

Infringing and trespassing plants. Patented seeds at dispute in Canada's courts.¹

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Abstract: Patents on objects that have agency such as seeds pose new challenges for governance, raising fundamental questions of control and responsibility. In May 2004 the Supreme Court of Canada found the farmer Percy Schmeiser guilty of infringing the Monsanto patent on genetically modified canola, because he re-seeded part of his canola harvest although he knew or ought to have known that it contained seeds of GM canola plants that had blown into his field. A year later in May 2005, a group of organic farmers tried to get certification as a class against two biotechnology corporations Bayer Crop Science and Monsanto for polluting their fields with GM canola. At stake are the types of ownership that can be claimed over plants — whether ownership can be claimed over a plant at the same time that liability for their reproduction is denied. The two court cases I discuss allow us to more closely see how genetically modified canola plants have become objects of contention among Western Canadian farmers, how they transformed the farmers' daily work, the relationships between neighbors, and how they increased farmers' dependency on agro-biotech corporations.

Keywords: biotechnology, corporate control, farmers, intellectual property, lawsuits, seed

The trials opposing the Canadian farmer Percy Schmeiser to the multinational biotechnology corporation Monsanto caught the attention of farmers around the world not only because they felt compassion for the relatively wealthy man who risked his fortune in these trials but because they sensed that in that legal battle the very autonomy and identity of the farming profession was at stake. In May 2004, the Supreme Court found Schmeiser guilty of infringing the Monsanto patent on genetically modified canola, because he re-seeded part of his canola harvest although he knew that it contained seeds of GM canola plants that had blown into his field. The customary view that a farmer owns the crops that grow in his field has become superseded by the recognition of intellectual property rights over living organisms that are released into the environment without restriction.

A year later in May 2005, two organic farmers supported by the Saskatchewan Organic Directorate lost the legal procedure to get certification as a class when filing a lawsuit against two biotechnology corporations Bayer Crop Science and Monsanto. The organic growers claimed compensation for damage done to organic farmers in the province. The introduction of GM canola to Saskatchewan had destroyed the market for organically grown canola because of the

contamination of the canola seed stocks with GM seed. The ‘adventitious presence’ in organic fields of GM canola volunteers, this is of GM canola plants that have reseeded themselves without human intervention, threatens the very viability of organic agriculture. It was the judge’s opinion that the farmers’ cause for action could not succeed as it claimed to make the corporations liable ‘for an undeterminable amount for an undeterminable time to an undeterminable class’ as this would unreasonably interfere’ with their ‘commercial freedom’ and ‘economic interests’ (Hoffman v. Monsanto 11 May 2005, SKQB 225: 77).

What will concern me here is the fundamental question of liberalism: how does governance shift from government to corporations if it is market freedom and profitability that become the true measures of value and the ultimate principle of decision-making and rationality? Related to this I will examine the question of responsibility for man-made living things in neo-liberal society. What are the ambivalent views on agency that are present throughout the trials? Who is infringing a patent when a GM canola plant grows in a farmer’s field? Is it the farmer or the plant itself? Obviously, intellectual property disputes can only exist between people. As I discussed in the introduction of this special section of *focaal*, you cannot sue an ‘infringing plant’, even if it possesses agency. Although engineered by man to serve human purposes, from the moment onward when genetically engineered plants are released into the environment they escape human control and develop their own agency. As Hans Jonas phrased it: ‘It may be that we take our own evolution into our hands but it will escape this hand in the very moment when evolution takes up the impulse and while we were free to do the first step, we will be slaves to do the second step and all the following ones.’ (Jonas 1982: 72) Humans are from the moment of release onwards occupied to contain the movements of GMOs, to appreciate the consequences of their agency and to predict their impact for the future.

GM-plants would fit with the definition that Bruno Latour gives for objects of concern to political ecology. He designates them with one of his imaginative neologisms, as ‘‘hairy objects’ that attach themselves in a risky way’ (Latour 1999: 40). First, similar to ‘hairy objects’, genetically engineered plants have no clear-cut limits and no well-defined essence. There is no trenchant separation between their hard core and their environment. GM-plants are by kind *between* the species, transgressing species boundaries. Second their producers are no longer invisible, but

appear in the open embarrassed, controversial, complicated and implicated with all their instruments. The scientific production is an integral part of their definition. Third, they are quasi-objects with connexions and numerous tentacles. Everybody expects unexpected consequences from them, consequences that belong to them. Although man-made they are alive, but they are not natural. They are objects that can no longer be naturalised.

The lawyers of the biotechnology corporation argue that the living organism of the plant is ultimately a mere patentable 'composition of matter'. They claim that the farmer 'uses' a patent when he allows a genetically modified seed to grow into a plant in his field. The plant itself escapes the classification as inert matter though by reproducing through natural processes, by producing differentiated cells and by following a life cycle only marginally controlled by man. Insects and the wind carry the pollen and seed of 'the infringing plant'.

What lies behind these seemingly intricate legal considerations is a fundamental question of power and control over the production of food and over the entire agricultural system. What defines the types of ownership that can be claimed over plants, who has not only ownership claims over them but is also liable for their natural reproduction? Marilyn Strathern (quoted in Escobar/Heller 2003: 168) analysed the Western views of genes and intellectual property as based on notions of possessive individualism, fully commodified social relations and market transactions. Property rights over man-made living organisms pose new challenges for governmentality. Governments and law-courts not only have to regulate the question of ownership over living objects that reproduce and spread but also the question of responsibility for them. As genetically engineered organisms released into the environment are there to stay, the responsibility that has to be determined is not only one for their immediate biological effects but also for their social and economic consequences. At issue are not only the impacts on present farmers and consumers but also those that will affect future generations and the environment.

The question of responsibility for genetically engineered plants meets an insoluble contradiction; the attribution of responsibility supposes the proof of a potential risk, while uncertainty is by definition impossible to prove. Proof would have to be carried by provisional and evolving indices (Delmas-Marty 2004: 373). Mireille Delmas-Marty distinguishes three moments of

responsibility; first responsibilities in the past that can be punished, second in the present that can be repaired by paying damages and third in the future that are of a universal nature implying the conservation of life for future generations (Delmas-Marty 2004: 374). This last kind of responsibility is what Jonas addresses when he talks about the new dimension of responsibility that arises out of the cumulative character of technological practice (Jonas 1982: 27) The fact that our predictive knowledge lags behind our technical knowledge is in itself an ethical problem (Jonas 1982: 28). It is thus part of an ethical imperative to recognise this lack of knowledge and to act with a new humility that gives priority to the consideration of possible negative consequences.

The material for this study is based mainly on hundreds of pages of court material from the court cases complemented by interviews with two of the farmers directly involved, Percy Schmeiser, a conventional grain grower in Bruno Saskatchewan, and Pat Neville an organic seed grower in Govan. The arguments advanced in the court materials are written by professional lawyers and take a certain form because they refer to rules established by legislation and legal precedent. For an anthropologist used to base her conclusions on direct observation and informal interviews to use such a material constitutes a challenge. The legal arguments of plaintiffs and defendants and the verdicts given by the judges are certainly not spontaneous, they are coded in formal legal language, that 'connects, conserves, links, assigns and retraces' (Latour 1990: 299) the litigation to other texts and decisions in the past that might provide a procedure for conflict resolution. As Bruno Latour expresses it, without law 'one would have lost trace of what has been said' (Latour 1990: 299) in the past. As the arguments are on the one hand controversial and on the other hand referring to the same body of rules and precedents they express a scope of possible legal ways of looking at reality at this particular point in time. The body of legal rules and precedents does not constitute a homogeneous unambiguous frame, but it leaves space for interpretation, subjectivity and the interplay of interests; As Wittgenstein showed: Human action does not 'obey', 'follow' or 'apply' a rule, one can only say that it 'refers' to it (Latour 1990: 289).

In their arguments the lawyers move back and forth between legal texts and the economic, political and social interests of their clients. Court cases from the past and results from scientific research are cited as legal precedents and as 'scientific evidence'. The material gives a certain

reading of the reality experienced by plaintiffs and defendants, which is strategic because the lawyers want to win the case for their clients. The outcome of the lawsuit will set a new precedent and will be part of the future way of looking at reality, of contributing to the particular references that society has developed over time. It is thus part of a living law that tries to make sense of the unknown and mirrors the dominant worldviews and relationships of power. As Laura Nader maintains, 'law is often not a neutral regulator of power but instead the vehicle by which different parties attempt to gain and maintain control and legitimisation of a given social unit' (Nader 2002: 117)

The judgement rendered by the supreme court is in this respect particularly interesting as not only the legally binding majority decision by five supreme court judges is published but also the diverging minority decision by the four other judges. On the central issue of whether Monsanto can make a claim for patent infringement towards the farmer the judges had diverging opinions. The body of law Canadian society has accumulated over the past and to which the judges referred to, could have allowed to give the Supreme Court trial a different outcome.

In the first part of this article I will look at how genetically modified canola plants have become objects of contention among neighbouring farmers how they transformed the farmers' daily work, the relationships between neighbours, the alliances inside the Canola Growers Association and the dependency upon agro-biotech corporations. The two court cases allow us to see these different aspects as through a looking glass. The two court cases are about new forms of control by the biotechnology industry and about attempts of escaping or limiting them. Percy Schmeiser as a conventional farmer who saved and selected his own seed, went through all the legal instances to get the right over the seed that he saved from his harvest recognized by the courts. Pat Neville wrote an affidavit for the class action lawsuit because he wanted to keep control over his organic seed production and maintain it free from GMOs and chemicals. The major interest of Monsanto and Bayer Cropscience to win these cases was to consolidate control over agricultural producers and central to exercising this control effectively was to disrupt the practice of saving and replanting seed.

Spies and Polluters: Rural Life with GMOs

If one considers only the two court cases one could get the impression that in the Saskatchewan countryside farmers are opposing biotechnology corporations. The reality in the rural communities is, however, far more complex. More than 80 percent of all canola growers grew GM canola in 2004, either Roundup Ready or Liberty-link varieties. It allowed them to have a more flexible cycle of crop production as they could spray herbicides whenever they wanted in the agricultural cycle. The chemical glyphosate at the basis of Roundup was relatively cheap as Monsanto did no longer have a patent on it. The main agro-chemical companies Monsanto, Syngenta, Dow Crop Sciences and Bayer praise in their advertisements the ease with which their products allow the farmer to achieve, thanks to the highest level of technology, a clean homogeneous field in a safe green fertile landscape. A neat and tidy field and the immaculate lawn around the farmhouse are the status symbols for a successful farmer as they convey the impression of control over invasive weeds and menacing insects.

The two rulings in favour of the biotechnology corporations are put forward at a moment when farming in Saskatchewan is 'at the crossroads' (Diaz 2003). Many Saskatchewan farmers came to think of themselves as independent farmer-entrepreneurs that had to control nature and the market by using the latest agricultural technology and by becoming astute players on the world-market (Müller forthcoming). They intensified the production per acre by introducing zero till techniques and by suppressing the practice of summer fallow. This implied a heavy increase in the use of chemical fertilisers and herbicides and important investments into new agricultural machinery. More and more farmers grow speciality crops on a contract basis for agricultural corporations and most farmers growing canola are now cultivating herbicide resistant varieties. All these innovations led indeed to a considerable increase in production per farm. It did not translate itself however into a simultaneous increase in farmers incomes. As a matter of fact their incomes went down and most farmers are heavily indebted.

Farmers in Saskatchewan are generally in favour of agro biotechnology, as they hope that biotechnology might open new markets for them. Also, among all the conventional farmers I talked to, the idea of progress was prevalent. It was part of their self-image that they had to outdo

themselves every year, embrace new technologies, experiment with new crops that their neighbours didn't have. They accepted to take up important credits to buy bigger machinery and cultivate more and more acres that they rented or bought. Embracing scientific progress has also been the line of argument that the Ministry of Agriculture has maintained towards the farmers. The prospects for the future of grain farmers that they sketched out are pharma-crops, i.e. food crops engineered to contain pharmaceuticals, crops destined to produce bio-diesel, or materials for the packaging industry. They claim that the farmer has finally become ready to become an independent entrepreneur on his/her farm, grasping the opportunities 'sound science' and the market have to offer.

New arrangements between farmers and agribusiness are eroding farmers' independence while threatening the knowledge of the land and natural environment through deskilling (Magnan 2004: 302). The technological packages that the biotechnology corporations sell to the farmers together with their seeds, propose simplistic chemical solutions to complex biological interrelationships between food crops, weeds, fungi, insects, soil bacteria and nutrients. The increased dominance of agribusiness is achieved through two primary mechanisms: contracts between producers and agribusiness which bypass the market altogether (Magnan 2004: 304) and by corporate concentration in the agro-food industry that captures the profits by increasing the prices of inputs and reducing the prices for outputs (NFU 2003: 13).² The pattern is one in which farmers have been forced 'into a farming process that uses a package of maximum value to the producers of those inputs, and [tailors] the nature of farm products to match the demands of a few major purchasers of farm outputs who have the power to determine the price paid' (Lewontin quoted in Magnan 2004: 304). The farmer thus becomes merely a link in the chain of food production. The introduction of agro-biotechnology has increased the dependence of the farmer. In order to be allowed to seed genetically engineered canola resistant to the herbicide glyphosate, farmers have to sign a technology use agreement (TUA) with the firm Monsanto, in which they agree not to save and replant GM seed and to allow a Monsanto representative visits to the farm to inspect the acres sown. They have to allow access to their farm up to three years after the signature of the contract, even if they stop growing GM canola. By implementing restrictive licensing agreements on the users of the biological patent, the seeds become thus effectively 'legally sterile' (Scrinis quoted in Magnan 2004: 306).

Many farmers trust that the market will act as a regulatory principle and ‘take care’ of distortions, excessive exploitation and crops that are damaging for the environment (Müller forthcoming). In this logic they are sceptical of all government interventions, think that subsidies are useless and are strongly opposed to any legislation labelling food containing GM ingredients. Their trust in the market goes together with the optimistic expectation that the ‘extremely poor farming situation’, characterized by drought and low prices, by too much work and too little time for the family will get better.

Lewontin (quoted in Magnan 2004: 307) gives a related interpretation for the preference of many farmers for Roundup Ready canola. He attributes the success of herbicide resistant crops to the increased incidence of off-farm work. Faced with a growing income crisis farmers grow RR-crop because the use of such powerful general weed killer will reduce the number of herbicide treatments or mechanical tillage passages through the field freeing them for the hour of off-time work. Although the argument that Roundup Ready plants require less herbicide treatments has since been disproved — rather the opposite seems to be true — (Moeller/Sligh 2004: 29), it seems accurate, that the application of glyphosate herbicide at any moment in the crop cycle of Roundup Ready canola can greatly increase flexibility and make cultivation more easy for a farmer working off the farm part of the time.

Part of the canola growers as a result actively supported Monsanto in the Supreme Court trial against Schmeiser. The Canadian Canola Grower Association had constituted itself party to the Schmeiser trial and gave Monsanto devoted support. As one of the regional directors told me, at first the membership had been reluctant to endorse this idea but when the directors from the national level explained to the board members on the regional level, that biotechnology was their future and that they had to defend it by this move, they ‘understood’ and endorsed the decision. At trial the lawyer of the Canadian Canola Growers Association, claimed to speak in the name of 95% of all canola growers and presented them as ‘the stewards of the land, who know best what is best for it’. The use of the term ‘steward’ here is highly ambiguous. It was used in the Convention for Biodiversity with reference to indigenous people who were acting as ‘stewards of the land’, responsible for save-guarding biodiversity. Monsanto took up this term in its advertising materials designating as ‘stewards’ the farmers who respected the terms of

technology use agreements for GM crops. GM-crop, so the lawyer claimed, have environmental, health and pecuniary benefits that largely outweigh the obligation to pay technology use fields. Cultivating Roundup Ready canola saves petrol, chemicals, time and stops soil erosion. Farmers like Schmeiser who take the seed and don't pay, need to be put back on a 'level playing field' with the other farmers and should not be allowed to take undue advantage (Oral communication at the hearing in January 2004). The 'level playing field' was also the basis for her argument of allowing the patenting not only of genes, but of entire plants. Canada's major competitors, so she claimed, allow patenting of plants. 'If we don't have it, these scientific advances will migrate to other countries relegating our growers to a disadvantaged position.' (Oral communication at the hearing in January 2004) The 'level playing – field' are the mechanisms of corporate control over agriculture that are presented as the 'natural' basis of rural economy.

The organic farmers involved in the second court case contest corporate control over agriculture and emphasize that there is no 'level playing field' between farmers and corporations, between organic farmers and farmers growing GMOs, between large farming businesses and family farms. Rural communities are divided about GMOs that could become a formidable source of conflict, between farmers who want to maintain an agriculture that is GM-free and those who think they need to use it to make a decent living. Already canola plants with multiple resistances are emerging and menace to become a weed difficult to control. Other weeds are becoming resistant to glyphosate too and there might be a link between the poisonous wheat illness fusarium and the overuse of glyphosate.

The lawyers of the organic farmers took great care of addressing the liability claims exclusively to the corporations and not to the farmers cultivating GMOs. It was essential for the organic growers not to spark of a vendetta with their hard-pressed conventional neighbour but address the corporations that made tremendous profits out of GM. The fact, however, that Monsanto was guarding its intellectual property rights by hiring as private detectives members of the local community, among them retired officers of the royal Canadian Mounted Police³, created a climate of resentment and distrust. In the leaflet distributed with the seeds Monsanto advertised a hotline where farmers were invited to report anonymously on their neighbours whom they suspected of having planted GMOs without paying a licence. The presence of the 'infringing

plant', Roundup Ready canola everywhere, especially in ditches that are kept 'clean' by spraying glyphosate or on chemical-fallow, created unease. Farmers work their fallow fields all over again to avoid being caught with GM plants in their fields. The claim of ownership by the biotechnology corporation is especially a formidable tool for coercing and menacing those farmers who have not yet surrendered to the general trend and still cultivate conventional canola, or who have tried to return to the cultivation of conventional varieties.

The biotechnology corporations have effectively instituted their own system of governance in the countryside based on the contracts they established with the farmers. The recognition of intellectual property rights over seed is one of the pillars of contract farming. While farmers enter voluntarily into contract relationships with biotechnology corporations that hold the patents over their seeds, they cannot get easily out of these contractual relationships again. The GM plants they grow one year reproduce to some extent in the next generations without their intervention. Conventional canola grown in a field where GM canola has been grown previously has some percentage of GM plants in it. The biotechnology corporation claims intellectual property rights even for these "volunteers" and thus binds the farmer in an ongoing contractual relationship. This relationship is enforced by private agents collecting crop samples from farmer's fields and building evidence against them. As lawsuits are risky and too costly for the hard-pressed farmers, menacing them with a lawsuit is an effective means for corporations to make farmers settle out of court and accept their conditions. Schmeiser's persistence to follow up suit is the exception. His appeal to the Supreme Court could have challenged the legal basis for this system of corporate governance. Therein lies the importance that the ruling had for biotechnology corporations and farmers.

Monsanto versus Schmeiser: Control over Seed

When I visited Percy Schmeiser in Bruno, his hometown, in July 2005, the Canadian Supreme Court judgement had been rendered. It had freed Schmeiser from the obligation to pay legal damages to Monsanto but had confirmed the patent on the glyphosate resistance gene. Schmeiser continued to travel around the world invited by farm organisations, parliamentary commissions

and groups working on intellectual property rights to tell his tale. Defending his case over the last seven years had brought him international fame among farmers and activists and made him a self-taught expert on patents over seeds. As it was the day before the centennial celebration of the province of Saskatchewan, Schmeiser had brought out a white convertible Pontiac from the 1950s and prepared it for the mayor of Bruno who was to ride it during the parade. It was one of the ways by which he tried to improve his relationships with the local authorities that the court cases had strained. Most of his neighbours were now mostly planting Roundup Ready canola and had signed technology use agreements with Monsanto. Some neighbours however, who had been disappointed by the performance of Roundup Ready canola seeds and had planted conventional canola, now turned to him for legal advice, as Monsanto's intellectual property advisors were menacing them with court cases if they did not continue to pay the technology use fee on the grounds that Roundup Ready canola volunteers were present in their fields from the preceding years. While Schmeiser was visibly enjoying the fight and the publicity that depicted him as a 'David' who had courageously taken on the 'Goliath' Monsanto, his wife Louise was tired of it. She intervened into my conversation with Schmeiser only once, to tell me how much she had suffered from the harassment that Monsanto had used to intimidate them while they were preparing for the supreme court trial by parking a van with drawn curtains and running motor across their driveway to observe their house and their movements day and night.

Schmeiser told me once again what had sparked off the whole legal procedure, recounting a tale of local vendettas. What was interesting in these descriptions was how technology use agreements and the control exercised by individuals becoming private detectives for Monsanto change relationships on the local level and create a climate of distrust and fear.

Percy Schmeiser prided himself of having been a seed developer over the last fifty years, growing and developing his own raps and then canola since 1949. He occasionally bought new seed to mix it with the seed he kept from his harvest, but had never bought Roundup Ready canola. In 1997 some of his neighbours were already using Roundup Ready canola that had just been introduced for unconfined release into the environment in 1995. Schmeiser, however, was unaware of the extent to which the genetically engineered canola was already present in the environment. When he discovered canola plants and also some buckwheat and dandelion in

patches around power-poles, which had been sprayed with Roundup to make them free of vegetation, he first concluded that they had developed a natural resistance to the herbicide. Intrigued by this discovery he conducted a spray-test with Roundup the next day on 1,5 acres, only to discover that again some canola plants survived in thick patches close to the road and only sparsely further inside the field. Every passer-by could see the green canola plants surviving in the brown patches. At harvest time Schmeiser had an accident and it was therefore a neighbour who combined this patch opening up the field for the grain trucks. As the trucks had not yet arrived he dumped the grain on an old broken Ford truck that stayed tarped throughout the winter. It was the content of this truck that became the main object of litigation in the case. Monsanto claimed that Schmeiser had deliberately isolated the Roundup resistant plants to seed in 1998 all his 1000 acres with Roundup Resistant canola whereas Schmeiser claimed that the canola had stayed there by accident because the truck had broken down and that he was not even aware of the fact that it was the grain resistant to the herbicide that had stayed on the truck as his neighbour had done the harvesting. At any rate, in the spring of 1998, so Schmeiser told me, he took a grain truck plus the grain from the old truck to Humboldt Flour Mills to get treated and then mixed it with untreated grain from other bins for seed.

A former officer of the Canadian Royal Mounted Police, who later became officially a private detective for Monsanto and who was in conflict with Schmeiser's son, because the latter had refused to rent land to him, reported Schmeiser to the company. Schmeiser received the visit of a Monsanto representative in the spring of 1998 who accused him of illegally growing Roundup Ready canola without a licence. Schmeiser ignored the warning and was confronted with a legal procedure in August of 1998 for having infringed the licence that Monsanto holds on Roundup Ready canola.

I am not going to recount the details of the case any further, nor will I try to find out what percentage of herbicide resistant canola Schmeiser had in his field. What is of importance here, is that the glyphosate resistant canola arrived in Schmeiser's field on its own, either by developing a natural resistance to glyphosate as Schmeiser thought at first, or by GM-seed or pollen being blown in by wind. At the trial some neighbours of Schmeiser testified that they had been growing GM canola in a field adjacent to his. Another neighbour admitted that a tarp had come loose on

his grain-truck, when he went past Schmeiser's field scattering large amounts of GM canola seeds.

At the first trial in 2000 the trial judge ruled that Schmeiser had been guilty of infringing Monsanto's patent on the glyphosate resistance gene that they have been holding since 1986 and which they had implanted into the Roundup Ready canola variety authorised for unconfined release into the environment in 1995. Schmeiser considered this ruling a profound injustice as it went against what he considered his traditional right as a farmer to save seed and replant it and against his right as a property owner to own what is in his field. If Monsanto could claim a property right over the canola seed he selected over the past 50 years because a percentage of it had been cross-pollinated by a GM variety or was intermingled with it, then he lost the result of his breeding work and his autonomy as a farmer. Monsanto regarded this ruling as an adequate reply to protecting their intellectual property over the herbicide resistance gene, a chimerical gene that had taken a lot of time and money to develop. They argued wherever this gene appeared it was their property and they could claim it and were entitled to get paid royalties. If Schmeiser would be allowed to do what he wanted with the GM canola plants that had appeared in his field, he could isolate them by spraying Roundup and then sell them as brown bag seed (unlicensed seed) to other farmers who did not want to sign the technology use agreement and pay the fee. Monsanto would thus lose not only a large portion of the potential profit they made by selling GM canola seed, but also the control they could exercise by making farmers sign contracts.

Two conceptions of property, or as Sir Henry Maine defines it, two bundles of power (Hann 1998: 8, Verdery 1998: 161) opposed each other. The first conception, that Schmeiser held, referred to the inviolability of property ownership, in particular of the ownership of land as a fundamental right in a democratic society. In most democratic societies that emerged in the nineteenth century private property was indeed considered as a precondition of full citizenship (Hann 1998: 14) The individual citizen bases his right to privacy in part on his property. According to ancient British common law, that for centuries ruled relationships between neighbouring farmers, the owner of the land can naturally claim property over anything that comes into his land, for example to the offspring of a bull that comes into his land and impregnates his cow.

The second conception places the right to intellectual property over the right to the private enjoyment of property. Intellectual property rights define a link of identification between producer and product in such a way that while third parties may enjoy the property, and create more property from it, its future use is also to the benefit of the original producer (Strathern 1998: 215) The ownership of an object does not limit in any way the monopoly of intellectual property rights that may be put on this object. To become the owner of a patented object does not extinguish the intellectual property rights of the ‘inventor’ and patent holder. ‘Ownership is no defence to a breach in the Patent Act.’ (Monsanto Inc. v. Schmeiser 2004 SCC 34: 96). The problem however in this case is that the GM canola plant is not simply an inert ‘composition of matter’, but a living being that reproduces naturally, spreads and invades together with the property claims put on it, the private property and thus privacy of the farmer. The monopoly rights and property claim of the multinational corporation go against and are in conflict with the rights linked to private property of land.

The resolution of this conflict is an intensely political matter. As Allan Macfarlane pointed out, and Marx before him, property relations are necessarily political relations and the liberal individualist paradigm can only function when the state provides the stable framework for it to do so. ‘What is needed is a state that is strong enough to guarantee order and to protect property, and not to give in to the pressure to relinquish too much power to the Lords.’ (Macfarlane 1998: 115). At issue in the Schmeiser case was indeed the question whether biotechnology corporations could be allowed to collect rents from patented genes found in genetically modified plants that reproduced naturally and spread. Was the right to collect rents not from the land but from the plants growing and spreading in it not attributing power to the corporations that was analogous to the one the feudal lords used to exercise over the things living and growing on the land they controlled?

Schmeiser’s lawyer, Terry Zakreski, based his claim that Monsanto could not claim a patent for canola plants on the legal precedent of the *Harvard Mouse* case (Harvard College v. Canada 2002 SCC 76). The issue in this case was whether a mouse that was genetically modified to make it susceptible to cancer was a valid subject matter for a patent claim. The majority of the supreme

court judges had ruled in 2002 that mice were ‘higher life forms’, that were not simply ‘compositions of matter’ as no human inventive act was required beyond the production of the first modified founder cells to produce a mouse that was a ‘differentiated being’. Zakreski argued that plants, like animals have differentiated cells, exhibiting a broad range of size, structure, shape and function, that no human act is needed to produce a differentiated plant and that cross-breeding a founder transgenic plant with suitable varieties of that plant makes use of natural laws and Mendelian inheritance, which are not patentable (Schmeiser v. Monsanto SSC 2004 34, Appellants’Factum: 51).

The images and legal precedents that the Monsanto lawyer, Roger Hughes, used in this case to defend their claim to ownership all referred to inert matter. Plant cells were compared to Lego blocks, an argument that convinced the supreme court judge who stated that ‘the fact that the Lego structure could not exist independently of the patented blocks would strengthen the [patent] claim, underlining the significance of the patented invention to the whole product, object, or process.’(Monsanto Inc. v. Schmeiser 2004 SCC, judgement 34: 42). As the Monsanto lawyers could not claim a patent over the canola plant itself they compared in the oral submission the patented cells to patented steel in a car or simply to an ingredient in a cake (Supreme Court Hearing January 20, 2004). Their argument was that patented matter was ‘used ‘ in the plant, as steel would be in a car or baking powder in a cake and that this constituted an infringement as ‘the law holds that a defendant infringes a patent when the defendant manufactures, seeks to use, or uses a patented part, that is contained within something that is not patented’ (Monsanto Inc. v. Schmeiser 2004 SCC 34, judgement: 42).

The nine Supreme Court judges ruled with a majority of five in favour of Monsanto’s patent claim recognizing that the chimerical gene they had ‘invented’ was in fact ‘practiced’ or ‘used’ in the canola plant, analogous to the use of steel in a car or Lego blocks for building a toy castle. The proprietary rights attached to the patented cell were conflated with those that would attach to seed or plant. Steven Shrybman who represented Civil Society organisations in the Supreme Court case regarded the decision as a drastic reversal of the court’s position in the Harvard mouse case towards the patenting of life. ‘The case represents a significant reversal of its decision about the patenting of life in Harvard College in the sense that Harvard would now have a claim of

infringement against anyone who used the Oncomouse, notwithstanding the fact that the mouse itself wasn't and couldn't be patented.' (Shrybman 2004: 2). According to Shrybman the inventors of the Oncomouse would now be able to claim that the gene, which contributed to making the mouse sensitive to cancer, was used each time an Oncomouse was involved in a medical experiment. The five majority judges argued that the inventor would be 'deprived of the full enjoyment of his monopoly' if the patent on the GM cell would only be valid in isolation and not as 'practiced' in the plant. (Monsanto Inc. v. Schmeiser 2004 SCC 34 judgement: 79) They argued, even though Schmeiser did not 'use' the invention as he did not spray a glyphosate herbicide and thus did not profit directly from the invention, he could have decided to do so in the future. The glyphosate resistance was thus of 'standby utility' to him. In their argument the judges never left the analogy between the living plant and the inert matter.

The four other judges formulated a minority decision claiming that no patent claims could be laid on plants as they were higher life forms and not simply composition of matter. 'The use of biologically replicating organisms as a 'vehicle' for genetic patents may overcompensate the patentee both in relation to what was invented, and to other areas of invention... [..] much of the value of the higher life form, particularly with respect to animals, derives from the natural characteristics of the original organism and has nothing to do with the invention. In light of these unique characteristics of biological inventions, granting the patent holder exclusive rights that extend not only to the particular organism embodying the invention but also to all subsequent progeny of that organism represents a significant increase in the scope of rights offered to patent holders. It also represents a greater transfer of economic interests from the agricultural community to the biotechnology industry than exists in other fields of science.' (Monsanto Inc. v. Schmeiser 2004 SCC 34 judgement: 165)

The Supreme Court was thus very close to rendering a historical decision that would have reversed the current trend towards the privatization of the living that the two big international treaties at the end of the 20th century, the Convention of Bio-diversity (1992) and the Marrakech Agreement (1994) founding the WTO have legally redefined. While the Convention of Biodiversity instituted private property rights over wild nature to prevent bio-piracy – the limitless exploitation of the rich genetic resources of the poor countries, the Marrakech

agreement⁴ made the recognition of patents for the discovery of micro-organisms and genetic components of naturally occurring plants and animals obligatory for all signatory countries. The minority decision of the Supreme Court indicates that the body of Canadian law could have given the judges the possibility to decide against Monsanto's patent claim. Monsanto won the case because they brought home the point that their patent would be hollowed out, if the farmers could isolate glyphosate resistant plants themselves, reproduce them and sell them as brown bag seed. Roundup Ready canola would have become like any other non-hybrid seed. Some of the controlling power of the corporation would have been gone. Instead Monsanto can now claim property rights over any glyphosate resistant plant in farmers fields. They could lay a claim of patent infringement on any farmer who saves his/her own canola seed, as all canola is contaminated and the percentage of GM canola of no avail for the property claim. They have indeed achieved power analogous to the one of feudal lords who collect rents on the crops grown by the serfs they control. However, in this modern version of rentiers capitalism they don't need direct control over the person of the farmer anymore as they control the plants themselves.

What about responsibility for the 'genie they left out of the bottle', does ownership come with responsibility? ⁵ The second court case I have been looking at deals with that question.

Hoffman versus Monsanto: Responsibility for the Gene

The first time I visited Pat Neville, one of the organic farmers involved in a class action against Monsanto and Bayer Crop Science, in July of 2003, I was accompanying the former British environmental minister Michael Meacher. He had come to Saskatchewan to collect evidence for his claim that the coexistence of conventional, organic and GM crops was impossible without substantial contamination. In Govan, we were received by Pat Neville, his wife and Arnold Taylor the president of the Saskatchewan Organic Directorate. Taylor was extremely suspicious about us and wanted to find out who we were before saying anything. He explained later that he had been afraid that there might be a 'Monsanto spy' among us.

Neville is cultivating on 850 acres different organic crops and seeds. These have to correspond to the purity requirements of two sets of regulations one for organic farmers and one for seed growers. Three weeks before our visit he discovered in his plot of foundational flax and oats seeds the yellow blossoms of canola plants. He took them to the local Monsanto branch and received the confirmation that these plants were indeed GM ones. Monsanto offered to have them hand-roded out of his field. He then had to wait for written instructions from his organic certification body COCC to find out what to do with his plot. We visited his plots together and he showed us the neighbouring field from where the canola had come. Last year his neighbour had planted Roundup Ready canola directly next to his seed plots with a sanitary cordon of about eight meters between the two fields. Due to snowfall the swathed canola crop had stayed on the field all winter and was only combined in spring. Heavy spring winds must have blown the canola seeds all over the place because canola plants could be found in his two plots quite regularly distributed. His neighbours field was yellow from GM canola volunteers that grew in midst of the alfalfa that the neighbour had planted to make a more efficient separation between his conventional fields and Neville's organic ones because he felt he was being invaded by the weeds from the organic seed plots. The shelter belt of thousands of trees that Neville had planted had not survived his neighbour's glyphosate spraying. Neville told me:

'I was not concerned about GMOs six weeks ago. It was all around us, and you don't think much about it. Now suddenly it is in my field. As I am not growing canola myself, the GM canola in the next field was not an issue. The reason why I am not growing canola is that I cannot prove that it is non-GM. Now this canola eliminates us from growing clover, mustard, certain seeds. There is a good market for organic mustard and I cannot produce this seed now. We are done. Well, we probably can plant it on other parts of the farm. I don't think we loose our organic certification. This would be the end of us. I am too old to go through three to five years again. I cannot afford this. I am too old.' (Pat Neville, organic farmer, Govan 16.8.2003)

For Neville the problem now was to achieve the degree of purity required for the foundational seed and prove the absence of GMOs that was required for organic certification. He was afraid that he would have problems over the next couple of years as he had ploughed the fields one foot

deep in the spring and might have ploughed GM canola seeds under that might come up over the next couple of years. Neville was fantasizing about the amount of compensation he would ask from Monsanto for the damage done to him. At one point it reached the proud sum of one million. He seemed in a strange mood between a combative spirit and despair.

When I visited Neville again a few weeks later he told me how he became an organic farmer and what hopes and expectations he had put into this endeavour. Neville's account showed the precariousness of the farming existence that he shares with most other small farmers that operate at high risk and under a heavy debt load. He tried to pay off the farm by custom spraying and by cultivating alfalfa for the Japanese market. When the foreign market collapsed he tried to feed the alfalfa to sheep, which however a few years later lost their value because of the BSE crisis. He took up organic farming because he was allergic to chemicals and because he could not afford to pay for the chemicals any more, not because of environmental concerns. But as he said himself: 'Even though we went into the organic seed production as a way to make money I think we are also developing education.' He started to observe the weeds in his field to deduce from the type of weed present what components are missing or in excess in the soil and he became extremely critical of conventional science.

Neville was questioning what was presented to him in government publications and in the advertisements of the biotechnology corporations as 'sound science'. He remembered that in the past asbestos, leaded gasoline, DDT, PCDs were all celebrated as achievements of scientific progress and only decades later and after strenuous campaigns and lawsuits their long-term damageable effects on human health and the environment were finally officially and legally recognized. He ceased to take at face value 'the things in life we were told are good for us.' His combined intellectual ethical judgement of scientific and technical knowledge was also a judgement of the quality of the institutions which are the proponents of that knowledge, and which appeared utterly unwilling to render that knowledge-culture accountable to public discussion of its limitations (Wynne 2001: 447). The scientific certainties he was able to hold on to when he was a child, like for instance the existence of planets around Saturn, have since crumbled. He asks repeatedly on the basis of this fundamental scientific uncertainty, what is the real purpose of releasing GMOs into the environment that are impossible to contain or isolate.

Neville decided to describe his case and add it as an affidavit to the application of the Saskatchewan organic farmers to become certified as a class in their liability lawsuit against Bayer Crop Science and Monsanto. The organic farmers argued that the biotechnology corporations were claiming ownership over the genetically engineered plants and should be therefore also responsible for them. As their lawyer Terry Zakreski put it: ‘with ownership comes responsibility’. He argued: Monsanto Canada claims a proprietary interest in its transgene regardless of how the farmer acquired it, and irrespective of whether the farmer had any previous contractual relationship with Monsanto Canada (Hoffman v. Monsanto SKQB 67, 2002 memorandum of plaintiffs: 97). They made millions from making a commodity out of genetic material, ‘therefore, there should be legal ramifications for the Defendants when this genetic material spreads and causes damages. What this lawsuit seeks to do is to say to the biotechnology corporations that they cannot put something into the environment and claim ownership when it suits them and disavow it when it does not’ (Hoffman v. Monsanto SKQB 67, 2002 memorandum of plaintiffs: 101).

Monsanto representatives had so far every time cleared up unwanted volunteer plants from the fields of organic farmers and given chemicals for free to conventional farmers who wanted to get rid of them. They presented it however as a voluntary measure, designed to enhance their image in public and not as an obligation. Officially they declined all further responsibility for the spread of GM plants as the government had granted ‘unconfined release into the environment’ to them. ‘There is no way to put the genie back into the bottle. GM canola is now part of the environment. Our Federal government authorized and approved that.’ [Hoffman v. Monsanto memorandum of defendants: 135]

The farmers’ lawyer Zakreski argued that the GM crops were a ‘substance’ that has caused loss or damage to certified organic grain farmers because of its discharge into the Saskatchewan environment. The Corporations were liable according to the Environmental Management and Protection Act of 2002, they had created a nuisance, for which they were ‘strictly’ liable, as the canola plants that they ‘owned’ ‘trespassed’ into the land of the farmers. Zakreski compared the canola plant to another living thing, ‘a stray bull’ that entered a neighbour’s land and

impregnated his cows. In this case the plaintiffs were entitled to damages for interruption of business and the stunting of their heifers by early breeding. (Hoffman v. Monsanto SKQB 67, 2002 memorandum of plaintiffs: 176) Zakreski insisted on the particular nature of the trespassing ‘articles’ as alive. ‘They do not simply trespass into the fields of the farmers and sit there. They take root, grow, propagate and spread... Liability in trespass is thus a natural outgrowth of the commodification of genetic material in which the defendants have engaged and from which the defendants have profited. The plaintiffs ought to be entitled to say to the plaintiffs: ‘If this is your property please remove it from my land.’’ (Hoffman v. Monsanto SKQB 67, 2002 memorandum of plaintiffs: 188 and 190) Or as Neville phrased it: ‘I don’t want it here. I don’t want to harvest it. I want it out of here’ (Pat Neville, organic farmer, Govan 16.8.2003).

The biotechnology corporation assumed the position of saying that the alleged damage was not caused by the release of GM canola at all. GM canola had been judged ‘safe’ by the commission that had authorized its release, it was ‘substantially equivalent’ to other canola. The problem lay in the actions and decisions of the organic certification agencies that have promulgated in their standards that certified organic crops should be GM-free. Canadian agencies took this decision in 1999 and 2000, thus years after GM canola had received the authorization for unconfined release. As the presence of GM canola was not more harmful to crops or to the land than the presence of any other canola variety, it was clearly the problem of organic farmers themselves to adhere to these organic standards. The corporation could not possibly be made liable for that (Hoffman v. Monsanto SKQB 225 judgement: 106).

Zero tolerance to GMOs had been promulgated much earlier on the European organic market though, which was together with the Japanese market the main buyer for Canadian organic produce. The farmers’ lawyer Zakreski pinpointed that the corporations had reacted to the concerns about the loss of the potential export market for canola, by upholding voluntarily an Identity Preservation Program from 1995 to 1997, which strictly segregated GM canola from conventional one. This segregation was dropped in 1997 when the Japanese market started to accept GM canola. ‘The defendants favourably weighed the profits that they would make from dismantling the IPP against the risk that they faced in causing the loss of the European canola export market.’ (Hoffman v. Monsanto SKQB 67, 2002 memorandum of plaintiffs: 44)

The organic farmers and their lawyer had taken great care at attributing the exclusive responsibility for the spreading of the GM plants to the biotechnology corporations, who released the genetically engineered plants into the environment and not to the farmers cultivating GM canola. They insisted that the biotechnology corporation had kept tight control over their gene through the technology use agreement and the obligations it brought with it for the farmer and were thus solely responsible. The lawyers of the corporations maintained contrary to what they had claimed in the Supreme Court ruling that the technology use agreement gave them control only over the saving of seed not over the GM crop itself. The judge accepted their argument and ruled, that there is 'no Canadian case law to suggest that a manufacturer of a product can be made liable in nuisance for simply distributing the product, whereupon the product is then used by others. The spreading of GM canola required the intervention of the neighbouring farmer' (Hoffman v. Monsanto SKQB 225 judgement: 111). If responsibility was to be assumed it would be shifted back from the biotechnology corporations to the farmer.

The judge accepted the argument of the biotechnology corporations that they had no further responsibility for the genetically engineered plants they sold under contract as they had been granted authorization for unconfined release by the government. She further maintained that it would 'unreasonably interfere with the commercial freedom' of the biotechnology corporations if they would be held liable 'in an indeterminable amount for an indeterminate time to an indeterminate class' (Hoffman v. Monsanto SKQB 225 judgement: 77). The judge thus acknowledged implicitly that GMOs could spread indefinitely without limit in time and space and could negatively affect an unlimited number of people. Her verdict corresponds perfectly with Strathern's (quoted in Escobar/Heller 2003: 168) views of how genes and intellectual property are dealt with in the West as based on notions of possessive individualism, fully commodified social relations and market transactions. The Saskatchewan Court of Queen's Bench denied class certification. The farmers, consequently appealed.

Conclusion:

The decisions demonstrate three mechanisms essential to the control over and responsibility for genetically engineered plants in neo-liberal society. First, the frame for the free market mechanisms within which corporations can move is instituted through governmental regulations. As Karl Polanyi (1990: 192) has pointed out: 'Nothing is natural in the practice of laissez-faire.' It is embedded in systems of control and interventions. The corporations can claim to have no responsibility or liability because their product went through an official authorisation mechanism. Second, 'commercial freedom' becomes a value in itself and a guideline for governance. As Michel Foucault (2004 : 33-4) argued, in neo-liberalism the market appears to function according to natural spontaneous principles. It verifies and falsifies governmental practice and becomes thus a place of veridiction. The judge in the class action lawsuit seemed to have internalised this neo-liberal credo. Third, responsibility is shifted from the corporations to the consumers, (here to the farmers who chose the product) and to the state, (thus to the citizen) who will have to deal with potential environmental consequences.

The two cases throw light on the fundamental contradiction that underlies the whole worldwide debate about GMOs. As prevailing in Monsanto's argument in the Supreme Court trial, the chimerical gene is claimed to be an invention that is under tight control, supervised by private detectives and planted under contract. In the certification procedure the genetically engineered plant is declared uncontrollable. It has returned to 'nature', become like any other plant, or to use the jargon it is 'substantially equivalent' to any other plant. Using such contradictory reasoning the biotechnology corporations claim ownership rights and impose their licences, so far without being liable for economic and environmental damages. The profit-making of the biotechnology companies is recognized by the courts as a legitimate economic interest, the losses of the farmers no reason to make the corporations liable.

New objects of property, such as patented genes, not only challenge regulatory frameworks, they also challenge moral obligations involved in state jurisdiction (Maurer 2004: 297). The overblown 'propertization' of knowledge about genes (Eisenberg quoted in Rose 2004: 291) created the right to collect rents not from the land but from the plants growing and spreading in it.

With the decision of the Supreme Court a political and institutional framework is reinforced that constructs a new property regime that goes against and is in conflict with the rights linked to private property in land that founded the claims of white settlers on the Canadian plains. The new kinds of proprietary objects unsettle the moral order in which this property was grounded. With the new property regime farmers in Saskatchewan lose some of their rights to self-determination similar to the loss of control that native peoples experienced 150 years before when private property over land was instituted.

What will happen once the Monsanto patent on the glyphosate resistant gene has run out in 2010? By that time resistance to glyphosate may have developed to such an extent that it is no longer interesting to cultivate Roundup Ready crops anyway. Monsanto may cease to sell this chemical component and develop another one for which a new patent could be claimed that would start a new cycle of accumulation. Maybe by that time pressure over the spreading of GM crops has been such that the Terminator technology, also a patent held by Monsanto, that makes crops sterile, is imposed on the farmer.

The controversies that have been acted out in the two procedures are about the future and about patented GM crops in general. If contracts are generalized, patents will be no longer necessary. While these court cases were running under considerable public attention a much less visible and conspicuous war was going over the control of seed. An attack on brown bagging was launched in the Seed Sector Review that should end the practice of selling farm saved seed. The Canadian Parliament is discussing, to have farmers who deliver crop at the grain elevator declare the variety he/she has seeded, after which a royalty for the seed companies would then be immediately deduced from the income of his/her sales.

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Notes:

¹ The author wishes to thank *Berghahn Books* and *focaal* for the exceptional authorisation to put this version of the article online.

² ‘During the first half of the 1990s, wheat prices rose and fertilizer prices tracked those increases. In the second half of the 1990s, wheat prices fell and, with a lag, fertilizer prices tracked wheat prices downward. In 2001, wheat prices again began an ascent, as did fertilizer prices. When grain prices rise, fertilizer companies raise their prices to snatch any additional revenue right out of farmers’ pockets. Such pricing tactics are impossible in markets with real competition.’ (interpretation of statistics of Canadian wheat and fertilizer prices: 1990-2003 by National Farmers’ Union, 2003, *The Farm Crisis, Bigger Farms, and the Myths of ‘competition’ and ‘efficiency’* in: *Union Farmer Monthly* vol. 54, issue 7, December, p.13)

³ The private detective for example who had taken samples of canola plants from Schmeiser’s fields had been a retired RCMP officer.

⁴ especially in article 27.3 bits of the TRIPS (Trade Related Aspects of Intellectual Property rights) Agreement, an annexe of the Marrakech Agreement.

⁵ Schmeiser, who had spent 400000 Canadian dollars to carry his case through the different instances, and put a mortgage of 150000 dollars on his house to finance the Supreme Court proceedings, felt encouraged by the important financial support he had received from all over the world. He even felt confident enough to challenge Monsanto on the issue of responsibility for the GM plants they claimed to be their own. When his wife found some canola plants growing in her organic vegetable garden, he carried out a spray test with Roundup, carefully transplanting the plants first. When they proved to be resistant he encouraged his wife to contact Monsanto to clean them off. When the Monsanto representatives did not react he filed a claim in Humboldt Provincial Court that was judged on March 21, 2005. Judge Ebert did not award clean-up costs to Louise Schmeiser in her decision. As part of her ruling, she stated, according to Schmeiser, that Monsanto has a license from the Federal government to allow for the unconfined release of RR canola into the environment and that it was not proven that the canola plants that Schmeiser had collected had indeed the patented gene in them or had simply developed a natural resistance to glyphosate.