

# CULTURE

*and*

# AGRICULTURE

J O Y C E N E L S O N

An Imperial Oil fertiliser plant.

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Once everything will have been cleansed,  
once an end will have been put to all  
viral processes and to all social and  
bacillary contamination, then  
only the virus of sadness  
will remain, in this universe  
of deadly cleanliness  
and sophistication.

— JEAN BAUDRILLARD

# THE ULTIMATE SIMULACRUM

We live and die by metaphors, by the vicissitudes of our mother tongue. Each language both reflects and constrains highly arbitrary cultural bounds of thinkable thought. Recognising the conceptual constrictions imposed by a given language is possible only by comparison to the range of another. In simply the linguistic sense, we need each other, need the Babel of tongues, need the diversity of languages to maintain a rich and fertile variety of world views — especially so that we may recognise the limitations of our own.

For example, in his profound book, *The Primal Mind*, native writer Jamake Highwater observes:

For more primal peoples the earth is so marvelous that their connotation of it requires it to be spelled in English with a capital "E". How perplexing it is to discover two English synonyms of Earth — "soil" and "dirt" — used to describe uncleanliness, *soiled* and *dirty*. And how upsetting it is to discover that the word "dirty" in English is also used to depict obscenities.

Writing from a cultural mindset that perceives the ground itself as sacred, Highwater alerts us to a problematic attitude reflected in our common language usage.

Similarly, radical American farmer Wes Jackson, founder of the Land Institute of Kansas, has ironically noted with regard to farmers' standard practice of drenching the soil with chemicals: "You know, they just treat it like dirt. Treat the soil like dirt." Clearly, a society in which soil and dirt are considered "unclean" and the lowest form of matter is bound to be in environmental trouble. "He treated me like dirt," we say,

or else, "He treated me like shit." Two of the ingredients traditionally most necessary to good agricultural praxis — dirt and manure — have become, in our society, the epitome of debasement.

The words "culture" and "agriculture" both stem from the same Latin root: *colere*, meaning "to care for." In the case of the word "agriculture," that caring is directed towards the *ager*, meaning "field," while the word "culture" leaves the caring open-ended, implying an attitude towards living. In past centuries (and indeed, past millennia) that caring necessarily extended to the manure so central for fertilising pastures, with even human excrement considered part of the whole cycle of agricultural practice. In her book, *The Death of Nature*, Carolyn Merchant notes that in parts of Europe during the sixteenth century, an entire industry developed around what was called "night soil":

An extensive manure trade was pioneered by the city of Groningen, an area with rich peat layers covering sand. Human excrement, or night soil, was offered by the city to farmers attempting to cultivate the underlying sandy soils. Ships exporting peat to Holland returned with additional night soil. Sheep and pigeon dung were also exported to the tobacco district around Amersfoort.

Until the mid-twentieth century, manure was also central to North American agriculture, and indeed, a component part of farmers' self-sufficiency. In *Altered Harvest*, Jack Doyle describes the cycle of sustainability typical of most farmers before World War II:

Much of what [the farmer] needed for farming was taken from his own land: grain was saved for seed, animal manure was spread for fertilizer, and crops were used for livestock feed. Mixing these home-grown ingredients with his own hard work, the whimsical elements of nature, and a bit of intuition, the farmer hoped for a good harvest.

But these aspects of traditional farming were at odds with the gathering tenets of twentieth-century modernity, fueled by the leading industrialists' desired goals of increased efficiency and mass production through scientific management schemes, Taylorism, time-motion studies, and the perfection of the assembly line. Having achieved these goals at the factory plant during the 1920s, the corporate sector, led by the Rockefeller Foundation, addressed their new goal: "the rationalisation of agriculture through science."

The usual explanation for the mid-twentieth-century "revolution" in North American farming practice has been the desire for increased crop yields, considered the sign of increased efficiency. But we might look for other explanations, including corporate erosion of farmers' self-sufficiency and independence through the growth of what is called "the nonfarm sector" — a new realm of business to supply what farmers once provided and recycled for themselves: seeds, feed and fertiliser. Indeed, the transformation of the family farm into the factory farm of agribusiness can be told through the fate of each one of these elements, but here I will focus primarily on that last element, fertiliser — less delicately called shit. A central (but usually unacknowledged) part of the farm-

# "treat shit like dirt..."

Anhydrous ammonia being sprayed directly on a field of young corn.

ing "revolution" was to treat shit "like dirt," and ultimately, dirt "like shit" — an attitude that has had far-ranging consequences for the entire planet.

It is generally agreed that the first major step in the "rationalisation of agriculture through science" was the introduction by the nonfarm sector of hybrid seeds (especially corn) in the 1930s to replace the many open-pollinating varieties that had evolved through centuries on this continent. In *First the Seed*, Jack Kloppenburg writes:

The genetic variability of open-pollinated corn varieties posed a serious problem for the agricultural engineer. Plants bore different numbers of ears at different places on the stalk. They ripened at different rates and most varieties were susceptible to lodging (falling over). Mechanical pickers missed many lodged plants, had difficulty stripping variably situated ears, and tended to shatter overripe cobs. Genetic variability is the enemy of mechanization.

These "imperfections" in the way of full mechanisation could be eliminated

through the use of hybrids developed by corporate science. "Hybrid varieties resistant to lodging that ripened uniformly and carried their ears at a specified level greatly facilitated the adoption of mechanical pickers. The breeders shaped the plant to the machine."

The introduction of hybrids had several important repercussions beyond the increase in crop yields — which was the key selling point by which they were hyped to farmers in the 1930s. First, the widespread adoption of hybrids meant that farmers now had to buy their seed for each planting rather than use their own, since hybrid grains do not yield good replantable seed. This was a significant step in the erosion of farmers' independence and the growth of the nonfarm sector to supply commercial hybrids. Seed had become a commodity.

Second, the reliance on hybrids greatly reduced the diversity of plant varieties propagated on the continent. For example, four generations ago North American farmers grew more than 320 varieties of corn. By 1989, only six corn varieties accounted for 71 percent of all corn grown.<sup>1</sup> This loss of diversity is now being recognised as an increase in the vulnerability of uniform crops to pests and disease.

Third, hybrids tailored to mechanical pickers encouraged the reliance on mechanisation to replace human labourers hired seasonally for hand-picking. This, in turn, created a greater dependence on fossil fuels (oil and gas) to run the machines "necessary" for the newly rationalised farm.

Thus, we can understand the Rockefeller Foundation's interest in transforming agriculture to the benefit of oil companies like Exxon, its backer. And fourth, the standardisation of each plant to better facilitate machine pickers, as well as the loss of diversity in germ plasm through the reliance on a few hybrid varieties, were part of the assembly-line mindset overtaking agricultural praxis.

Nevertheless, the economic depression of the 1930s tended to retard these "advances" for the time being. Few farmers could afford to adopt the goal of full mechanisation being pitched by the nonfarm sector. Indeed, many farmers could no doubt see the wisdom in maintaining their own self-sufficiency through providing their own seed (much of it cross-pollinated by themselves to meet their own standards), their own intuition and expertise, and their own communal labour for the harvest. As usual in this century, it would take a war to turn the reluctant tide.

Part of the massive fallout of World War II was the extraordinary expansion of the petrochemicals industry, which developed a wide range of oil-based products for the war effort and also greatly expanded the production of ammonia and nitrogen necessary for explosives. Since both ingredients were also the basis for chemical fertiliser — a ton of oil makes a ton of ammonia, which is then converted into two or three tons of nitrogen fertiliser — the petrochemicals industry recognised that this expanded production capacity might generate a potentially profitable postwar spin-off.

At least one year before the war ended, the leading industrialists of the United States had already decided among themselves (and with the endorsement of the military chiefs) that it would be necessary for the health of capitalism to maintain a "permanent war economy," rather than demobilise production levels at war's end. This decision behind closed doors was decisive in every way for the postwar world, but especially for agricultural praxis.<sup>2</sup>

Before 1945, the amount of agrichemicals applied to North American crops was negligible. But the war effort had generated a greatly expanded petrochemicals industry looking for new markets in the postwar future. Unwilling to demobilise its wartime production of ammonia and nitrogen, the industry found ready allies even during the war for the continued production in postwar years. As Kloppenburg wrote:

The 1942 annual meeting of the American Society of Agronomy was held in conjunction with a conference addressing the anticipated problem of surplus fertilizer production. Increasing farmers' use of commercial plant nutrients appeared to be a profitable solution. A.S.A. president Richard Bradfield told the assembled plant scientists that: "There seems little question but that after the war there will be available for use as fertiliser at least twice as much nitrogen as we have ever used at a price much less than we have ever paid."

The "anticipated problem" could have been solved, of course, by simply cutting back on production of nitrogen, but that would not have been a "profitable solution" for the petrochemicals industry.

Thus, the nonfarm sector was faced with a new problem: how to increase farmers' use of agrichemicals, and especially something farmers had never needed before — artificial shit. Part of the solution was to be found in changing the attitudes of farmers themselves towards their own practice. The traditional view of farming as a felicitous mix of home-grown and recycled ingredients, intuition and expertise based on a "feel" for the land and the changing weather, was obviously at odds with both modernity and the growth of the nonfarm sector. What was needed was to see farming as *science*. Kloppenburg writes:

The noted corn breeder G.W. Sprague has observed that "the objective in plant breeding is to develop, identify and propagate new genotypes which will produce economic yield increases under some *specified management system*." From the 1940s, the specified management system for which hybrid corn was being bred presupposed mechanization and the application of agrichemicals.

Changing farming into corporate science-led praxis which would follow a "specified management system" necessarily entailed a certain amount of propaganda directed at farmers themselves.



In Canada, the wartime N.F.B. partly served this purpose through a variety of films made for the rural circuits. Films like *Bacon for Britain* (1943), *Do unto Animals* (1939), *Farm Front* (1943), *Farm Improvement Series* (1944), *Farmers' Forum* (1942), *Hands for the Harvest* (1943), *New Plans for the Land* (1943) all tended to stress the new scientific methods being developed by the nonfarm sector to achieve greater and more efficient yields. But underneath this message was another: traditional, individual and regional variations in farming practice were unacceptable, outdated and outmoded, and an impediment to central authority's co-ordination.

Both messages echoed wartime N.F.B. founder John Grierson's highly positive attitudes towards scientific management, rapid technological innovation, a rising technocracy, and the expanding multinational corporations — especially the oil and petrochemicals industry with which he maintained important links from the 1930s through the postwar period. Since the petrochemicals industry was (and remains) central to the developing nonfarm corporate sector, it is not surprising to learn that Grierson's attitude towards the family farm was less than favourable.

Filmmaker Julian Roffman, who worked at the wartime N.F.B. and who also accompanied Grierson to New York in the immediate postwar period to help with Grierson's new venture, World Today Inc. (initially funded by the Rockefeller Foundation), states:

World Today had contracts for distribution of three series of theatrical shorts with United Artists. I was one of the director-producers working for the company. The series were *World Eye*, *World Ways*, *Worldwise*. Grierson received some funding from the National Farmers' Union to make a film on the plight of the family farm, which I was to direct. But Grierson wanted me to have the film glorify the big corporation farms, which were actually driving farmers off their land. He admired the efficiency of the big technology, the big distribution system of corporate farming, and wanted me to romanticize all that. I changed the direction. He was not happy about that.

Roffman's film, *Seed for Tomorrow*, became a docu-drama focusing on one small farm family which was going under in the face of the corporate takeover of agriculture. He recalls showing the completed film (which featured Lee Hays as a farm union organizer) to Grierson: "I don't remember his vituperative commentary, but I do remember that I threw the film at his feet and said, 'We're finished!' I knew damn well I wouldn't get another assignment from Grierson. And I was rebel enough to protest what was happening to farmers at the time." *Seed for Tomorrow* was not picked up by any of the three series for United Artists. When World Today Inc. folded in the late 1940s, the film went to the National Farmers' Union, which found distribution for it through Brandon films.

But ironically, even those big corporation farms so admired by Grierson found that they could not entirely adhere to the directives issuing from the nonfarm sector — especially that new "need" being pushed by the petrochemicals industry at war's end: increased use of chemical fertilizer. The hybrid seeds in use at the time "were not suited to the higher nutrient levels made possible by the availability of cheap fertilizer. The plants responded to fertilizer application by developing weak stalks, and lodging again became a problem."

The answer, of course, was to redesign the hybrids so that they would withstand massive artificial fertiliser doses. Once this was accomplished, the petrochemicals industry could finally "justify" its decision to not demobilise wartime production levels of ammonia and nitrogen. A "need" had been created. As Kloppenburg notes, "Whereas there were but 7 firms producing ammonia (the basis of much nitrogen fertilizer) in 1940, there were 65 firms by 1966."

This change in practice was, in turn, a boon to other aspects of the nonfarm sector. Heavy chemical fertiliser applications resulted in an increase in crop insects, disease and weeds, which thrived in the changed conditions. Thus, there was a need for new pesticides, fungicides and herbicides to control these factors as well. Virtually the only thing left to commodify in that former triad of farmers' self-sufficiency — seed, feed and fertiliser — was animal feed. Here, too, the postwar nonfarm sector found the answer: antibiotics and growth hormones to make commercial feed a saleable commodity. As Jack Doyle writes in *Altered Harvest*:

The manufactured ingredients of agriculture have contributed dramatically to increasing American farm productivity... Yet what is now called the productive power of the American farmer is not really his [sic] power at all, but rather those who supply him. The power of productivity has moved off the farm, and in a sense to the city — to the university and the corporation — to the centers of high science.

The postwar transformation of farming into agribusiness meant that by 1981, North American farmers were spending more than \$18 billion per year on purchased feed, \$9 billion for chemical fertiliser, \$3 billion for pesticides, \$4 billion for seed, and \$9 billion for farm machinery. Since at least \$31 billion of this annual \$43 billion outlay was going for elements that farmers had once freely provided for themselves through their own traditional recycling practices, we can perceive the highly lucrative dimensions of this shift in productive power to the nonfarm sector.

While this shift was part of a larger postwar economic shift towards globalised markets (to be explored in another issue of *Border/Lines*), it was also part of a new mindset fascinated by the wonders of high science itself. The 1950s were steeped in a



romance with synthetics in every aspect of daily life: a romance based on "unlimited" oil, disposable plastics, and other oil-based consumer products that matched the "desires" of a culture already addicted to fossil fuels through the automobile. The postwar petrochemicals "revolution" in agriculture was an intrinsic part of this larger societal addition.

But such developments invite us to look deeper into the cultural mindset. That ultimate simulacrum of our times — artificial shit — is surely the sign of a culture obsessed with what Baudrillard calls "deadly cleanliness." Indeed, behind that watchword of the twentieth century — efficiency — we find the increasing removal of all signs of life through supposedly "clean" petrochemical and technological substitutes. It is in this sense that Arthur Kroker's otherwise insightful text, *The Postmodern Scene*, errs in its subtitle referring to "excremental culture." Instead, we have arrived at what might be called a post-excremental culture — one so removed from earth and body that even shit has its simulacrum.

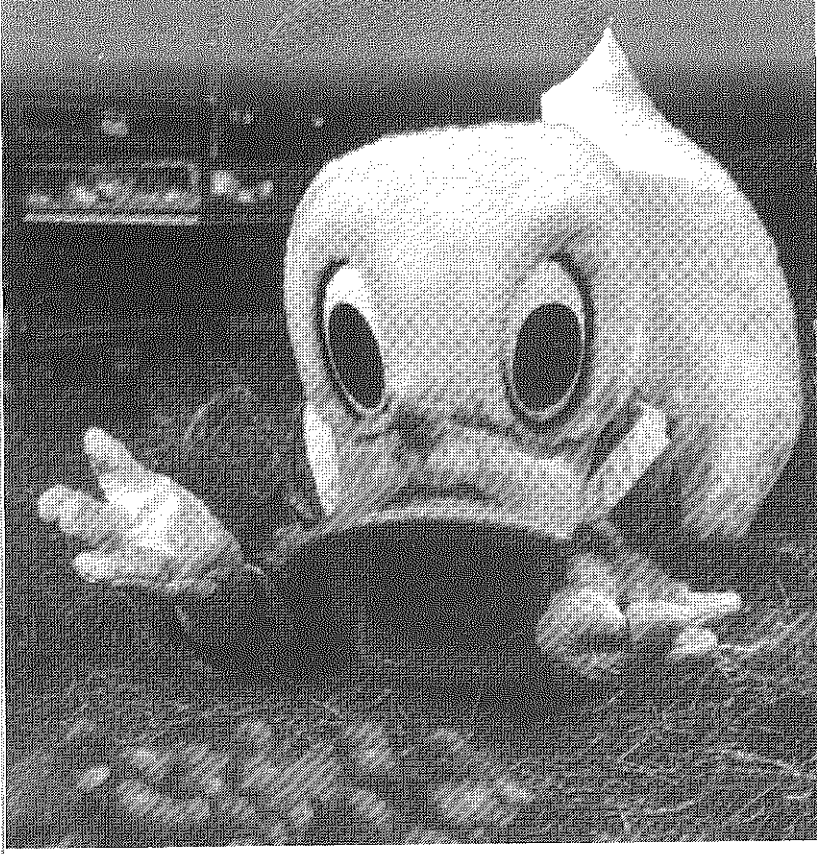
I asked someone highly informed about agribusiness practices to explain what happens to the real shit generated in the massive feedlots of modern farms. "I'm not sure," he answered, "I guess they throw it away." "But there's no 'away' to throw anything," I responded. "Where do they put it?" He paused for what felt like a long time. "Your guess is as good as mine," he said.

Not surprisingly, the postwar "revolution" in North American agriculture coincided with the rapidly rising star of a man who would make simulacra the centrepiece of his worldview. In *The Disney Version*, Richard Schickel writes: "The career of Walt Disney is...much conditioned by the

The enticement of farmers away from traditional recycling practices lead to a financial and technical dependence worth \$31 billion to agribusiness supply sectors by 1981.

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dirt  
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Donald Duck hatches a promotions ploy in a Miami factory farm.

**"The career of Walt Disney is ... much conditioned by the hatred of dirt and of the land that needs cleansing and taming and ordering and even paving over before it can be said to be in genuinely useful working order."**

*Richard Schickel*

hatred of dirt and of the land that needs cleansing and taming and ordering and even paving over before it can be said to be in genuinely useful working order." Disneyland of the 1950s reflected not only Walt's obsession with cleanliness and order and his hatred of the land, it epitomised what William Irwin Thompson has called "that curious cultural mixture of Hollywood fantasies and Big Science" that has so typified this American Century."

As Thompson notes, "The content of Disneyland was the turn-of-the-century small town, but the invisible structure was computerisation." This mix of the comforting, nostalgic artifact to encase the futuristic, robotic infrastructure was perhaps a recognition of the subtle ambiguity in 1950s society towards the rapid changes underway, especially with regard to urbanization and the changing relationship to land and nature. What Disneyland provided were technological signs of "nature" without the dirt, "animals" without the shit — the very triumph of that Biblical injunction to subdue the earth and have dominion over all other species. Robotic simulacra, more perfect in every way and fully obedient to the computer programme, reflect that obsession of both Disney and patriarchy itself: control. But such an obsession also has its price. As Umberto Eco notes, "Love of nature is a constant of the most industrialized nation in the world, like a remorse...."

The genius of Disneyland, however, was that it subtly transformed that remorse into something else. Eco writes:

When there is a fake — a hippopotamus, dinosaur, sea serpent — it is not so much because it wouldn't be possible to have the real equivalent but because the public is meant to admire the perfection of the fake and its obedience to the [computer] program. In this sense Disneyland not only produces illusion, but — in confessing it — stimulates the de-

sire for it: A real crocodile can be found in the zoo, and as a rule it is dozing or hiding, but Disneyland tells us that faked nature corresponds much more to our daydream demands.

If Disneyland was thus an early advertisement for biotechnology, with its goal of implanting biochips to monitor and control living species, it was also a spectacular advertisement for the end of nature. As Eco notes:

When, in the space of twenty-four hours, you go (as I did deliberately) from the fake New Orleans of Disneyland to the real one, and from the wild river of Adventureland to a trip on the Mississippi, where the captain of the paddle-wheel steamer says it is possible to see alligators on the banks of the river, and then you don't see any, you risk feeling homesick for Disneyland, where the wild animals don't have to be coaxed. Disneyland tells us that technology can give us more reality than nature can.

More important, Disneyland — and its later clone, Disneyworld, which is 150 times bigger than its predecessor — tells us that technological simulacra are superior to their biological counterparts. In this sense, the real Disney message is far more disturbing than its cultural commentators have usually noted. Aside from Thompson's observation of the "happy participation in fantasies of progress," Disneyland and Disneyworld reflect Walt Disney's greatest obsession — in Richard Schickel's words, "an obsession with death." That obsession is evident in every aspect of the theme parks — indeed, it is their major theme — where the only living beings are the human guides and visitors who themselves "must agree to behave like robots." As signs of the times, Disneyland and Disneyworld reveal a society more fascinated by what is "lifelike" than by what is alive.

Over the past 40 years, agribusiness has similarly followed this cultural penchant for the lifelike: providing crops and foods that are hyperreal in their appearances as "perfect" specimens, but which are so steeped in the chemistry of high science that they are more embalmed than alive. Indeed, in 1971, as Kloppenburg reports, a nonfarm-sector spokesperson for agribusiness explained the priorities: "As we solve the more pressing needs, such as giving our growers [seed] varieties which will be healthy, mature evenly, machine pick, and merchandise properly, we are going to go back to refine these varieties and incorporate in them the color, tenderness, flavor, and quality factors to which the consuming public is entitled." Most of us have stopped waiting.

But the desired goal of "cleansing" the planet has still not been reached, even though some 24 billion tons of topsoil (treated like dirt) is lost every year.<sup>3</sup> So Shell Oil has now developed the perfect seed for our times: a seed coated in more than seven layers of herbicides, pesticides,

fertilisers, growth stimulants and other pharmaceuticals that is intended to be drilled into bedrock to grow without soil at all.<sup>4</sup>

Clearly, dirt and shit have become the "noise" in that managed and purified information-system called agribusiness. But as Erik Davis reminds us, "In information theory, noise is not just random static, but also signals that interrupt other signals. Noise is negative: entropy, degradation, disruption, violence, no information. Noise breaks down worlds, gouges out the smooth surface of simulation, disturbs the system." It is in this sense that alternative farming practices, based on dirt and shit, actually are radical challenges to the "positive" (and positivist) agribusiness hegemony, and convey a very different "signal" about living matter, embodiment, and the dark, loamy underside of life. Otherwise, as the Disneyfication of culture and agriculture proceeds unabated, only Baudrillard's "virus of sadness" will remain, for a time, to remind us of what has been lost. ■

Joyce Nelson's latest book is *Sultans of Sleaze: Public Relations and the Media*, published by *Between the Lines* in Toronto.

#### FOOTNOTES

1. Quoted from John David Mann, Anna Bond and David Yarrow, "Seeds of Hope," *Solstice* (Sept./Oct., 1989), p. 11.
2. Historical material in this and the next paragraph derived from Kloppenburg.
3. See Dick Russell, "The Critical Decade," *E: The Environmental Magazine* (Jan./Feb., 1990), p. 32.
4. Chris Scott, Speaker at the "Remembering Tomorrow" conference, November 11, 1989. Mr. Scott is an Ontario writer and organic farmer highly critical of contemporary agribusiness.

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