

COMMENTS

GONE WITH THE WIND: WHY EVEN UTILITY PATENTS CANNOT FENCE IN SELF-REPLICATING TECHNOLOGIES

JESSICA LYND*

Genetically modified (GM) seeds are a self-replicating patented technology, which through pollen drift can contaminate neighboring crops, leaving the contaminated farmer liable for patent infringement. When pollen drift occurs, the patent holder should not be entitled to enforcement rights. This is because the self-replicating patented organism has itself caused the infringement and has simultaneously failed the moral utility test. Furthermore, patent enforcement should be void under the doctrine of ex turpi causa non oritur actio when infringement arises from unlawful trespass or nuisance caused by the patented organism.

TABLE OF CONTENTS

Introduction	664
I. Background	668
A. The Recent Change To Grant Utility Patents for Plants.....	668
B. GM Seeds Capable of Pollen Drift and Saving Seeds.....	676
C. GM Pollen Drift Contamination and Patent Infringement.....	679
D. Infringement Investigations, Settlements, and Lawsuits for Pollen Drift.....	681
II. Pollen Drift Demonstrates the Need for a Restriction in Patent Rights Because the Self-Replicating Invention Causes the Infringement	684
A. When Self-Replicating Inventions Themselves Cause Infringement and Injury, the Patent Holder's Exclusion Rights Should Be Restricted in Order To Reconcile the Three Types of Utility under 35 U.S.C. § 101	685

* Senior Staff Member, *American University Law Review*, J.D. Candidate, 2013 *American University Washington College of Law*. Thanks to the staff of *American University Law Review*, and professors Paul Schoenhard, David Hunter, and Jonas Anderson. This Comment is dedicated to my father's tomato garden.

B. Courts Should Not Enforce Patent Rights when Infringement Arises from Unlawful Trespass or Nuisance Caused by the Self-Replicating Patented Organism	693
C. The Benefits and Drawbacks of Pollen Drift to the “Infringer” Should Be Dealt with Outside of Patent Law	697
Conclusion	699

INTRODUCTION

Since Monsanto¹ first introduced genetically modified² (GM) seeds in India in 1998, more than 100,000 Indian farmers have committed suicide.³ During the peak of the tragedy, which has been labeled by some as the “GM Genocide,” an average of forty-six farmers committed suicide each day, usually by drinking toxic pesticides.⁴ As

1. Monsanto Co. is a plant biotechnology and chemical company based in St. Louis, Missouri that sells transgenic, also known as GM, seeds and herbicide products, including Roundup Ready seed and Roundup herbicide, as well as Bt Cotton. *Monsanto Corporate Brochure*, MONSANTO, http://www.monsanto.com/whoweare/Documents/Monsanto_Corporate_Brochure.pdf (last visited Feb. 20, 2013).

2. See Sophia Kolehmainen, *Precaution Before Profits: An Overview of Issues in Genetically Engineered Food and Crops*, 20 VA. ENVTL. L.J. 267, 269 (2001) (defining genetically modified seeds as having been inserted with “strands of foreign genetic material in an effort to change or supplement one or more of the *plant’s* traits” (emphasis added)). “Genetically modified” and “genetically engineered” are generally interchangeable. See *Glossary*, MONSANTO, <http://www.monsanto.com/newsviews/Pages/glossary.aspx> (last visited Feb. 20, 2013) (using the same definition for both terms).

3. See Priya Kumar, *Biopiracy, GM Seeds and Rural India*, GLOBAL RES. (June 2, 2009), <http://www.globalresearch.ca/biopiracy-gm-seeds-and-rural-india> (tallying over 100,000 Indian farmer suicides between 1997 and 2009 and attributing the suicide “epidemic” to debt and depression caused by the failures of GM seeds); P. Sainath, *The Largest Wave of Suicides in History*, ZNET (Feb. 13, 2009), www.zcommunications.org/the-largest-wave-of-suicides-in-history-by-p-sainath (associating the WTO programs with suicide rates where one farmer took his life every 30 minutes); Somini Sengupta, *On India’s Farms, A Plague of Suicide*, N.Y. TIMES (Sept. 19, 2006), <http://www.nytimes.com/2006/09/19/world/asia/19india.html> (citing government reports of 17,000 Indian farmer suicides in 2003 alone).

4. *NCRB Claims 46 Farmers Commit Suicide Every Day in India*, INFOCHANGE, <http://infochangeindia.org/agriculture/news/ncrb-claims-46-farmers-commit-suicide-every-day-in-india.html> (last visited Feb. 20, 2013) (citing the National Crime Records Bureau of India for the year 2007). At the same time India liberalized its cotton trade, the government heavily promoted GM seeds at the urging of international lending institutions, including the Inter Monetary Fund and World Bank, and as required by government agreements with Monsanto to obtain the seeds. See Vandana Shiva, *The Suicide Economy of Corporate Globalisation*, COUNTERCURRENTS.ORG (Apr. 5, 2004), <http://www.countercurrents.org/glo-shiva050404.htm> (“In 1998, the World Bank’s structural adjustment policies forced India to open up its seed sector to global corporations like . . . Monsanto The global corporations changed the input economy overnight.”); see also Iqbal Ahmed, *Killer Seeds: The Devastating Impacts of Monsanto’s Genetically Modified Seeds in India*, GLOBAL RESEARCH (Jan. 12, 2012),

conventional seeds became increasingly difficult to find, small farmers took out loans to purchase the GM seeds; despite claims of increased production, the seeds required double the water of conventional seeds, and some reports suggested the seeds were highly susceptible to bollworm parasites.⁵ Many farmers lost their entire crop and had no way of paying off their large debts.⁶

Exacerbating the farmers' debts, however, is that Monsanto's GM seeds are licensed on the condition that the seeds will not be saved for replanting,⁷ requiring the farmers to purchase new costly seeds each year and placing the farmers further in debt. The stress and shame resulted in the GM Genocide, an epidemic tragedy.⁸ Like in India, GM seed patents in the US permit license agreements that prohibit seed saving and allow causes of action for both the breach of the license agreement, and the infringement of the patent, even when breach or infringement occurred because of pollen drift.⁹

<http://www.globalresearch.ca/PrintArticle.php?articleId=28629> (stating that agreements between Monsanto and the Indian state governments dictated the terms of disseminating the GM technology); Vandana Shiva, *Monsanto's Seed MOU with Rajasthan Agricultural Universities Cancelled*, NAVDANYA, <http://www.navdanya.org/news/214-monsantos-seed-mou-with-rajasthan-agricultural-universities-cancelled> (last visited Feb. 20, 2013) (reporting that Indian universities cancelled similar agreements with Monsanto in 2011). The government also encouraged the local banks to provide liberal financing for the seeds that cost *at least* two times the price of conventional seeds in India. *See* Ahmed, *supra* (explaining that the unavailability of traditional seeds coupled with the ten-fold price increase for GM seeds caused many farmers to take out loans to finance their seed purchase); Andrew Malone, *The GM Genocide: Thousands of Indian Farmers are Committing Suicide After Using Genetically Modified Crops*, MAIL ONLINE (Nov. 2, 2008), <http://www.dailymail.co.uk/news/article-1082559/The-GM-genocide-Thousands-Indian-farmers-committing-suicide-using-genetically-modified-crops.html> (stating that most farmers who commit suicide do so by swallowing insecticide).

5. *See* Malone, *supra* note 4 (refuting the promises of GM salesmen who claimed to be selling "magic seeds"); *see also* Mae-Wan Ho, *Farmer Suicides and Bt Cotton Nightmare Unfolding in India*, INST. OF SCI. IN SOC'Y (June 1, 2010), <http://www.isis.org.uk/farmersSuicidesBtCottonIndia.php> (contradicting Monsanto's claims that their Bt cotton GM seeds cause a decrease in bollworms).

6. *See* George Lerner, *Activist: Farmer Suicides in India Linked to Debt, Globalization*, CNN WORLD (Jan. 5, 2010), http://articles.cnn.com/2010-01-05/world/india.farmer-suicides_1_farmer-suicides-andhra-pradesh-vandana-shiva (quoting an environmental activist who connected farmer suicides to corporate seed control, leading to increased production costs for already-struggling farmers and falling food prices in a global agricultural economy).

7. *See* 2008 MONSANTO TECHNOLOGY/STEWARDSHIP AGREEMENT, MONSANTO, available at http://www.monsanto.com/SiteCollectionDocuments/tug_sample.pdf (last visited Feb. 20, 2013) [hereinafter MTSA] (including a clausal agreement to not save seeds).

8. *See* Sanjay Jha, *Food Technology Driving Indian Farmers Toward Suicide*, NOWPUBLIC (Oct. 6, 2008), <http://www.nowpublic.com/environment/food-technology-driving-indian-farmers-towards-suicide> (reporting that Prince Charles believed that Indian suicides are due to GM seed use).

9. *See, e.g.,* *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1347–48 (Fed. Cir. 2011) (permitting patent holder rights to extend to second generation seed), No. 11-796 (U.S. argued Feb. 19, 2013); MTSA, *supra* note 7 (prohibiting seed saving).

Pollen drift can occur when cross-pollinating plants from GM seeds naturally release pollen that can contaminate nearby conventional crops growing on another farmer's land—a farmer who is not paying a licensing fee to the patent holder for the GM crop.¹⁰ Monsanto filed over 144 lawsuits between 1997 and 2010 for alleged patent infringement or breach of license for its seeds.¹¹ And at least 700 matters have been settled out of court.¹² The company has investigated a much greater number through its heavily funded investigation team and in conjunction with contracted private investigator services.¹³

Patent infringement is a strict liability offense, and, as such, intent or fault on the part of the alleged infringer is irrelevant.¹⁴ In addition, courts have not found it relevant to infringement that the GM contamination actually causes financial and legal harm to the alleged infringer by contaminating his or her conventional crop and trespassing onto his or her land.¹⁵

10. See Kolehmainen, *supra* note 2, at 280 (describing pollen drift and explaining that “genetically modified plants produce pollen that may also contain the foreign genetic material” and that the “pollen can be picked up by insects, birds, wind, or rain and carried into neighboring fields”). If a neighboring field is producing organic crops, it may be unable to sell its product, which “happened to organic corn chip maker Terra Prima, who lost \$87,000 when its European exports tested positive for GM ingredients.” *Id.*; see also Amelia P. Nelson, Note, *Legal Liability in the Wake of StarLink™: Who Pays in the End?*, 7 DRAKE J. AGRIC. L. 241, 251–52 (2002) (describing pollen drift as the “intermixing of pollen by air or animal during the time of pollination”).

11. See First Amended Complaint at 1–2, 46–47, *Organic Seed Growers & Trade Ass’n v. Monsanto Co.*, 851 F. Supp. 2d 544 (S.D.N.Y. 2012) (No. 11 Civ. 2163-NRB), available at <http://www.osgata.org/wp-content/uploads/2011/03/OSGATA-Amended-Complaint.pdf> (seeking a declaratory judgment to prevent Monsanto’s use of its aggressive patent-enforcement tactics against farmers who never intended to use transgenic seeds).

12. See E. Freeman, *Settling the Matter—Part 5*, MONSANTO (Nov. 11, 2008), <http://www.monsanto.com/newsviews/Pages/Settling-the-Matter-Part-5.aspx> (citing a Monsanto employee who stated that most farmers are willing to settle infringement claims before trial because it is more economical than fighting the allegations).

13. Compare E. Freeman, *Seed Police? Part 4*, MONSANTO (Nov. 10, 2008), <http://www.monsanto.com/newsviews/Pages/Seed-Police-Part-4.aspx> (explaining a friendly process for investigating farmers for infringement or breach), with CTR. FOR FOOD SAFETY, *MONSANTO VS. U.S. FARMERS* 24–28 (2005) [hereinafter CFS REPORT], available at <http://www.centerforfoodsafety.org/pubs/CFSMonsantovsFarmerReport1.13.05.pdf> (describing the experiences of several farmers who report they were verbally harassed and intentionally intimidated).

14. 35 U.S.C. § 271(a) (2006) (omitting intent or fault as elements of patent infringement); see also Jason A. Rantanen, *An Objective View of Fault in Patent Infringement*, 60 AM. U. L. REV. 1575, 1590 (2011) (describing the strict liability nature of patent infringement).

15. See, e.g., *Organic Seed Growers & Trade Ass’n v. Monsanto Co.*, 851 F. Supp. 2d 544, 555 (S.D.N.Y. 2012), No. 12-1298 (Fed. Cir. argued Jan. 10, 2013); *Monsanto Can. Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, paras. 96–97 (Can.) (ignoring any harm to the farmer in holding him liable for patent infringement).

When such circumstances are present, the infringer is punished despite taking no action to infringe, which seems to go against the traditional notions of the Patent Act. The original language of the Patent Act of 1793,¹⁶ as authored by Thomas Jefferson, defined patentable subject matter as “any new and useful art, machine, manufacture or composition of matter.”¹⁷ The word “art” was later changed to “process,” but the usefulness requirement survived the patent statutes of 1836, 1870, 1874, and 1952.¹⁸

This Comment argues that patent rights should be unenforceable when infringement is caused by the patented subject matter itself and is injurious. Although patents are currently enforceable in such circumstances, self-replicating patented technology—with its ability to cause injury without human interaction—warrants a restriction in patent rights because of the unique way in which it fails the moral utility test. Moreover, this Comment argues that patent rights in harmful pollen drift cases are also unenforceable under the doctrine of *ex turpi causa non oritur actio*, which prevents claimants from pursuing causes of action that arise in connection with an unlawful act.

Part I of this Comment provides background on plant patents and self-replicating technology, as well as the mechanics of pollen drift. Part I also includes a case study on GM seed patent holder’s response to pollen drift. Part II argues that patent rights should be unenforceable when the infringement is caused by the patented organism itself and creates an injury under the § 101 utility requirement of the Patent Act. Alternatively, because the self-replicating patented organism causes an unlawful act, such as trespass or nuisance, the infringement protection is void under the doctrine of *ex turpi causa non oritur actio*. Part II then describes the harmful effects of allowing these infringement suits, which perpetuate the elimination of food variety and biodiversity. Finally, this Comment concludes that unenforceability of patent rights in circumstances of pollen drift will provide a legal solution for farmers but will not necessarily solve the economic and biological harms of pollen drift from GM crops. While this Comment focuses on the legal implications of GM seeds, it may be applied to other self-replicating technologies as well. The reach of synthetic biology, the science that uses chemically-synthesized DNA to create biochemical organisms

16. Act of Feb. 21, 1793, ch. 11, 1 Stat. 318.

17. *Id.* § 1; see *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980) (referencing Jefferson’s contribution to the 1793 Act).

18. *Chakrabarty*, 447 U.S. at 308–09.

with new characteristics, extends beyond agriculture to vaccines, medicines, biofuels, and biosecurity.¹⁹ Biotechnology may certainly benefit society, but its significant scientific advances also require advances in the law.

I. BACKGROUND

The legal right to patent living organisms was initially extensively limited by statute, but the right has been greatly broadened by case law.²⁰ While plants formerly were patentable only through specific statutes, the U.S. Patent and Trademark Office (USPTO) began granting utility patents for plants in 1985.²¹ The Supreme Court confirmed the practice in 2001.²² Patents for self-replicating technology or living organisms are afforded an even more extensive right to exclude because patent rights are extended to each new generation of self-replicating technology—in the case of GM seeds, the seed's progeny.²³ Self-replicating technology creates new generations of itself without human intervention.²⁴ If the new generations of the self-replicating technology are created on a third party's real property or in combination with a third party's personal property, the courts view the third party as infringing on the patent holder's rights.²⁵

A. *The Recent Change To Grant Utility Patents for Plants*

The Patent Act²⁶ and the U.S. Constitution²⁷ require that the subject of a utility patent be useful. The Constitution grants Congress the power “[t]o promote the Progress of Science and *useful* Arts, by securing for limited Times to Authors and Inventors the exclusive

19. PRESIDENTIAL COMM'N FOR THE STUDY OF BIOETHICAL ISSUES, *NEW DIRECTIONS: THE ETHICS OF SYNTHETIC BIOLOGY AND EMERGING TECHNOLOGIES* 36, 56–72 (2010), available at <http://permanent.access.gpo.gov/gpo9019/PCSBI-Synthetic-Biology-Report-12.16.10.pdf>.

20. See *infra* Part I.A (discussing the recent expansion of patentable material to encompass plants).

21. See *Ex parte* Hibberd, 227 U.S.P.Q. (BNA) 443, 447 (B.P.A.I. 1985) (granting the first utility patent for a plant after the Supreme Court granted a utility patent for a bacterium in *Diamond v. Chakrabarty*, 447 U.S. 303 (1980)).

22. See *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 145 (2001) (holding that newly-developed plant breeds are patentable subject matter).

23. See, e.g., *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1348 (Fed. Cir. 2011) (holding that patent rights extended to second generation seeds), No. 11-796 (U.S. argued Feb. 19, 2013).

24. See *THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE* 1591 (5th ed. 2011) (defining self-replicating as “replicating oneself or itself”).

25. *Bowman*, 657 F.3d at 1348.

26. 35 U.S.C. § 101 (2006).

27. U.S. CONST. art. I, § 8, cl. 8.

Right to their respective Writings and Discoveries.”²⁸ Congress exercised this power when it enacted the Patent Act, which in its current form states: “Whoever invents or discovers any new and *useful* process, machine, manufacture, or composition of matter, or any new and *useful* improvement thereof, may obtain a patent therefor”²⁹

The utility requirement in § 101 of the Patent Act has historically consisted of three necessary types of utility: specific,³⁰ substantial,³¹ and moral.³² Specific utility requires that the patented subject be capable of “provid[ing] a well-defined and particular benefit to the public.”³³ In *In re Fisher*,³⁴ for example, a patent was denied for “expressed sequence tags” relating to maize genes because there was nothing useful about the tags to the public; they were merely “hypothetical possibilities.”³⁵ Thus, inventions must actually function as claimed and not simply be “theories” or “speculations.”³⁶

Substantial utility requires the patented subject to have a “significant and presently available benefit to the public.”³⁷ This entails being applicable in the “real world” and not just beneficial for further research.³⁸ In *Brenner v. Manson*,³⁹ the Supreme Court found that even though the chemical compound at issue was not detrimental, it still did not merit a patent because its uses were still being researched; thus, it lacked substantial utility.⁴⁰

Though greatly limited and rarely applied today,⁴¹ the doctrine of moral utility holds that *usefulness cannot be injurious*.⁴² Moral utility is based on *Lowell v. Lewis*, where Justice Story held:

28. *Id.*; see also *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (adding that Congress acts so as to positively affect society through the creation of new products that lead to increased employment and better lives).

29. 35 U.S.C. § 101 (emphasis added).

30. *Brenner v. Manson*, 383 U.S. 519, 534–35 (1966); *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005); *In re Perrigo*, 48 F.2d 965, 966 (C.C.P.A. 1931).

31. *Brenner*, 383 U.S. at 534; *Fisher*, 421 F.3d at 1371.

32. *Scott & Williams, Inc. v. Aristo Hosiery Co.*, 7 F.2d 1003, 1004 (2d Cir. 1925) (denying a patent for a fake seam up the back of stockings giving the look of higher quality stockings); *Nat'l Automatic Device Co. v. Lloyd*, 40 F. 89, 89–90 (C.C.N.D. Ill. 1889) (denying a patent for a gambling machine); *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (Story, Circuit Justice, C.C.D. Mass. 1817) (No. 8568).

33. *Fisher*, 421 F.3d at 1371.

34. 421 F.3d 1365 (Fed. Cir. 2005).

35. *Id.* at 1373–74.

36. *Perrigo*, 48 F.2d at 966.

37. *Fisher*, 421 F.3d at 1371.

38. *Brenner*, 383 U.S. at 534–36.

39. 383 U.S. 519 (1966).

40. *Id.* at 534–36.

41. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366–67 (Fed. Cir. 1999).

42. See *Brenner*, 383 U.S. at 532–33 (expounding on the definition of useful first given by Justice Story in *Lowell*); *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (Story, Circuit Justice, C.C.D. Mass. 1817) (No. 8568) (“[T]he law requires . . . that the

[T]he law requires . . . that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society. The word “useful,” therefore, is incorporated into the act in contradistinction to mischievous or immoral. For instance, a new invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention.⁴³

Justice Story’s moral utility test was later limited in *Fuller v. Berger*,⁴⁴ which held that injuriousness prohibits patentability where it is the *only* use of the invention.⁴⁵ Where a patent subject can be used for both injury and benefit, it is still patentable.⁴⁶ The moral utility requirement has been used to deny patents for morally objectionable inventions such as gambling machines⁴⁷ and deceptive inventions such as stockings with a fake seam.⁴⁸ It has also been applied where there were “concerns about the morality of practicing the patent’s underlying subject matter”⁴⁹ and “concerns regarding the morality of allowing anyone to limit the practice of the patent’s underlying subject matter.”⁵⁰ In *Diamond v. Chakrabarty*,⁵¹ the Supreme Court approved a patent for a “genetically engineered bacterium . . . capable of breaking down multiple components of crude oil”⁵² even though the living thing “may spread pollution and disease, that it may result in a loss of genetic diversity, and that its practice may tend to depreciate the value of human life.”⁵³ Although the Supreme Court rejected the application of moral utility as a basis

invention . . . not be frivolous or injurious to the well-being . . . of society. The word ‘useful,’ therefore, is incorporated into the act in contradistinction to mischievous or immoral.”); see also *In re Ruschig*, 343 F.2d 965, 978 (C.C.P.A. 1965) (finding that although the compound at issue lowered blood sugar, the drug’s high toxicity negated its utility).

43. See *Lowell*, 15 F. Cas. at 1019 (emphasis added) (referring to the former Patent Act, with the same definition); see also *Brenner*, 383 U.S. at 532–35 (building upon the standard from *Lowell* to define useful as more than just “not positively harmful to society” (emphasis added)). But see *Animal Legal Def. Fund v. Quigg*, 932 F.2d 920, 938 (Fed. Cir. 1991) (rejecting an argument that patent protections are issued for the public good rather than for private benefit on the grounds that this interpretation is overbroad and would enable almost anyone to collaterally attack the validity of patents).

44. 120 F. 274 (7th Cir. 1903).

45. *Id.* at 275.

46. *Id.*

47. *Nat’l Automatic Device Co. v. Lloyd*, 40 F. 89, 89–90 (C.C.N.D. Ill. 1889).

48. *Scott & Williams, Inc. v. Aristo Hosiery Co.*, 7 F.2d 1003, 1004 (2d Cir. 1925).

49. Margo A. Bagley, *Patent First, Ask Questions Later: Morality and Biotechnology in Patent Law*, 45 WM. & MARY L. REV. 469, 495 (2003) (listing “multi-cellular animals, human-animal chimera, and human cloning” as subject matters of concern).

50. *Id.* (citing “medical process methods”).

51. 447 U.S. 303 (1980).

52. *Id.* at 305.

53. *Id.* at 316.

for denying patents for living microorganisms,⁵⁴ moral utility has been applied for denying patents for part-human organisms.⁵⁵ The PTO has rejected an application for a chimeric embryo made from both a human and non-human and applied *Lowell* in doing so, referring to the partially human organisms as “immoral” and as “monsters.”⁵⁶

Despite the remnants of moral utility, “the USPTO has issued patents to inventions that may arguably be illegal at least in certain jurisdictions.”⁵⁷ The courts have justified this because “a patent is not the granting of a right to make, use or sell” the invention.⁵⁸ Instead, a patent “grants only the right to exclude others from making, using or selling the patented device.”⁵⁹ Thus, the object cannot become injurious without human intervention.

When applied, all three forms of utility assess the invention overall—regardless of whether it is at the time of granting the patent⁶⁰ or during trial.⁶¹ If utility is missing, it completely invalidates the patent—as opposed to restricting the patent rights only under particular circumstances, such as when human intervention uses a patented technology in an injurious way.⁶²

Similar to Justice Story’s interpretation that the law could not protect harmful inventions by awarding them a patent, in 1775, Lord Mansfield stated, “[n]o Court will lend its aid to a man who founds

54. *Id.* at 316–17.

55. Non-Final Rejection, U.S. Patent Application No. 8,993,564, at 28 (Jan. 29, 2003).

56. *Id.* at 24–25, 28; *see also* Mark Dowie, *Gods and Monsters*, MOTHER JONES, <http://www.motherjones.com/politics/2004/01/gods-and-monsters> (last visited Feb. 20, 2013) (referring to the press conference held by the Commissioner of Patents regarding the chimera). Section 33(a) of the America Invents Act now adds: “Notwithstanding any other provision of law, no patent may issue on a claim directed to or encompassing a human organism.” Leahy-Smith American Invents Act, Pub. L. No. 112-29, § 33(a), 125 Stat. 284, 340 (2011).

57. *Issues Relating to the Patenting of Tax Advice: Hearing Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways and Means*, 109th Cong. 9 (2006) (statement of James Toupin, General Counsel, U.S. Patent and Trademark Office); *see, e.g.*, Andrew A. Schwartz, *The Patent Office Meets the Poison Pill: Why Legal Methods Cannot Be Patented*, 20 HARV. J.L. & TECH. 333, 365–66 (2007) (“During Prohibition, for example, a patent was issued for a method of producing alcohol. More recently, patents have been awarded for radar detectors, cock-fighting equipment . . . all of which are contraband in at least some states and/or under federal law.” (footnotes omitted)).

58. *Little Mule Corp. v. Lug All Co.*, 254 F.2d 268, 272–73 (5th Cir. 1958).

59. *Id.*

60. 35 U.S.C. § 101 (2006).

61. *Id.* § 282 (allowing for a defendant to challenge the validity of an existing patent as a defense to infringement); *id.* § 302 (allowing the PTO to reexamine an already-issued patent to reassess validity).

62. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1358–59 (Fed. Cir. 1999) (vacating the lower court’s finding of infringement because the patent was invalid for lack of utility).

his cause of action upon an immoral or an illegal act.”⁶³ The doctrine, known as *ex turpi causa non oritur actio*,⁶⁴ holds that “[n]o cause of action can arise out of an immoral (or illegal) inducement (or consideration).”⁶⁵ This doctrine embodies the notion that enforcing a right that simultaneously violates the law undermines the rule of law.⁶⁶ *Ex turpi causa* is commonly applied in contracts⁶⁷ and torts.⁶⁸ The act need not violate a criminal statute.⁶⁹ A contract, for example, is considered illegal under the doctrine “if either its formation or performance is criminal, tortious, or otherwise opposed to public policy.”⁷⁰ Moreover, the doctrine applies to immoral and illegal actions, both *malum prohibitum* or *malum per se*.⁷¹ Thus, both

63. *Holman v. Johnson*, (1775) 98 Eng. Rep. 1120 (K.B.) 1121; 1 Cowp. 342, 343 (commonly cited as the origin of the *ex turpi causa* doctrine).

64. See *Nahas v. George*, 99 N.E.2d 898, 900 (Ohio 1951) (translating the general maxim *ex dolo malo non oritur actio* as “out of fraud no action arises”); see also, *McMullen v. Hoffman*, 174 U.S. 639, 654 (1899) (holding the maxim to mean that the law will not lend its aid to a claim based on its own violation); *Citizens’ Nat’l Bank of Chickasha v. Mitchell*, 103 P. 720, 730 (Okla. 1909) (same).

65. *BALENTINE’S LAW DICTIONARY* 447 (3d ed. 1969).

66. See PAUL H. ROBINSON, *CRIMINAL LAW: CASE STUDIES AND CONTROVERSIES* 47 (2005) (explaining the legality principle, which embodies the notion that the law must prevent arbitrariness by being clearly defined and consistently enforced so as to avoid a situation where the public is unclear on what or which illegal actions will be punished). Although the principle is often applied in criminal law, the same effect will result when the laws broken by pollen drift are ignored, such as when patent infringement is at play.

67. See *Davies v. Grossmont Union High Sch. Dist.*, 930 F.2d 1390, 1392 (9th Cir. 1991) (voiding a contract provision that prevented a person from running for office as being against public policy); see also *Shadis v. Beal*, 685 F.2d 824, 833–34 (3d Cir. 1982) (invalidating a contractual provision purporting to preclude a legal services group from recovering attorneys’ fees following a successful civil rights litigation against the state because it violated public policy (quoting *RESTATEMENT (SECOND) OF CONTRACTS* §§ 178–179 (1981))); 5 SAMUEL WILLISTON & RICHARD A. LORD, *A TREATISE ON THE LAW OF CONTRACTS* § 12:4, at 980–93 nn.15–22 (4th ed. 2009) (listing a multitude of federal and state cases that have applied the doctrine to void contracts as against public policy).

68. See Robert A. Prentice, *Of Tort Reform and Millionaire Muggers: Should an Obscure Equitable Doctrine Be Revived To Dent the Litigation Crisis?*, 32 *SAN DIEGO L. REV.* 53, 82–86 (1995) (applying *ex turpi causa* to tort law in the United States via proximate causation and public policy). Despite its traditional usage, the application of the doctrine in U.S. tort law is on the decline. See *id.* at 86–87.

69. *RESTATEMENT OF CONTRACTS* § 512 (1932). This statement of the law has been refined in *RESTATEMENT (SECOND) OF CONTRACTS* § 178.

70. *RESTATEMENT OF CONTRACTS* § 512; see also *RESTATEMENT (SECOND) OF CONTRACTS* § 178 (abandoning any reference to the illegality of the bargain and instead focusing on whether the contract is unenforceable on public policy grounds).

71. *Jones v. Dinkins*, 76 S.E.2d 489, 492 (Ga. 1953) (applying the doctrine); *Sewell v. Norris*, 58 S.E. 637, 639 (Ga. 1907) (same); *Melchoir v. McCarty*, 31 Wis. 252, 254 (1872) (listing multiple cases affirming the doctrine’s underlying principles).

the moral utility requirement and *ex turpi causa* are concerned with legal assistance to harmful causes.⁷²

The legal protection for patenting living organisms has undergone several iterations in the past century, each providing more expansive exclusion rights than the last. Living organisms were not initially granted utility patents; instead, patent protection for plants began in 1930 with the Plant Patent Act⁷³ (PPA). The PPA limited patent protection for plant germplasm to asexually reproduced plants (excluding tuber propagated plants)—those produced by grafting or cuttings and usually sold through a nursery, not seeds, and their progeny.⁷⁴ Because many agricultural plants are sexually reproduced, or tuber propagated plants, the PPA protection was very limited and did not include many staple or commodity crops such as corn, wheat, or rice.⁷⁵ The PPA only required that asexually reproduced plants be “distinct and new.”⁷⁶

Forty years after the creation of the PPA, the Plant Variety Protection Act of 1970⁷⁷ (PVPA) extended patent-like protection to sexually reproduced plants and seeds of novel varieties.⁷⁸ The standard for obtaining a PVPA patent-like certificate was less stringent than the standard for obtaining a utility patent. The PVPA omitted the non-obvious and beneficial requirements and instead

72. Compare *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (Story, Circuit Justice, C.C.D. Mass. 1817) (No. 8568) (discussing the moral utility requirement for utility patents, under which patent protections only apply to inventions that do not harm society), with *Holman v. Johnson*, (1775) 98 Eng. Rep. 1120 (K.B.) 1121; 1 Cowp. 342, 343 (creating the *ex turpi causa* doctrine under which courts do not allow recovery for injury caused by a person’s own harmful conduct).

73. Plant Patent Act of 1930, ch. 312, 46 Stat. 376 (current version at 35 U.S.C. §§ 161–164 (2006)). The current version of the PPA reads: “Whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefor . . .” 35 U.S.C. § 161 (2006).

74. *In re Arzberger*, 112 F.2d 834, 838 (C.C.P.A. 1940) (applying the PPA of 1930 to hold that propagation by asexual reproduction is defined “by grafting, budding, cuttings, layering, division, and the like, but not by seeds” (quoting H.R. REP. NO. 71-1129, at 1 (1930))).

75. See JACK RALPH KLOPPENBURG, JR., *FIRST THE SEED: THE POLITICAL ECONOMY OF PLANT BIOTECHNOLOGY*, 1492–2000, at 132–33 (2d ed. 2004) (suggesting that Congress may have excluded sexually reproducing and tuber propagating plants from the PPA because it did not want to grant monopoly-like patent protection to staple food crops).

76. Plant Patent Act, § 1.

77. Pub. L. No. 91-577, 84 Stat. 1542 (codified as amended at 7 U.S.C. §§ 2321–2582 (2006)).

78. 7 U.S.C. § 2402(a) (2006) (extending protection to sexually reproduced plants, which are often the largest commodity crops in the United States, such as corn, wheat, and rice).

only required that the product be new, distinct, uniform, and stable.⁷⁹ However, the PVPA also provided less protection to the patent holder than a utility patent because under the PVPA, seed saving and research do not constitute infringement.⁸⁰ For example, a farmer could save and replant patented seeds under the PVPA, but could not sell the seeds.⁸¹

In the PVPA, Congress created a specific patent-like certificate, distinct from utility patents.⁸² However, as the GM seed industry grew in the 1970s and 1980s, agricultural companies began applying for utility patents for their seed instead of PVPA certificates.⁸³ Although utility patents required a higher non-obviousness and usefulness standard, the utility patent was favorable for the seed companies because it did not include exceptions for research or seed saving.⁸⁴

The Supreme Court's *Chakrabarty* decision and the underlying facts of the case provide an example of the industry attempting to use utility patents for a non-plant organism.⁸⁵ In that case, the Supreme Court strictly interpreted the text of the Patent Act in extending utility patents to the genetically engineered bacterium, despite the USPTO's disagreement.⁸⁶ The USPTO first argued that the Patent Act must exclude living things (such as bacteria or seeds); otherwise the PPA and PVPA would not be necessary to authorize patent protection for plants.⁸⁷ However, the majority interpreted Congress's creation of the PPA and PVPA as an attempt to decrease the amount of detail in a description, especially for more difficult categories such as plants, and to explain that the work product of a plant breeder, though "in aid of nature," is patentable.⁸⁸ Second, the USPTO argued that Congress must explicitly name microorganisms as patentable because they were unforeseen at the time the Patent Act

79. *Id.*

80. *See id.* §§ 2543–2544 (providing a right to save seed for personal use and a right to breed protected plants for research).

81. *Compare id.* § 2541(a)(1) (providing that selling protected plants constitutes infringement), *with id.* § 2543 (indicating that seeds may be saved for replanting).

82. *Id.* §§ 2321–2582.

83. *See Ex parte Hibberd*, 227 U.S.P.Q. (BNA) 443, 447 (B.P.A.I. 1985) (granting for the first time a utility patent for a plant—in this case a maize plant—with high tryptophan levels).

84. *Compare* 7 U.S.C. §§ 2543–2544 (containing an exception for research or seed saving), *with* 35 U.S.C. § 101 (omitting any direct reference to plants or other life forms).

85. *Diamond v. Chakrabarty*, 447 U.S. 303, 305 (1980).

86. *Id.* at 316–18 (explaining how the question before the court was narrow and asserting that policy arguments on the dangers of patenting life forms should be discussed by Congress).

87. *Id.* at 310–11.

88. *Id.* at 312 (quoting S. REP. NO. 71-315, at 7 (1930)).

was enacted⁸⁹ and because bacteria are explicitly excluded from the PVPA.⁹⁰ The Court disagreed that unforeseen subject matter required explicit naming, asserting that the broad language of the Patent Act accounted for unforeseen subject matter.⁹¹ The 5–4 majority held that because the respondent “produced a new bacterium with markedly different characteristics from any found in nature,” the bacterium was eligible for a utility patent under the Patent Act.⁹²

Following *Chakrabarty*, the USPTO denied utility patent applications for self-replicating (sexually and asexually reproduced) plants, reasoning that Congress intended them to be covered separately under the PPA and PVPA.⁹³ However, the PTO Board of Patent Appeals and Interferences (Board) decided in the 1985 case *Ex parte Hibberd*⁹⁴ that sexually reproducing plants were indeed patentable.⁹⁵ The Board applied a statutory construction rule requiring that when two acts govern the same issue, courts must “give effect to both unless there is . . . [an] ‘irreconcilable’” difference between them.⁹⁶ Thus, the Board reasoned that the PPA and PVPA did not exclude issuing utility patents for plants.⁹⁷ Subsequently, the USPTO began accepting utility patent applications for plants.⁹⁸

In 2001, the Supreme Court decision in *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc.*⁹⁹ upheld the use of utility patents for plants using the same reasoning as the Board in *Hibberd*.¹⁰⁰ Both courts agreed that because Congress failed to explicitly exclude plants in the Patent Act’s provision on utility patents and failed to

89. *Id.* at 314–15.

90. *Id.* (arguing that Congress did not intend to include non-plant “living” organisms, such as bacterium, in the PVPA); see 7 U.S.C. § 2402(a) (1970) (“The breeder of any novel variety of sexually reproduced plant (other than fungi, bacteria, or first generation hybrids) who has so reproduced the variety, or his successor in interest, shall be entitled to plant variety protection . . .”).

91. *Chakrabarty*, 447 U.S. at 315.

92. *Id.* at 310 (noting that the bacterium also had “the potential for significant utility”).

93. See KEITH AOKI, SEED WARS: CONTROVERSIES AND CASES ON PLANT GENETIC RESOURCES AND INTELLECTUAL PROPERTY 42 (2008).

94. 227 U.S.P.Q. (BNA) 443 (B.T.A.I. 1985).

95. *Id.* at 443–48 (rejecting the argument that Congress intended to exclude sexually reproducing plants from 35 U.S.C. § 101).

96. *Id.* at 445–46.

97. *Id.* at 444–46.

98. See CFS REPORT, *supra* note 13, at 12 (arguing that the USPTO began granting utility patents for plants even though “Congress had never given the U.S. PTO authority to grant utility patents for sexually reproducing plants”).

99. 534 U.S. 124 (2001).

100. Compare *id.* at 138 (determining that utility patents cover a larger scope than the PVPA’s patent-like certificates), with *Hibberd*, 227 U.S.P.Q. (BNA) at 444–45 (finding that Congress did not limit the scope of utility patents).

state that the PPA and PVPA were the exclusive protections available for plants, extending patents to plants is not contrary to congressional intent.¹⁰¹ The Court also stated that the USPTO had been issuing utility patents for plants for sixteen years—since *Hibberd*—with no disagreement from Congress.¹⁰² By affirming multiple provisions for patents or patent-like protections for living organisms, these cases encouraged the commoditization of seeds and the expansion of biotechnology products.¹⁰³

B. GM Seeds Capable of Pollen Drift and Saving Seeds

There are at least two GM products relevant in the context of pollen drift: cross-pollinated herbicide-tolerant GM seeds and cross-pollinated insect-resistant GM seeds.¹⁰⁴ Herbicide-tolerant GM seeds include the Roundup Ready system through which GM seeds, such as wheat, are genetically modified to resist the herbicide Roundup.¹⁰⁵ This allows the farmer to spray Roundup on the entire field, thereby killing the weeds, but not the GM wheat.¹⁰⁶ Roundup Ready agricultural seeds include alfalfa, canola, cotton, and sugar beets.¹⁰⁷

The second group includes insect-resistant GM seeds such as corn, containing the bacterium *bacillus thuringiensis*, known as “Bt Corn.”¹⁰⁸

101. *J.E.M.*, 534 U.S. at 138; *Hibberd*, 227 U.S.P.Q. (BNA) at 444–45.

102. *J.E.M.*, 534 U.S. at 144–45; see also *Hibberd*, 227 U.S.P.Q. (BNA) at 443–44.

103. See KLOPPENBURG, *supra* note 75, at 282 (“The legal and technical capacities are now in place that will permit capital to realize the apotheosis of the seed as a commodity-form.”).

104. See *Agricultural Seeds*, MONSANTO, <http://www.monsanto.com/products/Pages/Monsanto-agricultural-seeds.aspx> (last visited Feb. 20, 2013) (listing their agricultural seed products, including canola, corn, cotton, and soybeans); see also *Glossary*, *supra* note 2 (explaining that “trait stacking” produce seeds are insect-resistant and “herbicide toleran[t]”).

105. See *Roundup Ready System*, MONSANTO, <http://www.monsanto.com/weedmanagement/Pages/roundup-ready-system.aspx> (last visited Feb. 20, 2013) (explaining that Roundup herbicide works in conjunction with Roundup-resistant seeds).

106. See John Russnogle, *Roundup Ready Soybean System Simply Works*, CORN & SOYBEAN DIGEST (Aug. 1, 1998), <http://cornandsoybeandigest.com/roundup-ready-soybean-system-simply-works> (explaining that farmers only need to spray Roundup Ultra about a month after planting Roundup Ready seeds).

107. *Roundup Ready System*, *supra* note 105. Monsanto also sells Roundup Ready soybeans, but because they are self-pollinating, the soybeans are not subject to pollen drift. Tim Van Pelt, Note, *Is Changing Patent Infringement Liability the Appropriate Mechanism for Allocating the Cost of Pollen Drift?*, 31 J. CORP. L. 567, 586 (2006). However, their seeds could still be blown or moved via animal and machinery and thus, still contaminate other fields. See *supra* note 10 and accompanying text (outlining the different ways pollen drift occurs).

108. See *Genuity Bollgard II Cotton*, GENUTTY, <http://www.genuity.com/cotton/Pages/GenuityBollgardIICotton.aspx> (last visited Feb. 20, 2013) (asserting that Genuity Bollgard II Cotton, manufactured by Monsanto, is the best Bt cotton plant at reducing damage by cotton-eating worms); see also *Glossary*, *supra* note 2 (describing that Bt is naturally found in soil, but Bt GM plants are designed to produce its fatal protein themselves).

The bacterium has been trans-genetically inserted into the seeds in order to kill certain insects and pests.¹⁰⁹ There are additional GM traits¹¹⁰ that change nutritional content and attempt to increase yield¹¹¹ in the plant. Regardless of which genetically modified traits a seed contains, farmers using any patented seed from a patent holder, such as Monsanto,¹¹² DuPont,¹¹³ or Syngenta,¹¹⁴ must sign a limited license to use the patented seeds; the limited license for Monsanto is called the Master Technology/Stewardship Agreement (MTSA).¹¹⁵ The MTSA prohibits saving any seeds reproduced by the GM plants.¹¹⁶ Saving seeds is a conventional farming practice that ensures the continuation of the breed, sustainably provides seeds for the next year's crop, and also allows for genetic diversification of seeds to

109. See *Glossary*, *supra* note 2 (detailing how Bt kills insects by creating a protein that harms their digestive systems); see also *Cotton Seeds*, MONSANTO, <http://www.monsanto.com/products/Pages/cotton-seeds.aspx> (last visited Feb. 20, 2013) (noting that Genuity Bollgard II cotton seeds specifically protect the plants from worms). Upland and Pima cotton, both genetically modified into Bt cotton (referred to as Bollgard II) by Monsanto, are "mostly self-pollinated," aside from rare instances of cross-pollination through insects and wind. ROBERT B. HUTMACHER ET AL., *AGRICULTURAL BIOTECHNOLOGY IN CALIFORNIA SERIES*, PUB. NO. 8191, *METHODS TO ENABLE THE COEXISTENCE OF DIVERSE COTTON PRODUCTION SYSTEMS 1* (2006), available at <http://www.anrcatalog.ucdavis.edu/pdf/8191.pdf>; see also MONSANTO, *TUG 2013: U.S. TECHNOLOGY USE GUIDE 13* (2013) [hereinafter TUG], available at <http://www.monsanto.com/SiteCollectionDocuments/Technology-Use-Guide.pdf> (clarifying U.S. law on exporting and marketing Bt cotton due to different laws regarding biotechnology).

110. *Agricultural Seeds*, *supra* note 104; see *Glossary*, *supra* note 2 (explaining that the agricultural seed technology industry can now contain "stacked" traits combining several modifications to a seed's genetic makeup, such as drought resistance).

111. *Do GM Crops Increase Yield*, MONSANTO, <http://www.monsanto.com/newsviews/Pages/do-gm-crops-increase-yield.aspx> (last visited Feb. 20, 2013) ("GM crops generally have higher yields due to both breeding and biotechnology."). But see INT'L ASSESSMENT OF AGRIC. KNOWLEDGE, SCI. & TECH. FOR DEV., *AGRICULTURE AT A CROSSROADS: GLOBAL REPORT 95* (2008), available at [http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Global%20Report%20\(English\).pdf](http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Global%20Report%20(English).pdf) (finding that the excessive costs and low yields of GM agriculture was outperformed by traditional agro-ecological farming practices).

112. See MTSA, *supra* note 7 (requiring all growers of Monsanto seeds to sign the licensing agreement); see also Andrew Pollack, *As Patent Ends, a Seed's Use Will Survive*, N.Y. TIMES, Dec. 18, 2009, at B3 (asserting that Monsanto's Roundup Ready soybeans will be the first Bt plant to go public since the widespread use of biotechnology began in the 1990s); *Roundup Ready Soybean Patent Expiration*, MONSANTO, <http://www.monsanto.com/newsviews/Pages/roundup-ready-patent-expiration.aspx> (last visited Feb. 20, 2013) (explaining that Roundup trait will go off patent and become available to the public in 2014).

113. Jack Kaskey, *DuPont Sends in Former Cops To Enforce Seed Patents*, BLOOMBERG (Nov. 28, 2012, 4:14 PM), <http://www.bloomberg.com/news/2012-11-28/dupont-sends-in-former-cops-to-enforce-seed-patents-commodities.html>.

114. SYNGENTA SEEDS, INC. STEWARDSHIP AGREEMENT (2009), available at http://www.legendseeds.com/download/Syngenta_Stewardship_Agreement_2010.pdf.

115. See MTSA, *supra* note 7 (containing the subtitle "Limited Use License").

116. *Id.*

confront future problems.¹¹⁷ The MTSA also prohibits any future use, sale, or receipt of the seeds.¹¹⁸ Additionally, the Center for Food Safety reported cases where farmers were unaware of the terms of the license agreement because they were never asked to sign a MTSA by the intermediary salesman.¹¹⁹

But it is not the license alone that prohibits seed saving. The U.S. Court of Appeals for the Federal Circuit has held in *Monsanto Co. v. McFarling*,¹²⁰ *Monsanto Co. v. Scruggs*,¹²¹ and *Monsanto Co. v. Bowman*¹²² that self-replicated GM seeds are protected by the patent as well. Defendants argued that second generation seed should not have patent protection due to the doctrine of patent exhaustion, which establishes that the right to exclusively sell the patented product is exhausted by a single, unrestricted sale of that product.¹²³ The doctrine also allows for modifications to the product.¹²⁴ However, the Federal Circuit found that both in cases where the sale was restricted

117. See INT'L COMM'N ON THE FUTURE OF FOOD & AGRIC., MANIFESTO ON THE FUTURE OF SEEDS 6–8 (2006) [hereinafter MANIFESTO], available at http://www.arsia.toscana.it/petizione/documents/semi/futurosemi_eng.pdf (proclaiming that preventing farmers from saving and exchanging seeds, as they have historically done, is detrimental not only to the agricultural way of life, but to food security); see also 7 U.S.C. § 2543 (2006) (allowing a seed saving exception under the PVP); Van Pelt, *supra* note 107, at 576 (stating that under the “saved-seed exemption,” farmers could replant saved seeds from protected plants that were legally purchased and planted on their own farms, although the scope of the “saved-seed exemption” narrowed over time to include only the number of seeds sufficient to plant their crop in the next season).

118. MTSA, *supra* note 7. The agreement further allows review of the farmer’s U.S. Department of Agriculture-Farm Service Agency (USDA-FSA) crop report, which permits Monsanto to view the farmer’s financial state. CFS REPORT, *supra* note 13, at 17 (explaining that access to the FSA form helps Monsanto identify neighboring farms, determine how much seed the farmer bought, and determine how many seeds the farmer planted). The company can also demand financial receipts of purchased and sold seed to be handed over if it believes a farmer has saved seed; farmers must release this financial information within seven days, and in some cases a twenty-four hour turnaround is required. See TUG, *supra* note 109, at 2–3 (declaring that if Monsanto has a “reasonable” belief that a farmer saves seeds, it “may inspect and test” all of the farmer’s fields). The agreement contains a choice of law provision and a forum selection clause requiring that any infringement lawsuits be brought in the Eastern District of Missouri. MTSA, *supra* note 7. This clause only applies to farmers who have signed the agreement and not to unsuspecting neighbors who never purchased seed, but were victims of pollen drift. CFS REPORT, *supra* note 13, at 44 (stating that Monsanto cannot enforce the terms of the technology agreement when farmers have not signed it, though Monsanto may sue the farmers for patent infringement).

119. See CFS REPORT, *supra* note 13, at 44 (asserting that forged signatures on the technology agreement are common).

120. 302 F.3d 1291, 1298–99 (Fed. Cir. 2002).

121. 459 F.3d 1328, 1336 (Fed. Cir. 2006).

122. 657 F.3d 1341, 1347–48 (Fed. Cir. 2011), No. 11-796 (U.S. argued Feb. 19, 2013).

123. *Supra* notes 120–22; see *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 625 (2008) (defining patent exhaustion).

124. *Jazz Photo Corp. v. Int’l Trade Comm’n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001).

by the license and where it was unrestricted, the patent still was not exhausted by the self-replicated, second generation seed.¹²⁵

C. *GM Pollen Drift Contamination and Patent Infringement*

Patents may be unintentionally infringed and the MTSA inadvertently breached when pollen drift occurs. Pollen drift is the cross-pollination of agricultural commodities and can be caused by the movement of animals or shared equipment,¹²⁶ by the wind carrying plants and seeds to other farms and contaminating the plants, or by planted, but dormant, seeds.¹²⁷ Seeds can lie dormant in a field for several years before sprouting; therefore, a field containing previously licensed seeds can violate the patent years later once the dormant seeds sprout.¹²⁸ Only total replacement of the topsoil can fully prevent dormant seeds from sprouting.¹²⁹

Pollen drift occurs without any intent or action on behalf of the alleged infringer.¹³⁰ However, courts have refused to move away from the strict liability standard of infringement.¹³¹ In some cases, however, courts have considered intent when awarding damages.¹³² Even if intent is considered when awarding damages and the accused farmer does not have to pay damages, the patent rights can still be costly because the farmer is not awarded legal fees and must still remove the contamination from his fields.¹³³ Removal can leave the

125. Compare *Bowman*, 657 F.3d at 1345, 1349 (finding no exhaustion where the sale was unrestricted), with *Scruggs*, 459 F.3d at 1336 (finding no exhaustion where the sale was restricted).

126. See *The World According to Monsanto* (ARTE France television broadcast Mar. 11, 2008), available at http://www.youtube.com/watch?v=N6_DbVdVo-k (discussing the potential endangerment of Mexico's traditional corn growing region, Oaxaca, because GM corn has contaminated parts of the region despite the illegality of cultivation in the region). Experts believe that because under the North American Free Trade Agreement, Mexico must permit GM corn from the United States to be imported for consumption (not for agricultural use), discarded GM corn was simply in the area and began growing. *Id.*

127. Keith Aoki, *Weeds, Seeds, & Deeds: Recent Skirmishes in the Seed Wars*, 11 CARDOZO J. INT'L & COMP. L. 247, 297 (2003).

128. *Id.*

129. See *id.* at 294 (asserting that when soil remains untilled, such as occurs in prairies, canola seeds are likely to lie dormant for "six to ten years").

130. See *supra* note 10 and accompanying text (explaining that pollen drift from GM plants is natural).

131. See, e.g., *Monsanto Co. v. Hartkamp*, No. 00-164-P, 2001 WL 34079482, at *2 (E.D. Okla. Apr. 19, 2001) (stipulating that intent is only taken into account to determine increasing damages for "willful infringement").

132. See *Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 277 (Fed. Cir. 1985) (citing *Baumstimler v. Rankin*, 677 F.2d 1061, 1073 (5th Cir. 1982)); *Lam, Inc. v. Johns-Manville Corp.*, 668 F.2d 462, 474-75 (10th Cir. 1982); see also *Rantanen*, *supra* note 14, at 1605-09 (discussing damage awards affected by willful infringement).

133. See *Monsanto Can. Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 105 (Can.) (sustaining an injunctive order against the farmer from using Monsanto's GM seeds);

farmer without seed for the following years.¹³⁴ More globally, however, permitting infringement suits even when the court does not award damages creates a system through which the high risk of using conventional seeds and being sued due to unintended pollen drift incentivizes farmers to use GM seeds.¹³⁵

Already, some farmers are taking measures to protect against contamination and potential infringement suits, which can cost tens of thousands of dollars.¹³⁶ Conventional farmers may take on the burden of creating a buffer zone around their crops to prevent pollen drift, attempt to rent machinery that does not also work with GM seeds or has been thoroughly cleaned between uses, or take other costly measures to prevent contamination.¹³⁷ Nonetheless, even these measures may be insufficient, as contamination may go unnoticed for years and may occur over large geographic areas,¹³⁸ meaning that many conventional seed companies can no longer certify that their products are not GM contaminated.¹³⁹ Yet the burden for finding a market is always on the farmer—whether his crop is contaminated or not.¹⁴⁰ The burden to prevent

Aoki, *supra* note 127, at 297 (describing the costs of removing contamination from fields, even though it is almost impossible to remove all contamination).

134. First Amended Complaint, *supra* note 11, at 38 (explaining that after contamination removal, the affected field cannot be used for many years).

135. See CFS REPORT, *supra* note 13, at 28–30 (emphasizing that Monsanto threatens farmers with expensive and time consuming lawsuits, even when they have little to no verifiable evidence of infringement, to pressure farmers into buying their GM seeds); see also Van Pelt, *supra* note 107, at 583, 588–89 (analyzing the Coase theorem, which posits that parties do not utilize the most beneficial and efficient solutions due to the potential for legal fees and liability costs, to determine that government regulation would be better than infringement lawsuits for ensuring the allocation of costs onto the patent holder because of the varying risks of unintentional cross-pollination).

136. See, e.g., CFS REPORT, *supra* note 13, at 41 (offering the example of a North Dakota farmer who spent a total of \$12,200 in one year on prevention strategies after spending around \$200,000 on legal fees when Monsanto sued his farm in 2000).

137. See TUG, *supra* note 109, at 8 (stating that according to “accepted practice,” farmers who grow non-GM crops should utilize borders and plan different growing times to prevent unintentional cross-pollination).

138. See CFS REPORT, *supra* note 13, at 39 (citing a British study that found oilseed rape pollen could travel sixteen miles); Andrew Pollack, *Can Biotech Crops Be Good Neighbors?*, N.Y. TIMES, Sept. 26, 2004, at WK12 (stating that GM bentgrass seeds can travel thirteen miles and cross-pollinate with other plants); *supra* note 127 and accompanying text (noting that canola seeds may remain dormant for six to ten years before germination).

139. See *The “Non-GMO Project Verified” Seal*, NON-GMO PROJECT, <http://www.nongmoproject.org/learn-more/understanding-our-seal> (last visited Feb. 20, 2013) (allowing 0.9% GM contamination in products certified as “Non-GMO” verified, in accordance with European Union guidelines, because contamination is unavoidable).

140. See TUG, *supra* note 109, at 8 (asserting that the grower of “Identity Preserved” crops, such as organic or non-GM crops, must prevent them from being contaminated).

contamination also lies with the third party farmer instead of the licensed seed user or patent holder; additionally, the cost of attempting to prevent contamination is lower than the legal fees and possible damages from an infringement lawsuit regardless of the likelihood of contamination or a lawsuit.¹⁴¹

Illustrating the plight of the third party farmer is *Organic Seed Growers & Trade Ass'n v. Monsanto*,¹⁴² a recently dismissed case from the U.S. District Court for the Southern District of New York. The case involved eighty-three plaintiffs, including organic farmers, seed businesses, and farming associations, who sought a declaratory judgment to prevent what they saw as inevitable infringement cases against them for unintentional contamination.¹⁴³ The court dismissed the case for lack of subject matter jurisdiction.¹⁴⁴ First, the district court accepted Monsanto's assertion that it will not sue farmers who are unintentionally contaminated with trace amounts of its products, and second, the court found that the plaintiffs failed to show that the 144 prior defendants sued by Monsanto were in like circumstances to themselves, thereby holding that the plaintiffs were not entitled to a declaratory judgment.¹⁴⁵ However, because intent is not required under the Patent Act,¹⁴⁶ Monsanto's assertion that it *will not* sue unintentional infringers does not mean that it *cannot* sue unintentional infringers or that it would not prevail in such suits.¹⁴⁷

D. Infringement Investigations, Settlements, and Lawsuits for Pollen Drift

GM seed companies often have strict patent and license enforcement investigations and procedures.¹⁴⁸ While most cases settle out of court, settlements can often include a requirement that the farmer purchase and use the patent holder's seeds in the future.¹⁴⁹ Monsanto reports that it filed 144 lawsuits in the United

141. See, e.g., CFS REPORT, *supra* note 13, at 19, 41; see also Van Pelt, *supra* note 107, at 586–87.

142. 851 F. Supp. 2d 544 (S.D.N.Y. 2012), No. 12-1298 (Fed. Cir. argued Jan. 10, 2013).

143. *Id.* at 548–49.

144. *Id.* at 556.

145. *Id.* at 548.

146. See 35 U.S.C. § 101 (2006).

147. See, e.g., Blair v. Westinghouse Elec. Corp., 291 F. Supp. 664, 670 (D.D.C. 1968) (“It is, of course, elementary, that [a patent] infringement may be entirely inadvertent and unintentional and without knowledge of the patent.”).

148. See *Farmers Reporting Farmers—Part 2*, MONSANTO (Oct. 10, 2008), <http://www.monsanto.com/newsviews/Pages/Farmers-Reporting-Farmers-Part-2.aspx> (discussing the procedures of the anonymous tip line and encouraging farmers to report their neighbor farmers for breach of license or for patent infringement).

149. See Rick Weiss, *Seeds of Discord; Monsanto's Gene Police Raise Alarm on Farmers' Rights, Rural Tradition*, WASH. POST, Feb. 3, 1999, at A1 (reporting that nearly half of

States between 1997 and April 2010;¹⁵⁰ this averages about thirteen lawsuits per year.¹⁵¹ To date, only nine cases have gone to trial, and all have ended in victory for Monsanto.¹⁵² Those farmers who do not settle often face bankruptcy.¹⁵³

Monsanto states that the company only pursues cases where it believes the farmer has intentionally saved seed.¹⁵⁴ However, the question of intent is irrelevant for patent infringement, and farmers who never signed a license agreement, but rather whose farm was contaminated by pollen drift, may also be categorized as intentionally saving seed if they harvest the contaminated crop and replant it the following season.¹⁵⁵ The strict liability of patent infringement is traditionally justified by the recoup of investment funds in the invention's development and the requirement that the invention be released into the public domain within twenty years.¹⁵⁶

Harvesting and replanting seeds from contaminated crops was exactly what defendant Percy Schmeiser had done in *Monsanto Canada Inc. v. Schmeiser*,¹⁵⁷ a case from the Supreme Court of Canada.¹⁵⁸ Schmeiser grew conventional canola, while five of his neighboring farmers grew Roundup Ready canola, but through pollen drift, his conventional crop was contaminated with GM pollen.¹⁵⁹ The season after his crop was contaminated, he planted a new canola crop using seed saved from his contaminated harvest.¹⁶⁰

the company's 525 investigations had been settled); *see also* CFS REPORT, *supra* note 13, at 30 (explaining the strict and often confidential terms of such settlements).

150. *Organic Seed Growers*, 851 F. Supp. 2d at 549.

151. *Id.*

152. *Why Does Monsanto Sue Farmers Who Save Seeds?*, MONSANTO, <http://www.monsanto.com/newsviews/Pages/why-does-monsanto-sue-farmers-who-save-seeds.aspx> (last visited Feb. 20, 2013).

153. CFS REPORT, *supra* note 13, at 42.

154. *Why Does Monsanto Sue Farmers Who Save Seeds?*, *supra* note 152.

155. *See, e.g.*, *Monsanto Can. Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 87 (Can.).

156. *See, e.g.*, *Jurgens v. CBK, Ltd.*, 80 F.3d 1566, 1570 & n.2 (Fed. Cir. 1996) (holding that intent is required only if the patent holder seeks enhanced damages or attorneys' fees for willful infringement (citing *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1527 (Fed. Cir. 1995) (en banc), *rev'd on other grounds*, 520 U.S. 17 (1997))). *But see* Roger D. Blair & Thomas F. Cotter, *Strict Liability and Its Alternatives in Patent Law*, 17 BERKELEY TECH. L.J. 799, 833-34 (2002) (suggesting patent law is actually a modified strict liability system where liability often depends upon receipt of actual or constructive notice of the patent).

157. [2004] 1 S.C.R. 902 (Can.).

158. Canadian patent law is very similar to U.S. patent law. *See* Carie-Megan Flood, Note, *Pollen Drift and Potential Causes of Action*, 28 J. CORP. L. 473, 476 (2003) (analogizing the two bodies of law and finding that Monsanto's licensing agreement had similar applicability in both countries); *cf.* *Aristech Chem. Int'l Ltd. v. Acrylic Fabricators Ltd.*, 138 F.3d 624, 629 (6th Cir. 1998) (noting the similarity between the Canadian and United States legal systems).

159. *Schmeiser*, 1 S.C.R. 902, paras. 5-6.

160. *Id.* at para. 61.

Schmeiser's routine spraying of Roundup herbicide to kill unwanted weeds in the ditches alongside his fields revealed a large number of Roundup-resistant canola plants.¹⁶¹ Schmeiser conducted testing and found that approximately sixty percent of his plants were resistant to Roundup herbicide.¹⁶² In the same growing season, an investigator from Monsanto took seeds from near Schmeiser's fields.¹⁶³ Tests on these samples revealed a significant amount of Roundup resistance.¹⁶⁴

Monsanto sued Schmeiser in 1998 for infringement of its Canadian patent on the Roundup Ready gene, alleging Schmeiser had grown and sold canola plants containing the gene without a license or consent.¹⁶⁵ Though Schmeiser's crop was contaminated through pollen drift, he did sell the contaminated canola and even saved and replanted the Roundup seeds, just as he would have done with his conventional crop in the following growing season.¹⁶⁶ He alleged, that he did not however, use Roundup spray on the contaminated crop and thus, did not benefit from the GM seed containing the Roundup Ready gene.¹⁶⁷ On the issue of infringement, the Supreme Court of Canada¹⁶⁸ determined it was irrelevant whether Schmeiser intended to use or even benefit from the patented gene and thus applied the strict liability doctrine. When assessing damages, the court did hold that Schmeiser had not financially profited from the harvesting of the crop grown from the patented technology and did not require Schmeiser to pay any damages to Monsanto, despite the finding of patent infringement.¹⁶⁹ However, he still incurred

161. *Monsanto Can. Inc. v. Schmeiser*, [2003] 2 F.C. 165, para. 22 (Can.), *aff'd*, [2004] 1 S.C.R. 902 (Can.).

162. *Id.*

163. *Schmeiser*, 1 S.C.R. 902, paras. 6, 63.

164. *Id.*

165. *Id.* at para 1.

166. *Id.* at para. 63.

167. *Id.* at para. 81.

168. *Compare* *Ridout & Maybee LLP, Canada*, in *MANUAL FOR THE HANDLING OF APPLICATIONS FOR PATENTS, DESIGNS AND TRADE MARKS THROUGHOUT THE WORLD* 23, 23 (Arnold & Siedsma eds., Supp. 2012) (excluding intent when defining Canadian patent infringement as "making, constructing, using or selling" any patented invention within Canada during the term of the patent), *with* *Kenyon & Kenyon, USA*, in *MANUAL FOR THE HANDLING OF APPLICATIONS FOR PATENTS, DESIGNS AND TRADE MARKS THROUGHOUT THE WORLD*, *supra*, at 30, 30 (excluding intent when defining U.S. patent infringement as making, using, offering to sell, selling or importing any patented invention within the U.S. during the term of the patent).

169. *Schmeiser*, [2004] 1 S.C.R. 902, paras. 104-05; *see also id.* at para. 87 (questioning why Schmeiser chose to harvest the Roundup Ready plants he found on his land, save the seeds, and plant them the next year). If courts were to continue this model of paying for infringement when and if benefits are incurred, it would be more costly and easier to use in other situations such as contamination by product lines that feature higher yielding corn. In contrast, for Roundup Ready crops,

significant costs, as he was required to pay legal fees, to rip up his land to remove the seeds, and thus to lose that year's income and seeds for future years.¹⁷⁰

II. POLLEN DRIFT DEMONSTRATES THE NEED FOR A RESTRICTION IN PATENT RIGHTS BECAUSE THE SELF-REPLICATING INVENTION CAUSES THE INFRINGEMENT

When utility patents were created, life was not patentable.¹⁷¹ There were no lab-rat patents¹⁷² or reproducing seed patents.¹⁷³ Now that self-replicating organisms¹⁷⁴ are patentable, the question of whether enforcement rights are appropriate in all circumstances remains.¹⁷⁵ This is particularly pressing in situations where the patented subject itself has caused the infringement with no human interaction, or when the infringement simultaneously arises in connection with illegal acts such as trespass or nuisance attributable to the patent holder. Moreover, an alternative means to patent law should be

benefits are only incurred if the farmer uses Roundup herbicide. *See supra* note 105 (explaining the Roundup system).

170. However, when Schmeiser's land was contaminated again several years later, he removed the contamination and sued Monsanto for the cost of removal and for trespass. *See Percy Schmeiser Turns the Tables on Monsanto*, ISLAND TIDES, Apr. 3, 2008, at 3, available at http://www.islandtides.com/assets/reprint/env_20080403.pdf. The company settled with him for the cost of removal, approximately \$600. *Id.*

171. *See* David G. Scalise & Daniel Nugent, *International Intellectual Property Protections for Living Matter: Biotechnology, Multinational Conventions and the Exception for Agriculture*, 27 CASE W. RES. J. INT'L L. 83, 88, 99 (1995) (describing the expansion of patent law to include plants in 1930 and animals in 1988); *see also* Stephanie M. Bernhardt, *High Plains Drifting: Wind-Blown Seeds and the Intellectual Property Implications of the GMO Revolution*, 4 NW. J. TECH. & INTELL. PROP. 1, 12 (2005) ("The unique nature of a property that can contaminate the property of others and reproduce on its own was not considered by lawmakers when they drafted the Patent Act.").

172. *See* Scalise & Nugent, *supra* note 171, at 99 (crediting the "Harvard mouse" of 1988 as the first multi-cellular living organism to be patented); *see also* U.S. Patent No. 4,736,866 col. 2 l. 30-42, col. 3 l. 16-48 (filed June 22, 1984) (describing the "Harvard Mouse," or "OncoMouse," as an animal genetically altered to be more susceptible to cancer, making it ideal for cancer research).

173. *See* Joe Miller, *Patent Law: How Patents Grew Over Time To Include Living Organisms*, COOKING UP A STORY, <http://cookingupastory.com/patent-law-how-patents-grew-over-time-to-include-living-organisms> (last visited Feb. 20, 2013) (outlining the development of patent law and its incorporation of reproducing seed patents in the PVPA of 1970).

174. Referring to seed technology, but also including patented animals, bacteria, and even DNA molecules. *See* Ass'n for Molecular Pathology v. U.S. Patent & Trademark Office, 689 F.3d 1303, 1325 (Fed. Cir. 2012) (finding that DNA molecules separated by geneticists are patentable technology under 35 U.S.C. § 101), *cert. granted*, 133 S. Ct. 694 (2012) (No. 12-398).

175. Bernhardt, *supra* note 171, at 12 (arguing that the strict liability standard applied to infringement of intellectual property is not appropriate in the context of tangible property).

found to manage any benefits inadvertently received from the pollen drift such as resistance to pathogens.¹⁷⁶

This Section first argues that because the self-replicating organism through pollen drift itself has caused the infringement, a restriction of patent rights is warranted in order to reconcile moral utility with specific and substantial utility. Second, this Section borrows the legal doctrine of *ex turpi causa non oritur actio* from contract law to assert that unlawful trespass attributable to the patent holder would prohibit him or her from seeking a cause of action for patent infringement. Third, this Section addresses an unintentional infringer benefiting from the infringement and explains why enforcing patent rights for pollen drift is harmful to biodiversity and the economy.

A. When Self-Replicating Inventions Themselves Cause Infringement and Injury, the Patent Holder's Exclusion Rights Should Be Restricted in Order To Reconcile the Three Types of Utility under 35 U.S.C. § 101

Under the current application of the § 101 usefulness requirement and *Chakrabarty*, it is clear that GM seeds are patentable and pollen drift results in unintentional infringement on behalf of the farmer whose crops are contaminated. Although the Court in *Chakrabarty* held that living organisms merited no new test for patentability,¹⁷⁷ the unique self-replicating ability to cause infringement without any human interaction should warrant a restriction of exclusion rights in order to reconcile the three types of utility.

In *Fuller*, the U.S. Court of Appeals for the Seventh Circuit nearly voided Justice Story's moral utility test.¹⁷⁸ The *Fuller* court held that as long as the invention is capable of some use that is not harmful, it is patentable.¹⁷⁹ The decisions in *Brenner* and *Fisher* further specified patentable utility as being *specific* and *substantial*.¹⁸⁰ The Supreme Court in *Brenner* held that looking to harm alone was insufficient because there are some inventions, which are not positively harmful, but are still not useful; thus, passing the injurious branch of the moral utility test (as qualified by *Fuller*) was necessary but not sufficient.¹⁸¹

176. *Infra* Part II.C.

177. *Id.* at 315.

178. *Fuller v. Baker*, 120 F. 274, 275 (7th Cir. 1903).

179. *Id.*

180. *Brenner v. Mason*, 383 U.S. 519, 534–36 (1966); *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005); see also MPEP § 2107 (8th ed. Rev. 9, Aug. 2012), available at <http://www.uspto.gov/web/offices/pac/mpep/mpep-2100.pdf>.

181. *Brenner*, 383 U.S. at 533 (stating that there are “many things in this world

However, even inventions having *only* injurious utility are now eligible for patents.¹⁸² Since the *Fuller* decision, inventions only capable of being used to deceive the public and inventions only capable of being used to commit an illegal activity have been granted patents.¹⁸³ With regard to “deceptive” patents, the moral utility test has been virtually eliminated.¹⁸⁴ The Federal Circuit in *Juicy Whip, Inc. v. Orange Bang, Inc.*¹⁸⁵ held in part that a beverage dispenser that concealed the mixing elements while displaying a fake pre-mixed reservoir was patentable despite its deceptive nature.¹⁸⁶ The court likened the device to cubic zirconium and synthetic fabrics to reason that the ability for one product to imitate another was itself a benefit sufficient to satisfy utility.¹⁸⁷ In addition to issuing patents for devices useful only for deception, the USPTO has issued several patents for devices useful only for committing illegal acts (illegal device patents).¹⁸⁸

The holding of *Juicy Whip* is inapplicable to self-replicating patented organisms because it dealt with the “deceptive” branch of moral utility, whereas self-replicating organisms are capable of injury instead of deception.¹⁸⁹ However, the rationale behind *Fuller* and the illegal device patents is also inapposite for self-replicating patents despite dealing with the injurious branch of moral utility. Both the invention in *Fuller* and the illegal devices are inanimate objects incapable of injuring without human intervention, whereas self-replicating inventions can injure on their own.¹⁹⁰ While moral utility has been applied to deceptive, morally objectionable, and illegal inventions, the *Juicy Whip* court only refused to apply it for deceptive inventions.¹⁹¹ Self-replicating inventions are not meant to deceive the public the way that the reservoir bowl in *Juicy Whip* was meant to deceive customers.¹⁹² Instead, as with pollen drift, self-replicating

which may not be considered ‘useful’ but which, nevertheless, are totally without a capacity for harm”).

182. See *supra* notes 57–59 and accompanying text.

183. See *supra* notes 57–59 and accompanying text.

184. *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1356–66 (Fed. Cir. 1999).

185. 185 F.3d 1364 (Fed. Cir. 1999).

186. *Id.* at 1356–66.

187. *Id.* at 1367.

188. *Supra* note 57 and accompanying text.

189. *Juicy Whip*, 185 F.3d at 1364.

190. See, e.g., Schwartz, *supra* note 57, at 365 (describing patents issued for alcohol production during prohibition, drug paraphernalia, radar detectors, and cock-fighting equipment, all items that only cause harm when used by a person).

191. *Juicy Whip*, 185 F.3d at 1367–68.

192. *Id.* (describing that the juice dispenser at issue was deceptive because it displayed liquid in a reservoir bowl that was not actually the beverage dispensed to customers).

patented organisms are capable of injury by breaking the law without any human interaction.¹⁹³ Thus, the holding in *Juicy Whip* does not apply to self-replicating inventions.

Like *Juicy Whip*, the criminal invention patents and the *Fuller* holding are also distinguishable when applied to self-replicating technology.¹⁹⁴ The rationale used to justify the granting of patents for banned inventions and inventions capable only of being used for illegal activity are inapplicable here.¹⁹⁵ When self-replicating patents cause infringement, the line between the patented invention and its use disappears because the invention is acting on its own.¹⁹⁶ For example, while banned drug paraphernalia requires a user to commit an illegal act, such as use or possession, self-replicating technology by its very nature and existence can itself cause an illegal act such as when the pollen produced by the patented seeds trespasses onto the property of a third party.¹⁹⁷ Without a distinction between the invention and its use, the rationale for illegal device patents is inapplicable to self-replicating patented organisms capable of causing injury.

Even if deceptive and illegal inventions were not patentable when they are *only* capable of injurious use, the holding from *Fuller* would still permit them if they had some other use besides injuriousness.¹⁹⁸ But like patents only capable of illegal use, the *Fuller* court's rationale is also inapposite for self-replicating technology.¹⁹⁹ By using the example of "Colt's revolver," the court in *Fuller* explained that an invention might in fact be injurious to morals by promoting revenge, to health by causing wounds or homicide, and to the good order of society by increasing "private warfare."²⁰⁰ However, the court went further to state, "[o]n the other hand, the revolver, by furnishing a ready means of self-defense, may sometimes have promoted morals

193. See *supra* notes 126–30 and accompanying text (describing the uncontrollable nature of pollen drift).

194. See *Fuller v. Berger*, 120 F. 274, 275 (7th Cir. 1903) (holding that a product can be patented if it has legal uses); Schwartz, *supra* note 57, at 365 (describing patented inventions that have criminal uses).

195. See *supra* notes 58–59 and accompanying text (describing the principle that a patent does not grant a right to use a device, but only to prevent others from using it).

196. The seeds themselves are creating a second generation, so in effect the seeds are infringing the patent, and not the farmer who owns the land in which they grow.

197. *Supra* note 193; see also *Pollen—Nature's Tiny Clues*, ARIZ. STATE UNIV., <http://askabiologist.asu.edu/podcasts/pollen-natures-tiny-clues> (last visited Feb. 20, 2013) (explaining that most pollen can travel 300 meters, but there are cases where pollen was found 2000 miles from its source).

198. *Fuller*, 120 F. at 275.

199. *Id.*

200. *Id.* at 275–76.

and health and good order.”²⁰¹ Such conflicting results are possible in nearly any inanimate invention that may be manipulated by human beings. In nearly all situations, the revolver will require a person’s will or even a person’s negligence in order to be used to cause wounds or to be a means of self-defense as the court implied.²⁰² The *Fuller* holding involved an inanimate object requiring human manipulation in order to be injurious; therefore, the holding nearly vacates the injurious branch of the moral utility test because inanimate objects will almost always have some capacity to be used for non-injurious purposes.

The *Fuller* test, however, does not address the circumstances of self-replicating inventions. Even though GM seeds are capable of growing food—a useful purpose—they are also capable of causing trespass and nuisance.²⁰³ But, unlike with Colt’s revolver, a farmer does not decide to plant GM seeds for food, and then decide to use pollen created from the GM seeds to contaminate another’s property or break the law.²⁰⁴ Instead, the seeds themselves cause injury, with no human interaction.²⁰⁵ Thus, *Fuller’s* test does not fully accommodate the distinct circumstances of self-replicating inventions and should not be applied.

The *Fuller* opinion was a way of reconciling the injurious branch of the moral utility test²⁰⁶ with the substantial and specific utility tests.²⁰⁷ If the *Fuller* opinion is not applicable to self-replicating patented organisms, then a new form of reconciling the injurious branch of moral utility and specific and substantial utility is needed when the invention itself causes the infringement. One solution is to continue applying the current test of at least one specific and substantial use for patentability as well as the injurious branch of the moral utility test without *Fuller’s* narrowing when a self-replicating patented organism acts without human interaction such as during pollen drift.

201. *Id.*

202. While accidental discharge and other inadvertent harmful uses may occur, the *Fuller* court was clearly implying that human use and will controls the object. *See id.* (implying that the Colt’s revolver can be used for good or evil based on the will of the person holding it).

203. *See infra* notes 213–39 and accompanying text (describing potential injuries associated with pollen drift).

204. *See, e.g.,* Bernhardt, *supra* note 171, at 6 (describing the various ways that seeds from plants growing on one farmer’s land can travel to another farmer’s land outside the control of either farmer).

205. *Id.*

206. *See* *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (Story, Circuit Justice, C.C.D. Mass. 1817) (No. 8568) (laying out the injurious branch of the moral utility test).

207. *See* *Brenner v. Manson*, 383 U.S. 519, 534–35 (1966) (requiring substantial utility and a specific benefit).

Doing so would mean the patent would only be unenforceable when it fails moral utility but would remain enforceable in all other situations, thanks to its specific and substantial utility. This would allow inventions such as GM seeds to maintain their patent because they are specifically and substantially useful in growing food, for example.²⁰⁸ But it would also expressly limit patent rights when a self-replicating patent becomes injurious without human interaction.²⁰⁹ Thus, because of the injurious branch of the moral utility test, the patent holder would have no patent enforcement rights when (1) the patented technology causes the infringement with no human interaction and (2) the infringing act fails the (pre-*Fuller*) moral utility test. Carving out patent rights in such a situation would accommodate self-replicating technology under moral utility and under specific and substantial utility. Moreover, these limited patent rights would leave intact the Federal Circuit's holdings in *Scruggs* and *McFarling*, where the GM seed patent infringement occurred because of self-replication but was not injurious.²¹⁰ In those cases, the infringer saved seed from a previously licensed patent-protected crop, in order to replant it, instead of being injured by self-replicating seed through pollen drift that caused a trespass or nuisance.²¹¹ Thus, the infringement did occur because of self-replication (first prong), but did not fail the injurious branch of the moral utility test in infringement (second prong).²¹² Therefore, the patent holder would be able to enforce patent rights when a farmer saves seed after licensing the seed from the patent holder.

In the case of GM seeds, there are several forms of injury that can occur by the very nature of the patented seed and the natural phenomenon of pollen drift.²¹³ First, the pollen can cause nuisance

208. See, e.g., WADE A. GIVENS ET AL., ROUNDUP READY CROPS HAVE MAJOR POSITIVE IMPACT ON TILLAGE PRACTICES (2009), available at <http://www.monsanto.com/weedmanagement/Documents/Benchmark-TillageSummaryRept2.pdf> (describing some benefits of Monsanto's patented seed technology).

209. See, e.g., Bernhardt, *supra* note 171, at 6 (describing the potential harm done to a neighboring farmer's crops from the introduction of genetic material carried in airborne pollen originating from a Monsanto derived plant).

210. *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1333 (Fed. Cir. 2006) (illustrating that the defendant purchased Monsanto seeds, yet did not sign a license agreement preventing his subsequent reuse of the resulting second generation seeds); *Monsanto Co. v. McFarling*, 302 F.3d 1291, 1293 (Fed. Cir. 2002) (revealing that the defendant saved seeds generated from the first generation of planted Monsanto seeds and then planted them the following season, contrary to the license agreement).

211. *Scruggs*, 459 F.3d at 1333; *McFarling*, 302 F.3d at 1293.

212. *Scruggs*, 459 F.3d at 1333 (noting that the GM seed was purchased not contaminated); *McFarling*, 302 F.3d at 1293 (same).

213. Flood, *supra* note 158, at 474 n.7, 475-76 (suggesting "[p]laintiffs may utilize . . . legal theories, such as trespass, nuisance, negligence, and strict liability for

because it interferes with the “private use and enjoyment” of property.²¹⁴ For example, in *Helmkamp v. Clark Ready Mix Co.*,²¹⁵ the Iowa Supreme Court held that erection of a cement plant constituted a private nuisance because the *dust*, noise and smell of the plant had “changed the neighborhood for the worse.”²¹⁶ Thus, wind-blown cement dust landing on another’s property is sufficient to constitute a nuisance, legally harming the victim.²¹⁷ Similarly, wind-blown pollen landing on another’s property also creates a legally actionable nuisance claim.²¹⁸

Second, the pollen can cause a physical trespass because it interferes with the possessory rights of property by entering another’s land.²¹⁹ Trespass can occur even when a person does not enter another’s land.²²⁰ It is sufficient that one causes a third person or *thing* to do so.²²¹ Additionally, the trespass need not be intentional; the trespasser need only be aware that there is a high probability that his or her activity will result in trespass.²²² Thus, there is liability for trespass where the trespass was negligent or the result of abnormally dangerous activity.²²³ Finally, the pollen that drifts can destroy the landowner’s possessions by contaminating their crops and soil.²²⁴

abnormally dangerous activities, to recover damages for injury caused by genetic drift”).

214. RESTATEMENT (SECOND) OF TORTS § 822 (1979) (defining “liability for a private nuisance if, but only if, [one’s] conduct is a legal cause of an invasion of another’s interest in the *private use and enjoyment of land*, and the invasion is either (a) intentional and unreasonable, or (b) unintentional and otherwise actionable under the rules controlling liability for negligent or reckless conduct, or for abnormally dangerous conditions or activities” (emphasis added)).

215. 214 N.W.2d 126 (Iowa 1974).

216. *Id.* at 129.

217. *Id.*

218. See *In re StarLink Corn Prods. Liab. Litig.*, 212 F. Supp. 2d 828, 847 (N.D. Ill. 2002) (“Residue from a product drifting across property lines presents a typical nuisance claim.”); Thomas P. Redick & Christina G. Bernstein, *Nuisance Law and the Prevention of “Genetic Pollution”: Declining a Dinner Date with Damocles*, 30 ENVTL. L. REP. 10,328, 10,329 (2000) (outlining the various harms that can occur to farmers due to pollen drift of GM crops).

219. See Flood, *supra* note 158, at 482 (comparing an example from the Second Restatement that “one who so piles sand close to his boundary that by force of gravity alone it slides down onto his neighbor’s land . . . becomes a trespasser on the other’s land” to pollen drift where there is substantial certainty that like gravity moving the sand, the wind will blow the pollen onto a nearby property (quoting RESTATEMENT (SECOND) OF TORTS § 158 cmt. i (1965))).

220. RESTATEMENT (SECOND) OF TORTS § 158 cmt. b (indicating that trespass may include “the presence upon the land of a third person or thing which the actor has caused to be or to remain there”).

221. *Id.* § 158 cmt. i (indicating that trespass may include “throwing, propelling, or placing” a thing on, above, or below the land).

222. 16 DAVID K. DEWOLF, WASHINGTON PRACTICE SERIES: TORT LAW AND PRACTICE § 13.31, at 408–09 (3d ed. 2006).

223. RESTATEMENT (SECOND) OF TORTS § 165 (“One who recklessly or negligently, or as a result of an abnormally dangerous activity, enters land in the possession of

Pollen bears many similarities to other types of particulate matter that have a known tendency to drift. In *Bradley v. American Smelting & Refining Co.*,²²⁵ a smelting company did not deny that whenever the smelter was in operation, the “whim of the winds” could deposit its emissions, including arsenic and cadmium, onto the plaintiff’s land.²²⁶

The pollen drift from GM seeds, often considered contamination by neighboring farmers, contains similar elements of trespass. Additional injuries include the receiving farmer losing the actual value of his or her crops, the farmer being unable or unwilling to find a market to sell the GM crops, or the receiving farmer being legally barred from selling them due to patent infringement.²²⁷ Just as with pollen drift, in *Bradley* there was a known high-probability that wind would move unwanted particulate matter from the defendant’s land to the plaintiff’s land, resulting in trespass.²²⁸ Although the seed industry often refers to contamination as “adventitious presence,”²²⁹ suggesting contamination occurred by chance, it is not by chance that organisms reproduce, it is inherent.²³⁰ Moreover, the contamination destroys the product the farmer intended to grow and in some cases of contamination, despite genetic modification, there is no “advantage” to the receiving farmer such as a higher crop yield or undisturbed use of a glyphosate herbicide (like Roundup) on the crop.²³¹ Furthermore, because conventional farmers save seeds from

another or causes a thing or third person so to enter is subject to liability to the possessor if, but only if, his presence or the presence of the thing or the third person upon the land causes harm to the land, to the possessor, or to a thing or a third person in whose security the possessor has a legally protected interest.”).

224. See Julie A. Davies & Lawrence C. Levine, *Biotechnology’s Challenge to the Law of Torts*, 32 MCGEORGE L. REV. 221, 223–24 (2000) (arguing that trespass is possible for pollen drift in the biotechnology context); Redick & Bernstein, *supra* note 218.

225. 709 P.2d 782 (Wash. 1985).

226. *Id.* at 785.

227. Stephanie E. Cox, Note, *Genetically Modified Organisms: Who Should Pay the Price for Pollen Drift Contamination?*, 13 DRAKE J. AGRIC. L. 401, 405, 407 (2008).

228. *Id.*

229. See *Glossary*, *supra* note 2 (defining adventitious presence as “unintended, trace levels of traits developed through modern plant biotechnology in seed, grain, or feed and food products”).

230. See MANIFESTO, *supra* note 117, at 10 (indicating that the nature of seed is to reproduce itself and multiply). This is particularly true in regard to GM plants evidenced by studies that suggest that certain GM crops are more likely to cross-pollinate than non-GM crops. Cox, *supra* note 227, at 405.

231. See, e.g., *Monsanto Can. Inc. v. Schmeiser*, [2004] 1 S.C.R. 902, para. 9 (Can.) (finding no benefit to using the GM seeds because the farmer did not use them in conjunction with the corresponding herbicide).

their crop for future replanting,²³² crop contamination in one growing season contaminates the genetic makeup of that crop's offspring, the seeds that the farmer would be using for future growing seasons.²³³ Worse yet, the genetic contamination can stay in the seed's genome for fifteen years.²³⁴

Finally, a farm certified as organic or GM-free may lose its certification and its market once contaminated by GM pollen.²³⁵ For example, the European Union requires labeling of GM food products; if a farmer's crops are not labeled, they cannot sell to that market, but the farm also cannot label their crops without paying the license fee to the patent holder, despite being contaminated through no fault of the farmer.²³⁶

Even if the patent holder were to offer to remove contaminated crops, the farmer would have lost his sellable crop for the year and the cost of seeds.²³⁷ The plethora of individual harms are the result of the self-replicating nature of the invention—the very invention that continues to be granted protection despite causing injury.²³⁸

232. *Farmers Protest Loss of Saving Seed*, DELTA FARM PRESS (Apr. 6, 2001), <http://deltafarmpress.com/farmers-protest-loss-saving-seed> (“As long as farmers have tilled soil, they have saved seed for their own use . . .”).

233. Rhea Gala, *GM Contamination Accelerating: No Co-Existence Possible*, INST. OF SCI. IN SOC'Y (Dec. 16, 2005), <http://www.i-sis.org.uk/GMCANCEP.php> (indicating that the contamination of a seed stays within its genome, thereby affecting the seed's offspring).

234. GEOFF SQUIRE ET AL., SCOTTISH CROP RESEARCH INST., *THE POTENTIAL FOR OILSEED RAPE FERAL (VOLUNTEER) WEEDS TO CAUSE IMPURITIES IN LATER OILSEED RAPE CROPS* 10 (2003), available at http://www.scri.ac.uk/scri/file/EPI/Agroecology/Volunteer_impurities_in_oilseed_rape_rg0114.pdf (finding that that GM canola can contaminate non-GM varieties for fifteen years).

235. First Amended Complaint, *supra* note 11, at 36; Flood, *supra* note 158, at 476 (discussing the loss of Mathew Kraft's organic corn certification due to pollen drift from GM corn); Flood, *supra* note 158, at 490 (“Currently no private or governmental certification program for organic food allows use of GMO seeds.” (internal quotation marks omitted)); *see also* Redick & Bernstein, *supra* note 218, at 10,329 (explaining that when non-GM farmers ship GM contaminated products to GM-free countries, their crops are rejected and labeled “unmarketable by the comingling of a single variety of GMO that is not approved for import to the EU or other major trading partners”).

236. *See The World According to Monsanto*, *supra* note 126 (discussing with Brazilian ministers how the Brazilian market had mysteriously become contaminated with GM soy causing exports to Europe to be rejected and how that played a role in Brazil legalizing GM seeds).

237. *See supra* note 170 (explaining how Schmeiser sued for the cost of later contamination removal and Monsanto settled for the cost of removal); *see also* Aoki, *supra* note 127, at 297 (discussing how an individual whose crops were contaminated with the pollen from GM seeds was required to dig up his land and lost all his seeds, with no offer to replace the seeds or compensate the farmer).

238. *Supra* note 24 and accompanying text.

B. *Courts Should Not Enforce Patent Rights when Infringement Arises from Unlawful Trespass or Nuisance Caused by the Self-Replicating Patented Organism*

Applying *ex turpi causa oritur non actio*, courts have held that the test for whether a demand connected with an illegal action is enforceable is whether the plaintiff requires any aid from the illegal transaction to establish his case.²³⁹ In many cases, this means that the cause of action and the illegal action were based on the same facts.²⁴⁰ Similarly, in a patent infringement suit for pollen drift, the applicable facts to infringement are the same as those that show nuisance or trespass on the part of the patent holder. For example, in *Sirkin v. Fourteenth St. Store*,²⁴¹ a hosiery distributor sued a buyer over the price of hosiery delivered.²⁴² The buyer brought a defense that the seller had obtained the contract by bribing the buyer's purchasing agent in violation of a New York statute making bribery a misdemeanor.²⁴³ The appellate court held the contract unenforceable because it conflicted with "the public policy of the state, [and] it is the duty of the court to be guided thereby in administering the law."²⁴⁴ The same is true in pollen drift: nuisance and trespass evidence the public policy of the state, and as such, the court should not uphold a patent causing a trespass or nuisance.

The doctrine of *ex turpi causa* seeks to protect the greater population from the harms that can result from encouraging illegal acts. In *Veazey v. Allen*,²⁴⁵ the New York Court of Appeals further clarified the purpose of the *ex turpi causa* doctrine by noting that it is intended for the protection of society in general and not for the protection of litigants.²⁴⁶ Therefore, in an action between the parties to a fraudulent scheme, it is no defense that the victim is satisfied with the bargain and is initially benefitted by the plaintiff's fraud.²⁴⁷ Courts have further justified the doctrine as a deterrence of illegal

239. See, e.g., *Ewell v. Daggs*, 108 U.S. 143, 149 (1883) ("If . . . the cause of action appear[s] to arise *ex turpi causa*, or the transgression of a positive law of this country, then the court says he has no right to be assisted."). But see *Ingram v. Mitchell*, 30 Ga. 547, 550 (1860) (holding that "whenever the plaintiff can make out his case without invoking the illegal contract to his aid, he is entitled to recover").

240. *Ewell*, 108 U.S. at 149 (indicating courts will not assist a plaintiff whose cause of action arises from illegal acts).

241. 108 N.Y.S. 830 (App. Div. 1908).

242. *Id.* at 831.

243. *Id.*

244. *Id.* at 833-34.

245. 66 N.E. 103 (N.Y. 1903).

246. *Id.* at 107-08.

247. *Id.* at 105-07.

conduct²⁴⁸ and the preservation of respect for the rule of law.²⁴⁹ This perspective could be particularly valuable for pollen drift, which not only harms the victim, but the public food supply as well.²⁵⁰ In *In re Starlink Corn Products Liability Litigation*,²⁵¹ GM corn that had been approved only for animal consumption was unknowingly released into the human food supply via pollen drift.²⁵² Only after products such as corn tortillas were sent to restaurants and super markets did testing reveal their GM contamination; massive product recalls followed.²⁵³

While patenting seed does not break the law as an illegal contract does, the effects of self-replication, such as pollen drift, can cause violations of the laws prohibiting trespass, nuisance, and the strict liability negligence for an abnormally dangerous activity.²⁵⁴ Thus, to enforce patent rights that treat pollen drift as an infringement and overlook the violations caused by the drift would “sully[] the machinery of justice.”²⁵⁵ The doctrine should be extended to patent infringement suits because the rationales that apply it to other fields of law are applicable and necessary in patent law. Once the specific illegal or tortious circumstance occurs, the right to sue for patent infringement is in conflict with the right to be free of trespass, nuisance, or negligence.²⁵⁶ Just as enforcing the right to contract for

248. See *McMullen v. Hoffman*, 174 U.S. 639, 669–70 (1899) (asserting that when parties understand that when they enter into contracts of this nature they place themselves outside the protection of the law that consists of aiding them to enforce such contracts, then the less inclined they will be to enter into such contracts); see also *Sirken*, 108 N.Y.S. at 834 (“I think nothing will be more effective in stopping the growth and spread of this corrupting and now criminal custom [of commercial bribery] than a decision that the courts will refuse their aid to a guilty vendor or vendee . . .”).

249. Prentice, *supra* note 68, at 106–22 (setting forth courts’ justifications for the doctrine).

250. *Infra* Part II.C.

251. 212 F. Supp. 2d 828 (N.D. Ill. 2002).

252. *Id.* at 834–35, 841.

253. See Melinda Fulmer, *Taco Bell Recalls Shells that Used Bioengineered Corn*, L.A. TIMES (Sept. 23, 2000), <http://articles.latimes.com/2000/sep/23/news/mn-25314> (estimating the recall of Taco Bell taco shells cost Kraft food roughly \$50 million).

254. See Flood, *supra* note 158, at 474–76 (suggesting “trespass, nuisance, negligence, and strict liability for abnormally dangerous activities” as claims against pollen drift).

255. See Prentice, *supra* note 68, at 60, 119 (noting that a court’s ruling allowing criminals to profit from their crime would “sully the court’s reputation”); see also *Manning v. Noa*, 76 N.W.2d 75, 77 (Mich. 1956) (“Our doors are open to both the virtuous and the villainous. We do not, however, lend our aid to the furtherance of an unlawful project, nor do we decide, as between two scoundrels, who cheated whom the more.”).

256. Compare *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc) (concluding that “[t]he patent right is [really] a right to exclude”), with *Church of Christ in Hollywood v. Superior Court*, 121 Cal. Rptr. 2d 810, 817 (Ct. App. 2002)

an illegal act would violate contracting principles, allowing patent enforcement for circumstances such as pollen drift undermines the *ex turpi causa* doctrine. Protecting the interest of society requires both preserving respect for the law and deterring tortious conduct by refusing to lend the law's aid to tortfeasors.²⁵⁷ Additionally, application of the *ex turpi causa* doctrine would encourage patent holders to require precautionary measures preventing pollen drift and deter patent holders from seeking to gain from the victims of pollen drift.

The effect of a contractual illegality under the *ex turpi causa* doctrine is generally that the courts refuse to aid either party.²⁵⁸ While some courts have stated that illegal contracts are void from their inception, the effect may more accurately be described as “simply leav[ing] the parties . . . where the court finds them.”²⁵⁹ Alternatively, a court may mitigate the damage by holding that only part of the agreement is enforceable.²⁶⁰ Such divisibility entails separating a contract into pairs of corresponding consideration and performance, and then enforcing only the part of the agreement that does not materially advance the improper purpose.²⁶¹ Similarly, applying *ex turpi causa* to patent infringement cases would not completely invalidate the patent; it would only make the patent rights unenforceable when illegal circumstances were present. Just as the court may enforce only parts of a contract that do not support an illegality,²⁶² the court should enforce a patent holder's right to exclude only when the patent is not causing the violation of laws that prohibit nuisance or trespass. Specifically, causing such a violation is not equal to the mere capability of being used by a human to commit

(“[L]andowners . . . have a right to exclude [others] from trespassing on private property . . .” (quoting *Allred v. Harris*, 18 Cal. Rptr. 2d 530, 533 (Ct. App. 1993))).

257. See *supra* note 239 and accompanying text (explaining that the court will deny rights to those whose actions appear to arise *ex turpi causa*).

258. See *Prentice*, *supra* note 68, at 61 & n.46 (noting that this often means that one party profits unjustly at the expense of the other).

259. *Id.*

260. 2 E. ALLAN FARNSWORTH, FARNSWORTH ON CONTRACTS § 5.1, at 3–4 (3d ed. 2004).

261. *Id.* § 5.8, at 88. For example, in *Karpinski v. Ingrassi*, 268 N.E.2d 751 (N.Y. 1971), a covenant for an oral surgeon not to practice “dentistry and/or oral surgery” was held void as to dentistry but enforceable as to oral surgery. *Id.* at 754–56. Attempting to exclude both professions violated the law that “a man [cannot] be excluded from a profession for which he has been trained when he does not compete with his former employer by practicing it.” *Id.*

262. Compare *Singleton v. Foreman*, 435 F.2d 962, 969–70 (5th Cir. 1970) (holding a contract void and unenforceable because illegal portions were not severable), with *Coolidge Co. v. Mokrynski*, 472 F. Supp. 459, 463 (S.D.N.Y. 1979) (enforcing a covenant to the extent that it was reasonable by severing “the impermissible from the valid”).

a crime or an illegal act, as with “Colt’s revolver,”²⁶³ but rather, as with pollen drift, involves no human interaction.

While only natural or legal persons are capable of violating the law, patented organisms may cause persons to violate the law when they self-replicate. An illegal act caused by pollen drift should be directly attributed to the holder of the patent and not the licensee.²⁶⁴ Sole liability should lie with the patent holder because pollen drift victims often cannot be certain of the pollen’s origin, so there may be no other farmer to sue.²⁶⁵ Moreover, Monsanto has previously settled with farmers over the cost of removal after contamination and has offered to remove contamination in certain circumstances, essentially linking their patent ownership to the pollen drift.²⁶⁶

The link between the patent holder and the self-replicated seed has also been established by the Federal Circuit via the doctrine of patent exhaustion.²⁶⁷ Although saving self-replicated seed after having licensed GM seed is distinct from having one’s crops be contaminated by GM seed, each is equally considered to be patent infringement under current law. In both seed saving and pollen drift, the patented item self-replicates.²⁶⁸ In *McFarling* and *Scruggs*, both defendants were sued for infringement because they saved the seeds that were reproduced from the patented seed.²⁶⁹ However, *Scruggs* and *McFarling* purchased seed from Monsanto under the actual or implied condition that they not save reproduced seed, then saved and replanted the reproduced seed and were found to be infringing the patent.²⁷⁰ They each argued that the doctrine of patent exhaustion applied and that the patent did not extend to the reproduced seed.²⁷¹ The Federal Circuit twice disagreed and stated in *Scruggs*, that “[w]ithout the actual sale of the second generation

263. *Fuller v. Berger*, 120 F. 274, 275 (7th Cir. 1903).

264. Most genetic seeds are licensed, not sold. *See* MTSA, *supra* note 7 (licensing seeds only); *see also* Van Pelt, *supra* note 107, at 579 (arguing that “trespass is not a defense against the infringement” but an “after-the-fact solution”).

265. Jane Matthews Glenn, *Footloose: Civil Responsibility for GMO Gene Wandering in Canada*, 43 WASHBURN L.J. 547, 555 (2004) (pointing out that if multiple transgenic crops are grown by different farmers around the alleged infringer’s field, it may be difficult to prove the source of the nuisance).

266. *Supra* note 170.

267. *See* *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1347–48 (Fed. Cir. 2011) (permitting patent holder rights, as established in a license, to extend to second generation seed), No. 11-796 (U.S. argued Feb. 19, 2013); *Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1335–36 (Fed. Cir. 2006) (same).

268. *See supra* Part I.D.

269. *Scruggs*, 459 F.3d at 1333 (charging that the defendant saved seeds, contrary to a license agreement); *Monsanto Co. v. McFarling*, 302 F.3d 1291, 1293–94 (Fed. Cir. 2002) (same).

270. *Scruggs*, 459 F.3d at 1333; *McFarling*, 302 F.3d at 1293–94.

271. *Scruggs*, 459 F.3d at 1335; *McFarling*, 302 F.3d at 1298.

seed . . . there can be no patent exhaustion. The fact that a patented technology can replicate itself does not give a purchaser the right to use replicated copies of the technology.²⁷² This is very different from Farmer A purchasing patented seed, then that seed contaminating Farmer B's crops through pollen drift, which is a stage of self-replication. Although pollen drift and seed saving are distinct, these seed saving cases guide the issue of liability in pollen drift cases because they both involve the prohibited use of self-replicated seed. The Federal Circuit's holdings in *McFarling*, *Scruggs*, and *Bowman* that patent exhaustion does not apply to using self-replicated seed indicates that the patent holder retains complete rights to the self-replicated seed that drift onto an unsuspecting farmer's land.²⁷³

The Federal Circuit extended patent rights, and thus, the connection between patent holder and self-replicated seed, in *Bowman*,²⁷⁴ even where the defendant had not saved licensed seed, but purchased reproduced seed from a grain elevator that was under no license.²⁷⁵ Those circumstances are also distinct from having one's crop contaminated by pollen drift.

Nonetheless, the Federal Circuit's holding in any and all of the three cases that the patent holder has perpetual control over seeds that have self-replicated²⁷⁶ strengthens the idea that the patent holder, and not the licensee, should be held liable to any illegal acts caused by the self-replicating nature of the patented seed. Because the patent holder has the benefit of retaining the rights to the second generation seed, it follows that the patent holder should then be held liable for the second generation seed.

C. The Benefits and Drawbacks of Pollen Drift to the "Infringer" Should Be Dealt with Outside of Patent Law

Proponents of utility patents for self-replicating technology may argue that even if the infringement is unintentional, the infringer could in some cases benefit from it.²⁷⁷ In cases where pollen drift has

272. *Scruggs*, 459 F.3d at 1336.

273. The Supreme Court heard arguments in *Bowman* as this Comment went to print. As such, the Court's decision may affect this point.

274. 657 F.3d 1341 (Fed. Cir. 2011), No. 11-796 (U.S. argued Feb. 19, 2013).

275. *Id.* at 1347-48.

276. *See id.* (permitting patent holder rights to extend to second generation seed); *Scruggs*, 459 F.3d at 1335-36 (same); *McFarling*, 302 F.3d at 1298-99 (same).

277. This might apply to someone who may realize that GM seeds are on their land and then use the corresponding herbicide to create a higher yield. *See, e.g.*, *Monsanto Can. Inc. v. Schmeiser*, [2003] 2 F.C. 165, para. 2 (Can.) (explaining the trial court's reasoning that the farmer knew of the contamination and intentionally saved seed), *aff'd*, [2004] 1 S.C.R. 902 (Can.). But it would not apply, for example, to an organic farmer who is harmed by the contamination. *See* First Amended

caused injury through self-replication of the patented organism and the receiving farmer does not remove the product (and infringement is not found under this test), the court may need to decide whether the farmer should be allowed to benefit from the trespass.²⁷⁸ Not only is it appropriate to prohibit patent infringement cases in these instances, it is appropriate to place the burden of preventing harm on the patent holder.²⁷⁹

The two doctrines that support burden-shifting to the licensees are the wandering bull doctrine and acquisition by find. The wandering bull doctrine holds that if a bull wanders onto the property of another and mates, the offspring belong to the owner of the cow, not the owner of the wandering bull.²⁸⁰ The doctrine of acquisition by find in sub-surface property holds that if an item is found embedded in the soil, then it goes to the landowner even if that owner did not know it existed.²⁸¹ These doctrines support the proposition that the burden lies with the owner of movable property to protect what is rightfully his or hers, or risk losing it to those who find it first. In the context of pollen drift, the burden lies with the patent holder to protect its product.

There are additional solutions to eliminate the unintended infringement caused by pollen drift that the patentees should be responsible for implementing. For example, the patent holder could limit drift by requiring that growers of its product have a buffer zone around crops, or in some cases such as alfalfa, the product can be harvested before pollen is released—greatly decreasing the likelihood

Complaint, *supra* note 11, at 1 (alleging inevitable harm to organic growers). However, even if the farmer did benefit from the unintentional infringement, trespass and nuisance in themselves can be harm that negates the application of strict liability. See *Morgan v. High Penn Oil Co.*, 77 S.E.2d 682, 689 (N.C. 1953) (“[A]ny substantial nontrespassory invasion of another’s interest in the private use and enjoyment of land by any type of liability forming conduct is a private nuisance . . .”).

278. *Supra* note 277.

279. See *Flood*, *supra* note 158, at 486 (analogizing pollen drift cases to cases involving wandering bulls, where courts place the burden of restraining the bulls on the owner of the animal).

280. See *Fuchser v. Jacobsen*, 290 N.W.2d 449 (Neb. 1980) (discussing the wandering bull doctrine). But see *Monsanto Can. Inc. v. Schmeiser*, 2001 FCT 256, para. 93 (Can.) (rejecting and distinguishing the wandering bull argument by saying Monsanto does not own the plant as a rancher owns a bull, but instead owns the gene and has exclusive use), *aff’d*, [2004] 1 S.C.R. 902 (Can.).

281. See *Elwes v. Brigg Gas Co.*, (1886) 33 Ch.D. 562 (Eng.) (setting precedent for finder’s law in property law by holding a landowner is in lawful possession of everything in and under the land, referring to a boat found under the surface).

of contamination.²⁸² Additionally, counties could zone agricultural areas by GM use, conventional use, and organic use. Alternatively, such measures could be mandated by the U.S. Department of Agriculture.

There are public policy reasons why there should be no patent rights when a self-replicating patented organism causes injury. By placing the burden to prevent contamination on the receiving (non-GM) farmer, that farmer may be incentivized to use GM seeds to avoid being sued for patent infringement or to avoid losing a market that requires GM labeling if contaminated. Moreover, if greater numbers of farmers produce GM foods, the decrease in biodiversity may put food security at risk because there are fewer breeds of food to withstand various conditions.²⁸³ Additionally, extending patents to self-replicated seed can unintentionally facilitate the control of the majority of food by only a few who are able to direct price and supply. Already, seed and crop statistics reveal the irreversible disappearance of seed and crop diversity; in fact, “[o]f 80,000 edible plants used for food, only about 150 are being cultivated, and just eight are traded globally.²⁸⁴ Not surprisingly, this “erosion of diversity has been propelled by the drive for homogenisation in industrial agriculture.”²⁸⁵ As the protection for GM products continues, so do the harmful effects on the general population, with consequences that will effect civilization for years to come.

CONCLUSION

The self-replicating nature of some types of patented organisms, such as seeds, demands that the patent system reexamine the full exclusion rights of patents. The current Patent Act does not accommodate patent subjects that can act without humans in creating harm, and thus, lose their usefulness with absolutely no human intervention. Such a situation should not warrant exclusion rights because it goes beyond the usefulness requirement in utility patents. Additionally, enforcing infringement rights where the same act of infringement is also harming the “infringer” undermines the

282. See *Can Roundup Ready Alfalfa Coexist with Organic and Conventional Alfalfa*, MONSANTO, <http://www.monsanto.com/newsviews/Pages/roundup-ready-alfalfa-organic-coexist.aspx> (last visited Feb. 20, 2013) (explaining this approach for alfalfa).

283. See MANIFESTO, *supra* note 117, at 7 (documenting the correlation between “[t]oday’s industrial productivity strategies” and the disappearance of local seeds and the disappearance of small farmers, local food cultures, and the local knowledge about plant varieties in local ecological and cultural habitats).

284. *Id.* at 6.

285. *Id.* at 9–10.

rule of law by violating *ex turpi causa non oritur actio*. Voiding exclusion rights when the self-replicating patented organism is injurious would not completely void the patent for GM seeds, but it would prevent patent infringement suits when the patented organism fails the moral utility test.

As biotechnology expands, biodiversity narrows, and super-weeds grow,²⁸⁶ infringement suits will only increase in importance. Unfortunately, narrowing patent rights in harmful situations will not prevent pollen drift, but it will protect innocent farmers and possibly the food supply.

286. See Justina Reichel, *First 'Superweed' Appears in Western Canada*, EPOCH TIMES (Jan. 22, 2012, 12:45 AM), <http://www.theepochtimes.com/n2/canada/first-superweed-appears-in-western-canada-178446.html> (explaining the rise of weed resistance to herbicides and GM traits); see also Jack Kaskey, *Monsanto Corn May Be Failing To Kill Bugs in 4 States, EPA Says*, BLOOMBERG BUSINESSWEEK (Dec. 6, 2011), <http://www.businessweek.com/news/2011-12-06/monsanto-corn-may-be-failing-to-kill-bugs-in-4-states-epa-says.html> (discussing rootworm resistance to Bt cotton in four U.S. states and in India).