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Jeremy DEBEER

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The Publisher, The Journal of World Intellectual Property,
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Reconciling Property Rights in Plants

Jeremy DEBEER*

I. INTRODUCTION

In the context of plants, intellectual property (IP) theory has forgotten its roots. Plants have long been objects of private property; germplasm[1] has not. But most jurisdictions now recognize IP rights in plants' genetic information. Law creates IP by separating an abstract idea, like for a molecularly engineered gene, from its physical vessel, such as the gene itself contained in a plant or seed. Property rights in the abstract object may come as patents, plant breeders' rights (PBRs) or both.[2]

As a relatively new phenomenon, IP still exists in a climate of excitement, anxiousness and perhaps insecurity. Innovations like biotechnology and the Internet, for example, have magnified the philosophical instability of property rights in ideational resources. Thus, IP is typically measured against the public interest, or occasionally, society's rights are crystallized as common property. In this two-dimensional appraisal, other important property rights are usually disregarded or dismissed casually. The foundations of longstanding and well-settled proprietary rights in physical objects seem to have been forgotten. Private property rights in physical objects—things that in fact have a real objective existence—are "classic property" that should not be overlooked.

Arguments supporting IP were originally expounded in support of classic property. So classic property is philosophically prior to IP, yet IP implicitly or explicitly subordinates classic property rights, usually without seriously asking why or at what consequence. A more thorough understanding of the principles underpinning all proprietary interests is essential to determine which should prevail in a given circumstance.

Therefore, this article seeks to reconcile IP with the public interest and common property, and also with classic property. The result is a matrix of private and public property rights in tangible and intangible resources. The analysis is better conceived as

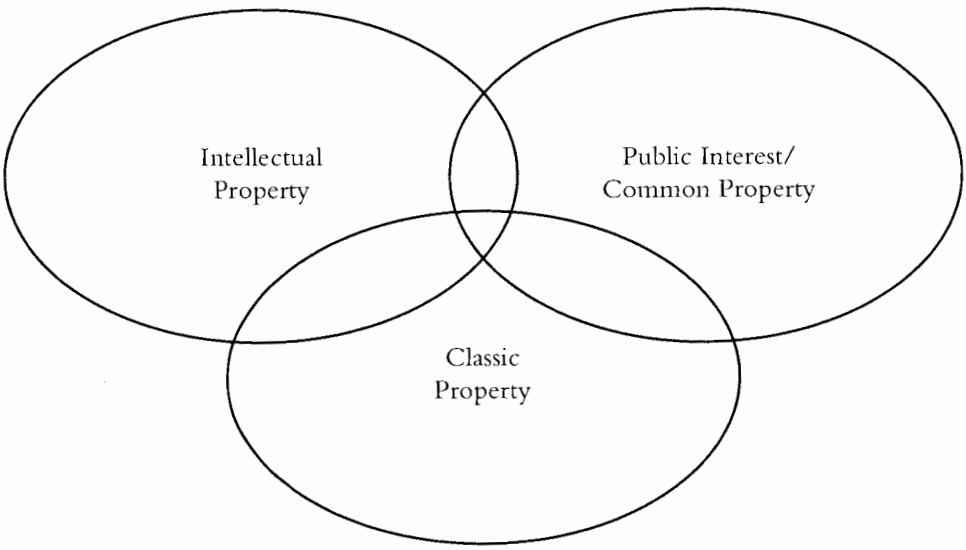
* B.C.L (Oxon.), LL.B., B.Comm (Sask.); Barrister and Solicitor, Law Society of Upper Canada; Assistant Professor, Faculty of Common Law, University of Ottawa. This dissertation was originally written as part of the author's B.C.L at the University of Oxford and supported by the Rosalind Bellerby Award from the Education Services Foundation in Oxford, England. Sincere thanks first to Professor David Vaver, and to the late Professor James Harris, Dr Joshua Getzler, Rohan Hardcastle, Syhamkrishna Balganesh and Lalit Aggarwal.
The author may be contacted at: jdebeer@uottawa.ca.

[1] Germplasm is the hereditary material transmitted to offspring through sex cells or gametes. R.C. King and W.D. Stansfield, *A Dictionary of Genetics*, 4th edition, Oxford University Press, Oxford, 1990, 131.

[2] Trade secrets, trademarks or other IP rights may also be relevant, but are not discussed in this article.

interlocking spheres of property, as shown in *Figure 1*, than a tug-of-war between society and IP rights-holders.

Figure 1
OVERLAPPING PROPERTY RIGHTS



The point is illustrated through the example of property rights in agricultural biotechnology, and specifically *Monsanto Canada Inc v. Schmeiser*.[3] In that case, the Canadian Patent Act[4] was interpreted to bestow expansive IP protection for a molecularly engineered gene, effectively nullifying the farmer's classic property rights in his plants and seeds. The result in *Schmeiser* and the state of patent and PBR laws globally demonstrate the lack of respect typically given to farmers' "privileges".[5] To overcome this attention deficit, farmers' seed saving rights should be seen for what they truly are—classic property rights—rather than public interest exceptions carved out from *a priori* dominant IP rights or as incidental means to a social end. IP is actually the "privilege" to override classic property rights.

This approach is important for at least two reasons, which appear as recurring themes throughout this article. First, in agricultural biotechnology in particular, certain concerns cannot be properly addressed under the rubric of the public interest or common property. Those concepts are helpful to confront biopiracy and preserve biodiversity, but not, for example, to alleviate global hunger. Instead, classic property must buttress farmers' rights, especially in developing countries.

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[3] 2004 SCC 34, reversing in part 2002 FCA 309; [2003] 2 FC 165, affirming 2001 FCT 256; (2001) 202 FTR 78.
[4] RSC, 1985, c P-4.
[5] The term "privilege", instead of "right", is often used to connote a farmer's ability to save IP-protected seed from one growing season to the next.

Second, and more generally, bringing the neglected sphere of classic property into focus can add intellectual integrity to the field of IP. An analytical unravelling of the property rights matrix is instructive for reconciling all sorts of tangible and intangible property rights. For example, this framework helps explain controversies over the freedom to copy CDs for private use[6] or circumvent encryption measures on DVDs.[7] A fuller view of the foundations of all property rights can also enlighten debate in other areas of biotechnology, such as IP generated from human body samples.[8]

To those ends, the first part of this article sets the stage for discussion. It contains several illustrations of neglected classic property rights. The second part unravels the property rights matrix. It exposes the foundations, content and context of IP rights, and analyzes how IP is counterbalanced against the public interest or common property. It also stresses the importance of considering classic property rights, and lays out the philosophical underpinnings and content of farmers' rights. The goal is to make clear that these issues should not be looked at as a two-dimensional rivalry between IP rights-holders and society. Three important spheres of analysis and the property rights matrix that lies at their nexus must be recognized.

II. SETTING THE STAGE

The following examples depict the breadth of circumstances in which classic property is neglected. Thus, they serve as an ideal launch pad to delve into philosophical enquiries. Yet, at the same time, they ground the exercise at a manageable level of abstraction, demonstrating the palpable consequences of our problem.

A. COPYRIGHT AND CLASSIC PROPERTY

Does or should ownership of a CD or DVD permit unconstrained use of the physical object? Canadian copyright law allows the owner of a pre-recorded music CD to make copies under certain circumstances for private use, for instance to backup a music collection on blank discs or to transfer it to an iPod. Private copying, however, is not an inherent right of ownership of the physical object. It is permitted in Canada through an exception to copyright coupled with a levy on blank audio recording media.[9] Otherwise, apparently, copyright overrides the classic property right.

In the United States, the Digital Millennium Copyright Act (DMCA), among other things, prevents trafficking in technologies designed to circumvent encryption measures.[10] Encryption measures prevent copying of, and control access to, content

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[6] Copyright Board of Canada, *Copying for Private Use*, 12 December 2003, available at: <www.cb-cda.gc.ca/decisions/c12122003-b.pdf>. Last accessed: 19 May 2004.

[7] *321 Studios v. Metro Goldwyn Mayer Studios*, No. C 02-1955 SI (ND Cal 19 February 2004).

[8] *Moore v. Regents of the University of California*, (1990) 793 P 2d 479 (Cal SC), reversing (1988) 249 Cal. Rptr. 494 (Cal App).

[9] Copyright Act RSC 1985, c C-42, ss 80-81; see also *supra*, footnote 6, 19.

[10] 17 U.S.C. §1201(a)(2), (b)(1).

encoded on DVDs for example. Defendants have argued that decryption technologies are legal because they work on "DVDs the user has already purchased, and thus unquestionably has the right to access".[11] It has been said in response that "the purchase of a DVD does not give to the purchaser the authority of the copyright holder to decrypt [encryption measures]".[12] The DMCA was held not to unduly burden the fair use rights of users, because there was "no authority for the proposition that fair use ... guarantees copying by the optimum method or in the identical format of the original".[13]

In reaching these conclusions, scant attention is paid to the classic property rights of owners of the physical objects. For one, courts talk of users, not owners. And users' rights are often grounded in social policies.[14] "The 'fair use' defence allows *the public* to use not only the facts and ideas contained in a copyrighted work, but also the expression itself in certain circumstances (emphasis added)".[15] Research is seen to benefit society by permitting innovation that builds upon existing knowledge, and criticism is part of healthy social debate. Ownership is not mentioned as a basis for the right to use a DVD. Similarly in Canada, libraries may fairly photocopy books but not, apparently, because they own the books or the machines.[16] The removal of constraints on the rights of classic property owners seems to be a lucky byproduct of exceptions oriented toward social ends.[17]

B. BIOTECHNOLOGY AND BODY SAMPLES

Moore[18] raised questions about classic property rights and biotechnology patents. Moore was a leukemia patient who provided samples of blood, skin and other bodily substances to his doctors, ostensibly as part of routine treatments. These samples were used without his knowledge or consent to generate a cell-line with enormous medical and commercial potential. The cell-line's inventors' employer, the Regents of the University of California, patented it.

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[11] See *supra*, footnote 7, 7; *Universal City Studios v. Corley*, (2001) 273 F 3d 429 (2nd Cir) 444.

[12] *Supra*, footnote 7, 7. Courts have also distinguished between an owner's right of use and a software manufacturer's liability for providing decryption technologies, ibid., 8; *Corley*, *supra*, footnote 11, 443; *United States v. Elcom*, (2002) 203 F Supp 2d 1111 (ND Cal) 1120.

[13] *Supra*, footnote 7, 12–14; *Corley*, *supra*, footnote 11, 445, 450–59; *Elcom*, *supra*, footnote 12, 1134–5.

[14] J. Waldron, *From Authors to Copiers: Individual Rights and Social Values in Intellectual Property*, 1993, 68 Chicago-Kent L. Rev., 841, 858–62.

[15] *Eldred v. Ashcroft*, (2003) 537 US 186, 123 S Ct 769, 788–9.

[16] *CCH Canadian Ltd v. Law Society of Upper Canada*, 2004 SCC 13 [47]–[73].

[17] Compare *Théberge v. Galerie d'Art du Petit Champlain*, 2002 SCC 34; [2002] 2 SCR 336, in which a classic property right trumped copyright, as the owner of a poster had the right to transfer ink from paper to canvas. However, IP's limited duration is seen to feed the public domain: expiration of a patent or copyright enables the public to use an idea they previously could not. C. Rose, *Romans, Roads and Romantic Creators: Traditions of Public Property in the Information Age*, 2003, 66 Law and Contemporary Problems 89, 104. In respect of copyright's originality requirement, the Supreme Court of Canada spoke recently of tipping "the scale in favour of author's or creator's rights, at the loss of *society's interest* in maintaining a robust public domain that could help foster future creative innovation", *supra*, footnote 16, [23] (emphasis added). Another example of a public interest limit to copyright and trademark law is free speech: "its value is that it sustains our democratic process, or it contributes to the dissemination of information", Waldron, *supra*, footnote 14, 857.

[18] See *supra*, footnote 8.

Moore claimed for breach of fiduciary duty and the tort of conversion. To establish conversion, he had to show that the defendants exercised control over his property. So a question arose whether Moore had a property right over his body samples. The California Court of Appeal held that Moore had such a right. A majority of the Supreme Court of California, however, decided that there was no support for Moore's property claim, yet at the same time, presumed the IP rights were justified.

In rejecting Moore's claim, the Court focussed largely on social considerations: "To impose such a duty, which would affect medical research of importance to all of society, implicates policy concerns far removed from the traditional, two-party ownership disputes in which the law of conversion arose."[19] The Court was paranoid that recognizing a classic property right would "threaten with disabling civil liability innocent parties who are engaged in socially useful activities, such as researchers".[20]

Broussard J. noted in dissent that "the majority's analysis ... fails even to mention the patient's interest in obtaining the economic value, if any, that may adhere in the subsequent use of his own body parts."[21] Mosk J. similarly criticized the majority's neglect of policies that support a property interest in an individual's body and its products.[22] It seems the majority collapsed questions about property rights over the body sample, the cell-line and the patent. Worse, they used the patent, the justification for which was taken for granted, as one of their principal arguments to deny Moore's rights.[23]

Theoretical support for classic property rights in body samples has gone unrecognized because judges, legislators and commentators have been preoccupied with countering public policy arguments that purport to validate IP, such as encouraging medical research.[24] It is certainly true that the problems in *Moore* were more complex than traditional, two-party disputes. So the Court rightly considered the public interest. But it squandered the chance to illuminate the analysis by adding this social dimension without subtracting other elements, namely arguments for classic property. Instead, it simply shifted the spotlight from individual interests to social concerns, moving from one bilateral enquiry to another.

C. Biotechnology and Agriculture

In the field of agricultural biotechnology, *Schmeiser* illustrates the overlap between IP and classic property rights. Monsanto markets agricultural systems; the farmer provides land and labour, and it provides seeds, chemicals or other tools for crop

[19] Ibid., 487.
[20] Ibid., 493.
[21] Ibid., 505.
[22] Ibid., 515.
[23] R. Hardcastle, *Property Rights and Body Samples*, Oxford Intellectual Property Research Centre, Electronic Database of Intellectual Property, 13; available at: ‹users.ox.ac.uk/~edip/hardcastle.pdf›. Last accessed: 19 May 2004.
[24] Ibid., 14.

growing.[25] Monsanto's system involves "Roundup®" glyphosate herbicide, which, in short, kills plants. Monsanto has also engineered a gene that causes a plant and its progeny to be glyphosate-resistant. Farmers can therefore spray "Roundup®" on a growing crop, killing weeds but leaving the genetically modified (GM) plants unharmed. Monsanto has a Canadian patent for glyphosate-resistant plants, including "Roundup Ready®" canola.[26]

Monsanto accused Percy Schmeiser, a Saskatchewan farmer, of making, using and selling its patented invention without licence. Monsanto's private investigators discovered glyphosate-resistant canola in Schmeiser's 1998 crop, which he had planted with seed saved from the previous year, as was his customary practice. Schmeiser never purchased seeds from Monsanto; that would have required contracting not to save new seeds generated from his crop.[27] He argued that he was not responsible for, nor did he want, "Roundup Ready®" canola on his land. He proposed various explanations for its presence, including adventitious spread by wind or insects.

Justice McKay of the Trial Division did not accept Schmeiser's explanations. However, he declined to decide how and why Monsanto's gene *did* appear in Schmeiser's crop. He held that this was "really not significant" because Schmeiser knew or should have known the seed he saved and replanted was glyphosate-resistant.[28] Growing and selling the GM seed under these circumstances made Schmeiser liable for infringement of Monsanto's patent.[29] The Court of Appeal and, on 21 May 2004, five of nine Justices of the Supreme Court of Canada, upheld this ruling.

Schmeiser had made four arguments to the Supreme Court.[30] First, he argued that Monsanto's patent is invalid, as it concerns a higher life form, which is not patentable in Canada.[31] Second, because he did not spray his crop with "Roundup®" herbicide, he claimed he did not "use" or exploit the patent's only novel utility. Schmeiser also argued that the correct damages, if any, represent only his enrichment from exploiting the patent (that is, nothing), not his entire profit.

The majority of the Supreme Court held that the patent was valid, as it did not concern a higher life form, but merely a gene and cell contained within a higher life form.[32] In a compelling dissent, four Justices held this is a distinction without a difference.[33] This dissent is especially persuasive given the majority's finding that

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[25] J. Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492–2000*, Cambridge University Press, Cambridge, 1988, 282–3, quoting Dr Klaus Saegebarth of Du Pont and Howard Schneiderman of Monsanto.

[26] "Glyphosate Resistant Plants", Canadian Patent 1,313,830. Generally, the claims pertain to a molecularly engineered gene, a molecularly engineered gene expressed in a glyphosate-resistant plant cell and, more particularly, in a glyphosate-resistant rape seed (canola) cell.

[27] Licensed growers must sign a "technology use agreement". See *Schmeiser*, (SCC), *supra*, footnote 3, [11].

[28] *Schmeiser*, (FCTD), *supra*, footnote 3, [119]–[120].

[29] Ibid., [127].

[30] *Schmeiser*, (Appellants' *Factum*), *supra*, footnote 3.

[31] *Harvard College v. Canada (Commissioner of Patents)*, 2002 SCC 76, [2002] 4 SCR 45.

[32] *Schmeiser*, (SCC), *supra*, footnote 3, [17]–[24].

[33] Ibid., [108]–[139].

possession of a plant containing a patented gene constitutes "use", and therefore infringement.[34] Schmeiser's failure to spray his crop with herbicide was immaterial because of the patent's "stand-by utility".[35] As a consolation, however, the majority did accept Schmeiser's argument regarding damages.[36] The dissent's solution to the whole dilemma would have been to uphold the patent's validity in so far as it protects only the gene, leaving farmers free to use their plants and seeds.[37]

Each of these points could spawn volumes of commentary. One involves fascinating issues about IP policy in terms of cumulative protection, and about the morality of biotechnology and IP. Another is an intriguing question of statutory interpretation, which seeks to uncover the rationale underlying patents and shape the doctrine of patent infringement. The question of remedies is an essay in itself.[38]

But Schmeiser made another argument that is most interesting for the purpose of this article. He had argued that Monsanto forfeited its IP rights by virtue of the unconfined release of its product into the environment; that innocent bystanders should not suffer from the adventitious spread of Monsanto's gene; and that the solution to this dilemma is through the doctrines of waiver or implied licence. The upshot is that Schmeiser's classic property rights in the plants and seeds should not be subordinated to Monsanto's IP rights.

Schmeiser tried to show how the law traditionally reconciles competing property claims. Indeed, this is not a novel exercise. By the early nineteenth century, the law of admixture recognized that "if a man puts corn in my bag, in which before there is some corn, the whole is mine because it is impossible to distinguish what was mine from what was his".[39] Also, so-called "stray bull" cases illustrate the traditional approach to property disputes concerning biological matter; when a bull escapes and impregnates a neighbour's cow, the offspring belongs to the owner of the female, who has possession.[40] Suppose, however, that Schmeiser's neighbour sued, claiming ownership of the seed that appeared on Schmeiser's land. In that case, there might be a claim in criminal law for theft, or in tort for conversion, or, once the seed germinates and grows into a new plant, perhaps in unjust enrichment.[41]

There are some especially noteworthy passages in response to Schmeiser's classic property argument. Justice McKay said in the Trial Division:

"... For the defendants it is urged Monsanto has no property interest in its gene, only

[34] Ibid., [58].
[35] Ibid., [47], [50], [83]–[85].
[36] Ibid., [98]–[105].
[37] Ibid., [140]–[163].
[38] N. Siebrasse, *A Remedial Benefit-Based Approach to the Innocent User Problem in the Patenting of Higher Life Forms*, (2004), 20(1) Canadian Intellectual Property Review 79.
[39] *Colwill v. Reeves*, (1811) 2 Camp 575, 577, cited in *Schmeiser*, (Appellant's *Factum*), *supra*, footnote 3, [119].
[40] *Schmeiser*, (Appellant's *Factum*), ibid., [116], citing *Popowich v. Letweniuk*, [1972] 1 WWR 641 (Sask DC); *Weeks v. Weeks*, (1977) 81 DLR (3d) 371 (PEISC); *Neeb v. Hoffman*, [1989] OJ No. 302 QL (Ont DC).
[41] N. Siebrasse, *The Innocent Bystander Problem in the Patenting of Higher Life Forms*, (2004) 49(2) McGill L.J. 50–52, (forthcoming, copy with author).

intellectual property rights. *While I acknowledge that the seed or plant containing the plaintiffs' patented gene and cell may be owned in a legal sense by the farmer who has acquired the seed or plant, that 'owner's' interest in the seed or plant is subject to the plaintiffs' patent rights*, including the exclusive right to use or sell its gene or cell, and they alone may license others to use the invention.

Thus a farmer whose field contains seed or plants originating from seed [spread adventitiously] *may own the seed or plants on his land even if he did not set about to plant them. He does not, however, own the right to the use of the patented gene, or of the seed or plant containing the patented gene or cell.*" (emphases added).[42]

In the Court of Appeal, Justice Sharlow remarked:

"I am prepared to assume, without deciding, that the owner of real property has legal title to any volunteer plant found on his land, and generally has a right to save the seed from such a plant, and to plant and harvest the seed for profit in subsequent years. However, *there is no authority for the proposition that ownership of a plant must necessarily supersede the rights of the holder of a patent for a gene found in the plant. On the contrary, the jurisprudence presents a number of examples in which the rights of ownership of property are compromised to the extent required to protect the patent holder's statutory monopoly.*" (emphasis added).[43]

Both the Trial Division and the Court of Appeal disposed of Schmeiser's classic property claim in these few lines. In the Trial Division, relatively more effort was spent dismissing public interest arguments for limits on IP, which involved a "balancing of competing *societal* interests". (emphasis added).[44] A larger proportion of the Court of Appeal's judgment involved construction of the patent claims, which required asking what is "reasonable and fair to both *patentee and public*". (emphasis added).[45] Note the absence of any reference to classic property owners, even though the purpose of the exercise was to determine what Schmeiser could or could not do with his crop.

But most disappointingly, the majority of the Supreme Court missed the point entirely: "*the issue is not property rights, but patent protection. Ownership is no defence to a breach of the Patent Act*". (emphasis added).[46] Actually, reconciling intellectual and classic property rights is exactly the issue.

Perhaps just as unfortunately, the majority also failed to mention *any* countervailing interest, including society's. They cited no purpose for patents except "to prevent others from depriving the inventor, even in part and even indirectly, of the monopoly that the law intends to be theirs".[47] Not only is this surprising in light of the Court's recent balancing approach toward other IP laws,[48] but it ignores the utilitarian undercurrent of patent law generally, which is discussed below (Section III.A.1(b)).

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[42] *Schmeiser*, (FCTD), *supra*, footnote 3, [91]–[92].

[43] *Schmeiser*, (FCA), *supra*, footnote 3, [51].

[44] *Harvard College*, *supra*, footnote 31, [183].

[45] *Schmeiser*, (FCA), *supra*, footnote 3, [36], citing *Whirlpool Corp v. Cameo Inc*, 2000 SCC 67; [2000] 2 SCR 1067 [49g], in turn citing *Consolboard v. MacMillan Bloedel (Sask) Ltd*, [1981] 1 SCR 504, 520.

[46] *Schmeiser*, (SCC), *supra*, footnote 3, [96].

[47] Ibid., [43].

[48] *CCH v. LSUC*, *supra*, footnote 16, [10], citing *Théberge*, *supra*, footnote 17, [30]–[31]: copyright is "a balance between promoting the public interest in the encouragement and dissemination of works of the arts and intellect and obtaining a just reward for the creator."

Although all the Courts were skeptical of Schmeiser's claim, the analysis (and precedent) is premised on the fact that Schmeiser may not have been responsible for the initial presence of Monsanto's invention is his crop. Yet Schmeiser was distinguished from an "innocent bystander" because of the suggestion that he deliberately and selectively harvested and replanted only glyphosate-resistant seeds.[49] The Supreme Court felt he had, figuratively speaking, reaped without sowing.

It must be emphasized, however, that classification of "innocent" bystanders is inherently misleading. Whether a classic property owner who exercises the normal freedom of ownership, such as possessing and using the property, is himself innocent, is precisely the question. The fact that the IP right is statutory, while the classic property right is not, says nothing about the justice of favouring one over the other. The essence of the majority's decision is that the patent trumps because it exists—a most intellectually dissatisfying result.

Nevertheless, Schmeiser was forced to give up or destroy all of his plants and seeds. He was also injuncted from saving or replanting any seed that he knows or should know contains Monsanto's gene. So a farmer who knows of a patented gene in his crop cannot replant particular seeds known to contain the gene. That is perhaps a regrettable constraint on an owner's classic property rights.

But worse, if a patented gene has infiltrated an entire crop, or even if it is sparsely distributed throughout the crop, all seed saving rights are in effect extinguished. Farmers who suspect GM plants on their land are in a very difficult position. For one, every farmer knows that Monsanto's gene spreads adventitiously. So they may test-spray the entire crop, killing it if they were mistaken. If, however, they were correct, they could not save any of their seeds without being branded an infringer.[50] Not testing, but nevertheless saving seeds, might make them willfully blind.[51] The only viable option is to discontinue the practice of saving seeds. Not surprisingly, it has been said that *Schmeiser* sets a "troubling general precedent".[52]

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[49] *Schmeiser*, (SCC), *supra*, footnote 3, [62]–[63]. See also Siebrasse, *supra*, footnote 41, 1, 11, citing *Schmeiser*, (FCA), *supra*, footnote 3, [58]. In fact, however, it is not easy to discern the trial judge's conclusions in this respect. Seemingly, Schmeiser harvested his entire crop, including some glyphosate-resistant plants. And the next year, in carrying out his longstanding and customary practice, the seed he replanted was apparently derived from his entire crop, perhaps not deliberately segregated glyphosate-resistant seed; *Schmeiser*, (FCTD), *supra*, footnote 3, [40], [104]; *Schmeiser*, (FCA), *supra*, footnote 3, [23]–[24]. Regardless, the point is not material to this article.

[50] It would be difficult (or impossible) to rebut the presumption that possession constitutes use; *Schmeiser* (SCC), *supra*, footnote 3, [159] (Arboun J dissenting).

[51] *Schmeiser*, (FCA), *supra*, footnote 3, [75]–[76].

[52] K. Aoki, *Weeds, Seeds & Deeds: Recent Skirmishes in the Seed Wars*, (2003) 11 Cardozo Journal of International and Comparative Law 247, 292; J. Sudduth, *Where the Wind Blows: Genetically Altered Seed and Neighbouring Farmers*, 2001, Duke L. & Technology Rev., 15. In effect, the judgments create a strict liability regime, without requirements of causation or intent; H. Wilkins and F. Latorre, *Biodiversity at a Crossroads—Monsanto v. Schmeiser*, (2002) 4(1) Environmental L.R. 62.

III. Unravelling the Property Rights Matrix

A. IP rights

1. *Rationale*

Although our immediate concern is justifications for patents and PBRs in agricultural biotechnology, it makes sense to build from the ground up. There are two schools of thought about property justifications generally—natural rights and instrumentalism—and both have been invoked in regard to IP with varying persuasiveness.

(a) *Natural rights justifications*

Labour is a common starting point when speaking of natural rights to IP.[53] Among the most famous proponents of labour-based property theory is Locke, who believed that a person who is not a slave owns his body, and therefore his labour and the fruits of that labour.[54] In essence, people have natural property rights to anything produced through their own industry. Importantly, Locke's theory is qualified by two provisos. First, private property must allow "enough and as good left in common for others".[55] Second, private property protects only "... as much as any one can make use of ... before it spoils".[56]

The starting premise of self-ownership has been criticized as a basis for property rights generally. That I am not a slave does not necessarily mean I "own" my body—perhaps nobody owns it.[57] Moreover, it is not clear why mixing labour with an object entitles a labourer to a property right.[58] But there are further controversies specific to IP.

Ideational resources exhibit three fundamental characteristics. They are non-rivalrous, meaning one use does not preclude another. They are non-excludable, meaning possession does not control access. And they are inexhaustible, meaning ideas are in infinite supply.

Some believe, therefore, that there are always enough and as good ideas,[59] or that using an idea enlarges, not depletes, the common pool.[60] That is to say, second-comers

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[53] See, for example, J. Hughes, *The Philosophy of Intellectual Property*, (1988) 77 Georgetown L.J. 287; E.C. Hettinger, *Justifying Intellectual Property*, (1989) 18 Philosophy & Public Affairs 31; W.J. Gordon, *An Inquiry into the Merits of Copyright: The Challenges of Consistency, Consent and Encouragement Theory*, (1989), 41 Stanford L. Rev. 1343; T.G. Palmer, *Are Patents and Copyrights Morally Justified? The Philosophy of Property Rights and Ideal Objects*, (1990) 13 Harvard J.L. & Public Policy 817; W.J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, (1992) 78 Virginia L. Rev. 149; W.J. Gordon, *A Property Right in Self Expression: Equality and Individualism in the Natural Law of Intellectual Property*, (1993) 102 Yale L.J. 1533; P. Drahos, *The Philosophy of Intellectual Property*, Dartmouth Publishing Company Ltd, Aldershot, 1996; and C. Craig, *Locke, Labour and Limiting the Author's Right: A Warning against a Lockean Approach to Copyright Law*, (2002) 28 Queen's L.J. 1.

[54] J. Locke, in G.W. Gough (ed.), *Second Treatise of Government*, Basil Blackwell, Oxford, 1976, Chapter v. That is, of course, a sinfully shallow description of Lockean property theory.

[55] Ibid., Chapter v [27].

[56] Ibid., Chapter v [31].

[57] J.W. Harris, *Property & Justice*, Oxford University Press, Oxford, 1996, 196.

[58] R. Nozick, *Anarchy, the State and Utopia*, Basil Blackwell, Oxford, 1974, 174–5.

[59] *Supra*, footnote 57, 200.

[60] Hughes, *supra*, footnote 53, 315–25.

have available the building blocks of knowledge, inventions and culture, which would not have existed but for the industriousness of others. It is also arguable that ideational resources are not perishable. Although their commercial value may depreciate over time, their internal value remains constant.[61]

However, these claims are unsettled. For one, ownership over knowledge, inventions and culture may inhibit use of the particular idea, so IP would not leave enough and as good for second-comers.[62] Moreover, failing to communicate or develop an idea may be as wasteful as letting plums rot, or IP may be inherently wasteful because it restricts otherwise free access to resources.[63]

A variant of labour-based property theory, under the rubric "creation-without-wrong", suggests that a person who creates social wealth is entitled to property if that wrongs no one else.[64] Or, as J.S. Mill puts it, it is no hardship to be excluded from something that would not have existed but for other's work.[65] R. Nozick used this argument to suggest that patents, for example, do not worsen anyone's plight because the invention would not exist but for the patentee.[66]

Upon reflection, however, that may not be true. People evaluate loss by reference to alternative scenarios.[67] For example, Waldron hypothesizes a patentee denying a life saving drug to a patient who suffers in mental anguish, knowing what might have been.[68] This demonstrates that people do suffer from being denied something that may not have, but does, in fact, exist. The same is true of patented genes designed to increase agricultural yields, which could reduce world hunger. Can one seriously say that children should starve because they would have anyway, had Monsanto's scientists not been so clever? Or that the children should go engineer their own gene?

Another variant, labour-desert, rewards labour with property rights (including ostensibly IP rights) either because a person has chosen to be industrious rather than lazy, or because a person has achieved something worthy of admiration.[69] Equivocal property rights might be offered as a reward for labour in cases of special excellence, special human need or as a reciprocal exchange.[70]

There are several "anti-desert" arguments, namely that talent and opportunity should not be rewarded because they are the results of a genetic lottery, that rewards

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[61] Ibid., 327–9.

[62] Craig, *supra*, footnote 53, [40]; Waldron, *supra*, footnote 14, 882–6.

[63] Craig, ibid., [50], [52].

[64] Harris rejects this argument because it would allow the creator to create property rights through unilateral action; Harris, *supra*, footnote 57, 197–204.

[65] J.S. Mill, *Principles of Political Economy: With Some of their Applications to Social Philosophy*, in J.M. Robson (ed.), *Collected Works of John Stuart Mill*, University of Toronto Press, Toronto, 1965, 230.

[66] Nozick, *supra*, footnote 58, 182.

[67] Craig, *supra*, footnote 53, [41].

[68] Waldron, *supra*, footnote 14, 867–9.

[69] Harris, *supra*, footnote 57, 206.

[70] L.C. Becker, *Deserving to Own Intellectual Property*, (1993) 68 Chicago-Kent L.Rev. 609; L.C. Becker, *Property Rights: Philosophic Foundations*, Routledge and Kegan Paul, London, 1977, 45–56.

are inappropriate because everyone has an obligation to work, and that the free market should determine whether rewards are forthcoming.[71] But the strongest objection boils down to the possibility of offering suitable rewards other than property rights. Inventors might instead be granted subsidies, tax breaks or prizes. It has been said, however, that such responses are inadequate if social convention and expectation demand property rights.[72]

Perhaps personality-based justifications, such as Hegel's theory of property, establish natural IP rights. Grossly oversimplified, Hegel supposed that each individual must own property because one does not exist as a person unless his will is extended into the sphere of external resources. So personality becomes actualized in property.[73] Wedding rings, photo albums, pets or houses are good examples of "personal" property.[74] Personality-based property rights also have intuitive appeal for IP theorists, especially in the field of the arts.[75] Moral rights under copyright law are a good example.

However, personality's potential to justify IP is inherently limited.[76] It is difficult to express in the face of external constraints.[77] Thus, it has been said that ".. in inventing the light bulb, Edison searched for the filament that would burn the longest, not a filament that would reflect his personality".[78] In the same vein, a biotechnology patent is difficult to justify on the basis of personality. For starters, can we seriously say anyone's personality is expressed through, for example, glyphosate-resistance? Furthermore, it is arguable that a work, once created, becomes an object independent of the creator's personality. If so, perhaps special personal rights should vest in the audience or user who interprets it.[79] Advocates of a broader theory of personality-based IP must at least address the incompatibility of granting purportedly "personal" IP rights to, for example, corporate employers.

This brings out a deeper concern that undercuts all natural rights theories of IP. They are arguably based on romantic misconceptions about creators.[80] Often, authors or inventors are simply token figures representing, for example, the claims of publishers or agrochemical companies. This reality strains philosophical justifications based upon either the labour or personality of nominal creators.

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[71] All rejected in Harris, *supra*, footnote 57, 206–7.

[72] Ibid., 208.

[73] G.W.F. Hegel, in A.W. Wood (ed.) and H.B. Nisbet (tr.), *Elements of the Philosophy of Right*, Cambridge University Press, Cambridge, 1991, 70–103; M.J. Radin, *Property and Personhood*, (1982) 34 Stanford L.R. 957; Hughes, *supra*, footnote 53, 331–7; Drahos, *supra*, footnore 53, 75–82.

[74] Radin, ibid., 959.

[75] Hughes, *supra*, footnote 53, 330, 350–55.

[76] Some actually fear this theory of IP is dangerously broad. Since personality can appropriate anything as property, the extensive control-powers conferred by personality-based IP rights might exacerbate poverty and inequality, threatening ethical life and civil society and restricting freedom in communities, contrary to Hegel's vision; Drahos, *supra*, footnote 53, Chapter 4.

[77] Hughes, *supra*, footnote 53, 343.

[78] Ibid., 341–2.

[79] Palmer, *supra*, footnote 53, 844–8.

[80] J. Boyle, *Shamans, Software and Spleens: Law and the Construction of the Information Society*, Harvard University Press, Cambridge, Mass., 1996, 56–57; Craig, *supra*, footnote 53, [11]; Waldron, *supra*, footnote 14, 853, 879–80.

Thus, of the litany of potential natural rights arguments, none can shoulder the load of philosophically justifying IP. "Self-ownership" and "no-hardship" are at best controversial justifications for IP, and "labour-desert" establishes only an equivocal right dependent on convention. Personality-based theories may explain some forms of IP, but are unable to go the distance, especially in respect of agricultural biotechnology. Hence, some authors, writing specifically about plants, patents and PBRs in Canada, do not even mention the possibility of natural IP rights.[81]

(b) *Instrumental justifications*

There are two standard instrumental arguments for private property. First, private property prevents catastrophic overuse of resources, thus avoiding a "tragedy of the commons".[82] If everyone had a right to use a resource, and nobody could exclude anyone else, we would witness a stampede to strip it of all value. Stuck in a prisoner's dilemma, rational individuals will act in a collectively irrational manner.[83] Private property, with its concomitant exclusivity, stops this from happening. Private property also brings "justice-as-order" to eliminate uncertainty, social conflict and violence—basically, non-economic tragedies of the commons.

Second, private property promotes optimal investment by internalizing to the owner the economic surplus associated with creating and maintaining a resource.[85] This argument supposes that self-interested people will free-ride on the backs of others unless convinced that they will reap the benefits of their efforts. So private property concentrates benefits on the property owner to provide incentives for investment.[86]

Upon reflection, the two standard arguments do not apply to tangible and intangible property with equal force. The first is wholly inapplicable to IP. Because of their non-rivalry, non-excludability and inexhaustibility, ideational resources cannot be overused in the same sense as physical resources. Songs are sometimes overplayed or trademarks may become diluted; that may affect commercial exploitation but it is hardly tragic.[87]

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[81] Siebrasse, *supra*, footnote 41, 3: adopting "the traditional approach to patent policy, which considers patents to be justified only to the extent that the innovation they foster brings benefits to society at large." N. Derzko, *Plant Breeders' Rights in Canada and Abroad: What Are These Rights and How Much Must Society Pay for Them?* (1994), 39 McGill L.J. 144, 150: "There is no reason to protect the creation of new plant varieties unless doing so would be in the public interest and in Canada's economic interest."

[82] G. Hardin, *The Tragedy of the Commons*, 1968, 162 Science, 1243.

[83] E. Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press, Cambridge, 1990, 3–5.

[84] Palmer, *supra*, footnote 53, 850–1.

[85] H. Demsetz, *Toward a Theory of Property Rights*, (1967) 57(2) The American Economic Rev. 347.

[86] R.A. Posner, *Economic Analysis of Law*, 6th edition, Aspen Publishers, 2003, 37–45; Harris, *supra*, footnote 57, 296–9.

[87] Indeed, the concern with plants' germplasm is not overuse but underuse, and too many IP rights may be counterproductive; M.A. Heller and R.S. Eisenberg, *Can Patents Stifle Innovation? The Anticommons in Biomedical Research*, 1998, 280 Science 698.

So we are left with only the second of the aforementioned justifications for IP, as an incentive. This is closely linked to labour-desert arguments.[88] The difference, if any, is between *ex ante* stimuli and *ex post* compensation, although the promise of reward obviously motivates behaviour. But the parallel highlights a common shortcoming: why property rights? A possible answer is that subsidies, tax breaks, medals or other incentives/rewards are contingent upon the value judgment of those doling them out, whereas property rights are a State-independent, free market incentive.[89] This response would be especially attractive to many instrumentalists.

But the incentive argument presents a more significant problem, linked to the uncertainty of utilitarianism generally. It is difficult to determine empirically whether patents, for example, truly encourage innovation, let alone socially desirable innovation. This, of course, is less problematic if patents are seen as moral deserts. Nevertheless, instrumental arguments are typically the "doctrinal starting point"[90] with respect to IP. This is especially so for patents.[91]

2. *Content*

The evolution and intricacies of IP protection for plants cannot and need not be fully explained here. Generally, there are two forms of protection: patents and PBRs, and the key question is whether one, both or neither are available. Increasingly, the answer is both.

The United States has led the expansionist movement with respect to IP in plants. Until Congress passed the Plant Patent Act (PPA)[92] in 1930, it was generally accepted that plants were naturally occurring, not amenable to written description, and therefore, not patentable.[93] But the PPA now protects new and distinct asexually reproduced plants.[94] In 1970, Congress protected sexually reproduced plants with the Plant Variety Protection Act (PVPA),[95] which requires novelty, stability and uniformity.[96]

The U.S. Supreme Court first offered general patent[97] protection for a living organism—a GM strain of bacteria—in 1980 in *Diamond v. Chakrabarty*.[98] Five years later, in *Ex Parte Hibberd*, the Board of Patent Appeals opened the door to dual protection by finding that the PPA and the PVPA did not narrow the scope of otherwise

[88] A. Ryan, *Property and Political Theory*, Blackwell, Oxford, 1984, 15–48; J. Waldron, *The Right to Private Property*, Oxford University Press, Oxford, 1988, 201–7; Drahos, *supra*, footnote 53, 44; Palmer, *supra*, footnote 53, 819.

[89] Harris, *supra*, footnote 57, 301–303.

[90] Waldron, *supra*, footnote 14, 849. This is enshrined in Article I, § 8, cl. 8, of the U.S. Constitution.

[91] See, for example, *Harvard College*, *supra*, footnote 31, [185] as per Bastarache J.: Patents are "to advance research and development and to encourage broader economic activity."; and [25] as per Binnie J.: "It is necessary to feed the goose if it is to continue to lay the golden eggs", using a cliché also found in Harris, *supra*, footnote 57, 299.

[92] 35 U.S.C.A. § 161.

[93] *Imazio Nursery Inc v. Dania Greenhouses*, (1995) 69 F 3d 1560 (9th Cir) 1563.

[94] PPA, *supra*, footnote 92; Aoki, *supra*, footnote 52, 280–81.

[95] 7 U.S.C.A. § 2321 *et seq.*

[96] Ibid., § 2402; Aoki, *supra*, footnote 52, 284.

[97] 35 U.S.C.A. § 100 *et seq.*

[98] (1980) 447 US 303, 100 S Ct 2204.

patentable subject-matter.[99] The flood of patent grants that followed did not diminish the relevance of the PVPA. In *Asgrow v. Winterboer*, the U.S. Supreme Court was challenged to interpret the baffling seed saving provision,[100] and determined that farmers could only sell seeds that they had saved for their own replanting but sold following a change of mind.[101] The U.S. Supreme Court confirmed in 2001 that plants may be protected under the PPA, the PVPA and the general utility patent statute.[102]

Underpinning protection for plant varieties internationally is the International Union for the Protection of New Varieties of Plants, or UPOV.[103] Initially created in 1961 by several European countries, UPOV's agreements have been revised several times.[104] The European system is also governed by the European Patent Convention (EPC),[105] the Community Plant Variety Right Regulation[106] and the Biotechnology Directive.[107] The Biotechnology Directive allows patents for plants and animals, but not specific plant and animal varieties or essentially biological processes.[108] So the European Patent Office has held that the EPC does not entirely prohibit patenting of plant varieties.[109] Therefore,

> "... the present position in Europe is that a plant variety, or a group of plants that could be defined as a variety, cannot form the subject-matter of a patent application no matter how they are generated, but can be patent-protected if they are embodiments of inventions that independently qualify for patent protection."[110]

PBRs were first recognized in Canada in 1990 with the enactment of the Plant Breeders' Rights Act (PBRA).[111] It protects distinct, stable and homogenous (but not necessarily useful) varieties of certain plants.[112] Regarding limitations, there are compulsory licensing provisions,[113] but more importantly, only propagating materials, such as seeds and cuttings, are protected. Thus, seed owners may grow and sell crops as a commodity, and replant seeds for their own use.[114]

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[99] (1985) 227 U.S.P.Q. 443.

[100] 7 U.S.C.A. § 2543.

[101] (1995) 513 US 179, 191; 115 S Ct 788, 795. Saved seed may also be used for replanting.

[102] *JEM Agricultural Supply v. Pioneer Hi-Bred International*, (2001) 534 US 124, 122 S Ct 593.

[103] Union internationale pour la protection des obtentions végétales.

[104] All are online at: ‹www.upov.int›. Last accessed: 19 May 2004. The most recent amendments, in 1991, removed a ban on cumulative protection with patents, extended the term of protection, and reversed the presumption of farmers' privilege. These changes were not binding on all member countries, and in particular, were not incorporated by Canada. Derzko, *supra*, footnote 81, 165.

[105] Convention on the Grant of European Patents (adopted 5 October 1973, entered into force 7 October 1977), 1065 U.N.T.S., 199.

[106] Council Regulation (EC) No. 2100/94 of 27 July 1994 on Community plant variety rights.

[107] Council Directive 98/44/EC of 6 July 1998 on the legal protection of biotechnological inventions.

[108] Ibid., Articles 3 and 4.

[109] *Novartis Transgenic Plant G01/98*, [2000] EPOR 303 (Enlarged Board of Appeal); M. Shillito, *Patenting Genetically Engineered Plants*, (2002) 24(6) EIPR 333. For discussion of earlier cases and the evolution of the European approach, see A. Schrell, *Are Plants (Still) Patentable? Plant Genetic Systems*, EPO Decision T356/93, (1996) 18(4) EIPR 242.

[110] Shillito, ibid., 335.

[111] RS, 1990, c 20. For more detailed discussion of this legislation, see generally Derzko, *supra*, footnote 81.

[112] PRBA, ibid., s 4. The breeder has an assignable exclusive right to sell the variety's propagating material, to use it to create new varieties and to produce ornamental or cut flowers, as well as to authorize the foregoing, for a term of up to 18 years; ibid., ss 31, 5, 6.

[113] Ibid., s 32.

[114] Derzko, *supra*, footnote 81, 161–2.

Canadian patents for plants are slightly more complicated. In the same vein as *Chakrabarty*, the Patent Appeal Board held in 1982 that living organisms are patentable.[115] In *Pioneer Hi-Bred Ltd v. Canada (Commissioner of Patents)*, the Supreme Court of Canada avoided the question, deciding only that, on the facts of the case, there was insufficient disclosure.[116] However, in *Harvard College*, a five-four majority of the Supreme Court held that a higher life form is not a manufacture or composition of matter, and therefore, is not patentable. The Court characterized plants as a subset of higher life forms.[117] In *Schmeiser*, the Court again split five to four. All maintained that higher life forms are not patentable in Canada. The majority's decision, however, renders this proposition meaningless. Patents are allowed for genes and cells that constitute higher life forms, and the patent protects the whole of any organism containing patented genes and cells.[118] So higher life is not patentable *per se*, but its building blocks are.

Overlap between patents and PBRs raises concerns. Patents usually offer more expansive protection because they permit multiple independent claims, and claims over entire plants (expressly or, following *Schmeiser*, in effect) and individual components.[119] Creators will of course exploit the stronger form of protection, effectively negating any delicately crafted limits of the weaker form. Features of PBRs, such as seed saving exceptions, are often moot in the face of patents.[120] Also, legislative history can demonstrate that dual protection was never intended.[121] From a philosophical perspective, there is no rationale for cumulative rights, and layered IP regimes are over-protective. And finally, empirical research has begun to demonstrate that if patents are available, PBRs fall into disuse, so resources are wasted maintaining schemes of concurrent protections.[122]

Nevertheless, in most jurisdictions the law is currently stacked in favour of inventors. As it was put in *Schmeiser*: "Ownership is no defence to a breach of the Patent Act."[123] Perhaps this is because of the belief that if one interest, namely an IP right, has been granted, no room remains for "balancing the interests" of others, and that balancing "... wrongly suggests that rights are held by two entities. Under an ownership scheme, rights will be granted to one entity only".[124]

That is a grave but common mistake. At least two additional "ownership" interests factor into the property rights matrix: common property rights in the ideational

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[115] *Re Application of Abitibi Co.*, (1982) 62 CPR (2d) 81.
[116] [1989] 1 SCR 1623.
[117] *Harvard College*, *supra*, footnote 31, [188]–[196].
[118] *Schmeiser*, (SCC), *supra*, footnote 3.
[119] Aoki, *supra*, footnote 52, 289.
[120] But see Biotech Directive, *supra*, footnote 107, Article 11, which incorporates the seed-saving provisions of the Community Plant Variety Rights Regulation, *supra*, footnote 106.
[121] See, for example, *JEM Ag Supply*, *supra*, footnote 102, 153–4 (Breyer J dissenting).
[122] M.J. Janis and J.P. Kesan, *U.S. Plant Variety Protection: Sound and Fury ... ?* (2002), 39 Hous. L. Rev. 727.
[123] *Schmeiser*, (SCC), *supra*, footnote 3, [96].
[124] Derzko, *supra*, footnote 81, 152.

resource, and classic private property rights in the physical object. Both forms of property, as well as the non-proprietary public interest, are discussed below. But first, we should put IP protection in context.

3. *Context*

We have witnessed recently the "commodification of germplasm".[125] For capital to infiltrate agriculture, there were a number of obstacles to overcome.[126] The most notable was a fundamental biological characteristic of the seed—the ability to self-reproduce. However, law and technology have overcome this barrier to create thriving seed markets. So as Marx foreshadowed: "Agriculture no longer finds the natural conditions of its own production within itself, naturally arisen, spontaneous, and ready to hand, but these exist as a separate industry from it."[127]

Our focus is juridical, but a word should be said about technological innovation. Although mankind has bred plants since the dawn of agriculture, an understanding of heredity turned plant breeding from art to science.[128] Initially, most research was carried out as public science.[129] Private seed markets developed with hybridization.[130] Because seed obtained from a hybrid crop generates reduced yield when replanted, hybridization circumvented the biological barrier that inhibited plant breeding and seed production by private enterprise.[131] Farmers who wanted high-yielding hybrid crops were forced to return to the market to purchase new seeds every year.

Biotechnology now supports seed markets. Unlike hybrids, however, GM plants generate equally fruitful progeny. To sustain annual demand, patentees must therefore rely on contracts with farmers.[132] Consensual arrangements may, however, become obsolete because of "terminator", or "genetic use restriction", technologies.[133] That is, genetic modification can now create seeds that grow normally but produce sterile progeny—"suicide seeds".[134]

Legal developments have complemented technological evolution. Strong IP protection for plants contributes to the expropriation of the means of production from

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[125] Kloppenburg, *supra*, footnote 25, 11; Aoki, *supra*, footnote 52, 250.

[126] Kloppenburg, ibid., 27–39.

[127] K. Marx (M. Nicolaus (tr.)), *Grundrisse*, Allen Lane, London, 1973, 527.

[128] Kloppenburg, *supra*, footnote 25, 66–90.

[129] Aoki, *supra*, footnote 52, 268–275; Kloppenburg, ibid., Chapter 4.

[130] The mating of any two unlike genotypes or phenotypes: King and Stansfied, *supra*, footnote 1, 155. Corn hybrids were the first to be exploited: Kloppenburg, ibid., 91–129.

[131] Kloppenburg, ibid., 93.

[132] Such contracts are less objectionable than IP rights, for the obvious reason that the farmer forfeits his rights voluntarily. See generally N.C. Nachtigal, *A Modern David and Goliath Farmer v. Monsanto: Advising a Grower on the Monsanto Technology Agreement*, (2001), 6 Great Plains Natural Resources J. 50.

[133] "Control of Plant Gene Expression", U.S. Patent 5,723,765.

[134] R.A. Steinbrecher and P.R. Mooney, *Terminator Technology: The Threat to World Food Security*, 28(5) Ecologist 276. On the merits, or lack thereof, of such technology, see J. Oczek, *In the Aftermath of the "Terminator" Technology Controversy*, (2000), 41 Boston College L. Rev. 627; S.M. Ohlgart, *The Terminator Gene: Intellectual Property Rights vs the Farmers' Common Law Right to Save Seed*, (2002), 7 Drake J. Agricultural L. 473; G. Dutfield, *Should We Terminate Terminator Technology*, (2003), 25(11) EIPR 491.

farmers into the hands of increasingly concentrated agribusiness.[135] Although, arguably, intellectual propertization promotes the commodification of any ideational resource, *Schmeiser* "represents the legal apotheosis of the patented seed as a paradigm commodity".[136]

B. PUBLIC INTERESTS AND COMMON PROPERTY

1. *The Non-Proprietary Public Interest*

Recall that IP is usually justified as a social instrument—encouraging science and art—rather than a natural right. The limits of IP are also often explained by social policies.[137] We saw at the beginning of this article how, for example, courts explicitly believe that social concerns underpin fair dealing in copyright law, and validity and construction in patent law. So IP is typically both justified by, and balanced against, society's interests.

Biotechnology presents special challenges for the public interest. IP rights in biotechnological innovations, although temporally limited, have the potential to be lineally unlimited. For example, a patented gene may be protected not only in the product in which it is presently expressed but also in the progeny of that product. In theory, protection is generationally infinite.[138] Then there is the "innocent" bystander problem.[139] Many biotechnological innovations are self-replicating. This leaves owners of the descendants of patented plants or animals particularly vulnerable to the claims of IP rights-holders. With "traditional" IP, human intervention is required to reproduce the protected subject-matter. Books, for example, simply do not copy themselves. Plants do.[140]

There are at least three further public-interest concerns in respect of IP and agricultural biotechnology in developing countries. One relates to biodiversity and the erosion of plants' genetic resources.[141] Among other things, genetic diversity facilitates discovery of new medicines and insulates against crop disease. Concentration of genetic resources in the hands of a few global agrochemical corporations may be detrimental to the long-term sustainability of a diverse gene pool.[142]

Second, there are concerns about biopiracy. Almost all economically significant

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[135] Aoki, *supra*, footnote 52, 285, 303.

[136] Ibid., 304.

[137] Waldron, *supra*, footnote 14, 856–7.

[138] This aspect of IP predates biotechnology; rights in derivative works in copyright law are an example.

[139] See generally Canadian Biotechnology Advisory Committee (CBAC), *Patenting Higher Life Forms*, Report to the Government of Canada, Biotechnology Ministerial Coordinating Committee, June 2002, 13–14; Siebrasse, *supra*, footnote 41.

[140] Granted, some inventions, such as computer programs, may be designed to self-reproduce. Yet that is, at some point, a consequence of human direction. The self-propagating character of biological material is the result of nature. Compare *Schmeiser*, (SCC), *supra*, footnote 3, [92]: "Such a suggestion denies the realities of modern agriculture."

[141] See, for example, T. Swanson (ed.), *Intellectual Property Rights and Biodiversity Conservation*, Cambridge University Press, Cambridge, 1998; G. Dutfield, *Intellectual Property Rights, Trade and Biodiversity*, Earthscan Publications Ltd, 2002; Aoki, *supra*, footnote 52, 305–13.

[142] Aoki, ibid., 285, 303.

crops originated in what is now called the Third World.[143] As well as feeding, clothing and otherwise sustaining the First World, these plants are used as inputs for innovation. Allegedly, IP rights are sometimes granted in respect of plants that are simply taken from developing countries.[144] The ideational products are returned not as free goods but as commodities.[145] Indigenous peoples in the Third World should arguably be compensated for such germplasm contributions, which may be a key to economic development.[146]

Finally, there are concerns about global hunger. Eight-hundred million people are chronically undernourished, and live in permanent or intermittent hunger.[147] Increased productivity through agricultural biotechnology can be a solution, but only under the right circumstances. "A great deal needs to be done so that developing-country producers are empowered to make their own decisions regarding these technologies for their own benefit."[148] So what can be done?

2. *Common Property*

Increasingly, the response to the concerns just mentioned is to translate the public interest into property terms. A theoretical view of IP's limits as "no-man's land"[149] cannot resist its expansionist pressures, so fences have been built around what might be called "common intellectual property". Vague social rights are thereby injected with the powerful concepts of property and ownership.[150] The public domain is not seen as a realm void of any property, but is itself property, held in common by a particular community or all mankind.

It is now cliché to say germplasm is the common heritage of all mankind. However, in order to establish concrete rights and obligations, the common heritage principle needs an elaboration of community.[151] For example, if property is controlled by and open to only members of a particular group, it may be termed "limited-access". If it is controlled by no one and open to all, it is "open-access".[152]

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[143] Kloppenburg, *supra*, footnote 25, 14.

[144] Shillito, *supra*, footnote 109, 335–6; M. Blakeney, *Protection of Plant Varieties and Farmers' Rights*, (2002), 24(1) EIPR 9, 11–12.

[145] Kloppenburg, *supra*, footnote 25, 15, 152–190.

[146] The E.U.–U.S. Biotechnology Consultative Forum (BCF), *Final Report* (December 2000), 21; available at: ‹europa.eu.int/comm/external_relations/us/biotech/report.pdf›. Last accessed: 19 May 2004.

[147] Food and Agriculture Organization of the United Nations (FAO), *State of Food and Agriculture 2003-04* (May 2004) pt III, 157, available at: ‹www.fao.org/docrep/006/Y5160E/Y5160E00.htm› (last accessed 19 May 2004); BCF, ibid., 17; Blakeney, *supra*, footnote 144.

[148] FAO, ibid., 104; see also BCF, ibid., 18.

[149] D. Lange, *Recognizing the Public Domain*, 44 L. & Contemporary Problems 147.

[150] See, for example, J. Litman, *The Public Domain*, (1990), 39 Emory L.J. 965; Y. Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, (1999), 74 New York University L. Rev. 354; J. Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, (2003), 66 Law and Contemporary Problems 33; C. Hess and E. Ostrom, *Ideas, Artifacts and Facilities: Information as a Common-Pool Resource*, (2003), 66 Law & Contemporary Problems 111; Rose, *supra*, footnote 17.

[151] Drahos, *supra*, footnote 53, 65.

[152] S.V. Ciriacy-Wantrup and R.C. Bishop, *"Common Property" as a Concept in Natural Resource Policy*, (1975), 15 Natural Resources J. 713. A more complex vision involves four views of the intellectual commons based upon Pufendorf's ideas: inclusive and exclusive positive community, and inclusive and exclusive negative community: Drahos, ibid., 54–68.

Is it that germplasm is an inherently common good that cannot be owned; in other words, entirely inappropriable?[153] If so, farmers could use germplasm to grow crops, and scientists to develop new breeds, but nobody could claim ownership over germplasm itself. Or is germplasm initially unowned, but appropriable by anyone?[154] The question would then be who actually has claimed ownership, which depends on the terms by which property is recognized. Since the developed world has decided patents or other statutory rights stake IP claims, indigenous communities are seemingly out of luck. However, another view suggests germplasm was once common but then appropriated by Third World communities.[155] Those in the First World have therefore misappropriated germplasm from them. Or maybe germplasm was always owned by particular indigenous groups, and was never part of mankind's common heritage.[156]

Most indigenous communities in the Third World do not possess the capability to transform germplasm into a tradable commodity. So that they are not excluded from it, they are likely to view it as initially or thereafter appropriated by either everyone or them alone. Either way, the common heritage principle must include them within its "positive community".[157] Some say, however, that germplasm must be recognized as a form of "national" property. In other words, only a limited-access commons will do, since any other approach would cause "only minor alterations in existing patterns of plant genetic resource use and exchange".[158]

Clearly, work is still needed to refine the concept of common property in this context. The essential point here is that much of the work regarding the limits of IP is focused, in one way or another, on public interest or common property counterweights.

C. Classic Property Rights

The third sphere of property rights, classic property, is usually neglected when discussing the limits of IP. Rose brings physical objects into the picture, but only to explain public rights.[159] Palmer recognizes that IP restricts the use of legitimately owned tangible property, but stops short of fully analyzing these interests.[160] Waldron recognizes individual rather than societal interests, but does not focus on owners of classic property, mostly discussing liberty instead.[161] Regarding plants and patents,

[153] Rose analogizes such things to the Roman law category of *res communus*, which is consistent with Drahos' description of inclusive positive community: Rose, *supra*, footnote 17, 93–7; Drahos, ibid., 58.

[154] Rose sees this as *res nullius*, which would be a form of Drahos' inclusive negative community: Rose, ibid., 92–3. Drahos, ibid., 58.

[155] Aoki, *supra*, footnote 52, 319–20. Indigenous groups might found such claims on Drahos' notion of exclusive positive community: Drahos, ibid., 58.

[156] Aoki, ibid., 321–2. Drahos might see this as exclusive negative community: Drahos, ibid., 58. According to Rose, this might implicate *res universitatis*: Rose, *supra*, footnote 17, 105–8; but if owned by the entire public, germplasm might be like *res publicae*, 96–100.

[157] Drahos, ibid., 65.

[158] Kloppenburg, *supra*, footnote 25, 286–8.

[159] Rose, *supra*, footnote 17.

[160] Palmer, *supra*, footnote 53, 830, 855.

[161] Waldron, *supra*, footnote 14.

Siebrasse unpacks concerns over autonomy to avoid balancing "incommensurable factors", but his utilitarian perspective overlooks other important property rights theories.[162] Aoki believes private property can be a shield against domination, but looks at germplasm as a severable intangible, rather than an intrinsic element of the physical resource.[163] Nobody has posited an amalgamated theory that shows adequate concern for classic property owners.

1. *The Importance of Classic Property*

(a) *Farmers' rights and global hunger*

Waldron suggests that claims by individuals who are denied access to IP are usually not as serious as those who are denied access to material property: "We are seldom dealing here—as we are, sometimes, in the case of material property—with matters of life and death."[164] Sometimes, however, IP does seriously constrain the use of vital material resources. Curtailing a farmer's seed saving rights is an example. For sustenance farmers in the developing world, this may well be a life or death matter.

Biopiracy and biodiversity can be addressed through variants of the common heritage principle,[165] or by protecting communal rights.[166] The commons, however, is less able to confront global hunger. It poorly protects an individual farmer's right to save seed, which is an integral element of sustenance farming. The commodification of germplasm, in part through strong IP regimes, expropriates the means of production from sustenance farmers, who cannot afford to return to the seed market from year to year. This is economically detrimental, but can also be literally fatal.

Exceptions to IP in the name of the public interest are not an adequate safeguard. That distracts from the severity of the consequences to individual farmers. Moreover, it is unrealistic to expect IP laws to carry this load, given their instrumental ambitions lie elsewhere.

Oczek's note, defending terminator technologies and denying farmers' seed saving rights, illustrates this problem. He canvassed public property concepts to conclude that there is no support for farmers' rights to save seed, let alone reason to favour them *vis-à-vis* IP rights.[167] However, his flawed methodology completely overlooks farmers' classic property rights. Derzko fell into a similar trap by characterizing farmers' privileges as mere "residual liberties", albeit liberties that IP should recognize.[168]

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[162] Siebrasse, *supra*, footnote 41, 25.
[163] Aoki, *supra*, footnote 52, 323.
[164] Waldron, *supra*, footnote 14, 863.
[165] See, for example, Kloppenburg, *supra*, footnote 25; Aoki, *supra*, footnote 52.
[166] Blakeney, *supra*, footnote 144, 14–19, suggests farmers' rights might form part of biodiversity laws, IP laws, traditional knowledge laws, human rights laws or *sui generis* legislation.
[167] Oczek, *supra*, footnote 134.
[168] Derzko, *supra*, footnote 81, 152, 169–70, dismisses these liberties by asserting without question that the PBRA contains adequate "safeguards" and presuming a "reality" that new and improved varieties will be developed, making farmers better off.

The CBAC's recommendation that Canadian patent law should incorporate an innocent bystander exemption[169] has been called a *non sequitur*.[170] This may be true if its underlying purpose is to provide a remedy for nuisance or trespass, but it might instead be seen to downgrade IP's potency on account of farmers' classic property rights.[171] The United Nations Food and Agriculture Organization's (FAO) approach toward farmers' rights avoids the important issue of seed saving.[172] This may be in part because farmers are not treated as individual classic property owners, but as an aggregate and inseparable group, whose rights are vested in the international community.[173]

A better view puts seed saving into the bundle of private rights that vests in farmers as classic property owners. It is not an exception to IP that can be justified only by abstract rights, public property doctrines or social utility.

(b) *Intellectual integrity*

Recognizing classic property rights also adds intellectual integrity to the discipline of IP. We concluded that reward or incentive theories best justify IP, but rewards or incentives must come from somewhere. "It sounds a lot less pleasant if, instead of saying we are rewarding authors, we turn the matter around and say we are imposing duties, restricting freedom, and inflicting burdens on certain individuals for the sake of the greater social good."[174] So naturally, we will want to examine the burdens IP imposes.[175] Waldron realized how a Hohfeldian analysis of the duties correlative to IP rights serves as a testing ground for the strength of those rights.[176] Therefore, he looked at IP against a variety of individual rights, especially liberty.[177]

However, individual owners of classic property deserve special attention. True, IP constrains all individuals' liberty, but an owner of a physical object is unique. A patent, for example, restricts the owner's freedom to practice an invention, just as it does everyone else's. Yet moreover, the patent curtails the freedoms otherwise associated with ownership, freedoms exclusive to the classic property owner. The classic property owner is doubly affected: like others he/she cannot make the invention from scratch, but also, he/she cannot use the invention as embodied in a physical object he/she already owns.

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[169] CBAC, *supra*, footnote 139, 13–14.

[170] Siebrasse, *supra*, footnote 41, 13–14.

[171] Siebrasse himself recognizes this as the main impetus for an innocent bystander defense in patent law: ibid., 25–36.

[172] Farmers' rights are seen as protecting traditional knowledge regarding, equitably sharing the benefits of, and participating in decision-making about plants' genetic resources. Seed saving is not protected by these rights but is expressly unaffected by them: Blakeney, *supra*, footnote 144, 10.

[173] Ibid.

[174] Waldron, *supra*, footnote 14, 862.

[175] Id.

[176] Ibid., 843–4; W.N. Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, (1913), 23 Yale L.J. 16.

[177] Waldron, *supra*, footnote 14, 868–78.

Another important point is implicit in an argument that seeks to justify IP as "piggy-backing" classic property rights.[178] The justifications most often cited in defence of IP are, for the most part, recycled arguments for classic property. Each of the theories discussed earlier—labour, personality and instrumentalism—were first used to support classic property rights. So one cannot understand the theory of IP without grasping the arguments for private property generally.[179] And as a matter of historical fact, IP has only ever existed in societies with already advanced classic property institutions.[180] There is no such thing as a *sui generis* history or theory of IP.

Locke, for example, was concerned with property in tangible not intangible resources. Variants such as no hardship and labour-desert may envelop IP but were not formulated with that in mind. Hegel mentioned products of the mind, although his theory is certainly not designed to justify IP, let alone property; it is a broader explanation of the world. And instrumentalist property theory is basically an offshoot of classic utilitarianism, which applies equally or more strongly to classic property. Modern commentators, such as Hughes for example, essentially adapted these general property theories to the ideational realm.

So one can debate the inferiority or superiority of "property" rights and other rights, or of natural property and instrumental property, but one cannot dispute that classic property rights are philosophically prior to IP rights. That is not to say that classic property should trump IP in every circumstance. It does, however, follow that IP's burden on the privileges and powers of classic property owners cannot be defended sensibly unless we appreciate these shared ideological underpinnings. Too often IP subordinates classic property without hesitation. But if we take the time to look, we will often see that a classic property right has relatively more philosophical clout.

2. *Rationale*

(a) *Natural rights justifications*

In justifying classic, as compared to intangible, property, we can start from an intuitive psychological perspective. From childhood, we understand that we can own "things". Although creators have tried to influence social conventions, there seems still to be a poorly developed psychology of IP. Nevertheless, this may gain Schmeiser more public sympathy than Monsanto, but it cannot justify a natural property right.

Some suggest that propertization requires an object capable of reification, that is, sufficiently distanced from a human subject.[181] This is possible with ideational resources, although it is certainly more difficult to grasp the boundaries of an abstract concept than

[178] Palmer, *supra*, footnote 53, 852–3.
[179] Waldron, *supra*, footnote 88, 33–8.
[180] Harris, *supra*, footnote 57 , 46–7.
[181] Ibid., 332.

a physical object.[182] The *res* as physical object is an existential reality, whereas the *res* as ideational construct is a purely legal fiction. Natural classic property rights, however, do not follow from physical existence.

One reason to favour classic property rights over IP relates to liberty. A farmer's property rights in a plant containing patented genetic material do not impinge upon the patentee's liberty in the same way that the patentee's rights impinge upon the farmer's liberty.[183] Although the patentee might prefer, for example, that the farmer not save seed, doing so is not a restraint on the patentee's freedom.[184] Thus, it has been said that classic property rights "do not restrict liberty at all—they simply restrain action. Intellectual property rights, on the other hand, do restrict liberty".[185] But again, even if so, this does not in itself establish a natural property right to classic property.

Debate carries on over whether any property right, classic or intellectual, is natural. But to the extent that natural property rights are justified at all, nowhere are they more secure than in the field of agriculture. The literature is replete with references to farmers' property rights. Sometimes the basic argument for IP generally is framed against farmers' rights: "... just as one has a right to the crops one plants, so one has a right to the ideas one generates and the art one produces."[186]

"Growing a crop" has been offered as an example of labour theory's applicability to classic property.[187] Locke himself uses agriculture to make his point: "As much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property."[188] Agriculture is also mentioned in the context of the "creation-without-wrong" argument: "He who already rightly owns the seed and the ground in which he plants and tends it also owns the crop—provided always that management of the growing process itself involves no wrong to others."[189]

Farmers also have compelling personality-based arguments to support both "intellectual" and classic property rights. Although Schmeiser disposed of his crop as a fungible commodity, he viewed his strain of canola in a different light.[190] It was simultaneously "personal" and "fungible".[191] And even in so far as crops may become fungible, growing in a farmer's fields they are part of the homestead, not like ordinary stocks or money.

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[182] Drahos, *supra*, footnote 53, 151–6.

[183] Waldron uses the example of copying a literary work to make a similar point: Waldron, *supra*, footnote 14, 871.

[184] Ibid., 872–3.

[185] Palmer, *supra*, footnote 53, 831.

[186] Ibid., 819.

[187] Drahos, *supra*, footnote 53, 51–2, 48.

[188] Locke, *supra*, footnote 54, [32].

[189] Harris, *supra*, footnote 57, 204.

[190] *Schmeiser* (Appellant's *Factum*) *supra*, footnote 3, [11]: "Mr. Schmeiser took great pride in his canola, which he developed through a life of work." See Siebrasse, *supra*, footnote 41, 28: "Canola is not like a wedding ring. A farmer values canola for its cash sale value, and not out of special emotional attachment."; and Hughes, *supra*, footnote 53, 344–50.

[191] Radin, *supra*, footnote 73, 986–8.

In general, farmers' arguments for natural property rights are relatively compelling. The same can be said of donors of body samples, such as Moore: privacy, personhood and creation-without-wrong might all support his claim.[192] By contrast, it is more difficult to sustain a natural rights argument on behalf of owners of CDs and DVDs, whose claim rests largely on having bought the product. These property owners, like IP rights-holders, must resort to instrumental arguments.

(b) *Instrumental justifications*

Recall that of the two main instrumental justifications for private property—preventing tragedy and encouraging investment—only the second applies to IP. This is mainly attributable to the non-rivalry, non-excludability and inexhaustibility of ideas, which alleviate the threat of a tragedy of the commons. Most physical objects, however, are scarce, so the whole catalogue of economic arguments applies to support classic property.

This is certainly true for Schmeiser and other farmers. Locke, in so far as his theory has instrumentalist elements, realized that "... the provisions ... produced by one acre of enclosed and cultivated land, are ... ten times more than those which are yielded by an acre of land of an equal richness lying waste in common".[193] Moore's claim is slightly different. The tragedy of common ownership of human body samples is not economic but ethical. So, like IP, we are left with an incentive argument: more body samples will be provided with property rights than without.[194] Economic and non-economic tragedy-avoidance and market-incentives all underpin ownership of tangible chattels such as CDs and DVDs.

Yet whether one or both instrumental arguments support private ownership does not determine which of two conflicting property rights should prevail. That depends on the particular costs and benefits involved; the benefit of incentives may offset the cost of tragedy. My point here is not to say which property right should prevail in which circumstance, but to emphasize that the answer requires a solid understanding of their philosophical foundations. And if, in the end, one believes it boils down to competing instrumental arguments, the answer requires empirical study. Or at least it requires reliable estimates factoring all interests.

3. *Content of Farmers' Classic Property Rights*

It has been suggested that "the concept of farmers' rights was formulated in 1989".[195] Others say "saving seed has developed over time and been thought of as a

[192] Hardcastle, *supra*, footnote 23, 14–22.
[193] Locke, *supra*, footnote 54, [37].
[194] See *Moore*, *supra*, footnote 8, 497–8, Arabian J, rejecting property rights incentives in order to avoid a "marketplace in human body parts".
[195] Blakeney, *supra*, footnote 144, 9–10.

common law right by many farmers".[196] Recent reports suggest that IP laws should not override this right.[197] But rarely, if ever, have we received an account of the source of seed saving rights. The truth is that farmers' seed saving rights are as old as private property itself. Based on the philosophical foundations discussed above, they are part of the standard bundle of rights that accompanies "full-blooded ownership"[198] of classic property. They may not constitute "sole and despotic dominion",[199] but theoretically, they should be as all encompassing as any of the most powerful classic property rights.

Honoré's delineation of the "standard incidents" of full liberal ownership serves as a theoretical touchstone for the "bundle of rights" view of property.[200] It is enough to briefly mention the key incidents of ownership most relevant to the question at hand. Obviously, farmers have an *in rem* right to exclusive possession of the seed itself. Farmers also have the right to use and manage their seeds; in other words, full "use-privileges" and "control-powers".[201] The rights to the income and the capital give farmers the right to seeds as both commodity and means of production.

This point is especially important, as germplasm is agricultural capital. One may not easily see or touch germplasm, but it is fundamentally not IP. It falls in the category of classic property. The farmer, therefore, has rights not only over the plant and seed but also over its genes and germplasm, which are inseparable elements of the physical object. The principle is the inverse of that expressed in *Schmeiser*—that IP protection for an invention embodied in a gene protects the plant as a whole. A farmer's classic property right extends to the plant and its genetic components.

IV. Conclusion

Arguments for natural property rights do not support a universal theory of IP, but are relatively more compelling for farmers' classic property rights. Also, only incentive-instrumental rationales sustain IP, whereas the litany of instrumental arguments applies to farmers' rights. Yet, paradoxically, the legal scales are tipped decidedly in favour of inventors and against farmers. In many jurisdictions, patents and plant breeders rights are available cumulatively, and seed saving "privileges" are limited. Such legal strong-arming complements technological developments, resulting in the commodification of farmers' means of production.

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[196] L. Belsie, *Features, Ideas, Genetics: Plants Without Seeds Challenge Historic Farming Practices*, Christian Science Monitor, 30 July 1998, B4.

[197] CBAC, *supra*, footnote 139, 13–14; BCF, *supra*, footnote 146, 21. But compare Siebrasse, *supra*, footnote 41.

[198] Harris, *supra*, footnote 57, 29–30.

[199] W. Blackstone, *Commentaries on the Law of England*, 16th edition, Butterworths, London, 1825, Vol. 2, Chapters 1 and 2.

[200] A.M. Honoré, *Ownership*, in *Making Law Blind: Essays Legal and Philosophical*, Clarendon Press, Oxford, 1987, 161–92.

[201] Harris, *supra*, footnote 57, 26.

Public interest concerns, including biodiversity, biopiracy and global hunger, are sometimes translated into common property rhetoric. Such efforts are helpful, but there is another way to defend against IP's ever-expanding frontiers. The boundaries of IP are marked not only by the commons but also by classic property.

Classic property rights are especially important to farmers in developing countries. Seed saving rights are an integral component of sustenance farming, and therefore a key element of any solution to global hunger issues; and seed saving rights are best recognized as an inherent part of ownership of classic property, rather than a socially justified limit on IP.

This analytical model also has implications for reconciling all sorts of intellectual and classic property rights, for example, in other areas of biotechnology and in copyright. The standard approach to resolving conflicts between such rights is to segregate a resource's ideational attributes from the tangible vessel, and then juggle this against an abstract vision of public welfare. But we must not lose sight of a fundamental component of the debate—the *res* itself. This requires viewing the problem not as a tug-of-war, but as a web of interests in a property-rights matrix.

Doing so reveals the relative philosophical strengths of various property rights. This is especially true for farmers' rights. Schmeiser could be the poster boy for private property. He is the paradigmatic labourer, a modem day acorn gatherer. He poured personality into his crop, as commodity and strain. And land and crops are templates for instrumentalism. Indeed, most theorists take farmers' private property rights for granted. Yet, in agricultural biotechnology for example, too often we just cut to the chase and ask how patents and PBRs are justified. Despite its recent celebrity, IP theory must remember where it came from.