

## The Quest for Profit on the Road of Uniformity

Thirty-five seconds from start to finish. That's how long it took disassembly line workers in an early pork slaughterhouse to take a pig to pieces. With a few well-practiced hacks of a cleaver, they divided a whole animal into a neat set of uniform cuts of meat, sending each bit where it would produce the most profit in an anonymous market. It took longer than 35 seconds, but early agribusinessmen and entrepreneurs in the 18<sup>th</sup> and 19<sup>th</sup> centuries systematically dismembered the American landscape in a similar way, turning a continent of rich ecological diversity into a factory for uniform production of a few generic crops. In the quest for wealth in North America, uniform production was the means, efficiency was the outcome, and the resulting uniformity in methods remains embedded in the destructive agricultural practices we use today.

Factory farming, including the feedlot production of livestock, relies on and perpetuates the reduction of the ecosystem into a machine for capitalist production. Uniform production methods, like the systematic slaughter of hogs described above, create uniform products. They insist on taking the variation out of crops and preventing specialization of crop strains to ecological constraints. This exacts a toll on the fertility of the soil and the livelihood of the local fauna, and can lead to crop failure without massive inputs of synthetic fertilizers or pesticides. The goal of this artificially supported farming is no longer sustenance or variety, but production of the greatest quantity of the most consistent quality, of a few commodities. Sugar production in the Caribbean in the 1600s foreshadowed a trend that accelerated in corn growing near Chicago from the 1850s, and which continues in commodity farming today: when the land is inhabited with the express purpose of growing a cash crop, the land becomes a factory and the farmer a producer of widgets. And when producers impose uniformity on the land and its crops in an effort to make a profit, ecologically unsound principles reign. Using a battery of tools such as Cartesian mapping and place naming, urban planning, scientific and technology-based farming methods, a series of actors from early settlers to modern agribusinessmen reduced the land and its wildlife to their most profitable elements, thereby replacing a naturally ordered system with one patterned after an artificial blueprint for economic success.

When Europeans arrived in the Americas, they saw the New World ecosystem as the sum of its parts, rather than a whole, and from their first actions in the new land they strove to organize those parts in an unnatural way, into a system that ignored the ecological boundaries and resources around which the native life had structured itself. They began in colonial New England by mapping the continent and dividing it into private property, and they continued this behavior across the frontier. They labeled new world locations on their maps, replacing native names with meaningless abstractions of native place names, or with tributes to saints, colonial heroes, or European locales (St. Joseph, Evanston, and Holland are also Lake Michigan port towns). The local people had used names, such as *chigagoa*, "the wild garlic place," to indicate sites where important resources might be found. Settlers abstracted these native names; they referred to the place as "Chicago," but disregarded the name's meaning as they replaced the garlic fields with a grid of city streets. The replacement names signified the arrival of settlers, who became the focal point of an area, and this ignorance to the attributes of the land represented a small step toward uniformity.

As the frontier spread westward toward Chicago, urban planning institutionalized uniformity. In most of the East and probably all of Europe and Asia, cities sprouted spontaneously out of farmers' need to trade their crops. Chicago, on the other hand, was carefully planned and developed by forward-minded planners wishing to create a capitalist metropolis. They developed

the infrastructure for a major commercial city, including waterways, railroads, and merchandise processing areas, before demand for such services existed. As a result, the farmers who migrated to the Midwest near Chicago turned immediately to cash crop farming, rather than starting as subsistence farmers as Turner's social evolution model suggests. In this way, planners and farmers cut the land into sections, each with a specific purpose in the chain of production, thereby stripping its uniqueness in search of profit.

The development of monoculture plantations, which was accomplished in the east before the construction of the metropolis of Chicago, required scientific farming methods that reduced the land from an ecosystem to a production system. Because of their emphasis on sustenance rather than profit in the market, early colonial private farms were quite sustainable. Their large sizes allowed for interdependent forested areas, fallow fields, cropping and grazing lands, with each area of the farm put to its most ecologically practical use. The early colonial farmers used three-crop rotations, and other sustainable, holistic systems, which borrowed from Native techniques. But the system of inheritance dictated that land must be divided among all of a farmer's sons, so as generations passed, farms shrank (and some settlers migrated west to new lands). As the land holdings of individual farmers diminished, they had to turn to new methods to maintain the same level of productivity on smaller and smaller tracts, creating a demand for alternative techniques. Almanacs and agricultural journals filled this need with advice that could apply to all farms, regardless of their unique geographical and ecological features. The development of "scientific" knowledge for farming, perpetuated by experts, government officials, and clergy, caused a loss in local knowledge, and dependence instead on standardized information. Farmers all over the country used the same methods on their fields, despite the fact that soils and conditions differ everywhere. This reliance on expertly developed, uniform methods took hold, and farmers on large farms around the world today rely heavily on the same technology for F1 hybrid or genetically modified seeds, pesticides, fertilizers, and equipment. Uniformity of production in this case has led to a decline in biodiversity of both domesticated and wild plant species, and the ubiquitous twin problems of eutrophication and pesticide resistance due to overuse of fertilizers and pesticides, respectively.

The factory production of livestock followed this trajectory of uniformity, reduction, and systematization in two ways: dividing land into growing land and feedlots, and abandoning the natural life cycle of the animals. Livestock came to be seen as machines for producing valuable meat from inexpensive corn, as farmers realized it was more profitable to pen their animals and use former grazing lands to grow corn instead. This caused a dramatic compartmentalization of farmland for very specific purposes, and eliminated the symbiotic processes of feeding and fertilization that occur when animals graze in pastures. Now, land is for crops and feedlots are for cattle; separating the processes maximizes both economic efficiency and ecological malfunction. Most farmers abandoned breeding when they abandoned grazing, which further mechanized the animals. The point of a pig or cow's life was no longer to reproduce and pass on its genetic legacy, but to store corn energy. This changed cows from domestic animals into meat-producing machines, raw material to be fed into the hungry capitalist monster that Chicago became as its meatpackers revolutionized consumption patterns in America. As Michael Pollan describes, today's cattle are bred for large frames and well-marbled meat, and Michigan farmer Larry Gould explains that cattle are priced based on their adherence to a set of uniform standards. Uniformity has embedded itself in the meat production industry, leading eventually to the creation of "concentrated animal feeding operations," wherein a crowd of physically indistinguishable animals exist as production units, fattening as quickly as possible before rapid disassembly-line slaughter.

Over the centuries of development of the industrial agriculture described above, Americans cultivated a tendency to regard all land as equally productive, regardless of its natural attributes, and see a fantastic potential in the land rather than its actual capability. They went to extremes of exploitation in order to fulfill this perceived potential, first by sowing endless single-crop fields in the East and Midwest, then by attempting to remake vast swaths of the Arid West in the model of the fertile Plains. Land in Arizona and California that was too dry for agriculture would have been perfectly suitable for grazing cattle, but settlers to the area still thought of farming as a more efficient use of acreage. This profit-driven insensitivity to the ecosystem spurred the massive irrigation efforts that turned the desert of southern California into one of the most productive agricultural areas in the world. Making the arid land as fertile as the land back east required incredible inputs of capital to create elaborate irrigation systems. These systems damaged natural watersheds and robbed rivers of their volume, but succeeded in painting the desert green. Western farmers, or at least the ones who held the water, made a profit on the remodeled land after giving it the same fecundity as the rest of the country. In this way, irrigation completed the transformation of an ecologically diverse continent into a monoculture of uniform, standard factory farms.

Agricultural history in the United States is rife with examples of reductionism; from the first map of the New World's vast virgin wilderness to the modern fields of monocultures cloaking the land, settlers, farmers, ranchers, and entrepreneurs have sought to extract value from the land in the form of single commodities. This called for uniformity in production, for organization of the land in a way that stripped it of its character, for technology-driven methods of agricultural production that could be used anywhere, even for remodeling of the land itself. A pattern emerges throughout all these examples: when profit-seekers remove natural variation from the land or their crops in favor of efficient production, the environment suffers. It may be from loss of biodiversity in domestic species due to reliance on a few strains of commodity crops or animals. It could come from pollution due to fertilizers, pesticides, or feedlot wastes. There may even be geological changes due to disruptions in water flow. No matter the specifics, the environment is the victim of uniform production methods.

The ultimate irony is that this profit-driven quest for efficiency through uniformity has created an agricultural system that is not only ecologically damaging, but also economically unviable. Farmers growing incredibly efficient (in bushels-per-acre) monocultures of corn, wheat, and soybeans require support from the government to stay afloat. Fortunately, alternative agricultural methods are on the rise, focusing on growing locally specialized crops in a more integrative way. These will surely alleviate some of the environmental problems described above. Even better, food producers in the future may find that diversity, not uniformity, is the key to sustainable economic success.