Show Transcript
Deconstructing Dinner
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Jon Steinman: You're tuned in to Deconstructing Dinner, a syndicated weekly one-hour radio program and podcast produced in the studios of the currently rainy and cold Nelson, British Columbia. I'm Jon Steinman, and I'll be with you for the next hour.

As was introduced on last week's broadcast, over the course of the upcoming weeks and months, we will be featuring recordings and interviews compiled on September 18th and 19th of this year at the 55th annual CropLife Canada Conference. This year the conference was hosted in the city of Saskatoon, Saskatchewan – a conference that invited some of the most influential corporate figures in the world of agri-business. CropLife Canada is the trade association representing the biotechnology and pesticide manufacturers operating in the country, and CropLife is often the most vocal of groups denouncing the many criticisms of the dangers of pesticides, genetically modified foods and conventional agriculture.

And with those in attendance having had a significant influence on how agriculture and food operates in Canada, I packed my bags and microphones and hit the road to Saskatoon, to learn just what the industry is up to and in what direction they're heading.

On today's broadcast we hear from Keynote Speaker Juan Enriquez of Biotechonomy and we hear responses to his presentation from Terry Pugh of the National Farmers Union and Jeffrey Smith of the Institute for Responsible Technology and author of the recently released book, *Genetic Roulette*.

increase music and fade out

JS: It seemed fitting for me to drop in on this industry gathering as what became quite clear during the two-day conference, is that this industry is very concerned about the negative public perception of their products, and there was an ongoing message throughout the conference that called for better communication with the Canadian public on the importance, benefits and safety of chemical pesticides and genetically modified foods. This concern was even more evident in the concluding hours of the conference when attendees sat in on a media workshop hosted by the CBCs Ian Hanomansing. The workshop was titled, "The Media Today – an important partner in developing our vision." Ian guided participants through a background on how *any* industry can best communicate their vision to the media.

Well, my role seemed fitting at the conference, because there I was answering their call for more media exposure. And as was one concern raised by a participant in the media workshop, she was distraught at the industry always having to respond to environmental and health concerns raised in the media; that is, always having to respond last. Well today and on future broadcasts, we will give the industry the opportunity to share their opinions and views, and then have *others* respond to *them.*

I was one of a handful of media representatives there, but the only one recording the entire conference. And as will likely be the format for shows in the coming weeks and months, we will listen in on these presentations, and on interviews I conducted with some presenters, and examine the messages being distributed among themselves and to Canadians. We will be inviting a number of guests onto the broadcasts to respond to these messages, some of which will be familiar voices from previous shows.

And so on today's first episode featuring recordings from the 2007 CropLife Canada Conference in Saskatoon, we will listen in on segments from the Keynote Speaker, Juan Enriquez, who launched the conference with a long introduction into the future of the bioeconomy; that is an economy based upon the life-sciences and genetics. Now keep in mind, Juan Enriquez was speaking to some of the most influential figures in the world of Canadian agriculture including agricultural giants Agricore, Viterra, BASF, Bayer CropScience, the Canola Council of Canada, Cargill, Dow AgroSciences, duPont, Syngenta, Monsanto, and the list goes on. There were about nine attendees from Agriculture Agri-Food Canada including two Members of Parliament, and many representative from provincial ministries of agriculture. So needless to say, an examination of the Keynote Speaker is perhaps the single most important presentation to deconstruct at this conference.

But before we get to that, I wanted to share a couple of recordings I compiled during the trip to Saskatoon from here in Nelson, BC. After taking an early morning bus to Alberta, and with an overnight visit in Calgary, I then rented a car and proceeded in the direction of Saskatoon, crossing over some of the largest expanses of agriculture in the world. And it was a preferred method of transportation to be on the ground witnessing the very agricultural systems that provided the foundation for the conference I was heading to. On the sides of the highways were Agricore and Cargill grain elevators, nitrogen fertilizer plants, advertisements for Dow and Bayer crop protection products, and given the time of year, an ongoing parade of combines harvesting this years crop.

But with seven hours of monotonous driving and only a handful of CDs, the radio seemed like an ideal tool to help pass the time. It was an enlightening experience because as I discovered from talking with those involved in agriculture, the radio is a significant source of information and entertainment across the prairies and the rural expanses of Canada. And when the vast majority of Canadians live in urban centres, it seemed important to record some of what I heard on the radio and present it to you so that those in cities can better understand the messages Canadian farmers and rural communities are receiving. Now we will only listen to a couple of these recordings today, but a couple of them tie in nicely to today's topic as the message coming across Canadian rural radiowaves are quite mixed. In this first one, you will hear me stumbling across a religious program denouncing the theory of evolution and proclaiming it to be unscientific. This program caught my ear as the majority of farmers across the country are using technologies created by an industry that *believes* in the theory of evolution – a comment even echoed in the keynote speech we will hear just shortly. So take a listen to this first recording, which ends with me pulling into an abandoned train station in the community of Cereal, Alberta just west of the Saskatchewan border.

Audio of religious radio program: …the earth visible and invisible, whether they be throwns or dominions or principalities or powers, all things were created by him and for him, and he is before all things, and by him all things consist. All that the Hebrew says, by him God also made the worlds. John says all things were made by Him, and without Him was not anything made that was made (John 1: 1,2,3). Now you may challenge the skeptics who talk about blind chance, evolution, primal world stuff, the concourse of atoms and all the rest of it. God says all things were made by him. And there's no scientific fact that can disprove that. Evolution is not scientific. And how emphatic is the Word, as John goes on to say, 'and without him was not anything made that was made'. By implications this great text affirms that back of every created thing is the lord Jesus Christ himself…

..and lives today, and waits to say to the uttermost. All who come to him by faith, will you come and put your trust in Christ today? I'd love to send you my booklet, "How to be saved and know it." Oh today, take the time and write me a letter. And pray for our broadcast. And pray for souls today that we might see God work in mighty power.

JS: Now to give you an example of the seemingly contradictory messages broadcasting on rural Canadian radio, here is an advertisement heard on CFCW, broadcasting out of Edmonton. This ad is for a genetically modified product by Dow AgroSciences, a company that certainly believes in the theory of evolution.

Audio of Dow AgroSciences commercial: Global demand for Nexera Canola is gaining momentum fast. So sign your 2008 Nexera Canola contract now for competitive yields, a premium over commodity canola, more delivery options, two new varieties, profitability. Sign before September 30 and receive a four dollar break on signing bonus, plus a three dollar break on next year's cereal bonus. Get on board. Contact your Nexera Canola retailer today. Accomplish more on the same acres with Dow AgroSciences.

JS: And that commercial leads us nicely into the topics to be covered on today's broadcast as the two issues my guests will be responding to on today's show are genetically modified foods, and the economic health of farming in the country. That commercial refers to both a genetically modified strain of canola, and the contracts farmers have little choice but to sign. And this is of course connected to these concerns over the economic health of farming.

I will also note that this seeming conflict between religious values and farming in Canada will be a topic to explore on a future broadcast of Deconstructing Dinner, and so we will revisit with these recordings in coming months. And again, all broadcasts of Deconstructing Dinner are archived on our web site, and instructions on how to subscribe to our podcast are also found there, and that site for any new listeners is cjly.net/deconstructingdinner

soundbite

JS: Moving along to the feature of today's broadcast, we focus in on Juan Enriquez, the keynote speaker at the 2007 CropLife Canada Conference. Juan's presentation was titled, "As the Future Catches You – How Genomic and Other Forces are Changing Your Life, Work, Health & Wealth". Juan is the Chairman and CEO of Biotechonomy – a Life Sciences Investment and Research firm located in Boston, Massachusetts. He is considered a world authority on the economic and political impacts of life sciences, and with such status, it seems fitting to deconstruct his presentation to this audience of agribusiness executives.

Juan Enriquez launched his presentation with a slide outlining what the headlines of newspapers would have been 500 years ago. And he uses this slide to introduce the idea that power today, is determined by knowledge. His comments are suggestive of the common argument presented by opponents of biotechnology such as Vandana Shiva – that control of genes and control of life, is a form of neo-colonialism. Juan Enriquez uses the very idea *of* colonialism to illustrate the potential of biotechnology.

Juan Enriquez: It hasn't changed that much. If you've read the newspapers and you've read the newspaper this morning—basically the same headlines. But of course a couple things change between the Renaissance and today. And the interesting thing is change doesn't always appear in the newspapers, and reading the newspapers is often a bad way of figuring out what is really happening. Because the relative position over the next 500 years of who is rich and who is poor actually really did change. You still had the same sunsets; you still had the same sunrises; you still had the same headlines. But you really had some pretty important changes occur.

One of the things that happened is the way you used to be rich and powerful was based on the military. If you took over your neighbours land, you were richer. If you had more people, you were richer. So as long as brute force was the rule of the game—more land, more power, more serfs, more people—then armies were really useful. If you had the largest army, you could take over your neighbor and be the richest country in the world. Just before the Industrial Revolution, China and India were 40% of the global economy. Wanted to get rich? It wasn't through productivity because salaries between Rome, back in pre-Christian times, and France, just before the Industrial Revolution, were about the same. So if the salaries were the same, and the productivity was the same, the way you became wealthy was to get bigger—to have more people, to have more kids. They got rich enough that they were able to generate palaces made of marble. Wonders of the world.

But eventually the rules of the game changed. And the rules of the game moved from brute force and lots of people towards open borders and a knowledge economy. We call that the Industrial Revolution. And what ended up happening is that this huge empire with these thousands of people started competing with an obscure little island, fog bound in Northern Europe. And those folks started saying, let's have an open border competition. You bring your 12 kids and make textiles; and I'll bring 1000 horsepower and make textiles. And that competition was so uneven because one society had a few people but a lot of knowledge, and the other society had a lot of people and not a lot of knowledge. But that little obscure island, Britain, ended up taking over a huge chunk of the world.

Instead of building those big marble palaces, what they built is things like this (*refers to slides*): this is the Parliament building in India, and this is the view from it. And that's India gate. That's what it means for a government, for a society, to understand a transition in knowledge, or not. It's not just 'it would be nice to fix the schools', it's 'your sovereignty depends on fixing the schools, and learning stuff. Your country depends on learning stuff.'

JS: In this next segment, keynote speaker Juan Enriquez continues on with his ideas on how power is accumulated in our society, and he suggests that so long as people keep doing what their grandparents were doing, they won't get rich. This worldview is certainly the one that drives our global economy, that technological advances such as the theme of the conference—biotechnology— are the routes to power, to wealth and to, as Juan puts it, building an empire.

Juan Enriquez: Why are the rules of the game changing? Is it suddenly that people understood things, or is it that some people kept doing what their grandparents did, and the rules kept changing? Why do we get rich actually? What are the rules of the game on getting rich? Well, see the difference between a man and a mouse is actually very small. If you take the gene code of a human being (that gene code that's in each of your cells), there's 3.2 billion letters in each of your cells, so you have a full copy of everything that's your gene code in each of your hundred trillion cells. If you take that and stretch it out, that's about six feet worth of code, DNA. That's what we call the genome.

If you lay the gene code of a man next to the gene code of a mouse, the difference between a man and a mouse is about 5% of gene code. There are a lot of wives that already know that. (*audience laughter*) But the real difference between a man and a mouse, the real difference between a man and a chimpanzee, is that we teach our grandchildren and great grandchildren stuff. If you're a monkey, you don't teach your grandchildren stuff. Because to transmit data as a monkey, you have to touch, hear, feel, see, use your senses. There is no animal on this planet besides a human being that writes, or draws on a cave wall. Because we do this stuff, we can tell our grandchildren, our great-grandchildren, our great-great grandchildren what we've learned.

JS: Now the irony of this segment of Juan's presentation is that while his comments are suggesting that passing information from generation to generation is how you effectively build an empire, it's the very model of industrial agriculture that this conference was all about, that has effectively put a halt to the transferring of farming knowledge from generation to generation. The dominant system of agriculture today is one in which farmers themselves require less knowledge of natural systems and less knowledge of animal husbandry. And as the questionable messages coming out of this presentation began to increase, this next one introduces my next guest. So take a close listen to *these* comments.

Juan Enriquez: Who got rich over the last thirty years? It's the farmers who understood how to use futures markets. It's the farmers who understood how to access data from various markets from around the world. It's the farmers who understood how to trade on a global scale. It's the folks who found out first about the new genetic technologies, the new farming technologies, the weather patterns—all of this data coming into a farm that didn't used to come into a farm. And you all became knowledge workers. And in the process of that, those folks who remained digitally illiterate are mostly out of business. Those folks who did things just as grandpa did it, are basically not in this room.

JS: As these comments of farmers getting rich run in complete opposition to many of the issues discussed in the past here on Deconstructing Dinner, I invited Terry Pugh onto the program to lend his response to this suggestion that farmers who adopt new technologies are getting rich. Terry is the Executive Secretary of the Saskatoon-based National Farmers Union, an organization first formed in 1969 and representing farmers across the country.

Terry Pugh: I think that there are some people who have gotten rich but for the most part I don't think you'll find too many farmers among that crowd. Certainly it was the corporate sector (agribusiness) that supplies the inputs and buys the commodities; that's the crowd that was getting rich over the past five years. Particularly in 2004, the Farmers Union did a study, compared and looked at profit levels of bigger corporations. This is publically available data in their annual reports, and a surprising number of those were actually recorded record profits in 2004. And of course 2004 was the worst year on record, up to that point, for net farm income. There's a difference between gross farm income and net farm income. You can have higher and higher gross farm income on the chart, but it's what actually stays in farmer's pockets that actually counts. So there's a huge gap between what farmer's make and what they are able to keep. That wealth, that gap in the middle, is what is fueling the agribusiness corporations, and that's who is getting rich.

JS: And you're tuned in to Deconstructing Dinner as we begin to take apart the keynote presentation at the 2007 CropLife Canada Conference held in Saskatoon, Saskatchewan. CropLife Canada is the national trade association representing manufacturers, developers and distributors of pest control products and plant biotechnology for use in agriculture, and other settings.

I attended the September conference in Saskatoon and recorded among others, keynote speaker Juan Enriquez who opened up the conference. Juan spoke about the future of the industry and the importance of advancing technological innovations to stay competitive. Now there were a number of highly questionable messages coming out of this presentation, and we are beginning to examine these messages that the industry is quite clearly discussing among themselves. As Juan suggests, the farmers getting rich are those who adopt new technologies such as genetically modified crops, crop protection chemicals, and expensive machinery, and Terry Pugh of the National Farmers Union continues his response to such a suggestion.

Terry Pugh: It is a little bit misleading to say that farmers will benefit economically if they simply adopt these new technologies such as genetically modified seed and bigger equipment, because what that is ignoring is the other part of the equation, that it is much more expensive to get into these technologies.

And also you tend to lose control over your production as you get into those technologies. For example, most of genetically modified crops is under production contracts. You buy the seed but you sign over your ability to save seed, for example. It's against the law to replant it unless under certain conditions it also specifies where you can sell it and at what price. So a lot of those decisions that farmers took for granted in the old days are gone. You're not making those decisions anymore. Also, it is very expensive to get into bigger machinery. You pretty well have to lease equipment now, a lot of the bigger stuff, to even have access to it.

JS: Following Juan Enriquez's presentation, he was escorted into a room reserved for those within the media. Upon his arrival into the room, about four of us gathered around to ask him questions, and I was of course eager to question some of his comments about how farmers can get rich.

Audio of question posed by Jon Steinman: One group not represented here are the farmers. You were speaking at the beginning of your presentation that essentially farmers are getting rich—those that actually adopt these technologies, who buy into these futures markets. And looking at some of the statistics that come out of some of these farmer's unions, I understand that it's the complete opposite, especially when I speak with farmers that, in the past ten years, average net income has been minus $323. And this is coming from the NFU. When you actually add in the wage, which is the profit, and you figure out how much farmers should be getting paid, you're looking at $7.75 billion which has been in 2004 net farm loses. I'm wondering if you can expand on how farmers will get rich when, at least in my understanding, it's the opposite.

Audio of Juan Enriquez's response: Well if you asked that question five years ago there probably would have been a lot of tears in the room because it did seem like farming was in real trouble. Today, when you look at land prices in a city like this, when you look at wealth in a city like this, when you look at the price of agricultural land, when you look at investments into farmland, the types of people who are making investments into farmland, I'm not entirely sure that farming has been an awful business to be in for the past five years. It's a tough business. You have to get up at four o'clock in the morning, you've got a cycle throughout the year, and it's a hard way to make a living. But the last five years I don't think have been that awful. If you are in the farm business, look around this province and look at the prices. If your farmland prices are in freefall like some of the secondary housing markets in the U.S, then I'd agree a lot more with some of these statistics. But if your price of land keeps going up, and people keep losing more money doing that business, that's not an equation that works for me.

JS: I did pass an audio of this response to Terry Pugh to give him a chance to respond as well. And he responded to a number of comments including Juan's idea that increasing land values are a financial benefit to farmers. Terry Pugh was baffled by such a suggestion, and refers to this idea as misleading and that farmland values have no relation to farm cash flow.

Terry Pugh: One of the things he kept coming back to was that farming is in good shape because farmland values are on the rise. I think that it is quite misleading to suggest that just because farmland values are rising that farmers are suddenly wealthy. Because there's really no connection between the value of farmland on the market and a farmer's cash flow. Look at people in the city who have suddenly seen the value of their house rise, so their taxes have gone up, so their costs have gone up, but they haven't actually seen any increase in their wages, which are totally unrelated to the price of their house. I mean, there are reasons that real estate prices go up: one reason is speculation; people are flipping real estate. Another is because the subprime mortgage expansion in the United States, which is now collapsed, and that's bringing values down. Eventually, those values will reflect the reality of the market. They will also go down. The real increase in farmland values has been around cities. That is a reflection again on that urban housing market.

JS: Yet another comment made in Juan Enriquez's response was this.

Juan Enriquez: I'm not entirely sure that farming has been an awful business to be in the past five years.

JS: Terry Pugh suggests the complete opposite to be true.

Terry Pugh: The last five years really have been probably the worst, in terms of net cash income for farmers, and I really don't know where he's suggesting that the last five years have been just marvelous because none of the figures that I've seen support that argument. In fact, we've made presentations to the agriculture committee in the House of Commons and to the Senate agriculture committee as well. The Senate agriculture committee recently held cross-Canada hearings on rural poverty. And wherever they went, whether that was Southern Alberta, Prince Edward Island, or the middle of Ontario, people were saying the same thing: that there was a serious problem with net income. People have been able to keep going largely because of easy access to credit and low interest rates. Once those interest rates start to rise, we're going to see a really…and I think we're starting to get that tightening up of credit, if not now, then in the very near future. And that's going to really come down hard on a lot of rural communities.

JS: That was Terry Pugh, the Executive Secretary of the Saskatoon-based National Farmers Union. You can learn more about the NFU by visiting their web site at nfu.ca

soundbite

JS: We now come back to Juan Enriquez's keynote presentation at the 2007 CropLife Canada Conference in Saskatoon. The focus of his presentation: biotechnology, life-sciences and genetically modified foods. In the remainder of today's broadcast we will listen in on some segments from his presentation and his responses during the ensuing media scrum, and we will bring author Jeffrey Smith of the Institute for Responsible Technology onto the show to lend *his* responses to the messages coming out of Canada's dominant agriculture and food industries.

In this first segment, Juan Enriquez likens an orange to a computer diskette, and he suggests that to understand life simply requires the understanding of gene code.

Juan Enriquez: So this orange becomes a disquette. This becomes a computer program except this doesn't execute ones and zeros; this executes life, and you don't need a Microsoft license, and you don't need to plug it in. All you've got to do with this thing to execute code? First line of code— ATCAGGG, make a root. Next line of code—TCAGGG, make a stem. GCAA, make a series of leaves that look like this. TCGAA—make a flower. You change a couple of lines of gene code in this thing, and it becomes a tangerine. Or a grapefruit. Or a lemon. So you change a couple lines of code, and you change the function of this object. Where it can grow, whether it's tolerant to salt, whether it's tolerant to herbicide, whether it tastes like a lemon or tastes like a tangerine. And all of that stuff is written like this. And we're beginning to map it. In the measure that we begin to understand this gene code, we begin to understand life.

JS: As Juan's presentation continued, I became even more skeptical than I already was. In this next clip, Juan Enriquez speaks about the future of biotechnology, and its impacts on food and agriculture. Take a listen, and see if you can pick out some comments that should raise eyebrows.

Juan Enriquez: We've already modified most of the grains that you plant in Canada. They're herbicide tolerant, salt resistant, cold resistant. You've got this nifty brochure out here from Genome Prairie that's talking about how you can take rye and adapt the cold tolerance of rye into other things. Or how you can improve your seeds. This is stuff that's going on here. It's already happening. You're already planting it. So that's stage one.

Here's stage two. If you can program plants to do different things, then you can program plants to do different things. This is a Danish company, and it has programmed plants to turn red, not when it gets cold and dark in the fall. These turn red when they are exposed to explosives. So you plant these little seeds everywhere, and you get green fields, and where you get little red circles, that's where the land mines are. Because the plants have been programmed not to resist salt, they've been programmed to turn red when they are exposed to TNT. Or you could find uranium, or you could find pollutants.

This is beginning to change not just the seed, textile, herbicide, pesticide, biotech and pharma companies, it's also beginning to change food companies. Which is why Nestle is also beginning to think about bio-marketers and DNA and mRNA and proteins and metabolites. And as you go forward in this stuff we're also beginning to think of food as energy. We already know that we can get energy out of corn. In fact, the investments in this are getting quite large. To the point where you're now beginning to import corn into Iowa. A little ironic.

These investments are mostly driven by subsidies and political reasoning, and that's why the dominant companies today are companies that are very well connected politically. But as you go forward, one of the things you should think about is if you can get petrochemicals out of plants directly, a secondary and tertiary petrochemical process should also be possible. So the first stage of energy processing is you make gasoline. But what else comes out of refineries? Guess what, plastics come out of refineries. So therefore you should be able to program plants for tertiary petrochemical as well as secondary petrochemical.

And this is a German company that takes a hectare of corn and 6000 kg, 3500 kg of glucose, and 1250 kg of a biodegradable plastic out of corn. When you walk into some of these exhibit halls, you begin to see exhibits that look like this (*refers to slide*). And you wonder why didn't they bring something to exhibit? Well, because the exhibit is these little plastic cups. This is a Cargill Dow operation, and they happen to be making biodegradable plastics out of plants. They're also making t-shirts out of plants.

JS: So as may have sparked concern upon listening to that segment, Juan Enriquez believes that petrochemicals come from plants. I was so shocked by his suggestion that I even scrambled to an on-line dictionary on my computer to verify I wasn't going crazy, and indeed, petrochemicals only come from natural gas or petroleum. His final comment that extols the new and wonderful virtues of creating clothing out of plants knocked me to the back of my seat. I looked down at my clothes and felt as though I was some vision of the future. There I was draped in cotton and hemp. I wanted to raise my hand and show the audience how modern I truly was, but I did allow Juan Enriquez to continue his presentation.

soundbite

JS: If you're just tuning in, this is Deconstructing Dinner, a syndicated weekly one-hour radio program and podcast produced at Kootenay Co-op Radio in Nelson, British Columbia. I'm Jon Steinman. On today's broadcast we launch a series of shows that will feature recordings from the 2007 CropLife Canada Conference held in Saskatoon in September. I hit the road and travelled out of the mountains and into the prairies to attend the conference and see what Canada's most influential agricultural corporations are up to.

We're currently listening to the all-important keynote speaker, who this year was Juan Enriquez of Biotechonomy – a life sciences and research investment firm located in Boston, Massachusetts.

In just a moment we will hear from author Jeffrey Smith who has long opposed such genetic modification technologies being applied to our food supply. As Juan Enriquez's message was one of eager anticipation for the future of biotechnology and genetic modification, it seemed as though the rapid introduction of

such foods into the global food supply needed to first be questioned. It was only less than 15 years ago that GMOs entered into our food, and their presence is increasing rapidly.

During the media scrum following Juan's presentation, he was asked about the safety of such technologies, and here's his response.

Juan Enriquez: It's been a concern of parents forever what kind of gene swapping is going to take place with their sons or daughters. It's been something that has terrified people for centuries. Part of what we are doing is what we've been doing for thousands of years, which is making what's out there more productive, better tasting, and easier to grow.

If you take an all natural tomato: it's small, it's green, it's about the size of your thumbnail, and it's slightly poisonous. If you take an all natural dog, it is called a wolf. As we breed dogs, we want this kind of poodle or this kind of great-dane, or we want this kind of Chihuahua. Different people have different tastes. We're doing that with citrus; we're doing that with fruits; we're doing that with whole series of things. The difference is that we are doing it faster and more deliberately today. And so far, the technology has been remarkably safe.

There have been an awful lot of people who have died from various food allergies. I have yet to know the case of a person who has died from a GMO allergy, which by the way is extraordinary. That's not the usual state of affairs. It's been a surprisingly safe technology.

Does that guarantee that we will never make a mistake with it? No it doesn't. But we have to be careful as we think about new technologies, about what the trade-offs are. Because when you say we will not accept the new technology except if you can demonstrate that it's 100% safe, we wouldn't be driving cars. We wouldn't be using electricity. We wouldn't be using steel. These things have been misused, and they can be occasionally dangerous if misused.

We do need an ethical system. We do need a regulatory system that respects peoples genetic right to privacy. We need to keep the stuff out of warfare. But I'm not terribly worried about the food/feed applications of this, and I know nobody is going to grow a third arm because they are eating this stuff. Nobody is going to turn green because they are eating this stuff. That's great for science-fiction writers, but that's not the way these systems work.

JS: Juan's comments represent the standard argument that has existed ever since the idea of genetic modification was first introduced. His arguments are the same ones that have allowed such foods to be approved on such a wide scale, and are the same ones that continue to assure the Canadian population that these foods are safe. For seasoned listeners of Deconstructing Dinner, you probably remember Jeffrey Smith whose GMO Trilogy made its way onto our program as a three-part series back in 2006. Jeffrey is the Executive Director of the Iowa-based Institute for Responsible Technology and the author of well-known titles such as *Seeds of Deception*, and his most recent release, *Genetic Roulette*. Jeffrey is one of the most outspoken critics on the genetic modification of our food supply and I caught up with him over the phone while he was on a speaking tour in Vancouver, Washington. Prior to our conversation, I sent Jeffrey some of the comments made by Juan during the media scrum (the ones we just heard), and Jeffrey Smith first responds to this standard industry comment made by Juan Enriquez, that genetic modification has been done for thousands of years.

Jeffrey Smith: This man has given some very prime examples of the basic platform of disinformation that's being used to give people the completely wrong impression of genetically engineered foods. When the FDA scientists were looking at genetically engineered foods in the early 90s, the compliance officers summarized all the opinions of the technical experts of the agency and said that according to technical

experts, GM foods are different and lead to different risks. Trying to consider them equivalent to the non-GM foods was like putting a square peg into a round hole.

In fact, I was speaking to one of the developers of one of the first genetically engineered crops—the Flavr Savr tomato—and she looked at me and said of course it's not an extension of natural breeding. It's complete public relations spin. Consider some of the combinations that they're making: they're putting spider genes into goats in the hope that they can milk the goat for spider web protein to make bulletproof vests. It's hardly sexual reproduction. It's hardly natural. Yes, it is the latest tool by those who are working with plants and crops in terms of breeding, but it has nothing to do, in terms of the technology, with sexual reproduction. It's taking genes from one species and blasting it typically with a gene-guard into the DNA of another species, crossing genes from one kingdom or species to another causing massive collateral damage, and all sorts of unpredicted side effects.

So when someone starts out with the concept of "we've been doing this for thousands of years", watch out for everything they say. David Suzuki said if a scientist or politician tells you that GM foods are safe, they are either very stupid or lying. Either they are completely unaware of the situation, repeating what other people have told them, or they are consciously trying to manipulate in order to promote the industry. I don't necessarily have any idea what the motivation is for this man, but I can tell you that this has been dismissed by independent scientists and experts as simply whitewash and public relations, I'm sorry to say.

JS: Yet another comment made by Juan Enriquez was this.

Juan Enriquez: I have yet to know of a case of a person who has died from a GMO allergy, which by the way is extraordinary. That's not the usual state of affairs. It's been a surprisingly safe technology.

JS: And Jeffrey Smith responds to this statement often made by the industrial agriculture sector.

Jeffrey Smith: It's remarkably safe in the sense that they don't actually look for any problems, and since they haven't found any problems, they can call it safe. This is very dangerous. It's one of the most irresponsible, unscientific, and dangerous statements, that people have been eating this for years and no one has gotten hurt. There's not a single human clinical trial. There's no push marketing surveillance. In fact, the only human feeding study ever conducted and published showed that genes transfer from genetically engineered soybeans into the human gut bacteria DNA, and it appeared to be functional, meaning long after you stop eating genetically engineered foods, you might be producing these foreign proteins inside your intestines.

Consider if the BT corn has a gene transferred to your gut bacteria, it could theoretically turn your intestinal flora into living pesticide factories. Picking up the gene that was inserted into corn that produces a pesticide. What we have here are individuals making claims about safety. He said that he knows of no one who has died of genome allergy.

But when StarLink corn was discovered to have contaminated the U.S food supply in the year 2000, which was considered to be a potential allergen, there were thousands and thousands of consumer complaints to food companies about potential reactions. The FDA did not follow up any of them. What they did is they waited for people to fill out an extensive report for the FDA (there was only 52 of them) and they only actually looked at 17 of those people. We know that some people have died after eating corn products, and that other people were rushed to the hospital. This is something where we know could be happening today. We know that soon after genetically engineered soy was introduced to the U.K, soy allergies skyrocketed by 50%. Inside soy that's genetically engineered, a known allergen called trypsin inhibitor is as much as seven times higher in cooked soy. We know the new protein that was introduced

into soy that was unpredicted and unexpected, which is an allergenic, and we know the protein that was intended to be produced, which causes the soy to be herbicide tolerant, has properties of a known allergen.

Furthermore, when it was fed to mice, the pancreatic digestive enzymes were produced in much lower levels, suggesting that proteins were broken down less, which means that humans or animals might develop allergic reactions to a whole host of proteins, not just the soy protein.

There are all sorts of technological and scientific reasons why genetically engineered foods could be one of the causes for the increase in food allergies and food sensitivities. The fact that no one is actually doing post-marketing surveillance, and even if they did it's kind of difficult to identify since genetically engineered foods are not even labeled in the United States. It's kind of a genetic roulette, or a Russian Roulette, that they're playing with our lives, and since they're not monitoring they can claim that they know of no one that has died, but that's kind of disingenuous at best.

JS: And this is Deconstructing Dinner. We're currently listening to clips from my interview with Jeffrey Smith, author of the book, *Genetic Roulette*, as he comments on recordings made during a media scrum at CropLife Canada's 2007 Conference in Saskatoon. The conference was a gathering of the most influential agricultural corporations in Canada including Agricore, Viterra, Cargill, Monsanto, Bayer and DuPont among others. A number of bureaucrats from Agriculture-Agri-Food Canada were in attendance including two Conservative Members of Parliament. As you just heard prior to Jeffrey Smith's response, keynote speaker Juan Enriquez assured the media that genetically modified food is safe, and so I posed to him the following question. Take a listen.

Audio of question posed by Jon Steinman: On this topic of allergies, in the case of genetically modified food that has been in the food system now for 15 years, it hasn't really been that long. When you look at allergies within the human body, it can take an entire lifetime for someone to develop a gluten allergy. These sorts of allergies take time to develop in the human body. Now, in the case of generations, is there any risk or concern that these sorts of allergies that may be induced through this food that's now in the food supply, is that going to pan out over time? Is there a concern over that?

Audio of Juan Enriquez's response: It's conceivable. A lot of things are conceivable. What people have to understand is probabilities. When you have these debates in Europe—places like France have been really scared of some of this stuff, and they've gotten rid of their best scientists. France is a place that had Nobels in this, France is a place that had Pester, it had Monod, it had Jacob, and a series of people that were absolutely leading edge that are now finding it very hard to do their research. Most of the start up companies with smart young kids move somewhere else, and those jobs move somewhere else because part of what they've adopted was called a precautionary principle. You prove to me that this will never harm anybody before I allow you to do it. We wouldn't be allowed to salt peanuts.

Let me give you a sense of what fear can do on this stuff. If you took a food and you said, "I don't like this food because it's related to a known neurotoxin, because it has no health benefits whatsoever, because it's known to hurt people's hearts. That's a medicine that you probably wouldn't be allowed to sell even under prescription. And of course you use that medicine everyday - it's called table salt. There is no reason to use table salt. It just tastes good, and it helps food, and we're putting in a regulatory system where we're so scared, and we're trying to preserve so many things that we're driving a lot of this stuff into Asia, we're driving a lot of this stuff into India, we're driving a lot of this stuff into China. That can be really destructive to an economy in the long term.

The second thing it does is makes medicines very expensive. If you tell me, "prove to me that this new medicine will never hurt anybody, and if it does I will put your company out of business." If you applied

this same technology, this same strategy to a car, none of us would be driving cars. When you apply that to medicines, what we've been doing is the cost of medicines have gone from $40,000,000 to $880,000,000. That means that a whole series of medicines that aren't for rich people in rich countries don't get brought to market. Because you're not going to make a malaria medicine; you're not going to make a tuberculosis medicine; you're not going to make a series of things unless it's a billion dollar market. We're really under-serving people by doing that. We're doing an enormous amount of damage to society by doing that.

JS: Yet again, a number of very questionable statements were made by Juan Enriquez, with the first being an admission that risks from allergies are conceivable. I was shocked to hear such an admission, and I asked Jeffrey Smith to comment on whether it's common for the industry to admit to such risks.

Jeffrey Smith: Absolutely. I was talking to one scientist who did research for Monsanto and who was going around the world promoting genetic engineering, and we were talking in a very technical manner. As I kept drilling down, we finally came to an admission that there is a possible threat of allergies. You cannot wipe it out. You cannot pretend that it's not there. You're introducing proteins, for example, that have never been part of the food supply before. There's no way to test in advance because humans require multiple exposures before they develop allergic reactions. So when I finally said to him that you're still exposing the population and some people might get an allergic reaction and die, he basically said that it was worth it because this stuff is important for farmers for increased productivity. Then he went off in terms of seeing what kinds of farming is going on in India, neatly distracted from the fact that he just admitted that he was willing to risk the lives of human beings eating the food for the promise that this technology will help farmers.

Now, we know that the average genetically engineered crop reduces yield. We know that in India, for example, thousands of farmers have actually committed suicide after betting their wife's fortune and borrowing heavily for genetically engineered cotton. That has been a disaster there.

We know that the incomes from farmers using genetically engineered crops has not necessarily gone up, but in fact the closed markets has caused a huge economic catastrophe in the wake of their introduction.

JS: Another questionable comment made earlier in the media scrum was one we heard earlier. Here it is again.

Juan Enriquez: We're doing what we've been doing for thousands of years, which is how do you make what's out there more productive and better tasting and easier to grow.

JS: And Jeffrey Smith responds to this comment.

Jeffrey Smith: This concept that they're willing to risk the lives of human beings for this promise is like how we started off by saying that GM crops are, "more productive, better tasting, easier to grow." Well, they're not in general more productive. There is no product out there that is engineered to be better tasting. Being easier to grow is true in some cases, but it doesn't necessarily mean that it's worth the ease of herbicide tolerant crops if we're also dramatically increasing the use of herbicide and putting potentially dangerous crops in the mouths of Americans.

JS: Jeffrey Smith had a number of concerns with the message that was coming out of this conference in Saskatoon, and in particular, the comments being made by keynote speaker Juan Enriquez. We just heard Juan respond to my question regarding genetically modifying our food supply and the risks posed to human health. His response then proceeded to dismiss the precautionary principle and suggest that if such

unfounded worries over genetically modified foods had been applied to *other* technologies, we wouldn't be driving cars, using steel, or eating salt. And Jeffrey Smith responds.

Jeffrey Smith: It was a brilliant response, if you wanted to try and force the sense that if anyone is against GMOs they're anti-science. Those of us who are demanding more science are being called anti-science. The examples were just fantastic public relations opportunities. His complete mischaracterization of the precautionary principle was telling.

This is the kind of thing that was reported by Dan Glickman, the former Secretary of Agriculture under Clinton. He was a big biotech cheerleader. Towards the end of the administration, before he stepped down, he said, "what I saw generically from the pro-biotech side was the attitude that the technology was good and that it was almost immoral to say that it wasn't good because it was going to solve the problems of the human race, and feed the hungry and clothe the naked. If you're against it, you're Luddites. You're stupid."

This concept of being a Luddite, of being ridiculous (the way Enriquez laid it out with driving cars and eating salt) made it very unpopular to be a critic. In one sweeping motion, if you were against GMOs, then you were against any technological progress. He ignored of course those who were concerned about DDT and nuclear testing and all the things that turned out to be serious health and environmental problems, and just started to focus on salt, and driving cars. It was not at all a scientific discussion; it was not at all logical. It was one of those emotional and irrational arguments, and it was not scientific. In fact, there was a book called *Genetically Modified Language* where a linguist evaluated the statements of these pro-biotech advocates, and found that they used irrational and emotional and non-scientific arguments to call those against GMOs emotional, irrational, and unscientific.

JS: And in wrapping up my phone conversation with author Jeffrey Smith, he ended with these final comments on Juan Enriquez and his place as the keynote speaker at the CropLife Canada Conference.

Jeffrey Smith: What we have is a seriously dangerous and primitive technology based on assumptions that are 40 years old in terms of the science, and it's obsolete. We're feeding the products of this infant science to millions of people. We're releasing it into the environment where it can never be recalled. We have billion of dollars at stake, so these companies and their proponents are willing to risk our lives, our future, our environment for getting their products to the market, getting patents. Ultimately their desire as stated by them is to genetically engineer 100% of the world's food supply. I think he [Juan Enriquez] was very polished—the "surprisingly safe technology," "remarkably safe," "faster and more deliberate"—all these statements were very polished. It's completely obvious why he was the spokesperson or the keynote speaker for CropLife, who has been notorious around the world for taking information and turning it into disinformation to promote these products.

To me, all the bells and alarms rang when I heard these classic statements. It's wonderful—it's like throwing me a softball. These are statements that are entirely unsupported with facts. Yet, they are repeated over and over again. In fact, $15,000,000 for five years at least are spent giving these types of statements to Americans so that they would be in favour of genetically engineered crops, thinking that it was going to feed the world, that it was more precise, that it was well tested and remarkably safe, and that if you're against it you're stupid. This is what I'm up against. It takes me some time to unwind those tightly knit false arguments. But it's pretty easy these days. We've got thousand of sick, sterile, and dead animals linked to GM feed. We've got damage to virtually every organ and every system of laboratory animals that have been fed these products and tested carefully. We have thousands of toxic and allergic type reactions in humans, and we have numerous assumptions that were used as the basis for safety claims that have since been overturned.

It's not hard to actually unwind these deceptive points; it's just a question of having access to people. Thank you for that opportunity.

JS: And that was Jeffrey Smith, the Executive Director of the Iowa-based Institute for Responsible Technology. Jeffrey is the author of *Seeds of Deception* and his most recent title, *Genetic Roulette – The Documented Health Risks of Genetically Engineered Foods*. Jeffrey spoke to me over the phone while on a speaking tour in Vancouver, Washington.

Links to more information on Jeffrey and his books will be made available on the Deconstructing Dinner web site where you can also access Jeffrey's GMO Trilogy which we featured here on the program back in 2006. We will also place links to more information on Juan Enriquez, the President and CEO of Biotechonomy – a Life Sciences and Research Firm based in Boston, Massachusetts.

Juan was recorded in September at the 2007 CropLife Canada Conference held in Saskatoon, and you can expect many more recordings in the upcoming weeks and months that I compiled while attending the conference. Some of these include exclusive interviews with the President of Cargill Canada and the General Manager of Monsanto Canada.

And in closing, I'll leave you with a quick clip played earlier in the show featuring the radio I recorded while driving from Calgary across the prairies to the Saskatoon conference.

Repeated Audio of Dow AgroSciences commercial: Global demand for Nexera Canola is gaining momentum fast. So sign your 2008 Nexera Canola contract now for competitive yields, a premium over commodity canola, more delivery options, two new varieties, profitability. Sign before September 30 and receive a four dollar break on signing bonus, plus a three dollar break on next year's cereal bonus. Get on board. Contact your Nexera Canola retailer today. Accomplish more on the same acres with Dow AgroSciences.

theme music

JS: That was this week's edition of Deconstructing Dinner, produced and recorded at Nelson, British Columbia's Kootenay Co-op Radio.

I've been your host Jon Steinman. I thank my technical assistant John Ryan.
The theme music for Deconstructing Dinner is courtesy of Nelson-area resident Adham Shaikh.

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