified (GM) canola by two of the world's biggest biotechnology corporations had tortiously damaged the farmers' ability to grow and sell organic canola. Nonetheless, the issue of whether biotech companies may be liable in tort law for damages caused by their transgenic products remains a live one, since the *Hoffman* decision is binding only in Saskatchewan and the plaintiffs' tort claims were rejected only in the context of class certification. The decision does not shut the door on the right plaintiff, in the right circumstances, asserting a claim in tort for damages caused by the release of GMOs into the environment.³

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1. *Hoffman v. Monsanto Canada Inc.*, [2007] S.C.C.A. No. 347 [Q.L.] (In this case, there were multiple plaintiffs, including Larry Hoffman, L.B. Hoffman Farms Inc. and Dale Beaudoin, and multiple defendants, including Monsanto Canada Inc. and Bayer Cropscience Inc.).
 2. [2005] 7 W.W.R. 665 (Sask. Q.B.) [*Hoffman*], aff'd [2007] 283 D.L.R. (4th) 190 (Sask. C.A.) [*Hoffman CA*].
 3. For clarity, "genetic modification" and "transgenic" refer exclusively to the direct modification of DNA using rDNA techniques. See Part I, below.

Scholars such as Jeremy de Beer and Martin Phillipson have drawn attention to this debate in these terms:

[T]he most complicated (and controversial) legal challenge is achieving the appropriate balance between the intellectual property and contractual rights enjoyed by agricultural biotechnology multinationals on the one hand, and the obligations that the enjoyment of these rights should entail on the other. In Canada the manufacturers of GM crop systems possess a significant arsenal of legal rights in relation to their products. However, they appear to be relatively unburdened by legal obligations.⁴

This stands in contrast to the positions of Europe and South America, where a number of countries have established purpose-built liability regimes for the transgenic contamination of crops.⁵ De Beer argues that the situation in Canada represents “a trend away from accountability for technological innovation”⁶—a trend that is especially dangerous where the innovations in question are self-replicating biological organisms that can cause permanent changes to the environment and the economy. Moreover, as Birgit Müller has theorized, the rights allocated to biotechnology corporations have come at the expense of some farmers’ economic self-determination.⁷

In seeking solutions to this disequilibrium of rights and responsibilities, commentators have suggested applying patent legislation,⁸ environmental regulation,⁹ property law,¹⁰ and tort law,¹¹ even proposing a novel tort of

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4. Martin Phillipson, “Giving Away the Farm? The Rights and Obligations of Biotechnology Multinationals: Canadian Developments” (2005) 16 K.C.L.J. 362 at 362.
 5. See International Court of Environmental Arbitration and Conciliation, “Consultative Opinion on Liability of Public and Private Actors for Genetic Contamination of Non-GM Crops” (2005) 7 *Envtl. L. Rev.* 253.
 6. Jeremy de Beer, “The Rights and Responsibilities of Biotech Patent Owners” (2007) 40 *U.B.C. L. Rev.* 343 at 345 [de Beer, “Rights and Responsibilities”].
 7. Birgit Müller, “Infringing and trespassing plants: Patented seeds at dispute in Canada’s courts” (2006) 48 *Focaal – Eur. J. Anthropology* 83.
 8. See Robert Burrell & Stephen Hubicki, “Patent Liability and Genetic Drift,” Case Note, (2005) 7 *Envtl. L. Rev.* 278.
 9. Jodi McNaughton, “GMO Contamination: Are GMOs Pollutants under *The Environmental Management and Protection Act?*” (2003) 66 *Sask. L. Rev.* 183; Linda Beebe, “In *Re StarLink Corn*: The Link Between Genetically Damaged Crops and an Inadequate Regulatory Framework for Biotechnology” (2004) 28 *Wm. & Mary Env’t. L. & Pol’y Rev.* 511.
 10. Bruce Ziff, “Travels With My Plant: *Monsanto v. Schmeiser* Revisited” (2005) 2 *U. Ottawa L. & Tech. J.* 493.

biotrespass to allocate GMO-related risks.¹² While many of the proposed solutions have merit, they require a substantial shift in the existing law. We argue that the doctrine of cattle trespass, which imposes strict liability upon the owners of trespassing livestock, offers a solid foundation upon which to erect a framework of duties owed by biotechnology corporations. This doctrine was put forward by the *Hoffman* plaintiffs but rejected summarily by the motions court and left unexamined by the appeal court.¹³ It represents a judicial policy of distributive justice that recognizes the unique risks associated with keeping living creatures and imposes liability based on the owner's creation, knowledge, and control of those risks. It can be used to help rebalance intellectual property (IP) rights with responsibilities—a balance that is urgently required in the exploitation of poorly understood or poorly regulated emerging technologies.¹⁴

Two roadblocks stand in the way of applying cattle trespass to cases of transgenic drift. First, genes are significantly different from livestock. Second, it is not immediately apparent that the owners of biotech IP are analogous to the owners of farm animals. Why is the GMO farmer not the proper defendant in an action to remedy damages caused by transgenic drift? Drawing on the Supreme Court's characterization of genetic material in *Monsanto Canada Inc. v. Schmeiser*,¹⁵ and on Canada's current regulatory regime for the development and marketing of novel organisms, we propose that GMOs are analogous to the cows in cattle trespass actions. We also argue that biotech companies that release GMOs onto the market are the appropriate defendants because they exert the greatest control over genetically modified organisms and hold the most relevant knowledge about the risks inherent to the commercial exploitation of these organisms.

We begin by placing the problem in context, outlining in Part I the process of transgenic drift and assessing the risks presented by the uncontrolled presence of GMOs in the environment. Part II surveys the legal approaches to gene trespass, concluding that Canadian courts have been reluctant to view

11. Carie-Megan Flood, "Pollen Drift and Potential Causes of Action" (2003) 28 J. Corp. L. 473.

12. Jeremy de Beer, "Biotrespass" (2007) 27 Bull. Sci. Tech. & Soc'y 287 [de Beer, "Biotrespass"].

13. On appeal, neither the Saskatchewan Court of Appeal nor the Supreme Court of Canada addressed the cattle trespass issue specifically.

14. De Beer, "Rights and Responsibilities," *supra* note 6; Müller, *supra* note 7.

15. [2004] 1 S.C.R. 902 [*Schmeiser*].

genetic modifications outside the silo of intellectual property law. In Part III we distill the tort of cattle trespass to its fundamental principles and then apply these principles to the dilemma of gene trespass.

I. GMOS AND TRANSGENIC DRIFT

Over the last decade, in what is referred to as the “Second Green Revolution,” agribusiness has become increasingly characterized by the replacement of conventional crops with transgenic plants.¹⁶ Internationally, there has been a fifty-fold increase in the global biotech crop area since the commercialization of GM food in the mid-1990s.¹⁷ For example, herbicide resistant GM canola now comprises 80 per cent of the total canola crop in western Canada and covers over 1.6 million hectares.¹⁸

Transgenic plants differ from conventional crops in the ways they acquire the genes responsible for their desirable or marketable traits. Conventional crops acquire characteristics such as increased heartiness or drought resistance through generations of selective breeding in the field. Conversely, transgenic crops acquire new traits within a single generation through the insertion of genes from unrelated species like bacteria into the crop’s deoxyribonucleic acid (DNA) using recombinant DNA techniques. Over one hundred conventional crops have been genetically re-engineered to delay ripening; to increase resistance to pesticides, pathogens, or environmental conditions;¹⁹ to produce pharmaceuticals, antibiotics, and industrial enzymes;²⁰ and so on. Although there is no consensus on the benefits of GMO farming, many farmers have

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16. Philippe Demenet, “Can genetically modified organisms feed the world?” *UNESCO Courier* (2001), online: <http://www.unesco.org/courier/2001_09/uk/planet.htm>. See also Canadian Biotechnology Secretariat, *Canadian Trends in Biotechnology*, 2d ed. (March 2007), online: <<http://biportal.gc.ca/StatusreportE/Trendsenglish.pdf>>.
 17. A. Bryan Endres & Peter D. Goldsmith, “Alternative Business Strategies in Weak Intellectual Property Environments: A Law and Economics Analysis of the Agro-Biotechnology Firm’s Strategic Dilemma” (2007) 14 J. Intell. Prop. L. 237.
 18. Canola Council of Canada, “Canola Facts: Why Growers Choose GM Canola” (2005), online: <http://www.canola-council.org/facts_gmo.html>.
 19. Health Canada, “Approved Products: Novel Food Decisions,” online: <http://www.hc-sc.gc.ca/fn-an/gmf-agm/appro/index_e.html>.
 20. Gregory N. Mandel, “The Future of Biotechnology Litigation and Adjudication” (2005) 23 Pace Envtl. L. Rev. 83 at 87; PEW Initiative on Food and Biotechnology, *Harvest on the Horizon: Future Uses of Agricultural Biotechnology* (September 2001) at 19-27, 53-67, online: <http://www.pewtrusts.org/our_work_report_detail.aspx?id=33392>.

switched from conventionally bred seeds to GM varieties, perhaps induced by promises of increased profit margins.²¹

There is, however, substantial scientific agreement that the unconfined release of GMOs can cause permanent changes to the environment.²² At the most basic level, this change occurs when “newly introduced genetic material [moves] into environments or organisms beyond those intended” through a process known as gene drift.²³ Gene drift is caused by two mechanisms: seed dispersion and pollen-mediated gene flow.²⁴ In the former, seeds from GM plants are physically dispersed from their intended cultivation sites by numerous vectors, most notably wind, and “volunteer” themselves in neighbouring fields.²⁵ Pollen-mediated gene flow, on the other hand, occurs when pollen from one plant population fertilizes a related population of plants. Canola plants, for instance, are open-pollinating; this means that transgenic and conventional canola plants located sufficiently close to one another will exchange pollen by movement of wind and insects.²⁶ The embryos or seeds that result from this cross-pollination will contain the modified gene or, in the case of the transgenic Roundup Ready Canola, the GT73 gene. This next generation of GT73-modified plants can then go on to cross-pollinate with the remaining non-GM plants in the population until all plants within range carry the GT73 modification.

On the Canadian prairies, the environmental saturation of GM canola has reached the point that, according to growers and advocates, it is now virtually impossible to grow purely conventional or organic canola, and consequently,

21. Canola Council of Canada, *supra* note 18.

22. See Royal Society of Canada, *Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada* (Ottawa: RSC, 2001), online: <http://www.rsc.ca/index.php?page_id=119>.

23. Mandel, *supra* note 20 at 90.

24. Wendy Thai, “Transgenic Crops: The Good, the Bad, and the Laws” (2005) 6 *Minn. J.L. Sci. & Tech.* 877 at 881. See also Stephanie M. Bernhardt, “High Plains Drifting: Wind-Blown Seeds and the Intellectual Property Implications of the GMO Revolution” (2005) 4 *Nw. J. Tech. & Intell. Prop.* 1.

25. Royal Society of Canada, *supra* note 22 at 122-24.

26. Norman C. Ellstrand, Honor C. Prentice & James F. Hancock, “Gene Flow and Introgression from Domesticated Plants into their Wild Relatives” (1999) 30 *Ann. Rev. Ecology & Systematics* 539 at 541. See also David S. Bullock & Marion Desquilbet, “The economics of non-GMO segregation and identity preservation” (2002) 27 *Food Pol’y* 81 at 94.

many conventional seed distributors refuse to warrant their products as GMO-free.²⁷ In response, the federal government has produced a number of reports on the best ways to mitigate gene drift or “adventitious presence,” which it defines as “the unintended, *technically unavoidable* presence of genetically engineered material in an agri-food commodity.”²⁸ Such “technically unavoidable” risk of adventitious presence is the primary focus of this commentary.

A. ECONOMIC IMPACTS OF TRANSGENIC DRIFT

Since the introduction of transgenic products a decade ago, international markets for them have proven to be volatile, and consumer backlash has been common. Regulations vary, but the general trend appears to be towards stringent segregation due to increased consumer demand for GMO-free or at least GMO-labelled products.²⁹ In Japan, for example, premiums paid to suppliers of non-transgenic segregated soybeans on the Tokyo Grain Exchange varied between US\$18 and US\$39 per ton in 2001.³⁰ Some international and domestic marketplace standards require agri-food shipments to be virtually GMO-free.³¹ European Union legislation, for instance, limits imports to less than 1 per cent GMO content in non-GM agri-food and less than 5 per cent GMO content in other products.³² Existing regulations require agri-food

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27. Soil Association, *Seeds of Doubt: North American farmers' experiences of GM crops* by Hugh Warwick & Gundula Meziani (Bristol, UK: 2002), online: <[http://www.soilassociation.org/Web/SA/saweb.nsf/9f788a2d1160a9e580256a71002a3d2b/9ce8a24d75d3f65980256c370031a2d0/\\$FILE/SeedsOfDoubt.pdf](http://www.soilassociation.org/Web/SA/saweb.nsf/9f788a2d1160a9e580256a71002a3d2b/9ce8a24d75d3f65980256c370031a2d0/$FILE/SeedsOfDoubt.pdf)>. See also Royal Society of Canada, *supra* note 22 at 123.
 28. Canadian Food Inspection Agency, “Workshop on Adventitious Presence with emphasis on events approved in both Canada and its export markets” (4 February 2005), online: <<http://www.inspection.gc.ca/english/plaveg/bio/avepre/avepre.shtml>> [emphasis added].
 29. Ontario, Ministry of Agriculture, *Exporting Processed Foods Containing GM Ingredients to Europe* by Promar International (Final Report Prepared for Ontario Ministry of Agriculture, Food & Rural Affairs and Agriculture & Agri-food Canada, 2006), online: <http://ats.agr.gc.ca/europe/4328_e.pdf> at 15.
 30. Bullock & Desquilbet, *supra* note 26 at 94.
 31. *Ibid.* at 83.
 32. EC, *Regulation (EC) 1831/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC*, [2003] O.J. L 268/1. This regulation requires labelling of food or feed containing GM genes. See also European Food Safety Authority, “The EFSA GMO Risk Assessment” (2008), online: <http://www.efsa.europa.eu/EFSA/1178621706335/efsa_locale-1178620753812_GMO.htm>. See

imports to be tested upon their arrival in the destination country, and if they are found to contain prohibited GMOs, the shipment is rejected.³³ Contamination can result either from adventitious presence at harvest or through the subsequent co-mingling of GM and non-GM products during sorting, storage, or shipment. Where adventitious presence causes the contamination of non-GM harvests, farmers may find themselves in breach of their contractual obligations and/or without markets for their goods.

The scale of loss can be enormous. In 1999 and 2000, American farmers lost access to almost the entire US\$200 million EU corn export market due to the contamination of food corn stocks across the United States by the StarLink gene, a modification approved for feed corn only.³⁴ Non-GM farmers, unable to meet strict regulatory requirements, were forced to sell their produce on the feed market at a substantial discount.³⁵ Likewise, when StarLink corn, which is also banned in Japan, was found to be mixed with non-GM corn shipments from the United States, the result was “trade disruption and considerable political turmoil.”³⁶ US maize exports to Japan reportedly dropped by fifty-two million bushels in 2001.³⁷ The economic harm caused by GMO contamination is not limited to farmers who grow the organic or conventional analogues of GM crops. In 1999, EU authorities discovered a small percentage of transgenic pollen in Canadian honey shipments from western Canada, much of which is produced amongst GM canola fields. The regulators responded by banning Canadian honey from the European Union, seriously damaging a ten million dollar market.³⁸

also Agriculture and Agri-Food Canada, “Agri-Food Regional Profile - European Union: Food Safety Policies” (February 2006), online: <http://ats-sea.agr.gc.ca/europe/4148_e.htm>.

33. Thomas P. Redick & Christina G. Bernstein, “Nuisance Law and the Prevention of ‘Genetic Pollution’: Declining a Dinner Date with Damocles” (2000) 30 *Envtl. L. Rep. (Envt. L. Inst.)* 10328 at 10328-29.
34. Richard A. Repp, “Biotech Pollution: Assessing Liability for Genetically Modified Crop Production and Genetic Drift” (2000) 36 *Idaho L. Rev.* 585 at 593.
35. Amelia P. Nelson, “Legal Liability in the Wake of StarLink” (2002) 7 *Drake J. Agric. L.* 241 at 254-55.
36. Bullock & Desquilbet, *supra* note 26 at 83.
37. *Ibid.* See also US Department of Agriculture, Foreign Agriculture Service, *Japan: Grain and Feed Annual* by Shigeru Nozaki, GAIN Report #JA1026 (23 March 2001), online: <<http://www.fas.usda.gov/gainfiles/200103/65680107.pdf>>.
38. Stuart Smyth, George G. Khachatourians & Peter W.B. Phillips, “Liabilities and economics of transgenic crops” (2002) 20 *Nature Biotech.* 537.

Organic farmers must adhere to even stricter standards set by various organic certifiers that require, for instance, three to five years of organic field cultivation prior to certification.³⁹ A single incident of GMO contamination from pollen drift or seed dispersal can result in immediate loss of certification. Once revoked, certification may be hard to regain as transgenic seeds can lie dormant and viable in organic fields for several growing seasons.⁴⁰ Lost certification results in lost access to international and domestic organic markets which offer substantial premiums over conventional or GM products of the same grade.⁴¹ With the steady increase in the cultivation of transgenic crops in both Canada and the United States, the likelihood of adventitious GMO presence and co-mixing during grain storage, shipment, and sorting must also necessarily increase.⁴² Faced with the inevitable and near-permanent contamination of their fields with transgenic seeds, with the Sisyphean task of cleaning up GM canola, and with pressure from the majority of transgenic crop growers, many organic and conventional farmers have been left with no option but to sign the license agreements and sow the crops offered by the biotech corporations.⁴³

II. LEGAL RESPONSES TO TRANSGENIC DRIFT IN CANADA

Case law regarding the control of GMOs in Canada has developed primarily in the context of patent prosecutions and enforcement. The effect of these decisions has been to strengthen the patent rights of biotech IP owners while narrowly interpreting any concomitant obligations with respect to the harms caused by the release of animate products of biotechnology.⁴⁴ Likewise, while legislation exists to address some of the potential impacts of GMOs on human health and the environment, it has not been applied to prevent economic harms

39. See Canadian Organic Growers, *Gaining Ground: Making a Successful Transition to Organic Farming* (Ottawa: COG, 2005).

40. R.K. Downey, "Risk assessment of outcrossing of transgenic *Brassica*, with focus on *B. Rapa* and *B. Napus*" (Paper presented to the 10th International Rapeseed Congress, Canberra, Australia, 1999) cited in Canadian Food Inspection Agency, "Herbicide Resistance Management Issues In Plants With Novel Traits" (Discussion Paper presented to the CFIA, Plant Biosafety Office, 26 February 2002), online: <<http://www.inspection.gc.ca/english/plaveg/bio/resist/disdoce.shtml#licper>>.

41. Repp, *supra* note 34 at 594.

42. Royal Society of Canada, *supra* note 22 at 126.

43. Müller, *supra* note 7.

44. See de Beer, "Rights and Responsibilities," *supra* note 6; Ziff, *supra* note 10.

such as those faced by the plaintiffs in *Hoffman*.⁴⁵ In this section we examine the dilemma that has arisen from the Court's insistence on viewing contamination through the lens of patent law and Parliament's unwillingness to pass regulation for its control.

From *Pioneer Hi-Bred Ltd. v. Canada (Commissioner of Patents)*⁴⁶ in 1989 to *Schmeiser*⁴⁷ in 2004, the Supreme Court has maintained that transgenic life forms raise issues that are outside the scope of extant patent legislation and the authority of the courts. However, despite its numerous statements that the legal landscape is not prepared for patents on life, the Court has crafted a position that—although nominally upholding the Canadian common law prohibition against patenting higher life forms⁴⁸—offers IP owners a substantial stake in organisms that contain patented genes. Justice Binnie expressed this position in his dissent in *Harvard College* in the following manner:

[C]oncerns [about patented life forms] include the diversity of the gene pool and potential escape of genetically modified organisms into the environment. These are serious concerns which serious people would expect Parliament to address. The concerns, however, have little to do with the patent system. Patents or no patents, genetically engineered organisms have arrived in our midst. The genie is out of the bottle.⁴⁹

In *Schmeiser*, the GMO genie drifted from the fields of GMO farmers onto the land of conventional canola grower Percy Schmeiser and pitted IP rights against classical property rights. Monsanto, as the patent holder of the RoundUp Ready GT73 gene, sued Schmeiser for infringement when he collected and replanted seeds containing the patented gene.⁵⁰ A majority of the Court found that by virtue of possessing the seeds and plants containing Monsanto's invention, Schmeiser was guilty of illegal "use" of that invention under the *Patent Act*. In effect, this decision granted Monsanto "super-property right[s]"⁵¹ over its IP that extended to the higher life forms in which the IP was

45. See Beebe, *supra* note 9.

46. [1989] 1 S.C.R. 1623 at paras. 4-8, 12-14, aff'g [1987] 3 F.C. 8 (Fed. C.A.).

47. *Supra* note 15.

48. See e.g. *Re: Application of Abitibi Co.* (1982), 62 C.P.R. (2d) 81 (Patent Appeal Board).

49. *Harvard College v. Canada (Commissioner of Patents)*, [2002] 4 S.C.R. 45 at para. 103 [*Harvard College*].

50. *Schmeiser*, *supra* note 15.

51. De Beer, "Rights and Responsibilities," *supra* note 6 at 350.

contained, technically allowing it to lay claim to any adventitiously occurring glyphosate-resistant canola plant (and its progeny) in any farmer's field.⁵² As the Court bluntly concluded, "the issue is not property rights, but patent protection. Ownership is no defence to a breach of the *Patent Act*."⁵³

If it had been heard by the Supreme Court, the *Hoffman* action could have provided the proper bookend to *Schmeiser*, since it would have explicitly asked the Court to balance the property rights granted to Monsanto and Bayer for their GM canola with obligations to mitigate the negative effects of the exercise of those rights. In *Hoffman* the plaintiff class sought recourse in tort, alleging that under the various doctrines of negligence, nuisance, trespass, strict liability, and statutory liability, the biotech corporations had common law obligations to control the dispersion of their products and to prevent them from doing economic and environmental damage.

To succeed on an application for class certification, a plaintiff must establish (among other things) that the pleadings disclose a cause of action.⁵⁴ This is not a trial on the merits. The question for the judge is simply whether, accepting at face value the facts as pleaded, "there exists a plausible basis in principle and presumed fact for supposing the defendants could be held liable."⁵⁵ Nevertheless, the motions judge, Justice Smith, found it "plain and obvious" that none of the traditional common law tort actions could succeed. Negligence failed for the lack of merit in the allegation that GMO producers owed a duty either to warn client farmers of the necessity of containment measures or to ensure that transgenic seed did not spread into neighbouring non-GM fields.⁵⁶ Strict liability failed because the marketing and cultivation of GM canola did not meet the threshold for non-natural use as required in *Rylands v. Fletcher*.⁵⁷ The directness requirement for trespass was not met due to

52. *Schmeiser*, *supra* note 15 at paras. 107-11. See also Ziff, *supra* note 10; Jeremy de Beer, "Reconciling Property Rights in Plants" (2005) 8 J. World Intell. Prop. 5 [de Beer, "Reconciling Property"].

53. *Schmeiser*, *ibid.* at para. 96.

54. *Class Actions Act*, S.S. 2001, c. C-12.01, s. 6(a).

55. *Hoffman CA*, *supra* note 2 at para. 53.

56. *Hoffman*, *supra* note 2 at paras. 38, 88.

57. *Ibid.* at paras. 89-97.

the “intervening cause” represented by Monsanto’s client growers.⁵⁸ Finally, although she found some merit in the claim that *someone* was liable for harms caused by the nuisance caused by volunteer canola in organic growers’ fields,⁵⁹ Justice Smith ultimately rejected the contention that biotech patent holders were the proper defendants to such an action.

Other authors have dealt in detail with the merits of the *Hoffman* decision with respect to the proposed causes of action.⁶⁰ For our purposes, it is enough to observe that Justice Smith, in line with the Supreme Court in *Schmeiser*, considered this case within the watertight compartment of IP law, holding that in situations like this, the law of tort has no purchase on those who hold and exploit intellectual property. As Justice Binnie commented in *Harvard College*, “the genie is out of the bottle,”⁶¹ and the Saskatchewan courts in *Hoffman* were not prepared to use tort law to stuff it back in.

III. THE DOCTRINE OF CATTLE TRESPASS

Of special interest to us is Justice Smith’s rejection of the plaintiffs’ argument that gene trespass is analogous to “stray bull cases,” or the tort of cattle trespass.⁶² She dismissed the argument for these reasons:

The imposition of strict liability for the consequences of stray bulls is clearly a policy decision intended to place a heavy onus on the owners and possessors of bulls to keep these animals confined and under control. Although the plaintiff claims that the defendants “own” their GM canola gene, [it] can point to no similar public policy that would have, in effect, placed an onus on the defendants not to have commercially released GM canola, for the plaintiffs’ claim is that, once GM canola was commercially released, cross-pollination of conventional canola crops was natural and inevitable.⁶³

58. *Ibid.* at para. 133.

59. *Ibid.* at paras. 123-24.

60. See *e.g.* de Beer, “Rights and Responsibilities,” *supra* note 6; Martin Z.P. Olzynski “*Hoffman v. Monsanto Canada Inc.*: Looking for a Generous Approach to the Elephant in the Garden,” (2005) 16 J. Envtl. L. & Prac. 53; and Heather McLeod-Kilmurray, “*Hoffman v. Monsanto*: Courts, Class Actions, and Perceptions of the Problem of GM Drift” (2007) 27 Bull. Sci. Tech. & Soc’y 188.

61. *Harvard College*, *supra* note 49 at para. 103.

62. The plaintiffs’ argument is summarized in *Hoffman*, *supra* note 2 at paras. 129-30.

63. *Ibid.* at para. 132.

Put another way, the motions judge asserted that the defendants' broad ownership rights imported no concomitant legal obligations vis-à-vis those who might be harmed by genetically modified canola. This effectively allowed biotech patent holders to tread with impunity upon the classic property interests of non-GM growers. We believe that the court's interpretation in *Hoffman* stands directly in opposition to the centuries-old principles of distributive justice embodied in the doctrine of cattle trespass.

A. ELEMENTS AND PRINCIPLES

Beginning shortly after the year 1066, local courts in England awarded damages to landowners who suffered losses at the hooves and teeth of their neighbours' animals.⁶⁴ According to Fowler Harper, the rationale was based on the identification of the possessor with the wrongful conduct of his or her animal. "Where my beasts *of their own wrong*," says an anonymous case of the reign of Henry VII, '*without my will and knowledge* break into another's close, I shall be punished, for I am the trespasser with my beasts.'⁶⁵

By 1353 the court of King's Bench had extended the writ of trespass to cover circumstances where, through no determinable fault by the defendant, his livestock escaped onto the plaintiff's land. While some may argue that this writ is outdated, Glanville Williams, painstakingly tracing its history, concludes that cattle trespass is "not, as has frequently been thought, a 'stubborn archaism,' but a perfectly deliberate—although anomalous—extension designed to remedy a gap in the law."⁶⁶ Many common law jurisdictions have subsequently codified it, indicating that the problem remains cogent enough to attract the continued attention of lawmakers. Manitoba, for instance, imported the tort into statute in 1998 and broadened its scope by imposing joint and several liability on all those who held property in an offending animal, in order to reflect modern realities of livestock ownership.⁶⁷

64. Glanville L. Williams, *Liability for Animals: An Account of the Development and Present Law of Tortious Liability for Animals and the Duty to Fence, in Great Britain, Northern Ireland and the Common-law Dominions* (Cambridge: Cambridge University Press, 1939) at 127-28.

65. Fowler V. Harper, "Liability in Anglo-American Law for Damage Done by Chattels" (1938) 2 U.T.L.J. 280 at 284-85 [emphasis added, footnotes omitted].

66. Williams, *supra* note 64 at 133 [footnotes omitted].

67. *Animal Liability Act*, C.C.S.M. 1998; see also Manitoba Law Reform Commission, *Tort Liability for Animals* (Winnipeg: Queen's Printer, 1992) at 35 [Manitoba LRC].

In the frequently-cited case of *Cox v. Burbridge*, Justice Williams states the law clearly:

If I am the owner of an animal in which by law the right of property can exist, I am bound to take care that it does not stray into the land of my neighbor; and I am liable for any trespass it may commit, and for the ordinary consequences of that trespass. Whether or not the escape of the animal is due to my negligence, is altogether immaterial.⁶⁸

This definition was adopted by a Canadian appellate court in *Whalley v. Vandergrand*⁶⁹ and cited as recently as 1988 in *Cadman v. Saskatchewan (Department of Parks and Renewable Resources)*.⁷⁰ The doctrine imposes strict liability on an animal's owner when that animal does damage to the land, chattels, or person of a neighbour. The animals in question are tame creatures that are generally considered harmless to humans and are commonly resident on farms: cows, horses, fowl, sheep, goats, and so on. This category does not normally include inherently dangerous wild animals or dogs.⁷¹ However, the category is not closed, and an Australian court in *Doyle v. Vance* stated that "[t]he Court is at liberty, within reasonable limits, to meet the changed circumstances of the present day" by subjecting new creatures to the law.⁷² Thus, in 1988, a Canadian appellate court was prepared to accept the addition of deer to the list of animals to which the tort applies.⁷³

This category of animal is founded on two principles. First, these animals were commonly kept for food or profit by landowners. Second, and more importantly, as Sir Frederick Pollock explained, "it is in the nature of cattle and other live stock to stray if not kept in, and to do damage if they stray."⁷⁴ The common law characterizes this "nature" as a matter of common sense, as Chief Justice Erle expressed in *Cox*: "[t]he owner of a horse must be *taken to know*

68. (1863), 13 C.B. (N.S.) 430 at 438; 143 E.R. 171 at 174 [*Cox*].

69. (1918), [1919] 1 W.W.R. 89 (Sask. C.A.) at 92 [*Whalley*].

70. [1988] 51 D.L.R. (4th) 52 (Sask. Q.B.) [*Cadman*].

71. See *Cowles v. Balac* [2004] 135 A.C.W.S. (3d) 49 (Ont. Sup. Ct. J.). A *sui generis* legal tradition based in negligence had been developed for domestic bees, which might otherwise meet the criteria for cattle trespass. See Harry R. Trusler, "The Law of Bees" (1926-27) 5 N.C. L. Rev. 46.

72. (1880), 6 V.L.R., L. 87 at 92 (trespass by dog).

73. *Cadman*, *supra* note 70.

74. Sir Frederick Pollock, *The Law of Torts*, 13th ed. (London: 1929) at 514, as cited in Williams, *supra* note 64 at 127.

that the animal will stray if not properly secured, and may find its way into his neighbour's corn or pasture."⁷⁵ Furthermore, courts have found that these kinds of animals, given the opportunity, will by their nature inevitably stray and do damage if not properly contained. A Canadian court held that an owner "is presumed to know that if his bull strays into his neighbour's (the plaintiff's) pasture in which the plaintiff's heifers are, *it is in the ordinary course of nature* that the heifers will be impregnated by the bull."⁷⁶ Other instances of "natural inevitability" include where one horse kicks and damages another,⁷⁷ where trespassing sheep transfer disease to a neighbour's flock,⁷⁸ and, most commonly, where livestock trample and eat standing crops.⁷⁹ This inherent tendency or inevitability animates the theory of liability underlying the tort of cattle trespass.

With respect to ownership, the rule applies primarily to keepers of animals—those who exercise possession and control—rather than owners *per se*.⁸⁰ As we will explain below, this distinction has relevance for our argument, since there are at least two levels of "ownership" pertaining to GM canola seeds, namely, those of the patent owners and manufacturers and those of the farmer who grows them. In *Cadman*, the Saskatchewan Court of Queen's Bench outlined the possession principle: "before liability in trespass attaches, it must be shown that the [defendant] has in fact reduced such an animal into its possession, or, exercised some control over it, such that it can truly be considered the 'keeper' of the animal."⁸¹

Cadman raises a threshold question, since it is not clear from the judgment what degree of control is necessary to import liability. Glanville Williams suggests that "[t]he possessor [of animals] is the person who should in fairness be liable, because it is he who ... *can take steps to prevent their escape*."⁸² As a

75. *Cox*, *supra* note 68 at 173 [emphasis added].

76. *Popowich v. Letweniuk*, [1972] 1 W.W.R. 641 (Sask. Dist. Ct.) [emphasis added]; see also *McLean v. Brett*, [1919] 49 D.L.R. 162 (Alta. S.C.) [*McLean*] (plaintiff's heifer serviced by trespassing bull).

77. *Ellis v. Loftus Iron Co.* (1874), L.R. 10 C.P. 10 at 12 [*Ellis*].

78. *Theyer v. Purnell*, [1918] 2 K.B. 333 [*Theyer*].

79. *Acker v. Kerr*, [1973] 42 D.L.R. (3d) 514 (Ont. Co. Ct.).

80. Williams, *supra* note 64 at 176-77. See also Harper, *supra* note 65 at 282.

81. *Cadman*, *supra* note 70.

82. Williams, *supra* note 64 at 176-77 [emphasis added].

basic principle, then, liability attaches to one who a) asserts control over the animal and b) is in the best position to prevent its escape, based upon his or her knowledge of its instincts and tendencies.

With respect to remediable damages, the common law of cattle trespass is not settled on what damages will be considered too remote to merit compensation. One line of cases suggests that compensation will be limited to “such damage as it is ordinarily in [the animal’s] nature to commit... [that is,] the reasonable and natural consequences of the animal escaping.”⁸³ This framework appears to import a foreseeability test and has at times been used to deny compensation for personal injuries to plaintiffs when farm animals attack, on the basis that such damages are too remote.⁸⁴ However, where damage to farmland, crops, or chattels is concerned, courts have been more generous. In *Theyer*,⁸⁵ for example, a defendant’s diseased sheep trespassed onto a neighbour’s property and infected his herd. Whether or not this precise concatenation of events was foreseeable, the court found that the end result was not too remote and allowed the plaintiff neighbour to recover for the reduced value of the diseased sheep. More significantly, given our present concerns with the potential for genetic contamination of conventional or organic crops, a well-established line of cases permits recovery for the loss of value to heifers that have been serviced by non-purebred bulls. Recovery has also been extended to the reduced value of genetically inferior calves and even to the lost future fertility of cows.⁸⁶ Finally, as in the doctrine of common trespass, the tortious incursion need only be minimal to meet the threshold, for example, when one horse kicks another through the bars of a fence.⁸⁷ Such a technical trespass usually merits only nominal damages but has supported claims for injunctive relief.

It should be noted here that, as in the case of common trespass, the plaintiff class in cattle trespass is apparently limited to the occupiers of land upon which the offending livestock intrude. This protects against indeterminate liability,

83. *Halsbury’s Laws of England*, vol. 1 at 375-76, as cited in *Whalley*, *supra* note 69 at 92.

84. See *e.g. Hatton v. Morton*, [1921] 61 D.L.R. 365 (Alta. S.C.) [*Hatton*] (plaintiff’s own negligence is responsible for attack by steer).

85. *Theyer*, *supra* note 78.

86. *Cousins v. Greaves*, [1920] 54 D.L.R. 650 (Sask. C.A.); *McLean*, *supra* note 76 at para. 23 (damages awarded for “loss of a prospective calf which was anticipated as a result of a breeding intended but wrongfully prevented”).

87. *Ellis*, *supra* note 77.

especially in the case of claims for pure economic harm. For instance, a party who has contracted to purchase wheat which is then eaten by a trespassing horse would not be able to recover from the owners of the horse.

The final aspect of the tort of cattle trespass which concerns us here is its imposition of strict liability on the keepers of trespassing animals. A few courts have struggled with this, purporting to find as evidence a defendant's negligence or other fault upon which to hang the cloak of liability.⁸⁸ However, the majority of cases have demonstrated, as Justice Williams stated in *Cox*, that fault remains "immaterial."⁸⁹ The reasons for this merit examination. At the core of cattle trespass is the tort of trespass to land, which protects the "sacred and incommunicable"⁹⁰ inviolability of one person's land against virtually any intrusion by another. Trespass to land is actionable per se and may be committed by a defendant directly depositing or projecting chattels onto a plaintiff's land. However, it requires intent, in the sense that a defendant may trespass if he or she intends to walk through the woods and inadvertently crosses a plaintiff's land, but will not be liable if, for example, he or she is—or his or her chattels are—forced onto a plaintiff's land against his or her will. This exposes what Glanville Williams refers to as a "gap in the law"⁹¹ uniquely with respect to livestock, since animals tend to act of their own instinct in leaping fences and pillaging cornfields. A defendant might thus be able to avoid trespass liability by characterizing his or her animals' actions as either indirect or involuntary. To bridge this gap, the English courts extended the doctrine of trespass to assign liability to livestock owners without intent or fault.

This special treatment of animals is justified by the principle of distributive justice: the fair allocation of risk combined with an incentive for livestock owners to take due care to contain their animals. This principle is seen in the 1704 case of *Tenant v. Goldwin*:

Every one must so use his own, as not to do damage to another. And as every man is bound so to look to his cattle, as to keep them out of his neighbour's ground, that so

88. *Dobrolowski v. Danyluk*, [1921] 2 W.W.R. 729 at para. 14.

89. *Cox*, *supra* note 68 at 174.

90. *Entick v. Carrington* (1765), 19 State Tr. 1029 (C.P.), as cited in Robert M. Solomon, R.W. Kostal & Mitchell McInnes, eds., *Cases and Materials on the Law of Torts*, 6th ed. (Scarborough: Thomson Carswell, 2003) at 123.

91. Williams, *supra* note 64 at 133.

he may receive no damage; so he must keep in the filth of his house of office, that it may not flow in upon and damnify his neighbour.⁹²

This is more than simply “do unto others”—it implies that someone who derives a benefit from creating risk of harm to a neighbour ought to bear that risk. As recently as 1998, the Manitoba Law Reform Commission summarized this principle in the following way:

If animals are inherently unpredictable, it seems clear that the person who chooses to keep an animal has created a risk ... [which] should amount to an assumption of legal responsibility for the animal's actions ... [T]his assumption of responsibility includes an acceptance of liability, *even when the harm could not be foreseen or prevented*. In this way the costs of the risks posed by animals are borne by those who gain the benefit of keeping animals.⁹³

In line with this, keepers of animals are deemed to be in the best position to control the risks they create. No onus lies upon the neighbour to protect his or her property “from the depredations of wandering cattle”⁹⁴ or other livestock; the responsibility is entirely the keeper's, who may choose either to pay up front to contain his or her animals or to pay later to compensate a plaintiff. This distribution of risks must in the end be seen as a sensible way to balance property rights in animals with the responsibility to prevent or to compensate for harm flowing from the exercise of those rights.

Similar considerations inspired the English courts' development of the doctrine of strict liability for the escape of “mischievous” or dangerous substances in *Rylands v. Fletcher*.⁹⁵ Lord Cranworth, upholding the lower court judgment, explained that “the question in general is not whether the Defendant has acted with due care and caution, but whether his acts have occasioned the damage.”⁹⁶ Thus, when one, “however innocently,” causes damage to another, it is only just that he or she suffer the consequences—*sic uti suo ut non laedat alienum*.⁹⁷

92. *Ibid.* at 134 [footnote omitted].

93. Manitoba LRC, *supra* note 67 at 35 [emphasis added].

94. *Watt v. Drysdale* [1907] 6 W.L.R. 234 (Man. C.A.) at 236.

95. A.J. Waite, “Deconstructing the Rule in *Rylands v. Fletcher*” (2006) 18 J. Envtl. L. 423 at 428.

96. Cited in *ibid.* at 429 [emphasis added, footnotes omitted].

97. *Ibid.*

Significantly, neither court suggested that the rule in *Rylands* should supersede the tort of cattle trespass. Whereas *Rylands* is concerned with dangerous inanimate objects or non-natural uses of land, cattle trespass addresses commonplace and generally safe animate organisms that sometimes cause harm. Indeed, courts rarely characterized livestock as dangerous in the cattle trespass cases, preferring to understand them as naturally destructive in fairly limited circumstances.⁹⁸ This distinction is relevant to the tort of cattle trespass here (as was apparent in the decision in *Hoffman*⁹⁹); though the characterization of GMOs as dangerous per se may be a difficult proposition for the courts, the notion that bioengineered organisms can cause particular and limited kinds of harm is well accepted science.

In conclusion, we believe that the tort of cattle trespass can be distilled to the following principles:

- 1) Living chattels, because of their self-willed and self-replicating nature, and their unique tendency to escape the control of their owners and to cause harm, require special consideration by the law.
- 2) Those who exercise control over, and derive a benefit from, living chattels, which by their nature or instinct have a propensity to escape, create a risk, and are bound to prevent that risk from ripening into harm.
- 3) Whenever such organisms do in fact escape and trespass on the property of another, the keeper should compensate the victim on a strict liability basis for any ensuing damage to land or other property.

B. APPLYING CATTLE TRESPASS TO GENE DRIFT: ANALOGIZING GENES TO COWS

To demonstrate that cattle trespass offers an appropriate legal remedy for the damages caused by the adventitious presence of GMOs, we need to surmount the two roadblocks identified in the introduction. The first is whether genes can be considered analogous to cows, and the second is whether biotech companies can be held liable under this cause of action.

Applying the doctrine of cattle trespass to adventitious presence is appropriate because patented genes and cells share with domestic livestock the tendency to escape the control of their owners, to enter neighbouring property,

98. See e.g. *Hatton*, *supra* note 84.

99. *Hoffman*, *supra* note 2 at paras. 22, 71, and 97.

to “impulsively self-propagat[e],”¹⁰⁰ and to cause consequential harm. In the same way that the common law recognized these characteristics in livestock, the Supreme Court has recognized them in bioengineered organisms.

On the most basic level, bioengineered genes are animate because they are contained in a plant’s pollen and seeds, allowing them to travel and propagate. When the Court in *Schmeiser* held that “patented genes and cells are not merely a ‘part’ of the plant; rather, the patented genes are present throughout the genetically modified plant and the patented cells compose its entire physical structure,”¹⁰¹ it accepted—in line with Monsanto’s arguments—that genes are analogous to, or at least inseparable from, animate organisms. One might object that the patented modifications to DNA should be viewed in isolation from the pollen, seeds, and plants in which they are contained. But Monsanto did not sell, license, or seek to control the use of its bioengineered gene in isolation from its living hosts. Instead, the company released, marketed, and aggressively claimed continuing ownership of seeds and plants containing the gene that were capable of growth, reproduction, cross-pollination, and consequently of the type of damage complained of by the plaintiffs in *Hoffman*. It was to these living seeds and plants, not just the genetic information contained within them, that the Supreme Court extended legal protection on Monsanto’s behalf in *Schmeiser*. Moreover, the Court has noted more than once that genetically modified organisms might “escape,” and that such escapes could have serious consequences.¹⁰²

Since 1999, when the *Canadian Environmental Protection Act*¹⁰³ (CEPA) was rewritten to include a section pertaining specifically to “Animate Products of Biotechnology,” federal regulators have also favoured an approach that understands modified genetic information in the context of its living host rather than as an IP abstraction. The Act and its accompanying regulations make creators and importers of genetically modified organisms responsible for providing the Minister with detailed information about the potential environmental effects of these genetic differences as they are expressed in a living organism.¹⁰⁴ It also recognizes that bioengineered organisms possess

100. De Beer, “Rights and Responsibilities,” *supra* note 6 at 343.

101. *Schmeiser*, *supra* note 15 at para. 42.

102. See e.g. *Harvard College*, *supra* note 49 at para. 103.

103. *Canadian Environmental Protection Act*, S.C. 1999, c.33 [CEPA].

104. *Ibid.*, Part 6.

special characteristics not shared with inanimate substances and thus require special treatment by the law. The accompanying “Guide to Understanding” states that “because [bioengineered] organisms are capable of reproduction,” traditional toxic substances’ thresholds and limits are inappropriate.¹⁰⁵ Likewise, regulations that add teeth to the Act explicitly advert to the likelihood of bioengineered organisms escaping the control of their owners both before and after being released onto the market. For instance, the 2005 *New Substance Notification Regulations (Organisms)* require the manufacturer or importer of an organism to advise the Minister as to the organism’s reproductive biology, including species with which the organism could interbreed in Canada; its potential for adverse ecological effects, including pathogenicity, toxicity, and invasiveness; and the likelihood of its escape.¹⁰⁶ These latter requirements show that Environment Canada recognizes what Saskatchewan organic farmers, Tennessee corn growers, and the owners of cattle and bulls have known for some time: that biological organisms, including bioengineered ones, following their hardwired drive for self-replication and survival, tend to evade the control of their human keepers and have the potential to do damage.

The natural drive of animals to eat, reproduce, and wander necessitated the expansion of the law of trespass to accommodate the actions of livestock independent from their owners. Courts recognized the reality that living creatures do not respect property lines. As we established earlier, this applies equally to GM genes, since plant pollen and seeds contain a copy of the parent plant’s DNA (including any inserted genes) and can travel tremendous distances. Like stray bulls impregnating heifers, GM plants can cross-pollinate with members of the same or closely related species, transferring their genes and potentially damaging the commercial value of the recipient organism. Thus, the GM gene can move from one plant population to another, much in the same way that genetic characteristics of scrub bulls transfer to the calves of purebred heifers, or even the way that sheep scab (as in *Theyer*) may transfer from one flock to another.

The Canadian Biotechnology Advisory Committee specifically referred to these similarities between flora and fauna in its survey of the risks and benefits

105. Environment Canada, “Guide to Understanding the *Canadian Environmental Protection Act, 1999*” (10 December 2004), Part 7 (Animate Products of Biotechnology), online: <http://www.ec.gc.ca/CEPARRegistry/the_act/guide04/s7.cfm> [“Guide to Understanding”].

106. *New Substances Notification Regulations (Organisms)*, S.O.R./2005-248.

of patenting bioengineered organisms. The survey suggested that because plants and animals can reproduce on their own, regardless of their owners' control or knowledge, "[i]t is therefore foreseeable that adventitious reproduction of patented seeds, genetic material and animals will occur."¹⁰⁷

Therefore, from a legal, logical, and scientific perspective, very little distinguishes bioengineered farm plants from farm animals. We suggest that whatever residual differences exist should not immunize the owners of transgenic organisms from the application of the principles of distributive justice that are upheld by the tort of cattle trespass.

C. APPLYING CATTLE TRESPASS TO GENE DRIFT: FINDING THE PROPER DEFENDANT

This leaves us with the difficulty of naming a defendant. The tort of cattle trespass places liability on the possessor of a malfeasant animal. The possessor has been characterized as one who has the intent and means to prevent the organism's escape, as well as the knowledge of the risks associated with keeping it. This points, in our view, to the biotech companies. In *Hoffman*, however, Justice Smith was incredulous of the plaintiff's claim that biotech companies are the proper target of lawsuits to recover losses caused by trespassing GMOs:

In my respectful view it is not reasonably arguable that ownership of a patent in the modified gene and enforcement of patent rights through "technology use agreements" are sufficient to constitute "ownership" or "control" ... after the seed is sold to farmers and cultivated by them... . The "control" asserted by the technology user agreement is not control of when and how GM canola is cultivated or harvested, but only control, or restriction, of the right to save and use seed from the GM crop.¹⁰⁸

For Justice Smith, the risks created by the dissemination of GM seeds ought to be borne either by the farmers who cultivate them or by those who suffer harm through their cultivation. Unsurprisingly, the biotech companies agree. In the aftermath of the *Hoffman* and StarLink controversies, Monsanto has begun to "educate" its growers on strategies to mitigate pollen drift through the introduction of the *Technology Use Guide* (TUG). The TUG explains the "potential economic impact of the introduction of biotech products on other

107. Canadian Biotechnology Advisory Committee, "Patenting Higher Life Forms and Related Issues" (June 2002), online: <<http://strategis.ic.gc.ca/epic/site/cbac-cccb.nsf/en/ah00188e.html>> [footnote omitted].

108. *Hoffman*, *supra* note 2 at para. 157.

[conventional/organic] systems,”¹⁰⁹ acknowledging the possible loss of markets due to GM contamination of non-GM crops. Despite admitting that the co-existence of such systems depends on “mutual respect for each system,” Monsanto states that “[t]he responsibility for implementing practices to satisfy specific marketing standards or certifications lies with that *grower* who is growing a crop to satisfy a particular market.”¹¹⁰ For Monsanto, the non-GM farmer bears the responsibility to ensure that his or her land remains free from trespassing GMOs.

The reasoning of both the Saskatchewan court and the biotech corporations contradicts the Supreme Court’s decision in *Schmeiser*, the actions of the biotech corporations themselves, the letter and spirit of environmental and food safety legislation, and principles of distributive justice that assign liability to one who creates risks for his or her own benefit. In our analysis, biotech companies meet the threshold of possession set by cattle trespass jurisprudence and as such are the proper defendants in cases of transgenic drift.

The *Schmeiser* case offers compelling reasons why Monsanto and other GMO patent holders ought to be hoist by their own petard in cases of transgenic drift. In essence, by interpreting the *Patent Act* extremely broadly, the courts granted Monsanto most of the sticks in the proverbial property rights bundle with respect to transgenic canola seeds and plants containing their patented gene. The Trial Division concluded that, while “the seed or plant containing the plaintiffs’ patented gene and cell may be owned in a legal sense by the farmer ... that ‘owner’s’ interest ... *is subject to the plaintiffs’ patent right.*”¹¹¹ Added the Federal Court of Appeal, “the rights of ownership of property are compromised to the extent required to protect the patent holder’s statutory monopoly.”¹¹²

In short, although Percy Schmeiser may have had physical possession of the GM canola plants he found growing adventitiously on his land, this availed him nothing since he was precluded from saving, sowing, spraying, selling, or

109. Monsanto, *Technology Use Guide* (2008) at 7, online: http://www.monsanto.com/monsanto/ag_products/pdf/stewardship/2008tug.pdf.

110. *Ibid.* [emphasis added].

111. *Monsanto Canada Inc. v. Schmeiser*, [2001] 104 A.C.W.S. (3d) 567 (Fed. Ct. J.) at para. 91 [emphasis added] [*Schmeiser* FC].

112. *Monsanto Canada Inc. v. Schmeiser*, [2002] 218 D.L.R. (4th) 31 (Fed. C.A.) at para. 51.

sharing the canola. Indeed, as de Beer and Ziff have each shown, the control given to Monsanto over 'its' transgenic seeds and plants was held to trump even classic property rights under the doctrine of distraintment and the eons-old traditional right of farmers to save seeds for future use.¹¹³

The holdings of the three courts in *Schmeiser* put to rest any suggestion that Monsanto *et al.* are not "possessors" in the sense intended by the doctrine of cattle trespass; and Monsanto's own actions and the conditions under which its products are distributed strengthen this contention further. The courts in *Schmeiser* took judicial notice of Monsanto's "determined efforts" to control its genes, seeds, and plants, including protection from those "who were believed to be growing Roundup Ready canola without authorization."¹¹⁴

We note that Monsanto—not its client farmers—took the responsibility to round up and remove trespassing plants containing the patented genes, in much the same way that the owners of livestock commonly collect their escaped animals. Monsanto also required all farmers wishing to use its canola to enter into a Technology Use Agreement (TUA) which bound the farmer to purchase the seed only from a licensed distributor; to use the seed for only one generation; to sell the crop to a purchaser licensed by Monsanto; to permit Monsanto to inspect the fields of the contracting farmer and take samples to verify compliance with the TUA; to inform Monsanto of the coordinates of all cultivated RoundUp Ready canola; and to pay Monsanto a licensing fee of fifteen dollars per acre.¹¹⁵

Clearly, and contrary to Justice Smith's holding in *Hoffman*, Monsanto *does* exercise control over whether, where, and how its products are cultivated and reproduced, substantially removing such control from its client farmers. Indeed, the TUAs have been criticized as a form of serfdom wherein farmers provide only labour, land, and license fees to a biotech demesne lord, who oversees and derives the bulk of the benefit from the whole process.¹¹⁶ Whether or not this is the case, it is abundantly clear that Monsanto intends that its

113. De Beer, "Reconciling Property," *supra* note 52 at 11-13; Ziff, *supra* note 10.

114. *Schmeiser* FC, *supra* note 111 at para. 96.

115. See Nicole C. Nachtigal, "A Modern David and Goliath Farmer v. Monsanto: Advising a Grower on the Monsanto Technology Agreement 2001," (2001-02) 6 Great Plains Nat. Resources J. 50.

116. Müller, *supra* note 7.

transgenic products and their progeny, in their animate form, should remain firmly under its control at every step of their lifespan. This offers solid justification for assigning the company—rather than its client farmers—ownership status for the purpose of tort liability in cattle trespass.

Earlier, we observed that an owner of an animal is presumed to have the most relevant knowledge of the risks posed by his or her animal. For the most part, courts in cattle trespass cases accept that a possessor of livestock understands the propensity of his or her animals to escape and do harm. With respect to GMOs, the federal Plant Biosafety Office (PBO) requires that inventors and fabricators of bioengineered organisms have as much or more knowledge of the characteristics of their products than any rancher has of his or her livestock. In seeking approval from the PBO, an applicant must provide extensive information on the product's potential for genetic exchange with other species and with non-transgenic organisms of the same species. In the case of GT73 canola, the PBO decision authorizing the release of Roundup Ready canola is clear that Monsanto was aware that plants containing the gene have the ability to cross-pollinate with conventional canola and possibly with other plants.¹¹⁷

CEPA also construes the manufacturers of animate products of biotechnology to be the “owners” for the purpose of managing environmental risks because they are in the best position to know the risks posed by their products.¹¹⁸ The Act further states that manufacturers have an ongoing obligation to provide new information to the Minister whenever the organism is put to a “significant new activity” as defined by regulation.¹¹⁹ While it is not determinative here, this legislation clearly implies legal responsibilities for biotech corporations as the owners and exploiters of bioengineered organisms derived from their IP.

To summarize, the nature of the control exerted and the extent of legal protection enjoyed by corporations like Monsanto over their biotech IP meet the threshold of possession required for the tort of cattle trespass. The release of

117. Canadian Food Inspection Agency, Plant Health and Production Division, “Decision Document DD95-02: Determination of Environmental Safety of Monsanto Canada Inc.’s Roundup Herbicide-Tolerant *Brassica napus* Canola Line GT73” (2001), online: <<http://www.inspection.gc.ca/english/plaveg/bio/dd/dd9502e.shtml>>.

118. *CEPA*, *supra* note 103 at s. 106(1)(a).

119. *Ibid.*, ss. 106(3), (4).

GMOs onto the market and into the environment is analogous to releasing a herd of cattle into a fenced field. The owner in each instance is aware that the creatures may break loose and cause damage of a predictable nature. Indeed, releasing GMOs onto the market is more like turning cattle loose in a pasture with broken fences: escape is inevitable. Owners can likewise determine the costs of reducing the risk of that damage and weigh those costs against the likelihood of having to compensate their neighbours for damages. To the extent that risk reduction (deterrence) and/or reasonable compensation are achieved, tort law may fulfill at least one of its traditional purposes of distributive justice.

D. WHY CATTLE TRESPASS?

There are a number of other reasons why cattle trespass is an appropriate action for economic harms caused by GMO contamination. Some commentators have suggested that negligence offers a less anachronistic approach, and a US court in the StarLink litigation held that a claim in negligence may have merit.¹²⁰ However, information campaigns like Monsanto's TUG may allow biotech companies to raise a shield of due diligence, thereby deflecting liability for transgenic drift to their client farmers. This approach fails to account for the fact that GMOs, once released onto the market and widely cultivated, will inevitably escape, regardless of the measures taken by client farmers. In principle, the cattle trespass jurisprudence establishes that where a living creature will, by its nature, inevitably escape and do damage, the owner is strictly liable.

This tort would also rebalance the distribution of risk between IP owners, who benefit from their monopoly over the plants containing their patented gene, and those who may suffer harm from transgenic drift. Anyone who creates a risk by keeping organisms should be liable when that risk ripens into harm to his or her neighbours. Property rights are thus balanced by property responsibilities, with the beneficial side effect (in the case of GMOs) of increasing accountability for technological innovation.¹²¹

Other strategic advantages are also apparent. In certain cases, superficially similar to *Hoffman*, where an intrusion appears to have occurred via natural

120. *Marvin Kramer et al. v. Aventis CropScience USA Holding Inc., et al.*, 212 F. Supp. 2d 828 (US Dist. Ct., N.D. Ill. 2002) [Motion to Dismiss].

121. De Beer, "Rights and Responsibilities," *supra* note 6; Müller, *supra* note 7.

forces that are causally distant from the defendant's acts (such as oil, ash, or pesticides carried to the plaintiff's land by wind or water), courts have sometimes been unwilling to find trespass for lack of directness.¹²² Cattle trespass emerged in part to address this issue, since the wandering of livestock tends to occur according to the instincts of the animal, separate from, or in spite of, the actions of its owners. Under this doctrine, the organism's intervening agency is not a bar to recovery but rather the basis for liability.

Finally, one of the chief advantages of cattle trespass is that it relieves the court from the politically charged task of placing the merits of GMOs themselves on trial. As Kathryn Garforth has noted, given the uncertainty about the dangers of GM foods and crops, the judiciary will be "very reluctant to engage in a scientific rather than a legal exercise and [to] replace government assessment of the canola varieties with its own."¹²³ Under the doctrine of cattle trespass, the plaintiff's burden is limited to showing on the balance of probabilities that the offending organism is harmful because of its inbuilt propensity to escape from the control of its owners and do scientifically verifiable kinds of damage. By making such a finding, the court can justly allocate risk while avoiding highly politicized questions about the safety of transgenic organisms, which can properly be left to the legislature.

IV. CONCLUSIONS AND EQUIVOCATIONS

Reinvigorated, the doctrine of cattle trespass applies elegantly to a twenty-first century problem. In *Harrison v. Carswell*, a case that likewise considered the reinterpretation of longstanding rules of property and trespass to meet new conditions, Justice Dickson (as he was then) wrote for the majority of the Supreme Court:

The duty of the Court, as I envisage it, is to proceed in the discharge of its adjudicative function in a reasoned way from principled decision and established

122. See *Hoffman*, *supra* note 2 at paras. 130-33. *Southport Corporation v. Esso Petroleum Co.*, [1954] 2 All E.R. 561 (C.A.); *contra Kerr et al. v. Revelstoke Building Materials Ltd.* (1976), 71 D.L.R. (3d) 134 (Alta S.C.).

123. Kathryn Garforth, "When Worlds Collide: Biotechnology Meets Organic Farming in *Hoffman v. Monsanto*," Case Law Analysis, (2006) 18 J. Envtl. L. 459 at 469. Similarly, the court is constrained by issues of justiciability and will generally decline to rule on issues that are of a purely sociological, political, or hypothetical nature.

concepts. I do not for a moment doubt the power of the Court to act creatively—it has done so on countless occasions; but manifestly one must ask—what are the limits of the judicial function? ... Holmes J. said in *Southern Pacific Co. v. Jensen* [citation omitted]: “I recognize without hesitation that judges do and must legislate, but they can do it only interstitially; they are confined from molar to molecular actions.”¹²⁴

An extension of the common law doctrine of cattle trespass to bioengineered organisms represents just such a creative yet principled and interstitial approach. We are faced here with harm—economic loss caused by GMO trespass—that mirrors the harms considered by fourteenth-century English judges. Acting creatively with an eye toward fairness, judges moulded the law of trespass to address the problem of escaping animals in ways that were consonant with broader principles of tort law and distributive justice. In its current form, the tort of cattle trespass stands ready to mitigate the harms caused by new escaping creatures in a new millennium.

In concluding, we concede that tort law is no panacea for this or any social dilemma, and that this use of cattle trespass is limited in application. First, the cause of action evolved from the need to manage relations between agrarian neighbours on a relatively small scale and to provide redress when the actions (or animals) of one neighbour trod upon the rights (or crops) of another. It remains to be seen whether it can support the kind of David and Goliath challenges exemplified by *Hoffman*, or Goliath and Goliath contests like the class action with respect to StarLink corn. Furthermore, there are indications in the scientific literature that the global dispersal of—and investment in—transgenic organisms has reached a critical mass, such that a few civil actions by organic farmers will do little to prevent or reverse the environmental and economic changes already well underway. Presented with this apparent inexorability, courts may be hesitant to employ an uncommon though well established doctrine to put the biotech genie back in its bottle.

It is also apparent that even widespread application of the proposed doctrine cannot satisfactorily address the critical issues arising from the increasing abilities of science and industry to manipulate the building blocks of life and matter. Nothing short of a comprehensive and proactive legal, ethical, and political approach can make the genie do our bidding in ways that equitably distribute the risks and rewards of biotechnology. However, in view

124. *Harrison v. Carswell*, [1976] 2 S.C.R. 200 at 218.

of the absence of such an approach, and the lack of protection for the property rights and economic self-determination of individuals like the plaintiffs in *Hoffman*, there may be a role for tort law. The theory of tort law as “ombudsman,” put forward by A.M. Linden in 1973, suggests that in the hands of “ordinary citizens,” tort law can serve as “an instrument of social pressure upon centres of governmental, financial and intellectual power.”¹²⁵ Enthusiastically supporting this perspective, Thomas Koenig and Michael Rustad assert that “[t]ort law, like sunlight, acts as a disinfectant by exposing hidden threats to the public welfare.”¹²⁶

This role is nowhere more apparent than in the *Hoffman* case, which has already spawned an international genre of academic and legal commentary and advocacy. Governments have been forced to seriously consider and respond (albeit mostly rhetorically) to the issues brought to light by the *Hoffman* plaintiffs. Likewise, faced with adverse publicity and backlash, biotech corporations have felt compelled to justify and modify their practices (albeit mostly by seeking to further externalize their liability) and to explore technological methods for mitigating the risks caused by their products. These silver linings to the cloud of failure that overshadows the *Hoffman* case may yet inspire other plaintiffs, perhaps under the banner of the doctrine of cattle trespass, to come forward and seek a rebalancing of the rights and responsibilities of the creators of transgenic organisms.

125. “Tort Law As Ombudsman” (1973) 51 Can. Bar Rev. 155 at 156.

126. Thomas H. Koenig & Michael L. Rustad, *In Defence of Tort Law* (New York: New York University Press, 2002) at 3.