

A Remedial Benefit-Based Approach to the Innocent User Problem in the Patenting of Higher Life Forms, with Reference to Accounting of Profits and *Monsanto Canada Inc. v. Schmeiser*

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1 Introduction

1.1 The Innocent User Problem

One of the key controversies surrounding the patenting of higher life forms concerns the problem of the innocent user.¹ Higher life forms are more likely to escape from their inventor than are more traditional types of invention, and in consequence a farmer may, though no fault of his own, find patented crops growing on his land, or an aquaculturist may find patented salmon swimming in her pens. Should the farmer or aquaculturist be liable for patent infringement in such circumstances? This is the problem of the innocent user.

The most prominent response to the innocent user problem in the patenting of higher life forms has been to propose a substantive exception from liability based on intent.² In this article I will argue that there is an alternative, remedial, approach to the problem. In particular, on the proper application of existing patent law remedies, a user who does not benefit from the patent will not be liable for substantial damages. This protects the innocent user, who, because of her lack of knowledge innocence, does not take advantage of the properties of the patented crop.

¹In *Harvard College v Canada (Commissioner of Patents)* 2002 SCC 76 the majority of the Supreme Court cited this problem as one of the reasons for giving a restrictive interpretation of the statutory definition of “invention,” so holding that higher life forms are unpatentable under current legislation (see esp. para 167 and 172). The Report on Patenting of Higher Life Forms and Related Issues (June 2002) prepared by the Canadian Biotechnology Advisory Committee (CBAC) recommended patenting of higher life forms (Recommendation 2, at 11) but proposed that the Patent Act be amended to provide protection from patent infringement claims for “innocent bystanders” (Recommendation 4, at 14). The Federal Court of Appeal also recognized the problem in *Monsanto Canada Inc. v Schmeiser* 2002 FCA 309: see *infra* Part 1.3. The problem of “escape” is generally recognized as one of the most serious problems with genetically engineered plants and animals from an environmental perspective: see e.g. Board on Agriculture and Natural Resources, Board on Life Sciences, “Animal Biotechnology: Science Based Concerns,” (2002, National Academy Press, Washington D.C.), esp. Ch.5, prepublication version available at <http://search.nap.edu/books/0309084393/html/>

²See the Report on Patenting of Higher Life Forms and Related Issues *ibid* and the Federal Court of Appeal decision in *Monsanto Canada Inc. v Schmeiser*, *ibid*.

The substantive intent-based approach and the remedial benefit-based approach carve up the problem in very different ways. On the intent-based approach a farmer will escape liability if she meets some knowledge or intent oriented criterion; the question will be whether she caused the patented plant to enter her land, or whether she knew of the patented plant, or something similar. On the remedial approach, the intention of the user is irrelevant: the sole question is whether the user benefitted from the infringement. A user who benefitted will be liable; one who did not will be a technical infringer, but will not be liable for substantial damages.

It is important to recognize that the intent-based and benefit-based approaches give the same result in two key cases in which the correct result is intuitively clear: the farmer who intentionally uses the patent and benefits from that use (who will be liable under either approach), and the innocent, non-benefitting farmer (who will not be liable). In the two cases in which the outcomes are different under the two approaches, namely the non-innocent, non-benefitting farmer and the innocent benefitting farmer, the equities are not so clear. On the one hand, there is something to be said against holding a farmer liable for infringing a patent on an invention which he did not know he was using; but on the other, if the farmer gains some significant advantage – for example if the invention is a form of canola which produces twice as much oil under normal growing conditions – there is some basis for holding him liable at least to the extent of the additional benefit. Certainly the case for holding the innocent benefitting farmer liable is much stronger than that for holding the innocent non-benefitting farmer liable. And in the other case, a farmer who intentionally infringes is not a sympathetic character, but if he does not benefit from the infringement the case for imposing liability is significantly weakened.

Despite the tenor of these preliminary comments, the aim of this article is not to argue that the benefit-based approach is superior to the intent-based approach, or vice versa. The goal, more modestly, is to argue that the benefit-based approach reflects existing law, while the intent-based approach does not. I suggest that recognizing this much will go some way to alleviating concerns regarding the innocent infringer. The most pressing concern is to ensure that the innocent infringer who does not benefit from the patent should not be liable for substantial damages, and

this, I will argue, is already the case under existing law. Law reform is needed only if we are to relieve the innocent non-benefitting farmer from liability, or to impose liability on the non-innocent non-benefitting farmer. Since the equities are not so clear cut in these cases, the urgency for law reform is accordingly reduced if the benefit-based approach does in fact reflect existing law.

This modest task requires a lengthy exposition because the non-benefitting user is an uncommon figure in patent law. In most cases the user of a patented invention expects to benefit from the use of that invention, even if she is an innocent infringer in the sense that she is unaware that it is patented. Patented higher life forms, on the other hand, often (though not invariably) require some special treatment in order for the user to derive a benefit from the invention. So, the invention at issue in the recent decision in *Monsanto Canada Inc. v Schmeiser*³ is for a herbicide resistant canola which provides a benefit only if the farmer tailors his weed control methods to take advantage of the unique properties of the invention. A farmer who does not realize that her crop is of the patented variety will not tailor her farming techniques accordingly, and so will not benefit from the use of the invention. This unusual aspect of patented higher life forms does not require any new remedial principles, or so I will argue, but it does require careful application of existing principles.

This article analyses the various remedies of an accounting of profits, damages and an injunction and related remedies in turn. The bulk of the article deals with an accounting of profits, as the law relating to this remedy is very unclear in Canada. In *Schmeiser* in particular, the Federal Court of Appeal rejected a benefit-based approach to an accounting of profits and a direct consequence is that an innocent non-benefitting farmer would be liable for substantial damages. This conclusion is cause for considerable concern. Part 2 is devoted to a detailed assessment of the remedy of an accounting of profits, particularly as applied to a non-benefitting user, and I will argue that the Court of Appeal erred on this point in the *Schmeiser* decision.

³*Supra* n.1.

Parts 3 and 4 deal with damages and injunctions and related remedies respectively. Here the principles are clearer, but care is nonetheless required in their application. In these Parts I will argue that the remedial aspects of patent law provide a consistent benefit-based approach under which the non-benefitting infringer would not be subject to substantial penalties. Part 5 concludes.

1.2 Validity of Patents Related to Higher Life Forms

A few remarks must be addressed to the validity of patents relating to higher life forms, such as that at issue in *Schmeiser*, lest it be thought that the decision of the Supreme Court in *Harvard College v Canada (Commissioner of Patents)*⁴ (the “Harvard Mouse” case) has rendered this article moot. In the *Harvard Mouse* decision the majority of the Supreme Court held that patents for higher life forms *per se* are invalid. The Monsanto patent at issue in *Schmeiser* did not claim the plant *per se*, but rather the chimeric gene and plant cells containing such genes.⁵ The Patent Office, which, of course, contested the claims in the *Harvard Mouse* case, did not object to Monsanto’s claims, the validity of which was upheld at trial (validity was not argued on appeal). However, both decisions in *Schmeiser* were prior to that of the Supreme Court in the *Harvard Mouse* case. Unfortunately the *Harvard Mouse* decision does not provide clear guidance as to the validity of the patents at issue in *Schmeiser*. On the one hand the Supreme Court majority appeared to accept that a genetically altered egg would be a patentable “composition of matter”

⁴*Supra* n.1.

⁵Claim 1 of the at issue in *Harvard College v Commissioner of Patents* was as follows (see Appendix A of the Court of Appeal decision [2000] 4 F.C. 528, 613): “1. A transgenic non-human mammal whose germ cells and somatic cells contain an activated oncogene sequence introduced into said mammal, or an ancestor of said mammal, at an embryonic stage.” The main claims at issue in *Schmeiser* (*supra* n.1, para.38) were “1: A chimeric plant gene which comprises [a description of the gene]” and “22: A glyphosate resistant plant cell comprising a chimeric plant gene of Claim 1.”

even though the higher life form to which it gives rise is not.⁶ This suggests that a patent such as that at issue in *Schmeiser*, which is formally directed at individual cells and not at the higher life form *per se*, is valid. On the other hand, all of the policy considerations which led the majority to a restrictive definition of “invention” appears to arise just as forcefully whether the patent is for a plant *per se* or for every cell of which the plant is comprised.⁷ This suggests Monsanto’s patent may be invalid.

This article proceeds on the assumption that Monsanto’s patent is a patent related to a higher life form and not a patent for the higher life form *per se*, and so is valid. For convenience I will refer to patents “for” higher life forms, though this should be understood to mean patents “related to” higher life forms. Even if this assumption proves to be incorrect, I trust this article will be of interest for its contribution to the debate regarding the patenting of higher life forms. And in any event, the issue of whether patent remedies are benefit-based is clearly relevant to a broad range of patent infringement cases, not just those involving higher life form.

1.3 The Innocent Infringer under Current Law

In *Schmeiser* the Federal Court of Appeal expressly recognized the importance of the innocent user problem, remarking that

There is considerable force to the argument that it would be unfair to grant Monsanto a

⁶“Owing to the fact that the technology by which a mouse predisposed to cancer is produced involves injecting the oncogene into a fertilized egg, the genetically altered egg would appear to be cognizable as “[a] substance or preparation formed by combination or mixture of various ingredients” or as [TRANSLATION] “[a]ction or manner of forming a whole ... by assembling several parts”. However, it does not thereby follow that the oncomouse itself can be understood in such terms.” *Harvard College v Commissioner of Patents, supra* n.1 at para 162.

⁷The main policy issues, identified *ibid* at para 170ff are the innocent user problem, farmer’s privilege, and research and experimentation exceptions to liability. Certainly, as the Court of Appeal recognized in the *Schmeiser* decision, the innocent user problem arises just as forcefully under either form of claim: see *infra* Part 1.3.

remedy for infringement where volunteer Roundup Ready Canola grows in a farmer's field but its resistance to glyphosate remains unknown, or if that characteristic becomes apparent but the seeds of the volunteer plants are not retained for cultivation.⁸

The Court then went so far as to say that “it is an open question whether Monsanto could, in such circumstances, obtain a remedy for infringement on the basis that the intention of the alleged infringer is irrelevant.”⁹

This is a radical suggestion, as intention has never been an element in a patent infringement action.¹⁰ The Court of Appeal asserted that whether a defence of innocent infringement would be successful “does not need to be resolved in this case” because on the facts *Schmeiser* he knew or should have known that the seeds he used for the 1998 crop were glyphosate resistant and so he was not an innocent infringer.¹¹ With respect, the problem cannot be avoided so easily. Even though it is clear from the facts that *Schmeiser* was an intentional infringer, the finding of liability against him requires that either (1) an innocent infringer would also be liable or (2) intent is an element of infringement. When a truly innocent infringer comes to trial, a trial court bound by the *Schmeiser* decision will be forced either to hold the innocent user liable, or it will have to radically revise the law to introduce an element of intent into patent infringement.

And indeed the situation is simpler than this. Though an innocent infringer defence may be desirable as a matter of policy, the Court of Appeal’s suggestion that the a defence of innocent infringement might be open on existing law, is, with respect, not tenable. The Act gives the patentee “the exclusive right, privilege and liberty of making, constructing and using the

⁸*Supra* n.1 at para 56.

⁹*Ibid* at para. 57.

¹⁰See cases cited by the Court of Appeal *ibid* at para. 56.

¹¹*Ibid*, para. 57.

invention.”¹² The Act is plain on its face: intent is not an element. As the authorities cited by the Court of Appeal itself show,¹³ this principle of patent law is long and firmly established and there is no question that a general defence of innocent infringement cannot be introduced except by legislative enactment.¹⁴ It is true that the Court of Appeal was suggesting a narrower exception, which would be confined to cases of volunteer plants or escaped animals (e.g. salmon), where the patented product came fortuitously onto the property of the defendant. But this magnifies the problem of inconsistency with the *Patent Act*. There is absolutely no basis for this kind of narrow exemption from liability in the *Patent Act* itself, and even in the context of Charter remedies, where there is a constitutional mandate for judicially modifying a piece of legislation, the Supreme Court has warned against the courts indulging in detailed legislative drafting.¹⁵ Even if there were some constitutional basis for modifying the Act, reading in such a narrow and detailed exception would be problematic; to do so without a constitutional basis is out of the question.

Thus it is clear that even if an innocent user exception to liability for patent infringement is desirable, it not available on current law. The clear implication of the Court of Appeal’s decision in *Schmeiser* is therefore that an innocent user would be liable. The case of the defendant

¹²*Patent Act* R.S.C. 1985, c. P-4, s. 42.

¹³*Supra* n.1 at para 56.

¹⁴Further, the *Patent Acts* of the U.K. (*Patents Act 1977*, s.62) Australia (*Patents Act 1990*, s.123 (Cth), New Zealand (*Patents Act 1953*, s.68), and the U.S. (35 USC §287) as well as our own *Copyright Act* (R.S.C. 1985, c. C-42, s.39) all have provisions which limit a patentee’s monetary remedies against an innocent infringer in certain circumstances, so it is highly unlikely that the drafters of the *Patent Act* did not advert to the concept of innocent infringement.

¹⁵See *Schachter v. Canada* [1992] 2 S.C.R. 679, 707, where, after reviewing its own decisions, the Court stated that “These cases stand for the proposition that the court should not read in in cases where there is no manner of extension which flows with sufficient precision from the requirements of the Constitution. In such cases, to read in would amount to making ad hoc choices from a variety of options, none of which was pointed to with sufficient precision by the interaction between the statute in question and the requirements of the Constitution. This is the task of the legislature, not the courts.”

Schmeiser himself is of limited interest, as an intentional infringer who does not benefit from the use is a rare breed.¹⁶ But the direct implication of the *Schmeiser* decision, that an innocent non-benefitting infringer would also be liable, is cause for concern.

2 Accounting of Profits

2.1 Introduction

The *Patent Act* permits two different types of monetary remedy, namely damages and an accounting of profits. Damages represent the patentee's loss, which may be either the patentee's lost profits from sales lost because the infringer occupied the market, or lost royalty payments from the infringer's failure to licence. In contrast, the award in an accounting of profits is measured by the profits made by the infringer, rather than the amount lost by the patentee.

When an accounting of profits is ordered, the infringer is required to disgorge those profits made by the infringer as a result of the infringement.¹⁷ But the patentee is not necessarily entitled to the entirety of the infringer's profits. For example, in *Gordon Form Lathe Co. v. Ford Motor*

¹⁶It appears from the facts that Schmeiser did not benefit from the use of the patented canola, even though there is no doubt that he was aware of its nature: see *infra* n.49. This is very unusual, as normally a defendant uses a patented invention because they at least hope to derive some monetary benefit from it. It appears that Schmeiser considers himself an anti-GMO activist and he was not primarily motivated by money: See e.g. the Toronto Star editorial by Stuart Laidlaw, "A Quiet Hero from the Fields", Toronto Star, May 3, 2002; "Monsanto Foe Addresses Crowd of 50 at Columbia, Mo., University" Columbia Daily Tribune, September 24, 2002.

¹⁷Apart from the issue of apportionment discussed in the text, the other main issue of principle which arises in an accounting of profits the question of how to allocate shared costs. If a factory makes both infringing and non-infringing goods how are overhead costs (e.g. lights, heat) to be allocated in calculating the profits attributable to the infringing goods? This is a difficult question, which has been the subject of much litigation: see e.g. *Domco Industries Ltd. v. Armstrong Cork Canada Ltd.* 10 C.P.R. (3d) 53; 1986 C.P.R. LEXIS 1008 (F.C.T.D.) affirming 76 C.P.R. (2d) 70; 1983 C.P.R. LEXIS 716. Fortunately, this issue is not relevant for our present purposes. For an excellent discussion see A.J. Stack, A.S. Davidson & S.R. Cole, "Accounting of Profits Calculations in Intellectual Property Cases in Canada," (2001) 17 C. I. P.R. 405.

Co.¹⁸ the patent in issue was for a lathe for turning automobile camshafts. Though Ford Motor Co. was found to have infringed the patent, the patentee was clearly not entitled to the entire profits made by Ford on each car sold which had a camshaft ground with an infringing lathe. How then are the profits to be apportioned between the infringer and the patentee?

It is uncontroversial that an apportionment is sometimes necessary. It is also universally acknowledged that the governing principle is that the patentee is only entitled to that portion of the infringer's profit which is causally attributable to the infringement.¹⁹ This is simply a reflection in patent law of the fundamental legal principle that a causal link between the wrong and the award is an essential element in the assessment any non-punitive compensation.²⁰ The controversy is in the approach to be used in implementing the causation requirement in an accounting. Precisely what rule should be used in apportioning profits? A variety of methods have been used at various times in various jurisdictions, and the law today in Canada is unsettled. The next section of this paper will outline the existing state of the law in the U.S., the U.K. and Canada, and identify the three basic approaches which have been applied at various times.

¹⁸133 F. 2d 487 (6th Cir. 1943), affirmed 320 U.S. 714. As well as being a clear example of the application of the differential profit rule, *Gordon Form Lathe* has an excellent general discussion of the approach.

¹⁹*Lubrizol Corp. v. Imperial Oil Ltd.* (1996) 71 C.P.R. (3d) 26, 30 (F.C.A.): "It may be possible for Imperial to show that some part of the profits made on the infringing sales are not profits 'arising from' the infringement in that they are not caused by but simply made on the occasion of such infringement." *Dubiner v. Cheerio Toys & Games Ltd.* (1966) 49 C.P.R. 155, 174 (Ex. Ct.): ". . .the plaintiff is entitled to require the defendant to account for only that part of the profit it realized on infringing sales during the accounting period that is attributable to its use of the plaintiff's trade marks. . ." *Celanese International Corp. v. BP Chemicals Ltd* [1999] R.P.C. 203, para. 37 (Pat Ct.): "Although an account may give rise to a very different figure to that on an inquiry as to damages, they both proceed on a common principle of legal causation. . . .In an account the court is trying to determine what profits have been caused, in a legal sense, by those acts."

²⁰As McLachlin J. stated in " *Canson Enterprises Ltd. v. Boughton & Co.* [1991] 3 S.C.R. 534, 556, quoted with approval by Binnie J. for the unanimous Court in *Cadbury Schweppes Inc. v. FBI Foods Ltd.* [1999] 1 S.C.R. 142, 194, "[I]t is essential that the losses made good are only those which, on a common sense view of causation, were caused by the breach".

Subsequent sections will consider the justification for each of these rules in turn.

2.2 Current Law

2.2.1 United States

The law in the United States is very clear. Apportionment is based on what is conveniently termed the “differential profit” approach.²¹ Probably the best formulation of the rule is one of the earliest, that of the United States Supreme Court in the 1871 decision in *Mowry v Whitney*:

The question to be determined in this case is, what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result.²²

This rule was subsequently affirmed many times by the United States Supreme Court²³ and has always been consistently followed by the lower courts.²⁴ It was applied in patent cases until

²¹“Differential profit” is the term used in *Celanese International Corp. v. BP Chemicals Ltd* [1999] R.P.C. 203 (Pat Ct.). It is also sometimes known as the “standard of comparison approach” (see e.g. *International Industries, Inc. v. Warren Petroleum Corp.*, 248 F.2d 696, 703 (3rd Cir. 1957), cert. dismissed, 355 U.S. 943) or the “comparison of cost method” (e.g. *Sperry Rand Corp. v. A-T-O, Inc.* 447 F.2d 1387 (4th Cir. 1971)). I will adopt “differential profit” as being most descriptive: “standard of comparison” is not particularly descriptive and “comparison of cost” suggests that it is only costs, and not profits, which are compared.

²²(1871) 81 U.S. 620, 651.

²³The leading case is *Tilghman v. Proctor*, 125 U.S. 136, 151 (1886) which specifically approved this passage from *Mowry*. See also *Littlefield v. Perry*, 88 U.S. 205, 229 (1874); *Cawood Patent*, 94 U.S. 695, 709 (1876); *Black v. Thorne*, 111 U.S. 122, 123-24 (1884); *Root v. Railway Co.*, 105 U.S. 189, 197-98 (1881); *Manufacturing Co. v. Cowing*, 105 U.S. 253, 255 (1881); *Sessions v. Romadka*, 145 U.S. 29, 46 (1892); *Keystone Mfg. Co. v. Adams*, 151 U.S. 139, 147 (1893); *Coupe v. Royer*, 155 U.S. 565, 583 (1895).

²⁴See e.g. *Horvath v. Mccord Radiator & Mfg. Co.*, 100 F.2d 326, 330 (6th Cir., 1938); *Cambria Iron Co. v. Carnegie Steel Co.*, 224 F. 947, 949 (3rd Cir., 1915); *Dunkley Co. v. Central*

1946, when the remedy of an accounting of profits was abolished from the *Patent Act* for reasons unrelated to this aspect of the rule,²⁵ and it remains the law in related areas, such as trade secrets and copyright, where an accounting of profits is still permitted.²⁶ As there is no statutory basis for distinguishing the U.S. cases, this is strong authority (though obviously not binding) in favour of the differential profit approach.²⁷

We should note that the effect of the differential profit approach is that profits are apportioned based on the value of the patent. In general the fair market value of any item is “the highest price available in an open and unrestricted market between informed, prudent parties acting at arm's length under no compulsion to act, expressed in terms of money or money's worth”²⁸ What is the highest price that a licensee would be willing to offer for the right to use the patent? In deciding whether to licence the prudent potential licensee will ask herself how much money will be made

California Canneries, 7 F.2d 972 (9th Cir., 1925); *Westinghouse Electric & Mfg. Co. v. Wagner Electric & Mfg. Co.*, 173 F. 361, 369 (8th Cir., 1909).

²⁵The amending act was Act of August 1, 1946, c. 726, § 1, 60 Stat. 778, 35 U. S. C. (1946 ed.), § § 67, 70. There were two reasons behind the repeal. First, the U.S. *Patent Act* prior to that time provided for damages *in addition* to an accounting of profits, so that a patentee might, in effect, have double recovery. This is in contrast to Anglo-Canadian law which has always provided that the patentee must elect between the remedies, at least as against any individual infringer. Secondly, fixing the quantum in an accounting of profits is expensive and time consuming, and for this reason the remedy was abolished entirely rather than simply amending the Act to require an election. See the discussion in *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 505-506 (1964); *Kori Corp. v. Wilco Marsh Buggies & Draglines* 761 F.2d 649, 654 (Fed. Cir. 1985); S. Rep. No. 1503, 79th Cong., 2^d Sess. (1946), reprinted in U.S. Code Congressional Service (1946) at 1386-87.

²⁶See *Sheldon v. Metro-Goldwyn Pictures Corp.*, 309 U.S. 390, 400-402 (1940) approving the rule in copyright cases; *International Industries, Inc. v. Warren Petroleum Corp.*, 248 F.2d 696, 699 3rd Cir., 1957) approving it in the trade secret context.

²⁷The relevant statutes provide the authority to grant an accounting, without specifying the precise nature of the method used in calculating profits.

²⁸See e.g. *Chan v. Stanwood*, (2002) 216 D.L.R. (4th) 625, 635 (B.C.C.A.); *Russell v. Russell* 179 D.L.R. (4th) 723, 747 (Sask.C.A.).

using the patent as compared with the next best alternative. If the licence fee is higher than that advantage, then the potential licensee will be better off refusing the licence and adopting the next best alternative instead. The next best alternative is the standard because if the potential licensee compares her potential profit with some inferior alternative, she might agree to a licence fee that is so high that while it offers an advantage as compared with the inferior alternative, it is less profitable than the best alternative. A prudent party, informed about the alternatives, would not agree to a licence on such terms.

It is important to recognize that the question of exactly *what* the next best non-infringing method might be, is a matter of evidence. Further, though the burden generally lies on the plaintiff to prove its case, when a wrongdoer wishes to argue that the original position which forms the basis for the comparison with the injured position should be something other than status quo ante, the burden shifts to the defendant to establish that hypothetical alternative on the balance of probabilities.²⁹ Thus in the U.S. case law the balance is struck by requiring the patentee to provide a comparison based on some acceptable alternative, often the method used by the infringer before adopting the patented method, and once this is done the burden shifts to the infringer if it wishes to prove that there was some better non-infringing method actually available to it.³⁰ This is an essential point, as many cases in which the entire profits is ordered in an accounting turn on the failure of the infringer to adduce relevant evidence.³¹

2.2.2 Canada

The current situation in Canada is muddled and complex. The differential profit approach finds

²⁹*Rainbow Industrial Caterers Ltd. v Canadian National Railway Co.* [1991] 3 S.C.R. 3, 15-16.

³⁰See *Gordon Form Lathe supra* n.18 at 495.

³¹See e.g. *Westinghouse Electric & Mfg. Co. v. Wagner Electric & Mfg. Co. supra* n.24.

support in the early Supreme Court of Canada decision in *Collette v Lasnier*.³² In that case the defendant made candles using a machine which infringed the plaintiff's patent. The trial court had awarded damages equal to the entirety of the defendant's profits and this was affirmed by the Court of Appeal.³³ The Supreme Court, though affirming on the issue of infringement, awarded nominal profits. Gwynne J. provided a clear statement of the differential profit rule, tailored to the facts at hand, when he reversed the decision below on the basis that the estimate of the defendants' profits "does not appear to have been made by a comparison of the profit obtainable by use of the plaintiff's improved machine in making tapers, with the latest precedent and best known mode of making them."³⁴ *Collette v Lasnier* has received little subsequent recognition, though the differential profit method as applied in that case was referred to with apparent approval, albeit in the course of distinguishing it, in the subsequent Supreme Court decision in *Colonial Fastener Co. Ltd. v. Lightning Fastener Co. Ltd.*³⁵

However, three recent decisions of the Federal Court of Appeal have muddied the waters. In all three cases, culminating in *Schmeiser*, the Federal Court of Appeal expressly rejected the

³²(1886) 13 S.C.R. 563.

³³*Ibid* at 565.

³⁴*Ibid* at 576 per Gwynne J. The opinion of Taschereau J. was less clear in stating the rule, though he stated (at 575) that it was wrong in principle to award the entire profits made by the infringer, as this was based on the unproven assumption that but for the infringement "the [patentee] should be, with his patent, the only one to make candles in the country." Ritchie C.J., Fournier J. concurring, addressed only the issue of infringement in a one sentence opinion, though he evidently concurred in reducing the award of damages. Henry J. dissenting, held that the patent was invalid.

³⁵[1937] S.C.R. 36. The main issue in *Colonial Fastener* was whether the sale of the product of an infringing machine was too remote; it was held that on the facts it was not. Counsel for the infringer cited *Collette v Lasnier*, apparently to argue that no damages should be awarded, and the Supreme Court pointed out (at 41) that in *Collette v Lasnier* there was no evidence that the plaintiff had made any profit "over and above the profits that would have been made without using the patented machine" and that in the present case there was such evidence. The two cases are entirely consistent and the Supreme Court in *Colonial Fastener* did specifically approve the formulation used in *Collette v Lasnier*.

differential profit approach. None of these decisions mentioned *Collette v Lasnier* and we are left with an unresolved conflict between an old Supreme Court decision and recent Court of Appeal decisions. Further, despite the express rejection of the rule, the results in two of the three recent Court of Appeal decisions are arguably consistent with the differential profit approach, so the degree to which the differential profit approach has actually been rejected by the Court of Appeal may be questioned. Finally, the Court of Appeal decisions did not expressly set out any general approach which would replace the differential profit method, and indeed the three decisions are somewhat inconsistent as to what approach should be used.

The first case in the trilogy is *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*³⁶ The plaintiff requested an accounting and counsel for the defendant expressly argued that the differential profit approach should be used. Létourneau J. distinguished cases applying it by saying that they were “the sort of cases where a patent or process represents only a part of the ultimate production,”³⁷ whereas the case at hand was one where “the patent comprised the whole of what was sold by the appellant to its customer.”³⁸ For that reason, “one has to look at the profits that the appellant actually made through the infringing acts, not the profit that he could have made had he used a non-infringing method.”³⁹ In the result, he awarded all of the infringer’s profits to the patentee.

Taken out of context this appears to be a clear rejection of the differential profit approach, at least in cases where the patent comprised “the whole of what was sold.” But the breadth of Létourneau J.’s statement was immediately tempered when he went on to explain that

³⁶[1995] 1 F.C. 483 (F.C.A.).

³⁷*Ibid* at 499, citing *Gordon Form Lathe Co. v. Ford Motor Co.*, 133 F. 2d 487 (6th Cir., 1943), affirmed 320 U.S. 714. Note that *Gordon Form Lathe* is a clear example of the application of the differential profit rule.

³⁸*Ibid.*

³⁹*Ibid* at 496.

“*[p]articularly in the circumstances of this case, it would be unjust and contrary to the equitable nature of the accounting remedy to force a sharing of the profits between the appellant and the respondents.*”⁴⁰ He then identified a number of facts which make it clear that all of the defendant’s profits should have been awarded to the plaintiff even under the differential profit approach.

In particular, the defendant had used the plaintiff’s patented method in undertaking a contract for installing a gas pipeline under the St. Lawrence River. This was by no means a routine job. On the facts, all of the alternative methods proposed by the defendant as the basis for the differential profit approach were unavailable or workable, or at the very least unprofitable.⁴¹ The defendant was only entitled to payment on successful completion.⁴² Therefore any alternative method, if it could have been made to work at all, would almost certainly have resulted in a loss, not a profit, on the contract. On these facts, the profits from the alternative measure would have been (at best) zero. If we apply the differential profit approach and deduct from the profits actually made the profits which the infringer would have made, we arrive at the same result as did the Court, namely that the entire profits actually made on the contract by the defendant should be awarded to the plaintiff.

The result in *Reading & Bates* is therefore entirely consistent with the differential profit approach. This in itself weakens the case as authority against that rule.⁴³ Further, there is some

⁴⁰*Ibid* at 496-97, emphasis added.

⁴¹“[T]he referee and the reviewing Judge both concluded that of the four alternative methods of installing the pipeline proposed by the appellant, the one (Method A) most likely to have been used would have infringed the patent in suit. The three others (Methods B, C and D) were either not available at the time of the installation of the pipeline, theoretical or associated with so many contingencies as to be non profitable and not workable.” *Ibid* at 498.

⁴²*Ibid* at 497.

⁴³“...every judgment must be read as applicable to the particular facts proved, or assumed to be proved, since the generality of the expressions which may be found there are not intended to be expositions of the whole law, but governed and qualified by the particular facts of the case

ambiguity in Létourneau J.'s reference to "the whole of what was sold." The whole on what measure? Physical? Profits? Costs? The question is implicitly answered subsequently when Létourneau J. concluded, on ample evidence, that "the whole of the appellant's *profits* came through the infringing act."⁴⁴ Thus it appears that the rule from *Reading & Bates* is that when the whole of the profits are attributable to the infringing act, the whole of the profits should be awarded to the patentee. But this is no more or less than a restatement of the differential profit rule in the special case where the profits are entirely attributable to the infringement. In summary, *Reading & Bates* is entirely consistent with the differential profit approach – apart from the single sentence which expressly rejects it.

The next relevant decision of the Court of Appeal was that in *Wellcome Foundation v Apotex Inc.*⁴⁵ In that decision the Court went beyond *Reading & Bates*, which even on its face rejected the differential profit approach only when the patent comprised the whole of what was sold, and explicitly rejected the differential profit approach even though the patented material was only a part of the product. But again the decision is arguably consistent with the differential profit approach. The defendant had argued that it could have obtained a compulsory licence to use the patented product, and that the basis of comparison in applying the differential profit approach should be the profits it would have made under such a licence. But under the differential profit approach it is not any alternative at all which may be considered: it must be one which is "open to the public." Obviously, an infringer cannot defeat the plaintiff's claim by arguing that there was an equally good substitute if some other party held a patent for that substitute. At the time of trial the statutory compulsory licencing regime had been repealed, and the key question is therefore whether the product obtained under a compulsory licence is to be considered as "open to the public" in applying the differential profit test. If it is not, then the apportionment arrived at

in which such expressions are to be found." Per Lord Halsbury in *Quinn v. Leathem*, [1901] A.C. 495, 506 (H.L.)

⁴⁴*Supra* n.36 at 498.

⁴⁵[2001] 2 F.C. 618 (F.C.A.).

by the MacKay J. at trial and affirmed by the Court of Appeal was fully consistent with the differential profit approach. Indeed, as discussed in more detail below, MacKay J.'s decision is an excellent example of the proper application of the differential profit approach to a difficult set of facts.⁴⁶

In contrast to these two decisions, *Schmeiser* is clearly inconsistent with the differential profit approach. The differential profit approach was expressly argued by the infringer. It was rejected by the trial judge, who stated that even if Schmeiser would have earned the same profits on sale of a canola crop that did not contain the gene,

That is no answer to the issue of profits from sale of the crop which I have found contained the plaintiffs' patented gene and cells. It is the profit from sale of that crop that plaintiffs may claim, not the difference between sale of that crop and sale of an alternative crop that was not grown.⁴⁷

The Court of Appeal summarily affirmed the trial judge on this point, holding that the point was settled in its own decision in *Reading & Bates* which had raised “a somewhat similar question.”⁴⁸ In fact, *Schmeiser* went beyond *Reading & Bates* in two respects. First, while the defendant Schmeiser intentionally planted the patented canola without a licence, it appears from the evidence that he gained no benefit from the use of the invention, as he did not adopt the particular weed control methods required to take advantage of the unique properties of the patented canola.⁴⁹ The trial judge made no explicit finding of fact on this point as he held that it

⁴⁶See *infra* Part 2.3.3.4.

⁴⁷*Monsanto Canada Inc. v. Schmeiser* (2001) 12 C.P.R. (4th) 204 at para 135. The quoted passage is essentially the entirety of the trial judge's analysis and no authority was cited in support.

⁴⁸*Supra* n.1 at para.80.

⁴⁹From the trial judge's summary of the evidence, it appears that some of the patented canola seed had originally entered onto Schmeiser's land without his knowledge, possibly from a

was irrelevant; the application of the differential profit approach by the Court of Appeal would have at least required a reference back to determine whether the defendant had in fact benefitted from the use of the invention. Thus in defining the breadth of the rule laid down by the Court of Appeal, we may assume that Schmeiser did not in fact benefit. In contrast, in *Reading & Bates* the entire profit was attributable to the invention and the Court clearly held that this was relevant to the outcome. Thus the result in *Reading & Bates* is consistent with the differential profit approach, while the result in *Schmeiser* is not. Secondly, in *Reading & Bates* the reference to “the whole of what was sold” though ambiguous, apparently referred to the whole *profit* from what was sold. In *Schmeiser* it was applied to mean the whole *physical* thing that was sold; whatever the truth may be as to whether Schmeiser took advantage of the properties of the patented canola, it is perfectly clear that the entire profits from his crop were not attributable to the patented invention.

To summarize, in *Reading & Bates* the Court of Appeal expressly rejected the differential profit rule, yet in effect applied it. In *Wellcome v Apotex*, the Court of Appeal again rejected the differential profit rule, but affirmed a trial decision which applied it, subject to the caveat that a compulsory licence is not to be considered a legitimate alternative in applying the rule. And in *Schmeiser* the Court of Appeal set out a new rule that the whole profits are to be awarded when the patent comprises the whole physical thing which is sold to the customer. This may conveniently be referred to as the “whole profits” approach.

passing truck carrying seed to a contracting farmer. Schmeiser testified that he does not use ROUNDUP on his fields, but he became aware of the presence of the glyphosate resistant canola when spraying ROUNDUP in roadside ditches and around poles. It seems that he then deliberately selectively harvested these original glyphosate resistant plants for use in planting the next year’s crop. In other words it appears that Schmeiser multiplied the relatively small number of patented plants that had originally volunteered onto his land and this enabled him to plant the majority of his 1998 crop with the patented seed. See esp para. 38-40 of the trial decision *supra* n.47. There is no suggestion in the evidence that Schmeiser had obtained the seed illicitly.

To add to the confusion, in *Lubrizol Corp. v. Imperial Oil Ltd.*,⁵⁰ decided after *Reading & Bates* but before *Schmeiser*, the Court of Appeal rejected the “whole profits” approach in a case in which the patent comprised the whole of what was sold. In that case the patentee had invented a dispersant additive for motor oil, and obtained a patent for motor oil containing that additive. The infringer had sold such motor oil and the patentee had claimed the entire profits from the sale of the motor oil. The patent claimed the oil containing the dispersant itself, and not merely the dispersant, and the Court of Appeal stated that the breadth of the claim was proper,⁵¹ so there is no question that “the patent comprised the whole of what was sold by the [infringer] to its customer” just as much as in *Schmeiser*. The gene added by Monsanto to the canola is precisely analogous to the dispersant added by Lubrizol to the motor oil. Just as in *Schmeiser* the patentee claimed to be entitled to the whole profits, but in *Lubrizol* the Court of Appeal rejected this position in strong terms.⁵² The point actually at issue was the narrow one of whether the possibility of an apportionment had been foreclosed by the trial judgment, so the Court of Appeal in this case did not go so far as to set out its preferred approach to apportionment, but it is nonetheless clear that the whole profits rule was rejected. Nonetheless, at the level of principle, *Lubrizol* and *Schmeiser* are contradictory.

Finally, even if we accept the whole profits rule as set out in *Schmeiser*, it is unclear what approach the Federal Court of Appeal would apply when the patent comprises only a part of what is sold. The rule applicable in the special case, when the patent comprises the whole of what was sold, should be compatible in principle with the more general case when the patent comprises only a part of what was sold. This suggests that profits should generally be apportioned according to physical proportionality of the patented part. But *Reading & Bates* appeared to approve the differential profit approach when the patent was only a part of what was sold, albeit in *dicta*. And in *Wellcome v Apotex* the Court of Appeal referred with some approval to Laddie

⁵⁰(1996) 71 C.P.R. (3d) 26 (F.C.A.).

⁵¹*Ibid* at 31.

⁵²See *infra* n.124 and accompanying text.

J.'s decision in *Celanese*, although it did not expressly approve the cost-based apportionment discussed therein,⁵³ and indeed, the trial decision which was affirmed by the Court of Appeal clearly rejected cost-based apportionment on the facts.⁵⁴

To conclude, it is fair to say that the law relating to apportionment in an accounting of profits in Canada is profoundly uncertain.⁵⁵

2.2.3 The United Kingdom

The U.K. case law on this point is sparse and somewhat equivocal. Two early decisions support the differential profit approach. In *Siddell v. Vickers*⁵⁶ the patent in issue was for an invention used in turning large ingots. Prior to the infringement, because of the generally unfinished state of their factory, the infringers had been using manual labour for the process. After the infringement was stopped, the factory had been sufficiently completed to allow for machinery to be used and the defendants switched to a non-infringing mechanical method. The parties both accepted that the differential profits test was to be used (*Mowry v Whitney* was specifically cited by the plaintiff⁵⁷) and the main question of principle was whether the comparison was to be made with the manual method or the non-infringing mechanical method. The Court of Appeal apparently approved of the differential profits method, remarking during the course of argument that “The true test of comparison seems to be with what the Defendants were

⁵³*Supra* n.45 at para.17.

⁵⁴See the discussion *infra* in Part 2.3.3.4.

⁵⁵See e.g. *Ductmate Industries Inc. v. Exanno Products Ltd.* (1987), 16 C.P.R. (3d) 15 (F.C.T.D.).

⁵⁶(1892), 9 R.P.C. 152 (C.A.).

⁵⁷*Ibid* at 156.

likely to use, looking at all the circumstances of the case.”⁵⁸ This is reasonably clear support for the differential profit approach, which is somewhat weakened because the applicability of the differential profit approach was not contested. In the 1862 decision in *Cartier v Carlile*⁵⁹ the action was for infringement of a trade-mark used on cotton goods. The main issue in this early case was whether intent was an element of a trade-mark action. Having decided it was not, the Master of the Rolls stated that “I do not propose, in taking the account in Chambers, to make the defendant account for every species of profits during the last six years, but I shall consider how much of the profits are attributable to the user of the Plaintiff’s trade mark.”⁶⁰ This is a rejection of the whole profits approach, since even though the whole cloth was sold under the infringing mark, the Master of the Rolls refused to award the whole profits. It is also a clear statement of the causation requirement in an accounting. Unfortunately, no further principles were stated.

The issue arose again in *Peter Pan Manufacturing Corp. v. Corsets Silhouette Ltd.*,⁶¹ in which the action was for misuse of confidential information in the design of brassieres. The trial judge calculated profits as simply the difference between the cost and the revenue from the sale of the articles which had been manufactured using the confidential information, even though the infringer argued for the application of the differential profit approach. However, in the *Peter Pan* case it appears that the entire profits may have been attributable to the confidential information, in which case, as in *Reading & Bates*, there would be no inconsistency with the differential profit

⁵⁸*Ibid* at 162, reported as a statement “per curiam”.

⁵⁹(1862) 31 Beav. 292, 54 E.R. 1151.

⁶⁰*Ibid* at Beav. 298-99, E.R. 1153.

⁶¹[1963] 3 All E.R. 402 (Ch.D.).

approach in the result.⁶² Be this as it may, in *Potton Ltd v. Yorkclose Ltd.*,⁶³ an action for infringement of copyright in a house design, the court cited *Peter Pan* as authority for the whole profits approach, emphasizing that as the entire article was infringing, the entire profits would be awarded. The two cases are distinguishable though, as in *Potton Ltd. v. Yorkclose Ltd.* it seems very unlikely on the facts that the entire value was due to the copyrighted design.⁶⁴ This case is indeed an application of the whole profits approach and as such inconsistent with the differential profit approach.

The most significant U.K. case is *Celanese International Corp. v. BP Chemicals Ltd.*⁶⁵ where, in a fully reasoned decision, Laddie J. of the Patent Court rejected the differential profit approach in favour of an approached based primarily on the cost of the patented part relative to the cost of the infringing product as a whole (“cost-based apportionment”). Though this trial level decision is obviously not as good authority as the Canadian or U.S. Supreme Courts, it is nonetheless important because it is now the leading U.K. decision and because it is the most fully reasoned decision ever to reject the differential profit approach. This case is discussed at length below.⁶⁶

⁶²Pennychuck J. distinguished *Siddell v Vickers supra* n.56 on the basis that the infringer “could not have manufactured that article at all without th use of the confidential information,” (*ibid* at 413). This is not quite the same as saying that the whole value derived from the confidential information, so it is not clear whether this decision in fact consistent with the differential profit approach.

⁶³[1990] F.S.R. 11 (Ch.D.).

⁶⁴The defendant had used the plaintiff’s architectural drawings in constructing the houses in question, and the houses as a whole infringed the plaintiff’s copyright as they were a reproduction in material form of the drawings. Counsel for the defendant pointed out that at least some part of the value of the houses must have been due to non-infringing factors such as location, lot size and landscaping: *ibid* at 17-18. No findings of fact were made on this point, but it does seem eminently plausible. The argument was nonetheless rejected by the trial judge.

⁶⁵[1999] R.P.C. 203 (Pat Ct.).

⁶⁶Part 2.4.

On the whole, as in Canada, the older authority favours the differential profit approach, while the more recent authority rejects it. Given the small number of conflicting cases, it is not possible to say that the law is settled.

2.2.4 Summary of the Approaches to Apportionment as Applied to the Non-Benefitting Infringer

To summarize, the approaches to apportionment can be divided into three broad categories, as follows:

- A) Value based apportionment. Illustrated by the differential profit approach, profits are allocated according to the value contributed to the wares by the patent.
- B) Cost based apportionment. Illustrated by *Celanese Int'l*, profits are allocated according to cost of the patented aspect of the wares in relation to the cost of the wares as a whole.
- C) Physically based apportionment. Illustrated by *Schmeiser v Monsanto*, profits are allocated according to the physical proportion of the patented aspect of the wares in relation to the wares as a whole.

The issue of the correct method of determining profits is crucial, particularly because of the implications for a non-benefitting infringer. Though all three approaches may sometimes give the same result, they will often diverge. In particular, all three approaches would give different results in the case of a non-benefitting infringer, such as the farmer whose crops were contaminated with patented canola without his knowledge and who derived no benefit from the contamination. On the whole profits approach used in *Schmeiser* the farmer would be liable to give up all of his profits on the infringing crop, notwithstanding that he had derived no benefit whatsoever from the infringement. Under cost-based apportionment the farmer would be liable to give up some fraction of his total profit, depending on the proportionate cost of the infringing seed. And under the differential profit method, the problem disappears entirely. A user who is

unaware of the nature of the canola and does not adjust his farming practices and so does not benefit from the patent, would make the same profits as with unpatented canola. This intuitively just result is accomplished without introducing any question of intent into the law, as the differential profit approach is based on the benefit to the infringer, not on the infringer's intent.

In the remainder of this section I will argue that the differential profit approach, which is supported by the highest authority in the Canadian and U.S. Supreme Courts, is also sound in policy. Because recent Canadian and U.K. cases have rejected this approach, a closer examination is needed. In the following sections I will examine all three approaches in turn.

2.3 Differential profit

2.3.1 Justification: Differential profit and “But For” Causation

We have already noted that it is uncontroversial that the patentee is only entitled to the profits which are causally attributable to the infringement. The only question is how to implement the causation requirement. The argument in favour of the differential profit approach is that it is simply the application of “but for” causation to an accounting of profits.

This basic problem of determining causation is a familiar one which arises in any case in which a plaintiff has suffered harm which may not be fully attributable to the defendant. The goal of any compensatory award is to put the plaintiff in the position she would have been in but for the wrong, be it a breach of contract, a tort, or patent infringement. This principle of compensation is intimately related to the “but for” approach to causation, which says that the harm caused by a wrong (and so which is compensable) is the difference between the harm actually suffered and that which would have been suffered but for the tortious conduct.⁶⁷ The onus of proof may shift,

⁶⁷“The general test for causation in cases where a single cause can be attributed to a harm is the ‘but-for’ test.” *Walker Estate v. York Finch General Hospital* [2001] 1 S.C.R. 647, 679. “But for” causation is causation in its broadest aspect; it is generally necessary but not sufficient

particularly in cases where some relevant information lies particularly within the knowledge of the defendant, and the standard may be altered in special cases, particularly where probabilistic causation is involved.⁶⁸ But the basic principle is unchallenged. So, as Major J. explained for a unanimous Supreme Court in *Athey v Leonati*:

The essential purpose and most basic principle of tort law is that the plaintiff must be placed in the position he or she would have been in absent the defendant's negligence (the "original position"). However, the plaintiff is not to be placed in a position better than his or her original one. It is therefore necessary not only to determine the plaintiff's position after the tort but also to assess what the "original position" would have been. *It is the difference between these positions, the "original position" and the "injured position", which is the plaintiff's loss.*⁶⁹

Thus the causation requirement leads directly to the conclusion that the plaintiff is not entitled to all her loss, but only her "differential loss," namely the difference between the "injured position" which is the plaintiff's position in fact, and the "original position" which the plaintiff would have been in but for the wrong.

From this we see that the differential profit approach to an accounting is simply a more specialized statement of this general principle. It says that the defendant's profit caused by the

to establish "but for" causation if legal causation is to be established: see e.g. *Bazley v. Curry* 174 D.L.R. (4th) 45, 63 (S.C.C.). Harm which is caused but for the wrong is generally the greatest harm which may be claimed by a successful plaintiff, as there are a number of limiting mechanism, such as remoteness in tort law, which reduce the damages below that which would be calculated purely on the basis of "but for" causation.

⁶⁸See e.g. *Snell v Farrell*, [1990] 2 S.C.R. 311; *Walker Estate and Hollis v. Dow Corning Corp.*, [1995] 4 S.C.R. 634. These complexities need not concern us here, as the cause, infringement, is known and it is also known that there is a causal link. The question in this context is only that of quantifying the harm.

⁶⁹*Athey v Leonati* [1996] 3 S.C.R. 458, 473, emphasis added.

infringement is the difference between the profit which the defendant in fact made and the profit which the defendant would have made but for the infringement, on the supposition that but for the infringement the defendant would have used the next best non-infringing method.

The supposition used by the differential profit method, that but for the infringement the defendant would have used the next best method which can be established to have been legitimately open to the defendant to use is reasonable one, since it says no more than that but for the infringement, the defendant would have acted in a prudent and informed manner in pursuing its interest in making as much money as possible. Indeed, it is difficult to see what other supposition might be used: in an accounting of profits we cannot suppose that the defendant would have licenced, since that particular “but for” supposition is the basis of the remedy of damages in the form of a reasonable royalty. Nor it is reasonable to suppose that but for the infringement the defendant would have withdrawn from the market: we cannot suppose that if Ford Motor Co. would not have infringed the lathe patent at issue in *Gordon Form Lathe* it would have given up manufacturing automobiles.

The differential profit approach looks to the profits causally attributable to the infringement, while the cost-based approach looks to the costs causally attributable to the infringement, and the whole profits approach and physically based apportionment more generally, looks to the physical changes causally attributable to the invention. The profits are clearly the correct criterion, for two reasons. First, the award is an award of profits, and the causal link must be between the award and the infringement. Secondly, awarding profits according to the value added by the patented invention and opposed to the proportionate cost or physical size, is consonant with fundamental nature of patents as *intellectual* property. What is valuable is the intellectual contribution which is embodied in an invention, not the physical contribution. It may be that even though the patented aspect is only a small part of the wares which are sold, either by physical proportion or by cost, the entire value of the wares is due to the patent. In such a case, which is not uncommon, the differential profit rule will allocate the entire profits to the patentee.

The point that the value of a patent is entirely independent of the cost or physical size is nicely illustrated in the U.S. case of *Manufacturing Co. v. Cowing*.⁷⁰ The Circuit Court had ruled that because the patent was only for an improvement on an old pump, the profits for which the defendants were accountable must be confined to such as would have been realized from the sale of the patented part separately. On appeal, the U.S. Supreme Court rejected this view. Quoting *Mowry v Whitney*, the Court noted that “It does not necessarily follow from this that where the patent is for one of the constituent parts, and not for the whole of a machine, the profits are to be confined to what can be made by the manufacture and sale of the patented part separately.”⁷¹ The patent in issue was for an improved pump for pumping gas from oil wells, and on the facts, it was such an important improvement, that though only a small physical part of the pump, but for that particular use “no other pump could at the time be sold” and without the infringement “no . . . sales would have been effected.”⁷² For this reason, “it is clear the infringer has by his infringement secured the advantage of a market he would not otherwise have had, and that the fruits of his advantage are the entire profits he has made in that market.”⁷³ The value of the invention lay in the underlying concept, not in its size or cost. Accordingly, the entire profits were awarded.

Conversely, in other cases the patentee may be entitled to only a small part of the profits even though the physical product as a whole was patented. This is illustrated by *Mowry v Whitney* itself, where the patent in question was for a method of casting wheels for railroad cars while avoiding the strain and consequent weakness caused by uneven cooling of the wheel. The method was for casting entire wheels, not merely parts of a wheel, so that this was as apt a case for the application of the whole profits rule as *Reading & Bates* or *Schmeiser*. The court of first instance awarded the plaintiff the entire profits made by the defendant in the manufacture and

⁷⁰(1881) 105 U.S. 253.

⁷¹*Ibid* at 255.

⁷²*Ibid* at 256.

⁷³*Ibid*.

sale of the wheels. The United States Supreme Court reversed, noted that the evidence showed that there were other techniques as good or nearly as good at preventing uneven cooling, which cost no more than the patented product.⁷⁴ Though the patent was valid, as the method had not been previously known and it worked as intended, it was not a particularly valuable patent, in that the method was hardly to be preferred over the unpatented alternatives.

This leads to an important point. The policy justification for requiring a causal link between the wrong and the award, and the “but for” link in particular, is to ensure that the award is purely compensatory. As Major J. emphasized in *Athey v Leonati*, the plaintiff is not to be placed in a position better than his or her original one. A wrong which causes little harm should be accompanied by a small monetary award. This is as true in intellectual property law as it is in tort law. The Supreme Court remarked in the trade secrets case of *Cadbury Schwepps Inc. v FBI Foods Ltd.*, that “It would be inequitable to protect the respondents’ interest in a commercial opportunity they never enjoyed by invoking undue solicitude for their “nothing very special” information.”⁷⁵ Precisely the same is true with respect to patents. The fact is that not all patents are blockbusters and it would be “undue solicitude” to award substantial damages for the infringement of a minor patent. A patent is “nothing very special” when it provides only a small advantage over the next best publically available alternative. The differential profit approach, by comparing the actual profits with those which would have been made with the next best alternative, provides a precise means of identifying a patent which is “nothing very special.”

2.3.2 Primary Critiques of Differential profit

2.3.2.1 Rejection of “But For” Causation

Any rule of law may be criticized either on the basis of principle or because it gives an

⁷⁴*Supra* n.22 at 651.

⁷⁵*Supra* n.20 at 186-87.

unsatisfactory result on some particular set of facts. A principled rejection of the differential profit approach is found in only two cases, namely the early House of Lords decision in *United Shoe and Nail v. Stewart*⁷⁶ and the U.K. Patent Court decision of the Laddie J. in *Celanese Int'l Corp v BP Chemicals Ltd.*⁷⁷ Though House of Lords and Laddie J. both accepted the principle that the profits awarded must be causally attributable to the use of the patented invention,⁷⁸ they clearly rejected the “but for” approach to causation. In consequence, the rejection of the differential profit approach, though principled, is, with respect, based on a wrong principle.

United Shoe and Nail concerned a claim for damages rather than an accounting of profits, but the same issue was raised, as the defendant claimed that the plaintiff was not entitled to substantial damages for lost profits on the grounds that the defendant could have competed equally effectively in the same market using a non-infringing process. The First Division of the Scottish Court of Session accepted this argument, with Lord Adam in leading judgment remarking that “On the whole matter, I have come to the conclusion that if the patent is used exactly as described in the letters patent, no saving is effected, but the reverse, and that, in any view, the saving is so immaterial that I have no doubt that the defenders, without its use, would still have manufactured their nails, and competed with the pursuers, just as they are doing now.”⁷⁹ On this basis, and citing *Mowry v Whitney*, nominal damages only were awarded.

⁷⁶(1888) L.R. 13 App. Cas. 401 (H.L.).

⁷⁷*Supra* n.65.

⁷⁸“When a patentee elects to claim the profits made by the unauthorized use of his machinery, it becomes material to determine how much of his invention was actually appropriated, in order to determine what proportion of the net profits realized by the infringer was attributable to its use. It would be unreasonable to give the patentee profits which were not earned by the use of his invention.” per Lord Watson *supra* n.76 at 412-13; “The sole question is, what was the loss sustained by the appellants by reason of the unlawful sale of the respondents’ nails? The loss must be natural and direct consequence of the respondents’ acts.” per Lord Macnaghten *ibid* at 416; and see the passage quoted from *Celanese supra* n.19.

⁷⁹Quoted by Lord Watson in *United Horse Shoe supra* n.76 at 412

This argument was rejected by the House of Lords. Lord Halsbury remarked “what does it matter if it is ever so much established that the loss which the pursuers have sustained by the unlawful act of the defenders might also have been sustained by them under such circumstances as would give the pursuers no right of action? *Your Lordships have to deal with the facts as they exist...*”⁸⁰ Lord Macnaghten, rejecting the relevance of what the infringers might have done, said “It appears to be beside the mark to say that the respondents might have arrived at the same result by lawful means, and that, without infringing the appellants’ rights, they might have produced a nail which would have proved equally dangerous a rival...*The sole question is, what was the loss sustained by the appellants by reason of the unlawful sale of the respondents’ nail?*”⁸¹ Similarly, in *Celanese Int’l* Laddie J. stated that it was “consequence” of the causation requirement “that it should be no answer to an account that the defendant could have made the same profits by following an alternative, non-infringing course. The question to be answered is ‘what profits were in fact made by the defendant by the wrongful activity?’.”⁸²

Thus the judgments in both *United Horse Shoe and Nail* and *Celanese* expressly reject consideration of what would have happened but for the wrong. This constitutes a direct rejection of the “but for” approach to causation. As we saw above and as the Supreme Court of Canada has stated many times, the true test for causation *requires* comparison between the actual “injured position” with the hypothetical “original position”. The question is very clearly *not* “what profits were in fact made by the defendant by the wrongful activity?” The question is what is the *difference* between those profits and the profits which would otherwise have been made. It is true enough that the court must deal with the facts as they exist, but the court must

⁸⁰*Ibid* at 409, emphasis added. Similarly, also per Lord Halsbury *ibid*, “I think it is nothing to the purpose to shew, if it is shew, that the defenders might have made nails equally good and equally cheap without infringing the pursuers patent at all.”

⁸¹*Ibid* at 416 emphasis added. Lord Watson’s decision might be said to turn on the lack of proof of an alternative non-infringing process of equal efficacy (see his remarks at 414), but he did remark (at 412) that the principle in *Mowry v Whitney* was “manifestly erroneous.”

⁸²*Supra* n.65 at para.39.

also look to what would have happened absent the wrong. The Supreme Court addressed precisely this point in *Cadbury Schwepps*:

The respondents complain that the trial judge's analysis was hypothetical, because the appellants have never in fact reproduced Clamato using non-confidential technology. However, the Court is free to draw inferences from the evidence as to what would likely have happened "but for" the breach.⁸³

Neither Laddie J. in *Celanese* nor the House of Lords in *United Horse Shoe and Nail* offered any reason for departing from this otherwise universal approach to causation. The principles stated in those cases must therefore be considered to be clearly in error.

Indeed, it is clear that the approach adopted in those decisions leads to undesirable consequences. We have seen above that the effect of "but for" causation as reflected in the differential profit approach is that the value of the award to the patentee reflects the value of their intellectual property. In particular, a minor patent with little value will command only a small share of the profits. As the Supreme Court noted in *Cadbury Schwepps*, to do otherwise would be showing "undue solicitude" for intellectual property which was "nothing very special." Some trade secrets are very valuable, and some, such as that at issue in *Cadbury Schwepps*, are not. The same is true of patents.

A misunderstanding of this point was apparent in Lord Watson's speech in *United Horse-Shoe and Nail Co.* when he remarked that "if these part are not commercially useful; if, as Lord Adam holds, they effect no saving in the manufacture of nails, but the reverse, it would necessarily follow, either than the patent was void or that there was no substantial infringement which could entitle the patentee to an interdict."⁸⁴ With all due respect, this is simply wrong as a matter of

⁸³*Supra* n.20 at 186.

⁸⁴*Supra* n.76 at 413.

patent law. To obtain a patent an invention must be new, useful and non-obvious, but this does not mean it must be commercially valuable. The utility requirement is satisfied so long as the device is operative. As the Supreme Court has affirmed, lack of utility “means ‘that the invention will not work, either in the sense that it will not operate at all or, more broadly, that it will not do what the specification promises that it will do’ . . .’... the practical usefulness of the invention does not matter, nor does its commercial utility, unless the specification promises commercial utility, nor does it matter whether the invention is of any real benefit to the public, or particularly suitable for the purposes suggested.”⁸⁵ A new process for making an existing product will be patentable so long as it had never been done before, it actually results in the desired product, and it was not obvious that the product could be made by that process. There is no requirement that the invention be a commercial improvement on existing processes. A process which no one would use because it costs twice as much as available alternatives is entirely patentable. It is enough that it offers a choice⁸⁶ – perhaps in the future circumstances will change (e.g. the price of raw materials) and the choice will be an important one. The reason for this laissez-faire attitude is straightforward: while the courts must judge the inventiveness of the invention, it is for the market to judge its value. A patent which is only a slight improvement on the alternatives should not be rewarded with substantial damages, since otherwise individuals will rush to obtain minor patents simply in the hope of having them infringed. The problem of trivial patents is already serious enough. There is no need to actively encourage them by granting remedies out of all proportion to the value of the patent.

The untoward consequences of rejecting the but for approach to causation are well illustrated by one of Laddie J.’s own examples:

Imagine a case where the plaintiff invents and patents an entirely new process for making

⁸⁵*Consolboard Inc. v Macmillan Bloedel (Sask.) Ltd.* [1981] 1 S.C.R. 504, 525 quoting with approval Halsbury’s Laws of England, (3rd ed.), vol. 29, at 59.

⁸⁶*Ibid.*

[a] product. The defendant infringes the patent by using the process to make the products which he sells at a profit. There is little doubt that he would have to account to the patentee for the profits so made. Now imagine that, quite independently and at the same time, some other inventor invents another new process for making the same product but does not patent it so that the infringer could have made the same product in a non-infringing way. The fact is that he did not do so. The profits he made were made by use of the patented invention and he should account for them.⁸⁷

Let us expand somewhat on this example. Suppose first that the patent is an improvement to an old unpatented process for making the product. If the profit under the old method was \$1000/tonne and the profit under the new method is \$1010/tonne, then it is clear enough that the profits attributable to the patent are \$10/tonne. This is analogous to the situation in *Gordon Form Lathe*, a case in which it is obvious that an apportionment is needed, where the profits attributable to the patented lathe was the difference between the overall profits on cars made using the old method of grinding camshafts and the profits made using the new method. Now suppose that instead of being an improvement on the old process, the patent is for an entirely new process as a whole, as Laddie J. suggested, and that the profits using the new method are also \$1010/tonne. It is clear that there is nothing to choose between using the old process with the patented improvement and using the entirely new patented process; either returns of profit of \$10/tonne more than the old process. This means that the patent for the improvement and the patent for the entirely new process are equally economically valuable: the greatest royalty that anyone would pay for the right to use either patent would be \$10/tonne. Yet Laddie J. would say that in the latter case, but not the former, the patentee is entitled to the whole of the infringer's

⁸⁷*Supra* n.65 at 220. In his example Laddie J.'s refers to "an entirely new" product. But if the product is indeed entirely new and the process for making it was non-obvious, then the product itself would be patentable and the patentee would be entitled to the entire profits regardless of the process. Laddie J.'s reference to patenting the process, and his subsequent reference to making the product in a "non-infringing way" both make it clear that it is the patent on the process, not the product, which he is concerned with. To avoid confusion on this point I have removed the reference to "an entirely new" product from the example. I believe that this preserves Laddie J.'s intent.

profits. This is arbitrary, in that infringement of equally valuable patents would result in grossly different awards. And in the latter case, Laddie J. would grant an award which was 100 times greater than the actual value of the patent. This is truly undue solicitude for a patent which is “nothing very special.”

With this said, it is important to recognize that the differential profit approach does not always result in an apportionment of profits. We have already seen that *Reading & Bates* is an example where the differential profit approach results in disgorgement of the entirety of the infringer’s profits, and numerous similar cases may be found in the American case law.⁸⁸ It is true that there will be some reduction in the award more often in patent infringement than in tort or contract cases, but this is simply because even legitimate competition often harms one of the parties. There is nothing wrong with this result; the patent monopoly is a necessary evil, implemented only because of the innovation which it encourages. Ignoring the reality of legitimate competition is bad policy which will only unnecessarily compound the undesirable effects of the patent monopoly, to the detriment of society at large.

2.3.2.2 Insufficient Deterrence to Infringement

A second principled objection to the differential profit approach that is sometimes voiced is that it provides insufficient deterrence to infringement.⁸⁹ It is true that a remedy which does no more than strip the infringer of the profits gained from the infringement, does, in principle, leave the potential infringer indifferent at best between infringing and not infringing. If it infringes and is caught, it will only be stripped of profits due to the infringement, and so is in the same position as it would have been if it does not infringe in the first place. And if we suppose that being caught is not a certainty, then it does appear that the differential profit approach creates an

⁸⁸See *infra* Part 2.5.

⁸⁹“...adopting the comparative approach would have the further disadvantage of providing no incentive to individuals to take measures to avoid infringing others' patents.” *Wellcome v Apotex supra* n.45 at para.20.

incentive to infringe: the infringer is no worse off if it infringes and is caught, and it saves substantially if it infringes and gets away with it.

The basic response to this argument is that it is really an objection to the compensatory nature of civil law remedies. It is not the differential profit approach itself which arguably provides insufficient deterrence, but the principle that the patentee is to be put in the same position it would have been in but for the breach, and no better. Since the patentee's loss – the royalty payments – is the infringer's gain, we cannot provide a heightened deterrence to infringement without over-compensating the patentee.

We might stop here, with an appeal to this basic principle of compensation in civil law remedies, but this does not adequately answer the deterrence objection, and principles which are not sound in policy should and will eventually be rejected. But the compensation principle is not only well established, it is also sound in principle.

To see why the compensation principle is sound, we should recognize that the willful infringer is not the only defendant in patent law. Consider the innocent farmer who infringes without his knowledge. Under the differential profit approach he would be stripped of his profits due to the infringement, but no more. The argument that a stronger penalty is needed to deter infringement has no purchase here.

And while the innocent farmer has garnered much attention recently in the context of patenting of higher life forms, the innocent infringer is a figure which has long been known to patent law. A fundamental distinguishing feature of patent law is that independent invention is not a defence to an infringement action. A consequence is that a defendant may be liable for patent infringement even though the defendant developed the invention entirely on its own, without any reliance on or benefit from the patentee's intellectual labour.⁹⁰ Thus while it is true that the

⁹⁰In contrast, copyright law prohibits only copying, and the defendant's independently created work does not infringe the plaintiff copyright, no matter how similar the two works might

Patent Act grants a proprietary monopoly to the patentee which is effective even against the independent creator, infringement of a patent does not necessarily entail that the defendant has obtained anything at all from the patentee. In a common sense usage, a defendant who is an independent creator has not taken any of the patentee's property; on the contrary, the consequence of a patent suit is that she is prohibited from using her own property.

This is not intended as an argument that patent law should be changed to avoid imposing liability on independent inventors. On the contrary, there are sound policy reasons why independent creation is not a defence in patent law.⁹¹ But it is important to recognize that the fact that innocent infringers are liable in patent law is not desirable in itself; rather, it is a necessary but unfortunate by-product of the need to provide incentives to create certain types of inventions.

The independent inventor is the clearest case in which the equities are finely balanced between the defendant and the plaintiff in a patent action, but the same may also be true of knowing infringers. The Patent Office does a public service in examining patents and rejecting those which are invalid, but despite their best efforts, invalid patents are regularly issued. A defendant who knowingly infringes such a patent but then defends successfully on the basis that the patent is invalid has done a public service by invalidating a patent which never should have been issued. This is a public service since the benefit of the finding of invalidity, namely the wider dissemination of the patented device, accrues to the community at large.⁹² In effect, the knowing

be.

⁹¹See Siebrasse, "A Property Rights Theory of the Limits of Copyright" 51(1) *University of Toronto Law Journal* 1 (2001) where I discuss at some length why the fact that independent creation is a defence in copyright law makes copyright law superior in circumstances where it can be applied. I also discuss why patent law is justified for certain types of intellectual property which cannot be effectively protected by copyright: see in particular Part III.D, at 38ff.

⁹²As an example consider U.S Patent 4,873,662 issued to British Telecom. (BT), and which BT claimed covered hyperlinking. BT sued Prodigy Communications, an ISP, in a test case. Prodigy successfully argued that the patent did not encompass hyperlinking. This was clearly to the benefit of ISPs generally, and not just prodigy: see *British Telecoms. PLC v. Prodigy Communs. Corp.*, 189 F. Supp. 2d 101 (S.D.N.Y.). See also *Eli Lilly & Co. v. Barr*

infringer of an invalid patent who is willing to litigate the validity of that patent is complementing the work of the Patent Office by challenging bad patents which slip through the examination procedure. The knowing infringer in such a case performs essentially the same public service as does the Patent Office in the examination process. But it is inevitable that some parties who infringe a patent in the good faith belief that it is invalid will ultimately discover that their judgment was wrong. Since there is always some uncertainty in the outcome of litigation, if the remedies for infringement are too harsh, a defendant will be dissuaded from testing a patent in this way, and the progress of technology will be clogged by invalid patents which remain in force until their expiry.

Again, this is not to say the infringers who believe in good faith that the patent was invalid should be relieved of liability. And there is no doubt that many patent infringers are indeed willful infringers who are free-riding off the efforts of the inventor, and are fully deserving of moral censure. The point is that the equities are often finely balanced in patent infringement cases. Pure compensatory remedies are a practical recognition of this balance.

It is certainly true that not all infringers are so benign as those I have described above, and in the case of willful bad faith infringers purely compensatory damages probably do not provide a sufficient deterrence to infringement. But to the extent that it is desirable to punish such bad faith infringers, this should be done expressly, by awarding exemplary damages.⁹³

Labs., 251 F.3d 955 (Fed. Cir. 2001) in which Barr Labs successfully argued that Eli Lilly had illegitimately attempted to extend its patent for the anti-depressant PROZAC by double-patenting; *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343 (Fed. Cir. 2001) holding that the defendant had raised substantial questions as to the validity of Amazon.com's patent for "one-click" internet purchasing.

⁹³Exemplary damages are clearly available under existing Canadian patent law: see e.g. *Lubrizol Corp. v. Imperial Oil Ltd.* (1996) 67 C.P.R. (3d) 1 (F.C.A.); *Apotex Inc. v. Merck & Co.*, (2002) 19 C.P.R. (4th) 460 (F.C.T.D.). Whether existing law would allow exemplary damages for simple willful infringement is beyond the scope of this article. The important point is that if punishment for simply willful infringement is desirable, this should be done using exemplary damages rather than by inflating basic compensatory damages.

2.3.3 Subsidiary Critiques of Differential profit

2.3.3.1 Introduction

We have seen that in *Celanese Laddie J.*'s rejection of the differential profit approach to an accounting was based on a clearly erroneous concept of legal causation. Nonetheless, given that his decision is the most thorough recent discussion of apportionment, mention should also be made of some of his subsidiary critiques of the differential profit approach.

2.3.3.2 The Meaning of Profit

A separate argument raised by Laddie J. was that an accounting of profits considers the profit made by the infringer and “the defendant is treated as if he conducted his business and made profits on behalf of the plaintiff.” He then asserted that a “consequence” flowing from this premise is that “the maximum payment which can be ordered is the total profit made by the defendant.”⁹⁴ With all due respect, this conclusion does not follow. Laddie J. appears to have been confused by the word “profit.” The “profit” referred to in “accounting of profit” is the profit gained from the infringement, *not* the accounting profit turned by the infringer's overall company.⁹⁵ The two may be quite unrelated, as the profitability of the company as a whole depends on many factors, some of which will be unrelated to the infringement. This is a simple application of the causal principle. If the infringer lost money in fact because he was a poor businessman, but the invention was a valuable one and he would have lost even more but for the

⁹⁴*Supra* n.65 at para.36.

⁹⁵As was said in *Cawood Patent*, 94 U.S. 695, 710 (1876), cited with approval in *Tilghman v. Proctor*, 125 U.S. 136, 147 (1886); *Sessions v. Romadka*, 145 U.S. 29, 48-9 (1892): “If their general business was unprofitable, it was the less so in consequence of their use of the plaintiff's property. They gained, therefore, to the extent that they saved themselves from loss. In settling an account between a patentee and an infringer of the patent the question is, not what profits the latter has made in his business, or from his manner of conducting it, but what advantage has he derived from his use of the patented invention.”

breach, then it is a matter of common sense that the losses of the company as a whole are not caused by the infringement. Instead, the difference between the two amounts – the amount he did lose and the amount he would have lost but for the use of the patent – is the profit from the use of the invention, whether the profits from the company as a whole are positive or negative. It is clear law in the United States that the award is not based upon the defendant’s profits, but upon the advantage gained by the defendant by the use of the patent.⁹⁶ There is obvious merit to the American position; why should the plaintiff’s remedy be diminished because the defendant’s general operation of its business was so poor that it sustained a loss, notwithstanding that it gained a significant advantage from the use of the patent? In *Reading & Bates* itself the defendant likely won the contract from the plaintiff because it undervalued the worth of the patented method, since it had no intention of paying for its use. The profits the defendant made in *Reading & Bates* were probably less than the profits the plaintiff would have made if the defendant had not infringed (although we can’t be certain as the point was not specifically addressed). Thus while I have noted above that *Reading & Bates* was consistent with the differential profit approach, it is possible that the strict application of the differential profit approach would have led to an even larger award to the plaintiff than the whole profits approach articulated in that case. The differential profit approach is not always more generous to the infringer than the alternatives.

It may be that Laddie J. is drawing an analogy with the law of trusts, where the remedy is considered proprietary, but even there a trustee who invests the trust property imprudently and in breach of the trust, and thereby loses the entire value of the trust, is bound to account to the beneficiary for the capital lost, plus interest. It is clear law that “if [a trustee] is responsible for a number of breaches which have resulted in gains and losses, he may not set the losses off against the gains except to the extent that any particular losses or gains occur during the carrying out of a single continuing transaction.”⁹⁷

⁹⁶*Ibid.*

⁹⁷D. Waters, *The Law of Trusts in Canada*, 2nd ed (Carswell, Toronto, 1984) at 999.

2.3.3.3 Consistency with Damages

Laddie J. also suggested that the differential profit approach is inconsistent with the law of damages.

If [a non-infringing activity would have inflicted the same harm] it could be said that the plaintiff is no worse off as a result of the infringement than he would have been if a non-infringing course of action had been adopted by the defendant. But this is irrelevant to an inquiry as to damages.⁹⁸

With respect, this assertion is wrong on its face. To paraphrase in the tort context, Laddie J. is saying “If [a non-tortious activity would have inflicted the same harm] it could be said that the plaintiff is no worse off as a result of the tort than he would have been if a non-tortious course of action had been adopted by the defendant.” Contrary to Laddie J.’s argument, this is undoubtedly very relevant to an inquiry as to damages, as the Supreme Court affirmed in *Athey v Leonati*.

Laddie J. cited only *Gerber v. Lectra*⁹⁹ on this point and *Gerber v Lectra* in turn cited only *United Horse Shoe and Nail*, saying that any other citation would be “otiose.” This, perhaps, was because no other authority could be found. As we have seen, *United Horse Shoe and Nail* rejected the “but for” approach to causation, and was wrongly decided. Apart from the myriad cases establishing the “but for” approach to causation which we have already seen, the proper rule was stated in the context of patent damages in the case of *Penn v Jack*:

What would have been the condition of the plaintiff if the defendants had acted properly, instead of acting improperly? That condition, if it can be ascertained, will, I apprehend,

⁹⁸*Supra* n.65 at para.35.

⁹⁹[1995] R.P.C. 383 (C.A.).

be the proper measure of the plaintiff's loss.¹⁰⁰

It is also abundantly clear in U.S. law that the availability of acceptable non-infringing substitutes is to be considered in assessing damages in patent infringement actions.¹⁰¹

It must be emphasized that the defendant must show that an alternative course of action was actually available at the time. It is not enough to say “we could have independently developed a different process that would have been just as good.” So, in *Cadbury Schwepps*, the Court held that the defendant was not entitled to arbitrarily backdate the time at which it would have started developing an alternative non-infringing product in order to reduce the damages to zero. But the Court did allow the damages to be limited by the amount which the plaintiff would have lost had the defendant a non-infringing course of action be adopted by the defendant: “The trial judge found that the competition would have ceased to be unfair once the appellants could reasonably have been expected to come up with a tomato juice product independently of the confidential information.”¹⁰² Note that the defendant did not in fact ever independently develop its competing product. The damages were nonetheless assessed on the supposition that they would have.

The only difference between the calculation approved in *Cadbury Schwepps* and that dismissed by *Gerber v Lectra* is that in *Gerber v Lectra* the defendant claimed to have an alternative course

¹⁰⁰(1867) L.R. 5 Eq 81, 84, per Sir W. Page Wood V.C.

¹⁰¹The leading case is *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 197 U.S.P.Q. 726 (6th Cir. 1978) cert denied 401 U.S. 939: “Elements necessary to the determination of a reasonable royalty in the present case. . .were not determined by the master in his report and cannot be discerned from the record. They therefore must be determined on remand. On remand, the following factors must also be considered: (1) the lack of acceptable noninfringing substitutes. . .” This point is routinely considered: see e.g. *Gargoyles, Inc. v. United States*, 113 F.3d 1572. See also Ned L. Conley, “An Economic Approach to Patent Damages,” (1987) 15 AIPLA Q.J. 354, esp at 362ff. Note that patentee’s lost profits as damages are not apportioned (see Conley at 371) but this is because non-infringing substitutes are taken into account in the calculation of profits in the first place.

¹⁰²*Supra* n.20 at 196.

available to it at the time of the initial infringement, whereas in *Cadbury Schwepps* the alternative was available only at some time after the infringement had occurred. But surely this is an issue of fact, not of principle. If the evidence in *Cadbury Schwepps* had established that the alternative could have been developed in six months, or three months, or one month, rather than one year, surely the Court would have adjusted damages accordingly. What difference is there in principle if the alternative had been available at the time, instead of slightly later?

2.3.3.4 Wellcome v Apotex

While the decisions in *United Horse Shoe and Nail* and *Celanese* rejected the differential profit approach on the basis of principle (erroneous principle, as I hope to have shown), a principle may also be rejected because it leads to perceived injustice on the facts. We have already seen this happen in *Reading & Bates*, where, I have suggested, the result arrived at by the Court of Appeal is actually consistent with the differential profit approach. The Federal Court of Appeal decision in *Wellcome Foundation v Apotex Inc.*¹⁰³ also rejected the differential profit approach because it was perceived to lead to injustice on the facts. This case is a undoubtedly a difficult one as it raises two significant issues of principle: what alternatives may be legitimately considered in applying the differential profit approach?; and how is the approach to be applied when the contribution of infringing and non-infringing aspects of the products is not simply additive? I suggest that addressing these difficulties does not require rejection of the differential profit approach, but rather its careful application.

The patent which the defendant Apotex infringed was for a method of making the compound chemical trimethoprim (TMP). Apotex argued that the differential profit method should be used in calculating its profits and it proposed two possibilities as the non-infringing substitute. First, it argued that a non-infringing supply of TMP was available to it at the same price. This the Court of Appeal rejected on the facts, and so the decision is entirely consistent with the differential

¹⁰³[2001] 2 F.C. 618 (F.C.A.).

profit approach on this point.¹⁰⁴

The second point argued by Apotex is more interesting. Apotex argued that it could have obtained a non-infringing supply under a compulsory licence from Wellcome, the plaintiff. In 1985 a company related to Apotex had obtained a compulsory licence to use TMP manufactured by the patented process, subject to the payment of a very small royalty of 0.11% of the revenues of sales of a product using the patented product in combination with another. By the time of the trial the compulsory licencing scheme under which this licence was obtained had been abolished by repeal of the relevant legislation. Apotex never in fact made use of this compulsory licence, but it argued that it could have. For this reason Apotex argued that the profits attributable to the breach were only the saving from the avoidance of the small compulsory royalty.

Rather than accept this argument, the Court of Appeal rejected the differential profit approach entirely, remarking that it would “in effect, reintroduce the compulsory licence that Parliament abolished.”¹⁰⁵ This is a substantial objection. We have above that the differential profit approach

¹⁰⁴*Ibid*, para.17.

¹⁰⁵*Ibid*, para 20. The Court of Appeal also made two other less persuasive arguments in rejecting the differential profit approach. One was an argument from authority, in which the Court relied instead on its own decision in *Reading & Bates supra* n.36 and on the decision of Laddie J. in *Celanese supra* n.65.. No mention was made of *Collette v Lasnier supra* n.32 and the U.S. Supreme Court authority was rejected summarily (at para.19): “...whatever may have been the law on this topic in the United States in 1888, the comparative approach is not the law in Canada today.” With due respect, U.S. and Canadian Supreme Court authority cannot be so easily dismissed and, as we have seen, *Reading & Bates* is not strong authority against the differential profit approach. The Court then went on to suggest that adopting the differential profit approach would “promot[e] uncertainty in an aspect of the law on which individuals may rely when making an election of remedies or attempting to settle a dispute” (at para. 20). This was apparently premised on the notion that the differential profit approach is clearly not the law, so to go in this “new direction” would introduce uncertainty. Since the law is in fact unsettled, this argument is not persuasive. But it does make the important point that what ever approach is finally adopted should allow for predictability by providing a clear basis for determining the quantum of damages. This is in fact a strong point in favour of the differential profit approach. The differential profit approach provides clear answers in at least some cases and makes it clear what the relevant evidence would be in all cases. In contrast, we will see that the alternatives,

normally results in an award to the patentee which is equal to the full value of the patent. Normally, then, when the award is minimal it is because the profits attributable to the patent are small. But on the facts of this case it appears that the profits caused by the use of the patented invention were substantial. To allow the infringer to escape on payment of only a 0.11% royalty would allow it to achieve substantial benefit on payment of a merely nominal amount. This is contrary to the basic principles of the patent system. The whole point of the patent monopoly is to encourage innovation by allowing the patentee to charge substantial sums for significant inventions. To allow the infringer to escape on payment of nominal royalty amounts to confiscation of the patentee's rightful property.

This is a powerful point. But it is a criticism of the compulsory royalty system generally, not of the differential profit approach to calculation of profits. All of the undesirable consequences outlined above flow directly from the compulsory licencing system. It is only a coincidence that on the facts of this case the compulsory royalty system was relevant to the accounting of profits. If exactly the same facts were to arise today, there is no doubt that the differential profit approach would result in substantial damages. It appears that the Court of Appeal's antipathy to the compulsory licencing system was so great that it chose to reject the differential profit approach rather allow the defendant to take advantage of it. While it is true that the compulsory licencing system was highly objectionable and inconsistent with fundamental patent policy, I suggest that it is unreasonable to distort the law of remedies in order to avoid giving effect to compulsory licences in this particular case. Further, it is not clear that the differential profit approach mandates the result sought by the defendant, even on the specific facts of the case. It was arguably open to the Court to hold that the compulsory licencing scheme was so repugnant to basic patent principles that it would apply the repeal retroactively and would decline to recognize compulsory licences to be used as the basis for comparison in the differential profit approach.

cost-based apportionment (discussed *infra* Part 2.4) and physically based apportionment (Part 2.5), are arbitrary and hence inherently uncertain in all cases. The Court also suggested that the differential profit approach would not provide sufficient incentives to avoid patent infringement. This argument is discussed in Part 2.3.2.2, *supra*.

This position is quite attractive in many ways, but for our present purposes we need not settle whether it would have been right as a matter of law and policy. It is enough to recognize that the completely inadequate award proposed by the defendant flowed from the compulsory licencing system itself, and not from the differential profit approach to an accounting of profits.

Thus the real question in this case was whether the a supply of the patented product under a compulsory licence should be considered to be an alternative which was *legitimately* open to the infringer for the purposes of applying the differential profit approach. If we decide that it was not, then the apportionment approved in *Wellcome v Apotex* is entirely in accord with the differential profit approach.

Indeed, the original decision on reference of Mackay J., which was affirmed by the Court of Appeal, is an excellent application of the differential profit approach in a difficult factual situation. The infringing product, TMP, was sold in combination with a non-infringing product, SMX. Mackay J. recognized that the entire profits were not attributable to TMP alone, notwithstanding that it was the more pharmacologically active, so that an apportionment was necessary.¹⁰⁶ He properly rejected apportionment on the various bases advocated by the infringer, namely the value added to the cost of a unit of TMP, the relative weights of the two active ingredients and the relative costs of the quantities of the two ingredients to their total cost in the final product, as none of these reflect the relative pharmacological value of the infringing and non-infringing substances. Note that since MacKay J. expressly rejected cost-based apportionment, his decision is inconsistent with the cost-based approach advocated by Laddie J. in *Celanese*, which is discussed in more detail below.¹⁰⁷ In the result, he allocated 60% of the profits to the TMP, recognizing the greater potentiating effect of the TMP on the one hand, and the effect of the SMX and the infringer's marketing efforts on the other.

¹⁰⁶*Wellcome Foundation Ltd. v. Apotex Inc.* (1998) 82 CPR(3d) 466, 488 (F.C.T.D.).

¹⁰⁷See Part 2.4.

Though this is a difficult case, Mackay J.'s allocation is consistent with the differential profit approach.¹⁰⁸ The problem in applying the differential profit approach arises because the two drugs are presumably more effective in combination than they are together (or else they would be sold individually). Thus if we were simply to suppose that but for the infringement, the infringer would have sold SMX alone, we might find that SMX alone would sell for only, for example, 10% of the price of the combined product. This suggests that 90% of the value should be attributed to the TMP. But suppose that SMX were also patented to a third party who had also sued Apotex. If we applied the same test, we might find that the TMP alone would sell for only 50% of the price of the combination, suggesting that only 50% of the value should be attributed to the SMX. Thus if the SMX were infringing as well, we would come to the untenable conclusion that the infringer was liable for only 60% of its profits even though its entire product was infringing.

This is not grounds to reject the differential profit approach. The case simply illustrates that the approach truly is a reflection of “but for” causation, as the “but for” test in runs into exactly the same problem in tort law in the parallel case of simultaneous causation. In the most extreme case, where two separate but simultaneous torts would both have been sufficient to cause death (e.g. two hunters shoot a third simultaneously) it is well recognized that the standard “but for” test does not operate properly. This is because the effects of the two torts together (one death) is less than the sum of what their individual effects would have been (two deaths), just as the effect of the two drugs separately is less than the sum of their individual effects. The response in tort law is not to reject the but for test, but to recognize simultaneous causation as a special case and allocate liability according to the relative materiality of the two causes.¹⁰⁹ This, in substance, is

¹⁰⁸It must be acknowledged that Mackay J. expressly stated that the differential profit approach was not appropriate: *supra* n.106 at para.36-37. However, as in *Reading & Bates* this was a case where what was really being rejected was the infringer's proposed application of the approach.

¹⁰⁹See *Athey v. Leonati supra* n.69 at 467-68; *Bow Valley Husky (Bermuda) Ltd. v. Saint John Shipbuilding Ltd.* [1997] 3 S.C.R. 1210, 1267-68; and the various provincial contributory negligence acts, e.g. *Contributory Negligence Act* R.S.N.B. 1973, c. C-19; *Negligence Act*

exactly what Mackay J. did.

2.4 Cost-Based Apportionment

The only substantial discussion of cost-based apportionment is found in Laddie J.'s decision in *Celanese*.¹¹⁰ Though this is a trial level decision in another jurisdiction, it is nonetheless worth considering, both for its discussion of cost-based apportionment and because it was cited with apparent approval by the Federal Court of Appeal in *Wellcome v Apotex* as support for rejecting the differential profit approach.¹¹¹

In *Celanese* Laddie J. accepted the need for an apportionment, and he also accepted that the fundamental guiding principle was that the profits to be awarded are those which are caused by the infringement.¹¹² However, as we shall see, the method he used does not in fact respect this basic causation requirement.

His starting point was that “the profits of a single project are attributed to different parts or aspects of the project in the same proportions as the costs and expenses are attributed to them.”¹¹³ Thus if the patented part costs only a small amount in relation to the total cost of the project, then the patentee is entitled only to a small portion of the profit, but if the patented part costs a great deal in relation to the project as a whole, then the patentee is entitled to a large share of the profits. As Laddie J. put it, “by this method the whole project "cake", the size of which is determined by its costs and expenses, is divided into slices. It is only the profit icing on the

R.S.B.C. 1996, c.333.

¹¹⁰*Supra* n.65.

¹¹¹*Supra* n.45 at para. 21.

¹¹²See *supra* n.19.

¹¹³*Ibid* at para.81.

infringing slice (the relative size of which is also measured by reference to its relevant costs and expenses) for which the defendant has to account.”¹¹⁴

There are two problems with this approach. First, entirely ignores the requirement of a causal link between the infringement and the profit, which is universally recognized as being essential. Secondly, it produces entirely arbitrary and unpredictable results.

To turn to the first point, the causal link must be between the infringement and the profits. Apportionment based on cost ignores the fact that the cost of the physical part of a patented product may bear little relation to its value. So, for example, in *Wellcome v Apotex* the infringer urged that since the cost ratio of the patented pharmaceutical to the total cost of the combination was 2:7, it should only be liable for that portion, namely 29%, of its overall profits. But this argument ignores the fact that the patented product was *more* pharmacologically active than the unpatented part of the combination, notwithstanding that it was only the minor part of the cost. The infringer’s argument on this point was rightly rejected by Mackay J. for this very reason.¹¹⁵ Similarly, in *Manufacturing Co. v Cowing*, the patented modification was not expensive to implement,¹¹⁶ and therefore on Laddie J.’s cost based approach, the patentee would have been entitled only to a very small part of the profits. But, as we have seen, the patented modification so increased the value of the pump for certain purposes that no pump without it could be sold. Accordingly, the entire profits should be attributable to the patent, notwithstanding the trivial cost of its implementation. As we saw, this was the conclusion of the U.S. Supreme Court in applying the differential profit method.

The basic failing of the cost based approach to apportioning profits is that it fundamentally

¹¹⁴*Ibid* at para.54.

¹¹⁵*Supra* n.106 at para 57.

¹¹⁶“The change in the old pump was not an expensive one. The valves were put outside of the side chambers instead of inside, and the joints had to be carefully fitted.” *Supra* n.70 at 257.

misunderstands the nature of intellectual property. The cost of producing a patented product bears no particular relationship to its value. Patents are *intellectual* property, and their value lies in the intellectual contribution, not in the cost of putting that intellectual contribution into effect. So in *Manufacturing Co v Cowing*, it might well have cost nothing more to affix the valves to the outside rather than the inside; perhaps it was just a matter of telling the worker “weld here, not there.” The genius behind the invention was the insight in recognizing that this simple change would solve the problem at hand. In fact, it is the very nature of a patent that cost of producing the product and its value are unrelated. The entire rationale for patent law is that if a monopoly is not granted, prices will fall to equal the cost of production and the inventor will not be able to recover its costs of innovation. The point of a patent to allows the inventor to recover more than simply the cost of the invention by granting a monopoly in its use.

The value of the invention is precisely the *difference* between the cost of production and the selling price. The selling price is unrelated to the cost, and so is the value. One new drug might be a cure for cancer, while another might provide eighteen hours of relief from a stuffy nose instead of twelve. The costs of producing the two might be exactly the same – there is no reason that a cure for cancer will be especially complicated to produce, though it has proven very expensive to develop – but there is no question that the former is vastly more valuable.

Laddie J. recognized this problem, saying that “The distribution by costs approach does not set out to distinguish between relatively critical and relatively trivial parts of the whole but it does provide a measure of the base allocated profits attributable to the part in issue.”¹¹⁷ His response was to attempt to adjust the basic figure arrived at by comparative costs using considerations of value.¹¹⁸ The obvious problem with this approach is that when one starts from a basis which is entirely and fundamentally wrong, there is little hope that any adjustment will produce the correct figure. Laddie J. himself recognized this arbitrariness: “Any question of weighting this figure up

¹¹⁷*Supra* n.65 at para 53. Exactly the same phrase is repeated at para 81.

¹¹⁸*Ibid* at para. 81-83.

or down, if possible, is dependent on taking into account other, more nebulous, considerations.”¹¹⁹

A related problem is that because the cost and value are unrelated, the definition of the relevant cost becomes arbitrary. The result is that cost based apportionment leads to arbitrary results. So, in *Celanese* the immediate problem was whether “cost” should be allocated by capital cost or operating cost. Laddie J. stated that:

No one suggested a reason why one of these methods of apportionment should be preferred over the other and none occurs to me. I have come to the conclusion that it would be reasonable to have regard to the relative capital expenditure as the yardstick.¹²⁰

It is important to recognize that there was no intermediary reasoning between these two sentences. Laddie J.’s decision to use capital expenditure rather than operating costs as the basis for his cost-based approach was entirely unprincipled. Laddie J. himself acknowledged that, “The fact that an account can be an imprecise exercise does not mean that the judge is entitled to pick a winner on the basis of little more than hunches.”¹²¹ Laddie J.’s approach fails on this very point.

An example given by Laddie J. further illustrates the arbitrariness of his method.

An article is made by use of a standard process, involving five steps. Each article is sold at a price which realises a profit of £1,000. On the assumption that each of the steps is similar in cost and there is no obvious reason to distinguish between them, it would be fair to attribute £200 of the total profits to each step. . . .Now consider a case where the

¹¹⁹*Ibid* at para. 81.

¹²⁰*Ibid* at para. 82

¹²¹*Ibid* at para. 80.

replacement patented step makes no substantial alteration to the end product, which is sold for the same price, but introduces efficiencies such that the profit per item increases by £50 to £1,050. In such a case the court might fairly conclude that the profits attributable to the invention are £250, that is to say the original £200 together with the increase of £50, per item.¹²²

Laddie J. then said that in a case where the patented improvement released efficiencies in the process as a whole, so that “the conclusion that the whole process contributed to the improved profitability. If so it would be a reasonable approximation to divide the new increased profit of £1,050 evenly over all five steps. The profit attributable to the infringement would then be £210.” Examples can be multiplied. Suppose instead that a sixth process were added, of similar cost, but which led to efficiencies in all the subsequent stages (perhaps by purifying the feedstock), for the same overall profit of £1,050. In that case it seems that Laddie J. would allocate one-sixth of the profit, or £175 to the patented process. What if the patented process replaced two steps with a single completely new and more efficient patented step, which cost just less than twice as much as the original two steps, so that the overall profit was £1,050? It seems that Laddie J.’s cost based method would say that since the cost of the new step is 2/5 of the total, the profit attributable to this step is £420. Suppose then that the one step were replaced with a new patented step that itself cost next to nothing, but which required non-patented modifications to the other four steps which increased their costs, so that the overall profit was still £1,050. Is the profit attributable to the patent then next to nothing, as that is the proportion of its cost in the modified process?

The economic value of each of these patents is exactly the same, namely £50 per article, yet Laddie J.’s cost-based approach to an accounting of profits could result in an enormous variation in the award depending of the details of how the invention was implemented. This wide variation in outcome depending on the particular implementation of the patented process shows the

¹²²*Ibid* at para. 58.

unprincipled and arbitrary nature of Laddie J.'s approach. The differential profit approach, and, I suggest, common sense as well, say that in every single case, the profits attributable to the invention are simply the advantage gained as a result of the patented invention, namely £50.

We saw that it is uncontroversial that it is a basic legal principle that there must be a causal relationship between the harm and the award. When the award is profits, this means there must be a causal link between the infringement and the profits. The basic flaw of the cost-based approach is that it looks for a link between the infringement and the cost. Cost and profits are not related, and in consequence this approach to an accounting fails to provide the necessary causal connection between the remedy and the infringement.

2.5 Whole Profits

Now consider the whole profits rule respecting apportionment. As applied in *Schmeiser*, at least, this approach says that the patentee is entitled to the whole profits when the patented item comprises the whole physical part of what was sold. Since this rule only applies in some cases, namely when the patent comprises the whole of what was sold, it must be a special case of some more general rule. Thus the whole profits rule can be assessed both on its own, that is, as applied when the patent comprises the whole of what was sold, and as part of the more general rule of which it is a special case. In this part I will argue that even when applied to cases where the patent comprises the whole of what was sold, the whole profits rule must be rejected. Like cost-based apportionment, it does not meet the basic requirement of embodying a causal link between the infringement and the award. As a result, it can lead to arbitrary results. I will then show that in many cases where the patent comprises the whole physical thing which is sold, the whole profits are awarded under the differential profit approach. In other words, the whole profits result (if not the rule) is a special case of the differential profit approach: *Reading & Bates* is a good example of this. For this reason it is not surprising that courts faced with a case in which either rule gives the same result would sometimes state the whole profits rule rather than the differential profit rule. But in cases in which the two diverge, it is important to recognize that the

differential profit approach represents the correct principle.

The fundamental problem with the rule that the whole profits are awarded when the patent comprises the whole physical thing sold is the same as that facing the cost-based approach. What is being awarded is profits, and the causal link must therefore connect the infringement and the profits. The profits turn on the *value* added by the patent, and not on its proportion of the physical product in question, nor on its proportionate cost. Even when the patent comprises in some sense the whole physical thing that is sold, the value may be affected by many other aspects of the product.

For example, suppose Schmeiser had used an especially efficient machine for harvesting his canola and had thereby made a larger profit from his crop than he would have if he had used standard methods. The cost savings from the efficient machine would have contributed to his profits, and on a common sense understanding of causation we cannot plausibly say that those savings are attributable to the use of the plaintiff's patent. Indeed, suppose that the efficient harvester hypothetically used by Schmeiser was itself patented and had been used without licence. Would Schmeiser also be liable to the maker of the harvester, notwithstanding that he is already liable to Monsanto for his entire profit? And would that hypothetical patentee of the harvester machine also be entitled to all the profits on the basis that the whole crop had been harvested with its patented machine?

Precisely this point was made by the Court of Appeal itself in *Lubrizol Corp. v. Imperial Oil Ltd.*,¹²³ a case which, as we have already noted, rejected the whole profits approach to apportionment. The patentee argued that because the patent was for the motor oil containing that dispersant additive (and not just for the additive itself), the patent infringer had sold the whole of what was patented and the patentee was therefore entitled to the whole profits. The Court of Appeal rejected this position in strong terms:

¹²³*Supra* n.50.

The remedy of an account of profits is an equitable one. Its purpose is not to punish the defendant but simply to have him surrender the actual profits he has made at the plaintiff's expense. But if some part of Imperial's profit on the infringing sales can be shown to have been due not to the appropriation of the Lubrizol invention but to some other factor where is the equity? We were told that Lubrizol contends that Imperial's motor oil infringes another of its patents and has sued in respect thereof. May the same profits be claimed a second time? And if not by Lubrizol what of some third party patentee who likewise claims infringement? And even if no other patents were involved, to allow Lubrizol to take profits which Imperial succeeds in showing were solely attributable to some non-infringing feature of its motor oil would be to judicially sanction Lubrizol's unjust enrichment at Imperial's expense.¹²⁴

This is a compelling critique of the whole profits approach, and very similar reasons for rejecting the whole profits approach have also been given the Exchequer Court decision in *Dubiner v. Cheerio Toys & Games Ltd.*¹²⁵ and by United States Supreme Court in *Mowry v Whitney*.¹²⁶

¹²⁴*Ibid* at 34.

¹²⁵(1966), 49 C.P.R. 155, 175 (Ex. Ct.): “To accept the submission of counsel for the plaintiff that, if an infringer is using infringing marks as well as other marks, the whole of the profits in an account of profits goes to the person whose rights he has been infringing even if some of the profits are attributable to the use of a trade mark which does not belong to such person would, in my view, lead to unconscionable results particularly in a case where use is made of several trade marks belonging to different owners. Indeed, one might ask whether, if the trade marks used together belonged to different people, the defendant should be compelled to pay an amount equal to all of his profits to each of the individual owners. To reach such a result would indeed be most unreasonable and would lead to unjustifiable abuses.”

¹²⁶“The same principle, therefore, which gives to the complainants the aggregate profits of the entire manufacture would give the same profits to a patentee of the process of chilling, if there were one, and as there are many processes in the manufacture, for each of which it is conceivable there might be a patent, and as every one of the processes is necessary to make a marketable wheel, an infringer might be mulcted in several times the profits he had made from the whole manufacture. We cannot assent to such a rule.” *Supra* n.22 at 650-51.

On the differential profit approach such a situation presents no difficulty, since alternatives to the two different patents can be considered independently. Both patentees would be entitled only to some proportion of the profits, depending on the cost savings realized through the use of the invention. In either case there is no need to decide whether the patent “comprised the whole of what was sold” since that question is irrelevant to the differential profit method.

Thus the whole profits rule fails the causation requirement even when applied to cases in which the patent comprises the whole of what was sold. Another difficulty is that the whole profits rule is at best a special case which applies only when the patent comprises the whole of what was sold. It must therefore be a special case of some more general rule. What rule might that be?

The whole profits rule is consistent with a general rule that profits are apportioned according to the physical proportion of the patented part to the product as a whole. But the physical apportionment rule is subject to the same objections as cost-based apportionment. We have just seen that physical apportionment does not work when the patent comprises the whole of what was sold. It also gives unjust results when the patent comprises only a part of what was sold. *Manufacturing Co v. Cowing* is again a good illustration: the patent was only for a part of the whole, and yet it added all the value for some applications. Physical apportionment would wrongly give the patentee only a small part of the profits in such a case.

Though the whole profits rule is wrong in principle, it is not surprising that we should sometimes see it articulated, since the whole of the infringer’s profits are often awarded as a consequence of the application of the differential profit rule. That is, the application of the differential profit approach often gives the same result as the whole profits rule, even though the principle is entirely different. So, in *Warren v. Keep*, we find the U.S. Supreme Court apparently agreeing with the Federal Court of Appeal in *Schmeiser* and *Reading & Bates* in drawing a distinction between “whole product” and “partial product” cases:

It is, no doubt, well settled that where a patent is for a particular part of an existing

machine, it is not sufficient to ascertain the profits on the whole machine, but it must be shown what portion of the profits is due to the particular invention secured by the patent in suit. . . . But it is equally true that, where the patented invention is for a new article of manufacture, which is sold separately, the patentee is entitled to damages arising from the manufacture and sale of the entire article. *Manufacturing Co. v. Cowing*, 105 U.S. 253; *Hurlbut v. Schillinger*, 130 U.S. 456; *Crosby Valve Co. v. Safety Valve Co.*, 141 U.S. 441.¹²⁷

But, as in *Reading & Bates*, it is clear from the facts of *Warren v. Keep* that the entire profit was attributable to the patented aspects.¹²⁸ And the cases cited by the Court in favour of the whole profits approach clearly establish that the whole profits approach is not a special rule, separate from the differential profit approach, to be applied when the patented article is the very thing which is sold. It is rather a special case of the differential profit rule which arises when the entire value is attributable to the patented features.

We have already seen this in our discussion of *Manufacturing Co. v. Cowing*. Similarly, in *Crosby Valve*: “the profits made by the defendant are to be calculated in reference to the entire valve made and sold by it, for the reason that the entire value of that valve, as a marketable article, is properly and legally attributable to the patented feature...”¹²⁹ This is simply a restatement of the differential profit test. If the entire value of the article is attributable to the patented feature then if we ask, “What profits would the defendant have made if it had employed the next best substitute legally available to it?” the answer is none, since the patented article was so far superior to the next best substitute that the substitutes could not be sold at any profitable price. And in *Hurlbut v. Schillinger*, the Court stated that “It clearly appears that the defendant's

¹²⁷*Warren v Keep* 155 U.S. 265, 268 (1894).

¹²⁸“We think the court below was justified in saying: ‘. . .Remove the patented features, and nothing remains.’” *Ibid* 269-70.

¹²⁹141 U.S. 441, 453 (1891), emphasis added.

[product] *derived its entire value from the use of the plaintiff's invention...*¹³⁰

Thus the question is not whether the patent is the whole *thing* which was sold, or merely a part; the question is whether the patent contributes the whole *value* of the thing which was sold, or merely a part. The confusion of these two questions is understandable as it is not infrequently the case that when the patented item is the whole physical thing, the patent also contributes the entire value. But it is important to recognize the true rule, since there are some cases in which the patented item is the whole thing yet not the whole value; and conversely there are other cases in which it is only a part of the thing, and yet represents the whole value.

2.6 Conclusion and Application to the Innocent Non-Benefitting Infringer

To this point I have argued that the differential profit approach is sound in principle as it nothing other than the application of the “but for” test for causation. As such, it allocates profits to the patentee according to the value of the patent, and for this reason it gives intuitively reasonable results, even in difficult cases. We have also seen that the various criticisms which have been leveled against it are unjustified. In contrast, the alternatives, cost-based and physically-based apportionment, are wrong in principle as they reject “but for” causation and do not recognize the fundamentally intellectual nature of the value added by a patent.

This allows us to return to the primary aim of this paper, which is to address the problem of the innocent user of patents related to higher life forms. Here again, the differential profit approach is superior to the alternatives.

First consider our core case, the innocent non-benefitting farmer whose crops were contaminated with patented canola without his knowledge and who, not recognizing the true nature of his crop, took no steps to take advantage of its properties and so derived no benefit from his infringement.

¹³⁰130 U.S. 456, 472 (1889), emphasis added.

On the whole profits approach used in *Schmeiser* the farmer would be liable to give up all of his profits on the infringing crop, notwithstanding that he had derived no benefit whatsoever from growing the patented crop. The evident injustice of this result has been recognized by both the Court of Appeal in *Schmeiser* and the Supreme Court in the *Harvard Mouse* decision.¹³¹ Under cost-based apportionment the farmer would be liable to give up some fraction of his total profit, depending on the proportionate cost of the infringing seed. The injustice to the non-benefitting farmer may be reduced, but it is not eliminated. But under the differential profit method, the problem disappears entirely. A user who is unaware of the nature of the canola and does not adjust his farming practices and so does benefit from the patent, would make the same profits as with unpatented canola. The difference between the actual profits and the profits but for the infringement, is nil.

Now consider the innocent benefitting farmer; for example a farmer whose field was contaminated with a patented canola which produced twice as much oil under normal growing conditions. In this case a farmer would derive substantial benefit from the use of the patent even if she did not know the true nature of the crop. In this case the differential profit approach would hold that the farmer liable, but only to the extent of the benefit gained. So, if the crop were 100% contaminated with canola which gave twice as much oil as the unpatented variety, the farmer would be liable for one half of her profits. This would return her to the position she would have been in had her crop not been contaminated. It may be thought that an innocent infringer should escape liability entirely; but whether that is desirable as a matter of policy, we have seen that it not possible on existing law, and the comparison at issue in this article is between alternative remedial approaches. The whole profits approach, as applied in *Schmeiser* would award the *entire* profit to the patentee, since the entire crop was patented. Thus, even in the case of the innocent benefitting infringer, the differential profit approach is more generous to the infringer than is the whole profits approach. The cost-based approach would allocate the same fraction of profits to the patentee in this case as in the case of the non-benefitting infringer. This is one

¹³¹*Supra* n.1.

more illustration of the arbitrariness of the cost-based approach.

Though this discussion focused on an innocent infringer, all of these remedially based approach would give exactly the same result in the case of the intentional infringer. The consequence is that under the differential profit approach, the defendant in *Monsanto v Schmeiser* would not be liable for substantial damages, at least in the absence of a finding that he did in fact benefit from his infringement. Under the differential profit approach in contrast, Schmeiser was held liable for his entire profits. The defendant in *Schmeiser* is not a particularly sympathetic character, since he could easily have avoid liability by not planting the seed which he knew to be patented. On the other hand, the equities are not nearly so strongly against him as they would be against an intentional infringer who benefitted from the use of the invention. In any event, given that it is not possible to distinguish between the innocent and intentional benefitting infringer on current law, relieving Schmeiser himself from liability is in a sense a *qui pro quo* for doing the same in the case of the innocent non-benefitting infringer.

3 Damages

Even if we accept that a non-benefitting infringer will not be liable to account for any of its profits, this will be cold comfort if the plaintiff can simply turn to its claim for damages in the alternative. In *Schmeiser* the issue of damages as an alternative to profits was apparently not contested, with the plaintiff's figure of \$15 per acre being accepted, for a total award of \$15,450.¹³² But this should not be accepted so readily. Though an award of damages and an account of profits will not normally be the same, it is cause for concern when they diverge so dramatically. And there is a very straightforward argument that damages in the case of non-benefitting infringer should also be nil.

¹³²*Supra* n.47 at para. 133.

The successful plaintiff's most basic entitlement in damages is to a reasonable royalty.¹³³ The reasonable royalty calculated in *Schmeiser* was based on the standard royalty that was charged to other farmers in that year who had entered into an agreement with Monsanto.¹³⁴ In a normal case this would be entirely appropriate, as the best evidence as to a reasonable royalty is the royalty which is actually charged to users in a similar position. The classic statement is found in *AG fur Autogene Aluminium Schweissung v London Aluminium Co Ltd (No 2)*, in which Sargant J. stated that:

... what has to be ascertained is that which the infringer would have had to pay if, instead of infringing the Patent, he had come to be licensed under the Patent. I do not mean by that that the successful patentee can ascribe any fancy sum which he says he might have charged, but in those cases where he has dealt with his property merely by way of licence, and there have been licences at certain definite rates, there *prima facie*, apart from any reason to the contrary, the price or royalty which has been arrived at by means of a free bargain between the patentee and the person desiring to use the patented article has been taken as being the price or royalty that presumably would have to be paid the by infringer.¹³⁵

¹³³Damages are calculated either as the actual damages suffered by the plaintiff by way of lost profits from sales that were diverted to the defendant by reason of infringement, or a reasonable royalty for the use of the patented invention, or some combination thereof (as when the defendant both captures sales from the plaintiff in a market in which they are both present, and also sells the goods in a market which the plaintiff had not tapped: see e.g. *AlliedSignal Inc. v. Du Pont Canada Inc.* (1998) 78 C.P.R. (3d) 129 (F.C.T.D.)). In order to claim lost profits the patentee must be able to show that it would actually have made the sales in question but for the infringement. In the absence of such a showing the patentee is entitled only to a reasonable royalty. In this sense the reasonable royalty is the most basic form of damages. In *Schmeiser* in particular the plaintiff did not suffer any lost sales to other customers – there is no suggestion that *Schmeiser* sold the seed to other farmers – so the only basis for damages is a reasonable royalty.

¹³⁴*Supra* n.47 at para 133.

¹³⁵(1923) 40 RPC 107, 113.

But even on its face, this oft-cited statement establishes the standard rate as being only a presumption as to what would constitute a reasonable royalty, not a rule of law.¹³⁶ As Sargant J. expressly stated, this applies only “apart from any reason to the contrary.” The House of Lords has since affirmed this point, explaining that the standard royalty is evidence as to what the infringer would have paid had it sought a licence – often very good evidence – but the true inquiry is “case to case.”¹³⁷ The remarks of Sargant J. “are very useful guidelines, but the principle must not be misapplied. *Before a ‘going rate’ of royalty can be taken as the basis on which an infringer should be held liable, it must be shown that the circumstances in which the going rate was paid are the same or at least comparable with those in which the patentee and the infringer are assumed to strike their bargain.*”¹³⁸

This is a crucial point, as the innocent infringer who does not benefit from the patent is in a very different position from a typical licensee. A standard royalty is bargained for by a user who expects to benefit from the patent. This is why he is willing to pay for the right to use it. But a user who does not expect to benefit from the patent would not be willing to pay anything at all for the right to use it. It follows directly that the reasonable royalty in the circumstances would be zero.

It may seem very counter-intuitive that a reasonable royalty would be zero; why would the patentee agree to allow the hypothetical licensee to use of its patent without compensation? For typical patents this would be a compelling point. But as the Court of Appeal in *Schmeiser*

¹³⁶It is true that in , *Meters Ltd v Metropolitan Gas Meters Ltd* (1911) 28 RPC 157, 164-165, Fletcher Moulton LJ said when a patentee routinely grants licences at a fixed price it “has almost become a rule of law” that this price should determine the amount of damages. But he concluded the same paragraph by saying that “I am not going to say a word which will tie down future judges and prevent them from exercising their judgment” in order to fix the damages “as best they can in all the circumstances of the case. . . .”

¹³⁷*General Tire & Rubber v. Firestone Tyre & Rubber Co. Ltd.*, [1975] F.S.R. 273, 278 (H.L.).

¹³⁸*Ibid* at 279.

explicitly recognized, patents for higher life forms fall into “a novel category”¹³⁹ because the patented gene may be used by a party who does not want to use the patent and who gains no benefit from so doing. I have suggested that this novel point is not enough to support the introduction of an element of intent into patent law; but it is very relevant to remedies, even on existing law. The conclusion that a reasonable royalty would be zero for a non-benefitting user is simply a reflection, at the remedial level, of this unique aspect of patents for higher life forms. The innocent non-benefitting user is truly unique in this respect; even the independent inventor benefits from the use of the patented invention, even though they do not benefit from the efforts of the patentee. Put another way, the innocent user is in the position of being forced to purchase a compulsory licence for the right to use a invention. The reasonable royalty is based on a hypothetical bargain, and we need to ask not just what the patentee would have requested, but also what the user would have agreed to pay.

3.1 Relationship between Damages and an Accounting of Profits

The conclusion that the award against a non-benefitting infringer should be nil under the traditional bargaining approach to a reasonable royalty should as well as according to the differential profit approach to an accounting gives us further reason to think that the differential profit approach is sound. Indeed, the differential profit analysis allow us to develop a coherent approach to the relationship between damages and an accounting of profits.

A coherent approach to monetary remedies is needed. Damages are based on harm to the patentee, while an account of profits is based on benefit to the infringer, and in consequence it has traditionally been said that damages and an accounting “are separate and distinct and have no relationship to each other.”¹⁴⁰ But this is an unsatisfactory conclusion, as the conclusion that the

¹³⁹*Supra* n.1 at para. 57.

¹⁴⁰Fox, *Canadian Patent Law and Practice*, 4th ed. (Carswell, Toronto, 1969) at 491. Similarly, in *Draper v. Trist and Tristbestos Brake Linings Ltd.* (1930) 56 R.P.C. 429, 439 (C.A.) (a passing off case) Sir Wilfrid Greene, M.R., remarked “Of course, in taking an account of

two remedies are unrelated can lead to arbitrariness at a remedial level, as the Court of Appeal has pointed out:

While courts of law have, for some time, given the successful party a right to elect one or the other of these two recourses, it seems clear from recent experience that the choice between the two remedies cannot be left entirely to the successful plaintiff. Moreover, it certainly cannot depend on whichever amount would turn out, on inquiry, to be more profitable.

[An accounting of profits] is not a punishment and should not be allowed to be used for that purpose merely by leaving it to the choice of a plaintiff.¹⁴¹

While it is well established that an accounting is a discretionary remedy,¹⁴² and it is clear that the usual equitable concerns, such as undue delay in seeking a remedy,¹⁴³ may be invoked as a basis for denying an accounting of profits, this does not fully address the problem. Requiring a patentee to act with clean hands and without undue delay, while appropriate as far as it goes, does not address the root of the problem.

The root of the problem is that in principle we should expect that there is a single right answer as

profits, which is the equitable relief, the damage which the plaintiff has suffered is totally immaterial.”

¹⁴¹*AlliedSignal Inc. v. Du Pont Canada Inc.* (1995) 61 C.P.R. (3d) 417, 444 (F.C.A.)

¹⁴²See *Apotex Inc. v. Merck & Co.* (1996) 70 C.P.R. (3d) 183 (F.C.A.).

¹⁴³See e.g. *J.M. Voith GmbH v. Beloit Corp.* [1993] 2 F.C. 515 (T.D.) in which an accounting was denied because of delay in bringing action and because some of the defendant's infringing contracts had been entered into after the patent was declared invalid at trial; *Globe-Union Inc. v. Varta Batteries Ltd.* (1981), 57 C.P.R. (2d) 132 denying an accounting of profits because the plaintiff had not disclosed certain transactions relating to title to the patent until the end of the trial, affm'd on this point *sub nom. Johnson Controls, Inc. v. Varta Batteries Ltd.* (1984), 80 C.P.R. (2d) 1(F.C.A.).

to the quantum which should be awarded to the successful patentee. The arbitrariness objected to by the Court of Appeal arises because it is not clear whether an accounting or damages represents the correct measure. The usual explanation of the existence of the two distinct remedies is that it was an “accident of history”: the courts of equity could not award damages, so they awarded an accounting instead, and when the courts were merged the remedies were retained.¹⁴⁴

This again is an unsatisfactory conclusion, as it explains current arbitrariness by historical arbitrariness. Nor does the historical origin of the two remedies provide a compelling reason for thinking that they are entirely unrelated. Law and equity are not now so distinct as they perhaps once were; it is only to the extent that they reflect different underlying policy concerns that we should expect different results.¹⁴⁵ In general intellectual property law disputes typically involve commercial dealings between parties of roughly equal power and the equitable concern with keeping the fiduciary “up to the mark” in dealing with a vulnerable beneficiary is not relevant, as the Supreme Court has expressly recognized.¹⁴⁶ And despite of their disparate historical origins, an accounting of profits and damages are now both statutory remedies under the *Patent Act*. The

¹⁴⁴*Attorney General v Blake (Jonathan Cape Ltd Third Party)* [2001] 1 AC 268, 280 (HL), per Lord Nicholls of Birkenhead:

Considered as a matter of principle, it is difficult to see why equity required the wrongdoer to account for all his profits in these cases, whereas the common law's response was to require a wrongdoer merely to pay a reasonable fee for use of another's land or goods. In all these cases rights of property were infringed. This difference in remedial response appears to have arisen simply as an accident of history.

And see *Siddell v. Vickers* (1892), 9 R.P.C. 152, 162.

¹⁴⁵See generally the reasons of McLachlin J. and La Forest J. in *Canson Enterprises Ltd. v. Boughton & Co.* [1991] 3 S.C.R. 534.

¹⁴⁶“In this case there is nothing in the relationship between a juice manufacturer and its licensee to suggest that the former surrendered its self-interest or rendered itself “vulnerable” to a discretion conferred on the latter. The overriding deterrence objective applicable to situations of particular vulnerability to the exercise of a discretionary power. . . does not operate here. If different policy objectives apply, one would not expect the remedy necessarily to be the same.” *Cadbury Schweppes Inc. v. FBI Foods Ltd. supra* n.20 at 164, citations omitted.

single most fundamental principle of statutory interpretation is that an Acts of Parliament should be interpreted in a harmonious and coherent fashion.¹⁴⁷ This principle requires that we interpret the various remedies as bearing some reasonable relationship to each other.

If we accept the differential profit approach to an accounting, a reconciliation of damages and an accounting is possible. To begin with, we have noted that we should expect that in principle there should be one single measure of the quantum to which the patentee is entitled. And if there is one basic principle of civil law remedies, it is that the party wronged is entitled to be put in the position they would have been in but for the wrong. This indicates that damages are presumptively the correct measure.

What then is the relationship between harm to the patentee and the benefit to the infringer? In typical tort cases – automobile accidents, for example – it is true that the two measures are generally quite unrelated. The harm to the victim may be much greater than any benefit gained by the tortfeasor, and so we would not expect a remedy based on the harm to the victim to give a result similar to a remedy based on benefit to the tortfeasor.

Patent cases, however, are different. Unlike an automobile accident, nothing is destroyed. The harm to the patentee arises because the infringer made a sale which the patentee would have made, or because the infringer avoids paying a licence fee. This means that the harm to the patentee bestows a corresponding benefit on the infringer. There is therefore a direct link between the harm to the patentee and the benefit to the infringer.

To be more specific, when a patentee and potential licensee are negotiating, the maximum which

¹⁴⁷The most basic principle of statutory interpretation is that “there is only one principle or approach, namely, the words of an Act are to be read in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the Act, the object of the Act, and the intention of Parliament.” E.A. Driedger, *Construction of Statutes* (2nd ed. 1983), at 87, cited numerous times by the Supreme Court of Canada: see e.g. *Chieu v. Canada (Minister of Citizenship and Immigration)* (2002) 208 D.L.R. (4th) 107, 122 (S.C.C.).

the licensee would agree to pay is the amount by which the licensee expects to benefit from the use of the patent. The user of a patent benefits either by being able to charge a higher rate for the patented product than for the unpatented alternative, or because use of the patent reduces costs of production of the same product, and thus increases profits. The net benefit anticipated by the potential licensee is the difference between the profit the user expects to make with the patent and with the next best alternative: in other words, the expected differential profit. The only difference between this and the profit attributable to the infringement as calculated using the differential profit approach is that the accounting of profits calculation is made *ex post* with the full benefit of hindsight – it is the profit *actually* made – whereas hypothetical negotiations occur before the use, and the licensee’s calculations are based on the profit which the potential licensee *expects* to make. Though the expected and actual differential profit will, in general, be different, the actual differential profit is reasonable evidence of the expected differential profit.

The relationship between an accounting of profits and an award of damages, then, is that the accounting of profits represents an estimate of the maximum amount which the infringer would have paid as a reasonable royalty. The infringer’s profit is therefore evidence of the harm to the patentee. Exactly this point was made by the U.S. Federal Circuit Court in *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*¹⁴⁸ This case was decided after accounting of profits had been abolished as a remedy in U.S. patent law, and the infringer objected to the trial court’s consideration of the infringer’s lost profits. The Court of Appeal held that in the circumstances the infringer’s profits were “a reasonable approximation of [the patentee’s] lost profits,” and “although [the patentee] is not entitled to an award of [the infringer’s] profits *per se*, the district court did not err in this case in using [the infringer’s] profits to estimate [the patentee’s] lost profits.”¹⁴⁹ In *Kori Corp.* the Federal Circuit specifically cited evidence as to the similarity of the infringer’s and patentee’s revenue and costs in concluding that the infringer’s profits were a

¹⁴⁸761 F.2d 649 (Fed. Cir., 1985).

¹⁴⁹*Ibid* at 655.

reasonable approximation of the patentee's profits.¹⁵⁰ But as a general matter, in the absence of any better evidence, the infringer's profits are at least some evidence of what the patentee's profits would have been.

The view that the infringer's profit is simply evidence of the harm suffered by the patentee provides a rationale for an accounting of profits which is consistent with the fundamental remedial principle that the party harmed should be placed in the position she would have been in but for the wrong.¹⁵¹ It also suggests that in order to remain consistent with this basic principle, the court should exercise its discretion to award an accounting only when better evidence as to the harm suffered by the patentee is not available. This implies a fairly restrictive approach to an accounting. It should probably only be used in cases where the patentee neither licences nor sells the invention, since in those cases the typical royalty or the patentee's lost profits are a better measure of the harm suffered. Once again we find an applicable principle in the neglected Supreme Court case of *Collette v Lasnier*: "It is only when, from the peculiar circumstances of the case, no other rule can be found that the defendants' profits become the criterion of the

¹⁵⁰ *Ibid.*

¹⁵¹ There is some suggestion that similar considerations motivated the courts of equity in the original development of the remedy of an accounting of profits. In *Attorney General v Blake (Jonathan Cape Ltd Third Party)* [2001] 1 AC 268, 279-80 (HL), Lord Nicholls of Birkenhead remarked that:

In these cases the courts of equity appear to have regarded an injunction and account of profits as more appropriate remedies than damages because of the difficulty of assessing the extent of the loss. Thus, in 1803 Lord Eldon LC stated, in *Hogg v Kirby*, 8 Ves 215, 223, a passing off case:

what is the consequence in law and in equity? ... a court of equity in these cases is not content with an action for damages; for it is nearly impossible to know the extent of the damage; and therefore the remedy here, though not compensating the pecuniary damage except by an account of profits, is the best: the remedy by an injunction and account.

Lord Nicholls further noted that "Whether this justification for ordering an account of profits holds good factually in every case must be doubtful." Nonetheless it became a standard equitable remedy. I suggest that we return to this original rationale, and confine an accounting to those cases in which the infringer's profits do in fact provide the best available estimate of the patentee's losses.

plaintiff's loss..."¹⁵²

*Reading & Bates*¹⁵³ is an excellent example of a case in which an accounting of profits was appropriate on this theory. On the facts, but for the infringement the patentee would have been awarded the contract and so exploited the invention itself. Yet because of the unique nature of the contract (for drilling a pipeline under the St. Lawrence river, it will be recalled) it would have been very difficult to make a direct assessment of the profits which the patentee would have made. In the circumstances the infringer's profits may be the best estimate of the patentee's loss. More generally, an accounting might be ordered when the patentee intends to sell the product itself rather than licence, but the infringer has brought the infringing product to market first. Conversely, *Unilever PLC v. Procter & Gamble Inc.*¹⁵⁴ is an example of a case in which the trial judge correctly declined to order an accounting of profits on the grounds that the patentee had bargained over the patent and had never having made or practiced the invention in Canada. Both of these factors indicate that the patentee would not have retained all of the profit from sales in Canada for itself.

This restrictive approach to an accounting, as well as being grounded in principle, is attractive on a practical level. The cost and inconvenience of an accounting are well known,¹⁵⁵ and its

¹⁵²*Supra* n.32 per Gwynne J. at 576. See also *Laskowitz v. Marie Designer, Inc.*, 119 F. Supp. 541, 555 (S.D. Cal. 1954), decided *after* accounting had been abolished as a remedy in U.S. patent law, in which the district court noted that even though the infringer's profits per se could not be awarded, it was permissible to consider evidence as to those profits, since "the profits of the infringer may be the measure, when no other is adequate. . . . In ascertaining damages, the object has always been to approximate, as nearly as possible, the actual loss suffered by the patentee."

¹⁵³*Supra* n.36.

¹⁵⁴(1993) 47 C.P.R. (3d) 479 (F.C.T.D.) affirmed 61 C.P.R. (3d) 499 (F.C.A.)

¹⁵⁵In *Siddell v Vickers supra* n.56 Lindley L.J. in the Court of Appeal remarked as follows at 162-63:

The Plaintiff therefore was perfectly within his right in electing, as he did in this case, to have an account of profits; but I do not know any form of account which is more difficult

potential for harassing the infringer rather than exacting fair compensation for the patentee was one of the main reasons for the abolition of the remedy in U.S. law.¹⁵⁶ An accounting may serve a useful purpose in some restricted circumstances, but in light of these practical and theoretical deficiencies, there is much to be said for retaining it only as a remedy of last resort.

3.2 Celanese

This analysis allows us to consider the result in *Celanese*. Though I have been very critical of Laddie J.'s reasoning, it must be said that he faced a very difficult decision on the facts. The infringer argued that it had in fact gained almost nothing from its use of the patent. The primary benefit of the patented invention was that it would reduce the amount of rhodium that was used in a process for the production of acetic acid. As rhodium was very expensive at the time that the decision to use the patented process was made, reduced costs, and so increased profits, were anticipated. However, after the patented invention was implemented, the price of rhodium fell

to work out, or may be more difficult to work out than an account of profits. One sees it--and I personally have seen a good deal of it--in partnership cases where the capital of a deceased or outgoing partner has been left in the trade; an account has been directed of the profits made in respect of an invention, and the difficulty of finding out how much profit is attributable to any one source is extremely great--so great that accounts in that form very seldom result in anything satisfactory to anybody. The litigation is enormous, the expense is great, and the time consumed is out of all proportion to the advantage ultimately attained; so much so that in partnership cases I confess I never knew an account in that form worked out with satisfaction to anybody. I believe in almost every case people get tired of it and get disgusted. Therefore, although the law is that a Patentee has right to elect which course he will take, as a matter of business he would generally be inclined to take an inquiry as to damages, rather than launch upon an inquiry as to profits.

Similarly, in *AlliedSignal Inc. v. Du Pont Canada Inc.* (1995) 61 C.P.R. (3d) 417, 445 (F.C.A.) Desjardins J.A. for the Court of Appeal stated that "serious practical difficulties can be encountered by the court in the determination of profits, and it is desirable that a trial judge consider the practical consequences of ordering this remedy in a particular case..." See also the references cited *supra* n.25 regarding the reasons for the abolition of the remedy in the U.S..

¹⁵⁶See *supra* n.25.

precipitously and the anticipated savings never materialized.¹⁵⁷ The defendant argued that the correct measure of an accounting of profits was therefore zero.

This is indeed a correct application of the differential profit rule. This is not to say that the infringer should not have been found liable in *Celanese*, but rather that the remedy should have been a reasonable royalty rather than an accounting of profits. The non-benefitting, albeit intentional infringer in *Celanese* is in a very different position from the innocent non-benefitting farmer who has been the focus of this article. The difference is that in *Celanese* the infringer *anticipated* a benefit when it implemented the invention, even though, because of the vagaries of commodity prices, that benefit was not actually realized. In contrast the innocent farmer, who did not intend to take advantage of the properties of the invention would not have anticipated a benefit at the time at which she began to use the invention, even if she had known about the use.

The hypothetical negotiations which form the basis for the reasonable royalty take place before the patent is used, and so the price the willing licensee would pay would depend on the *anticipated* profit from the use of the patent. The fact that the benefit was not actually realized does not mean that the licensee would not have agreed to pay a royalty at the time of the initial use. Many buildings end their useful life and are torn down without ever having been set on fire; this does not mean that a built in sprinkler system is worthless.

The maximum amount which the infringer would have been willing to pay at the time of the initial use is the anticipated profits. The infringer's actual profit, which are awarded under an accounting, is only evidence of anticipated profits. It is no surprise that actual profits should sometimes be less (or more) than anticipated profits, as unanticipated events (such as commodity price fluctuations) intervene. Rather than inflate the profits in order to provide the patentee with a substantial remedy under the head of an accounting of profits, the patentee should be granted a reasonable royalty as a remedy. In so doing we should recognize that even though the invention

¹⁵⁷*Supra* n.65 at para 23.

turned out, with hindsight, not to have been worthwhile, this does not mean that it did not appear to be worthwhile at the time. Certainly in *Celanese* the infringer thought the invention was worthwhile at the time it was implemented, or it would not have spent the money to modify the process. The reasonable royalty should be calculated on the basis of that anticipated benefit.

4 Injunction and Delivery Up

To this point I have argued that, properly understood, an innocent infringer who did not benefit from the use of the patent would not be subject to substantial damages or an account of profits. The innocent infringer faces another hurdle (though this was not a significant issue in *Schmeiser* in particular), namely the remedies of an injunction and delivery up of the infringing goods.

The problem with both of these remedies arises because compensation is not normally paid to the infringer when an injunction or delivery up is ordered. To see why this is a concern, consider as an example a farmer who was a non-intentional infringer but otherwise in the same position as the defendant in *Schmeiser*. I have argued that the court was wrong to order an accounting of profits without using the differential profit method, but even on the whole profits method used by the Court, *Schmeiser* was entitled to deduct his expenses from his revenue in determining his profits. So, on revenues of \$142,625, \$122,793 was deducted for costs, including the value of *Schmeiser's* labour, leaving an award of \$19,832.¹⁵⁸

Suppose that instead of bringing its infringement action before the sale, the plaintiff had brought its action before the sale. To make the point most clearly, suppose the decision was rendered just after harvest but before the crop was sold. If Monsanto were granted delivery up of the infringing goods in such circumstances, the farmer would lose the entire value of the crop, \$142,625, with no compensation for the costs of growing it, even though those costs had actually been expended. In the result, if the order is issued the day after the sale, the farmer would lose

¹⁵⁸*Supra* n.1 at para 82-84.

\$19,832, but if the order were made the day before the sale, the farmer would lose crops worth \$142,625.

A similar problem occurs if the plaintiff did not obtain an order for delivery up, but was granted an injunction which prohibited the farmer from selling his crop, or an order for destruction of the infringing crop. The value of a crop which is destroyed or which cannot be sold is zero and the loss to the farmer would equal the value of the crop.

It is disturbing that an issue of timing should have such striking consequences for the defendant. If the law requires that an infringer, innocent or otherwise, should be compensated for his labour if the order issues after the sale, it is difficult to see why he should not also be compensated if the order happens to issue before the sale, but after all the labour has been done. The problem is exacerbated in the case of a truly innocent infringer, who, through no fault of his own, would be deprived of the entire fruits of his labour.

Fortunately the law does not compel such a conclusion. Though an injunction and delivery up are routinely granted, it is clear in principle that both remedies are in the discretion of the court and do not follow as matter of course on proof of infringement.¹⁵⁹

It is true that compensation is not normally granted, and there is authority to the effect that it should not be granted:

¹⁵⁹Regarding an injunction see authorities cited in Fox, *Canadian Patent Law and Practice*, 4th ed. (Carswell, Toronto, 1969) at 486, n.287 and s. 57(1) of the *Patent Act* stating that a court “may” grant an injunction. And see e.g. *Unilever PLC v. Procter & Gamble Inc. supra* n.154 in which the trial judge refused to grant an injunction and this exercise of discretion was upheld by the Court of Appeal. Regarding an account of profits, Fox *ibid* at 505 states that a successful plaintiff is entitled to an order for delivery up. But this was probably not intended literally, as the cases he cites for the proposition are merely cases in which an order for delivery up was made, and do not say that the plaintiff is entitled to the order. As Fox notes, there is no express authority in the Act for delivery up and the order is justified as ancillary to the grant of an injunction. As the injunction itself is in the discretion of the court, then the order for delivery up must be as well.

It was said by the defendants that there ought to be a set-off, as against these damages, of the value of the instruments which had been given up under the judgment. That appears to me to be absolutely untenable. The judgment is that those instruments should be delivered up and the plaintiffs have not to pay for them in any form. That is one of the penalties which the Patent law imposes on the infringer.¹⁶⁰

This an assertion rather than an argument or statement of principle. To the extent that there is an argument, it is that the lack of compensation is a “penalty” for wrongdoing. But this is not at all persuasive. Patent law remedies are not normally penal, nor should they be, as we have discussed. Certainly the innocent infringer at the core of our discussion has done nothing worthy of punishment.

The contrary argument, that the infringer should be entitled to compensation, is strong in principle, as it follows directly from the observation that patent remedies are and should not be penal. Ordering delivery up is penal, as the loss to the defendant is much greater than the benefit he received from the infringement. As a matter of policy this is undesirable because a penal sanction will improperly dissuade parties from challenging potentially invalid patents.

Nonetheless there is a good reason why compensation is denied in most cases. Though we do not want to penalize the infringer unnecessarily, we certainly do not want to penalize the successful plaintiff. It will often be the case that the infringing goods are not worth nearly as much to the plaintiff as they would be to the defendant. The defendant’s goods may infringe the plaintiff’s patent without being an exact substitute for the plaintiff’s own goods and in cases where the plaintiff is primarily a licensor, the plaintiff may not sell any similar goods at all. In such a case, though the delivery up of the goods to the plaintiff is very costly to the defendant, it does not bestow any corresponding benefit on the plaintiff. In other words, compensation is denied, not in order to punish the defendant, but to avoid punishing the plaintiff who would be

¹⁶⁰*United Telephone Co. v. Walker and Oliver* (1886), 4 R.P.C. 63, 67, cited with approval in *Dubiner v Cheerio Toys & Games supra* n.125 at 176.

required to pay compensation in order to get delivery up of worthless goods.

If this is the true basis of the rule, then crops, including canola, are a special case. Since they are readily fungible, the value of the crop in the hands of the plaintiff is the same as in the hands of the defendant. In this case an order for compensation should accompany an order for delivery up of the infringing items.¹⁶¹ Alternatively, an injunction and related remedies might be denied entirely, with the patentee confined to damages or an accounting.

The broader point is that patent law should recognize that the equities are often finely balanced, and, so far as is possible, remedies should not be punitive manner. In some instances delivery up without compensation may be unavoidable, but this is to be regretted. It does *not* follow from any fundamental principle of patent law or from the nature of the remedy itself.

5 Conclusion

The motivation for this article was the problem of the innocent infringer of patents related to higher life forms. The usual response to this problem has been to suggest a substantive intent-based exemption from liability for patent infringement. It is clear that this would require legislative change to implement. In this article I have argued that a remedial benefit-based approach to the problem is also available. This in itself has not always been clearly recognized. And not only is the benefit-based approach an available alternative, it in fact reflects existing law, or so I have argued.

The point of this article has not been to argue that the benefit-based approach is necessarily superior to the intent-based approach. The benefit-based approach and the intent-based approach cut the problem in quite different ways. While the two approaches come to the same conclusion

¹⁶¹Note that this rationale may not apply to canola seed retained for seed stock, if any treatment impaired its usefulness as for oil. As the plaintiff had no control over the quality of the seeds, it would be justified in being unwilling to resell it for planting.

respecting the intentional benefitting infringer and the innocent non-benefitting infringer, they part ways in two respects. The intentional non-benefitting user (the defendant in *Schmeiser*, or so it would appear) would be liable under the intent-based approach but not under the benefit-based approach. And the innocent benefitting user would be liable under an intent-based approach and not under the benefit-based approach. I have suggested that the equities are not clear in these two cases. However, in the two cases where the equities are clear, the intentional benefitting user and the innocent non-benefitting user, the two approaches give the same result. This means that the benefit-based approach addresses the core problem, that of the innocent non-benefitting farmer, just as well as an intent-based approach. The great advantage of the benefit-based approach is that no law reform is required to implement it, but only a careful application of existing principles to the novel case of patents related to higher life forms.

I have not argued that the benefit-based approach is perfect. In particular, it raises significant enforcement problems for the patentee. Consider Monsanto's patented canola. If use alone is sufficient to establish liability, then Monsanto can enforce its patent by sampling fields of non-contracting farmers at almost any time during the growing season, or at least at any time after the seeds are viable (in the case of a grow out test). In contrast, if Monsanto must prove that the farmer benefitted from the use of the patent it would have to monitor the field during the crucial period of the early season. Thus the benefit-based approach creates significant enforcement problem, at least in comparison with the whole profits approach adopted by the Court of Appeal in *Schmeiser*. Though this adverse impact on enforceability of patents is to be regretted, it is not clear that it is sufficiently serious that imposing liability on an innocent non-benefitting infringer in an attempt to improve enforceability would be warranted, particularly when doing so would require a change to existing law with no statutory basis.

In conclusion, I suggest that while the innocent infringer of patents related to higher life forms has garnered considerable attention and sympathy, in fact existing law protects such an infringer quite well. If she does not benefit from the patent, she will not be substantially liable, and even if she does benefit, she will only be liable to give up gains caused by the use of the patent. An

innocent infringer will not be placed in a position which is worse than that she would have been in had she not infringed. In this sense the benefit-based approach is much preferable to the approach adopted in *Schmeiser*. The greater problem with existing remedial law and the benefit-based approach in particular, is the hurdles it places to effective enforcement of patents. If reform is needed to existing law to accommodate new issue relating to patenting of higher life forms, it may be that the need is not to protect the innocent infringer, but to allow patentees to effectively enforce their patents.