The Ethical Phenomenon of GM-Corn: Anger, Anxiety, and Arrogance in Crossing American Borders

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I approach the phenomenon of transgenic foods, specifically genetically modified corn, by introducing a relatively novel ethical theory—phenomenological ethics. This is one part of a three-part work that includes the participation of two other philosophers, Bob Hall and Chuck Verharen. For his part, Hall espouses a plurality of standard Western philosophical approaches while Verharen presents a ‘world’ ethical approach with a survivalist baseline. In the first part of the paper, I set out what I mean by the theory that I am calling phenomenological ethics starting from what Werner Marx proposed about that theory in *Towards a Phenomenological Ethics: Ethos and the Life-World* (SUNY 1992). In doing so, I take note of both limitations and possibilities in the more traditional forms of ethical theories espoused by Hall and Verharen. In the second part of the paper, I apply that method to the study of the phenomenon of genetically modified corn as a way to present how a phenomenological ethics provides a metaphysical baseline for constructing sustainable political and cultural structures across international and multicultural lines.

**Theoretical Orientation**

Phenomenological ethics is neither alarmist nor abstractly myopic, two poles of philosophical professionalism that lead to self-obsessed and ultimately impotent ventures into ethics. This means, on the one hand, that phenomenological ethical analysis does not have immediate or direct consequences—to which an ideologically alarmist ethics might be prone—but, on the other hand, does have significant indirect effects—as an ideologically metaethical approach in principle does not. In other words, by approaching phenomenologically the kinds of ethical structures that have arisen out of contemporary scientific and technological developments in the global context of international and multicultural relations, I hope to indicate how we can more fruitfully address both the issues and the combatants that constitute the embattled dialectics that so often and so deleteriously determine the current speech acts and ethically questionable policies of our public domain. As a method, phenomenological ethics is simultaneously descriptive, analytic, and normative, such that, by practicing this discipline I more attentively attune myself to the lived world that I embody and that nourishes me precisely because of how I focus on the nature of my relationships with other embodied subjects and things that constitute my lived-world. The world and the subjects that emerge from it and live with and from it with each other, constitutes the *sine qua non* for commencing this demanding sort of ethical elaboration. Even with my first waking moments of becoming aware of my breath and my surroundings, I find myself already intuitively involved in relating to others, both subjects-, and things-of-the-world, as they sensually engage me in the ways that they incline or intend towards me as subject and I towards them as objects or other subjects. This is the fundamental and irremovable starting point for all ethical relations, a starting point that has become a signature for adopting a phenomenological approach.
Adopting such an approach means entering into a disciplinary structure that is inherent in phenomenology and that has to do with ethicality as such. This disciplinary structure that I am calling ethicality has as little to do with a personal, individually based decisionist framework, based on presuming a metaphysics of autonomy or sovereign agency, as it has to do with highly developed and abstract systems of metalogical concepts that have long dominated the contentious debates advanced by ethical theorists (and adopted by social-scientific practitioners). Rather, I draw on those elements of the tradition I am calling phenomenological ethics for how they help me to better present the normative, intuitive, and intersubjective impulses developed by early phenomenologists such as Edumund Husserl, Martin Heidegger, Adolph Reinach, Max Scheler and Edith Stein. My purpose is to further develop this new approach to ethical analysis to better integrate ethical action in the theoretical domains of personal moral maxims, direct dialogical relations, and broadly collective policy issues across the entire spectrum of the political and cultural domains of contemporary societies. Significant inspiration for developing phenomenological ethics in the way that I do has come from the works of Hannah Arendt and Emanuel Levinas with additional inflections from philosophers such as Jean-Paul Sartre, Simone de Beauvoir, Maurice Merleau-Ponty, Michel Foucault, Luce Irigary, and Robert Gibbs.

This approach differs from the three currently dominant ethical theories—virtue ethics, deontological ethics, and utilitarian ethics—as it should. Those classical ethical theories have productively guided our decision-makings for many centuries but also, in many ways, have faltered and even failed us. But despite their shortcomings, most humans rely on various versions of these theories because of how they are established and reified in so many ways and at some many levels across the spectrum of our socio-political institutions. This was Hegel’s insight that he developed as a social ethics in *Phenomenology of the Spirit* at the beginning of the 19th century and that he called *Sittlichkeit*. It is also one of the enduring contributions of Heidegger’s work in *Being and Time* that he developed at the beginning of the 20th century but which he recast as a process of clarifying the embeddedness of normative influences in our daily lives, and which he expressed with a dialectic of authenticity and inauthenticity. This factor of recognizing the unacknowledged embeddedness of ethical theories as guiding presuppositions in the practices of our daily lives—some would call them prejudices—is the first step in carrying out a phenomenologically sensitive ethical approach. But it is only the first step.

Specific differences begin to emerge in the way that I locate this or that theory as it is embedded in the practices of dealing with actual empirical things themselves that engage my attention and activities as they occur in my lived-world. Put otherwise, things are defined and normatively assessed by the theoretical commitments that I bring with me to any of my engagements. Hence, a kind of balancing act occurs whereby I simultaneously attend to what I perceive to be the thing itself with which I relate and the physical embodiment of intellectual and emotional commitments with which I carry through my dealing with the matter at hand (the object or ‘thing’) in that relationship. Genetically modified corn is one of those things
However, before I get to the ‘thing-in-itself,’ some remarks need to be made about what is involved in advancing phenomenological ethics. I say “advancing” because, as is the case in all phenomenological endeavors, there are both infinite tasks and infinite perspectives involved in locating the essential kernel of this agenda. Theory is always related to our tangible and embodied inter-subjective world and to think otherwise or to just ignore that indispensable condition is to proceed in one’s tasks in life superficially, presupposing—of course—that humans have a ‘task’ in life. That sort of recognition of attending to abiding presuppositions is one kernel of insight that guides our actions over the horizon of our possibilities. What I mean by that is that any of my reflections necessarily also includes in its formal structure a historical determinant that normatively guides my theoretical orientation that, however, can be bracketed as ‘historically situated’ in the realm of other constitutive factors that are infinite in the sense of standing in reserve of my interpretations. My present consciousness includes those factors as well as an inclination towards acting on those factors.

Thus, theoretical formalism and guided activism have their respective functions to play, but to overemphasize either is to court ethical bankruptcy.

SECTION ONE: What makes this method specifically phenomenological?

A preliminary touchstone for this theory is Werner Marx’s *Towards a Phenomenological Ethics*. Marx attempted to initiate a new wave of ethical thinking based on elements drawn from the phenomenological tradition that originated with Husserl and Heidegger. He identified several key elements out of that tradition that contribute towards a phenomenological ethics, such as:

1. a personal existential interest….as an interest common to our age because it reveals universal structures of our human way of being and opens up horizons of possibilities for those who share the same concerns. Here, the pertinence of Heidegger’s elaborations on being-towards-death, Sartre’s ruminations on “Bad Faith”, Beauvoir’s *Ethics of Ambiguity*, and Arendt’s philosophy of natality all come to mind.

2. it establishes a kind of measure….which is not the autonomous sovereignty of Enlightenment ethics, nor a self-centered egoism, and certainly not faith in the supernatural as a foundation for ethics; it is also not a revised form of Kant’s pure practical reason, respect for the moral law, or mere purposive rationality; deliberating and calculating on the most efficient means to attain a given end also does not provide adequate orientation or direction for judgment; neither can a Heideggarian awareness of death as guiding interest for understanding one’s *Mitsein* (one’s being-with); the various versions of virtue ethics and social contractarian models all suffer from fragmentation in the sense that these ethical theories are in one way or another all subject to narrow exclusivities or generalized superficialities.

3. and finally, phenomenology pays “attention to the things themselves” that does not prioritize texts (or textuality, in a Derridean sense), historical positions (in a Hegelian sense), or ideological theories (in Marxist or Rawlsian senses).
Adopting these points means that, for me, the most fundamental condition of an approach to ethical issues that is phenomenological is the experience of embodied intersubjectivity. This condition entails accepting a relatively nuanced and complex theory of relating the phenomenon of one’s personal, first-person experience itself to that of the primal formation of any community whatsoever. In my own case, I learned this approach by studying and teaching and applying the phenomenologies of Husserl and his followers, and became informed with an understanding of what it means to be an embodied subject already engaged and embedded in a lived-world that is conditioned by interrelated and interwoven normative socio-political structures. It has become my way to effectively and ethically bridge gaps between theory and practice that other theories are incapable of bridging. What I mean by bridging in the context of phenomenological ethics has to do with how I go about presenting a particular issue as the thing-itself, as it appears to me in terms of such normative structures of embodied consciousness such as intentionality and intuition, structures that essentially have to do with taking into my accounting my experience in the world in the ways in which I am (or am not) focused on or engaged with this or that issue. The guiding terms for such an account-taking of intentional activities includes such activities as perceiving, grounding, judging, deciding, choosing, and most importantly acting. Unpacking those semantic structures would take us into the heart of how this theory differs from others and, along the way, would exemplify both the openness and flexibility of phenomenological ethics. That is the work of a book-length elaboration and its unpacking is too onerous to accomplish in the form of an essay. My introductory remarks will have to suffice for the time being. Rather, I would like to present the outline for my argument for how to responsibly engage in the issue of GM corn because, after all, to practice a phenomenological ethics means to remain attentive to one’s relational intentions and thus to the thing-itself—in this case, to the corn on the cob.

But one more digression is in order.

This ethical investigation is even more deeply characterized as phenomenological in how two related factors of philosophy of language inform our practice as in themselves ethical. The first has to do with form, namely, the attempt to root written reflections in the best and most carefully constructed analyses set in common-sense language while using the creative use of terms designed to normatively guide our analyses. The other factor has to do with content, specifically, that we are guided by the multi-layered structures, associations, and implications of the phenomenon of intentionality. What I mean by calling the phenomenon of intentionality a content is that in becoming aware of my own intendings and imaginings (through recreatings and reconstructions) of the intendings of others, I become more clearly aware of the ethical implications involved in how I take up things in the world in productive/destructive ways, or in joy-inducing/pain-inflicting ways.

Of the several philosophers and thinkers inspired by Husserl’s work that have influenced my construction of this theory of phenomenological ethics, two can be singled out because of their fruitful ways of elaborating these matters of form and content. Anyone familiar with Hannah Arendt’s writing will agree that while she may have drawn deeply
from Husserl’s training to descriptively explicate the essential core of the thing or matter at hand, she may have been even more influenced to express her insights with the illuminating intent of her ethical inclinations by her ‘other’ mentor, Karl Jaspers. The *Laudatio* for Jaspers that she delivered on the occasion of being honored with the German Book Publisher Prize exemplifies her ability to publicly address in unambiguousness terms the clarity of his ethical stance in life, precisely as an existentialist philosopher with deep ethical commitments. In that essay, Arendt praised Jaspers for how he publicly stood up to the arrogance of a Nazi ethic that pressured many other intellectuals to submit to their logic of ethnic cleansing and fascist manipulation. The importance of such speech-acts for this ethical analysis of the phenomenon of GM corn is to exemplify the importance of the historical endurance and eventual mass-effect that results from publicly embodying one’s moral choices.

My other choice is Emmanuel Levinas. His entry into the world of philosophy came with his dissertation on Hussel’s concept of intuition, a written venture that led Levinas from Husserl’s phenomenological vistas through Heidegger’s *ekstases* to his own metaphysics of the ethical. Anyone familiar with Levinas’s body of work is aware that his essay, “Ethics is First Philosophy,” has become the signature that differentiates his work from his teachers and from other philosophers in the second half of the twentieth century. His reading of Franz Rosenzweig’s *The Star of Redemption* was possibly the single most decisive philosophical thread that led to the unraveling of Levinas’s confidence in even the promise of phenomenology to address the problems of the world. But his training under the tutelage of Husserl and Heidegger remained decisive in how he chose his intellectual combatants. Levinas created a style of writing that challenged and complicated the conceptualizations of his teachers, Rosenzweig included, with his desire to provide the means for his students, his readers, to indirectly but none the less intentionally challenge our training to formulate coherent, conceptual wholes as the basis for our ethical decision-making. This mistrust of intellectual projects that aim to unify thought structures into easily identifiable and thus reducible conceptual wholes—as manipulable units—is due to his conviction that our very modes of written and bodily expressions are modes of ethical judgments that carry out prescriptive demands. This conviction extends to the production of writing itself that relies upon directly manipulating readers to accept the choices of the writer, and thus leads to the sorts of conditioning that promotes accepting and promoting totalitarian modes of thinking. The bases for such promotings and acceptings comes from how we are educationally conditioned towards mimetic and appropriating habits as opposed to developing critical, personal stances.

There is a set of statements that I have begun using to help implement this sort of approach that I am calling phenomenological ethics. A first statement runs like this: phenomenological ethics is that human discipline that (1) incites our attention or inspires our desire to question ourselves as engaged and embodied subjects in a lived world and that (2) leads to forming ever-more binding relationships of responsibility. A second statement presents the four-fold concerns of this method, namely, that we are:

1. Embodied (sensual, perceptions), experiential, and immersed in intersubjective relations;
2. Engaged in the ethical narratives of our lived-world(s) that are laden with assumptions and presuppositions;
3. Guided by analyses of intentional acts and intuitive sense;
4. The kinds of beings that take temporality seriously.

The third (3) and perhaps the most important statement of all is that the analyses run through the descriptive explications of a first-person perspective.

**GM Corn**

In this section, I present how the *ethical* phenomenon of GM-corn should be approached by way of a phenomenological ethics.

The first step is to briefly recount how I began thinking of this as an ethical issue in how it appeared to me as an embodied subject engaged in this particular ethical issue that arose out of my lived-world of intersubjective relations. The second step entails explicating how that engagement leads to ever-more binding relationships of responsibility.

I find myself living out my embodied subjectivity as a philosopher working at the University of Texas at El Paso situated on the U.S.-Mexico border. In teaching and writing at that place for the past 15 years, I often wondered about the relevance of what I do as a philosopher for the life of those with whom I come into contact. In thinking about my work and living in that place, I became aware that this ‘coming into contact’ happens for me on several levels: as one human among many, as a husband and father and son and brother, as a teacher, as a neighbor, and as country or city dweller. I remember with fondness those times in the late sultry summer months when, as a youth, I would drive with my father to this or that local farm-stand on some remote back road in the hills of Hunterdon County, New Jersey—the Garden State—in order to seek out the freshest sweet corn that was being harvested by our farming friends. In the 1960s, I did not have the slightest inkling that in the future other ears of corn sold by our friends might all be the product of genetic engineering, although I was vaguely aware that some cross-fertilization may have occurred to produce such hybridized sweetness. But at that time, I could only wonder: how could the earth, entirely on its own and without the assistance of human artifice, generate such delicates?

As a result of a work-related trip to Queretaro, Mexico I am happy to say that I once again renewed the experiences of my youth by being reminded of that sweet white corn laden with goodness and available for sale on the farm stands of New Jersey, laced with memorable traces of accompanying my father. I should add that I made that trip already armed with the phenomenological tools of a philosopher, open to my experiences as temporally conditioned and multi-variant. I was able to renew the experience of that taste from my youth and that bond of affection with my father not because of the miracle of GM-corn in itself, but because of the resistance of the Mexican people to the introduction of genetically modified food products into their daily eating habits, specifically GM-corn. Although conflicted, many Mexican farmers and Mexicans in general have been reluctant to buy into the commercial and cultural introduction of GM-corn into their national...
psyche for the past 10 years. As the birthplace of maize, Mexicans are angry and continue to be suspicious of U.S. Americans arrogantly forcing down their throats their socio-political-industrial interests that we think should trump the cultural embodiment of a sacred practice that many Mexicans believe is their gift to the world. iv

The history of corn-as-maize has grown out of 10,000 years of cultural traditions of the Mexican people and revered for many as sacred. This is especially the case in the State of Oaxaca that is the site of the richest and most prolific variety of native maize in the entire world. In December 2004, the Mexican legislature passed a law allowing experimental use of GM maize in restricted and highly regulated parts of the country but put off implementing the law because of problems with regulation. In December 2008, legislation was passed to allow commercial use.v Prior to this official lifting of the legal ban, however, farmers in the State of Chihuahua had already been ignoring the ban and had been planting GM-corn smuggled into Mexico from the U.S. for several years because of the enormous profits that can be had to meet the recent spike in demand from the U.S. for corn to be converted to ethanol use. vi What this means, is that Mexicans themselves are truly conflicted about this ethical issue.

I only found out about this recent history and cultural tradition because although my trip to Mexico was intentionally academic—that is, intentionally work-related—it just so happened that one of my colleagues, Hilda Romero, a biochemist working at the Universidad de Autonoma Queretaro, befriended my wife and I and took us for a jaunt to San Miguel de Allende on one of our free afternoons.vii As we entered the crowded town filled with tourists and parked the car, I noticed a street vendor hawking roasted corn and, following my desires (and intellectual curiosity), I began the journey into my own (and the collective human) psyche. At least for me, that experience constitutes what I have been referring to as an embodied, intersubjective starting point for phenomenological ethics. Just as important, though, is the methodological condition that an embodied, first person analysis begins with the recognition that one’s initial judgments should be questioned because, as embodied, I am born into a lived world that has already framed how I approach whatever ethical situation (subject or object) that I encounter. In this case, I should point out that my own intentions included no small measure of a philosophically informed hermeneutics of suspicion regarding how I would read the corn phenomenon at all. Despite that, the corn still tasted sweet, as purely sweet as my tastes could remember.

While humans have been intentionally altering the genetic makeup of crops for thousands of years through selective plantings, it is only for the past few millennia that we have been manipulating plantings and graftings in order to select for the best varieties to create hybrids in order to increase the yields and quality of taste of the foods that we grow and enjoy. These developments go hand-in-hand with our specifically human ability to intuitively sense what is most essential for both our basic human needs to survive but also for our basic human trait to enjoy the world from which we live. And it was not until the end of the 19th century that the grandfather of modern genetics, Gregor Mendel, pioneered the way to more consciously, that is, more scientifically modify the genes of domesticated plants. As is well known, his research modified the work that Darwin did
that coalesced research in the theory of natural selection, and which included the earlier, core insight by Thomas Malthus that species struggle for existence as a means to control population. In the early twentieth century, breeders worked aggressively to artificially pollinate self-pollinating and cross-pollinating plants to produce varieties with favorable traits. In the 1920s, scientists found that they could induce genetic ‘mutations’ that greatly accelerated the process of inducing novel varieties, by exposing plants to x-rays or using chemicals such as sodium azide and ethyl methanesulphonate. While developments in plant breeding have been going on for many decades (tangelos & hybridized corn and apples) the big commercial breakthrough came in the 1980s when bio-genetics became industrialized and bio-engineers began to manipulate the DNA structure of plants themselves, such as wheat, soybeans, and corn. In 1994, a tomato was introduced as the first GMO food product, but it was not until 1996 that the FDA in the United States approved Bt corn for general use and since then it has become one of the top three genetically modified foodstuffs in the United States. Bt corn is the common term used to refer to corn genetically modified with *bacillus thuringiensis*, a common soil bacteria that stores multiple toxin proteins as crystals in spores. The individual toxins that naturally occur in the bacteria are isolated and then inserted into the genetically modified crop. The significant regulatory point that should draw our ethical interest is that the DNA structure of the isolated toxin is artificially altered prior to being inserted in the food crop in order to facilitate to make the gene more active in the crop and more soluble in the plant cell. In every case of GM food that has been released in the U.S., the regulatory guidelines stipulate that the natural toxin must be tested for toxicity to mammals and the environment, but that because of the complexity and cost of the testing procedure, the synthetically altered gene that is actually inserted into the crop, making Bt corn in this instance, is not tested for toxicity. Scientific studies are only now beginning to emerge indicating that synthetically altered Bt toxins do in fact bind to the cell proteins of mice, causing changes in the physiological structures of the intestines and also adversely affecting nasal and rectal organs as well as mucous membranes. In other isolated studies, findings revealed that some cows fed Bt corn silage died while further studies have consistently demonstrated that the synthetically modified toxins are not fully digested in both cow and pig groups fed genetically modified maize. What should be alarming is that most foodstuffs that are now being packaged and processed with GMO ingredients are unlabelled and their use is pervasive.

Indeed, 70-75 % of all processed U.S. food-stuff now contains some ingredients of genetic modification, that is, ingredients or food-stuff that have had their genetic makeup altered through recombinant DNA or gene splicing to give the plant a desirable trait. 81% of the total soybean crop, 73% of the total cotton crop, and 40 % of the total corn crop are currently the dominant genetically modified foods. The stated intention of those who practice genetic manipulation is to alter the DNA in selected plant varieties in order to ward off pests and tolerate herbicides. Specifically, the company responsible for making the pesticide Roundup, Monzanto, has led the way in developing GM foodstuffs, especially GM-corn seed which attacks the problem of the Corn Borer (which destroy 40 million tons of corn each year, equivalent to the total output of Brazil). Even more impressive from a global ethical view are the innovations that genetic engineers are developing to resist draught, cold temperatures and salty soil—all benefiting the growers.
The second generation of GM foods are being developed to benefit consumers, such as control of allergens and proteins and absorption of oils—in response to the explosion of world population and the loss of arable land. Credible research studies have clearly demonstrated that people are allergic to many different proteins in soybeans, for example. The third generation of transgenic foods has already begun and has been labeled Pharm Corn, namely, GM-corn that is designed to carry vaccines and enzymes that would wipe out world diseases. The fourth generation, also already in advanced stages of research and production, would genetically engineer varieties of corn such that it could be used to make plastic products, drastically reducing our reliance on oil-based plastic products and addressing the green issue of carbon-producing dependence on fossil fuels. These are strong arguments for supporting the ‘goodness’ of GM-corn. But the ethics are not that easily decided.

It is true that in the year 2000 a committee of the National Academy of Scientists deemed GM food safe to eat, a finding that was echoed by the U.S. Government Accounting Office in 2002. Significantly, in their Executive Summary, the Committee states that it was not their task to address philosophical and social issues, but merely biological and—apparently—ethical issues, given that they explicitly claim that genetically modified pest-protected plants (GMPP) are being commercially used to alleviate such issues as global food security and affordability. After that, a consensus was reached in the Organization for Economic Cooperation and Development in 2003 that not only were GM foods safe for consumption but that feeding GM food to animals and eating GM animal foods was safe. Then, the Codex Alimentarius Commission—established by the World Health Organization—adopted international standards equivalent to those of the U.S. FDA, which has added to the growing consensus that community scientists are lining up on the side of ramping up GM experimentation and application on a broader scale. Indeed, the FDA, the USDA, and the EPA (Environmental Protection Agency) have ensured us that the 50 or so foods that are genetically modified are safe for humans and non-human animals to eat and that those non-human animals are safe for humans to eat.

So, what is the beef? Why choose organic when GM is just as good for me? Well, there is the case of the Monarch butterfly, and the issue of biodiversity and the recent studies showing that runoff into streams from fields planted with GM corn has resulted in caddis larvae dying and affect the eco-systems of those streams. And then there is the 2004 study that indicated that rats that were force-fed genetically engineered food became sick and died. The bio-engineers at Monsanto and those in the hallways of Washington and Ottawa—and increasingly in Beijing—assure us that GM foods are safe and that science is on their side in this debate. And, what might be the most important point, they have the benefit that billions of dollars of profits are at stake. Indeed, this issue of profit margins fueling scientific research or determining national social policies seems to me to be one of the key factors involved in this issue can help explain many of the ethical developments surrounding this issue.

Consider, for example the European Union’s (EU) 1988 moratorium on introducing and/or growing GM foods and experimental research as opposed to Canada’s position, aligned with the U.S. and Argentina as of September 2003 in the run-up to the WTO
meeting in Mexico. At stake was the fact that GM canola from Canada was significantly reduced, as was GM soybeans and sugar-beets from the U.S. and Argentina. However, the real issue was market access. Since then, the EU passed legislation (2003) approving limited and highly regulated use of GM foods, but only very regulated and limited research and field test growing is being done. Indeed, France recently eliminated the few GM corn fields from its national borders and the EU struck down an attempt by an Austrian province to declare itself a GM-free zone. As I mentioned earlier, the Mexican government just passed legislation in January, 2008 allowing field testing of GM corn, perhaps merely accepting a fait accompli since thousands of acres of GM corn were already being planted by Mexican farmers and millions of tons of GM corn were being imported from the US for animal feed and even as ingredients for some foodstuffs.\textsuperscript{xii} The key issue now is labeling because advocates for GM foodstuffs, principally, large agribusinesses like Monsanto and the governments of the U.S. and Canada who profit by the application of the genetic technology, argue that there is little or no downside about which to be concerned. And yet, consumers who have become aware of the presence of GM ingredients in their foods are tending not to buy the products. The organic foods share of the market is growing by 10-20\% per year now while standard foodstuffs are growing by merely 1-2\% at best.\textsuperscript{xiii}

Besides the fears about unintended long-term health effects, pollen drift, the loss of biodiversity, and the slow erosion of the quantity and quality of foods that naturally taste sweet, such as Jersey corn and tomatoes, and Mexican corn from San Miguel de Allende, there is the ethical matter of self-subsistence farmers having to buy the exact same GM corn seed year after year because their indigenous crops that produced their own seed in endless varieties simply ceased to exist.

The anxiety on my part, and on the part of many others sharing this border, is that the anger over being force-fed GM foods by an arrogant profit-seeking Leviathan, that has aligned industry, agricultural, political, and scientific sectors with a profitable business model, will win the day.

\textsuperscript{ii} As opposed to deontological, utilitarian, or virtue ethics.
In “Mexico: Cradle of Maize Rocked by Transgenics” by Diego Cevallos in Inter Press Service March 16, 2009 (accessed at http://www.globalissues.org/news/2009/03/16/895 on March 27, 2009) we find that “Mexico has lifted the ban on experimental cultivation of transgenic maize imposed in 1999 in this country where the crop was first domesticated and shaped human culture. Biotech giants have put forward two dozen projects for approval and have announced investments of 382 million dollars up to 2012.”


vii Hilda Romero-Zepeda is a bio-chemist doing research in the Department of Biotechnology and Biochemistry at the Universidad Autonoma de Queretaro in Queretaro, Mexico. In conversations with our a research group to which we both belong, the North American Mobility Project, she admitted that she is conflicted about her own work since it advances the sort of biotechnology that she knows is ethically questionable but also ethically desirable in a struggling economy like Mexico’s.


ix For a comprehensive list of global studies on soy protein allergies, see http://www.food-allergens.de/symposium-vol1(2)/data/soy/soy-data.htm.

x For the full report from the Committee on Genetically Modified Pest-Protected Plants convened by the National Academy of Sciences, see: http://www.nap.edu/openbook.php?record_id=9795&page=R8. This Committee carried out their work with the intent of regulating the commercial application and biotechnology of transgenic plants. Their primary concern is that: “Pest and pathogen management to optimize crop health, productivity, food quality and safety is critical to global food security, and ultimately, to the cost and affordability of food.” Specifically, “The committee will investigate risks and benefits of genetically modified pest-protected (GMPP) plants, and the Coordinated Framework for Regulation of Biotechnology (Coordinated Framework) affecting the use of these plants.”


xii See fn # 3.