

Back to the Virtual Farm: Gleaning the Agriculture-Management Game

It is a cold and dreary winter morning, and raindrops are pattering away at the windows. But I drag myself out of a warm bed because I know I have wheat and onions to harvest, crops that will wither and die if I yield to the temptation to sleep a few more hours. Pausing only to slide my feet into slippers, I shuffle to my office, settle down at my desk, and press the button to start my computer. Just another day on the farm.

Like millions of others across the globe, I have become a dedicated digital farmer in my spare minutes and hours. *FarmVille*, the game that eventually loads before me, has been touted as the most popular game in the world by the developers at Zynga and Facebook, and still it is far from the only example of virtual agricultural play. Beyond the dozens of “social” farm games like *Farm Town*, *myFarm*, *Happy Farm*, and *Sunshine Ranch*, there are also hosts of downloadable “casual” games like *Farm Mania*, *Farm Craft*, *Farm Simulator*, and *Farmer Jane*, and console-based farm games like the extremely popular *Harvest Moon* series for Nintendo and PlayStation platforms. A website like Big Fish Games hosts over 40 games just with the word “farm” in their titles, and that does not even count the less obvious but still clearly related productions like *Country Harvest* and *Plant Tycoon*.

Meanwhile, the Environmental Protection Agency (EPA) has reported that less than one percent of the 285-plus million people living in the United States claim farming as an occupation, with only about 960,000 listing farming as their principal occupation.¹ Compare this with the available Facebook user data, which reveals that the

number of active *FarmVille* accounts peaked in March 2010 at ~85 million.² (For comparison, *Happy Farm's* mostly Chinese and Taiwanese players are said to number well over 200 million.) These radically discrepant numbers suggest that Americans no longer concerned with the day-to-day production of food are nevertheless heading back to the farm in droves, but most likely a virtual one. To better understand the marked success of this genre of agriculture games, as well as its current limitations, we will need to visit by turns the literary, historical, economic, and ecological implications of these games and the landscapes and processes that they model, beginning with the concept of the pastoral.

According to *The Concise Oxford Companion to English Literature*, pastoral is “a form of escape literature concerned with country pleasures” (427) that experienced its various heydays in eras prior to modern times—during the golden ages of ancient Greece and Rome, particularly in the writings of Theocritus and Virgil, and again during the Renaissance and the seventeenth century, before being ousted by the qualitatively unique rise of Romantic poetry. This temporally narrow definition of pastoral has its formal counterpart, which grounds the genre in traditional verse and drama, with an emphasis on bucolic scenes and the simple lives of shepherds. Yet despite the relative scarcity of shepherds in contemporary life, pastoral remains an apt label for many modern phenomena, less as a concretely known range of experiences than as a form of cultural wish fulfillment. Found now wherever positive portrayals of country living surface, pastoral has become a flabby descriptor connoting any kind of idyllic, temporally removed way of life, rural in nature and ostensibly full of simpler pleasures. In their reductive idealization of country work, *FarmVille* and games like it partake of conventional pastoral, but they also contain elements that seem to run counter to the pastoral tradition, namely an embrace of high technology and the flows of industrial capitalism.

Increasingly throughout its venerable history, pastoral has represented a direct contrast not only to the urban but also the mechanical and technical innovations represented therein. For Leo Marx, in *The Machine in the Garden*, this tension defines pastoral as it has evolved in the American context. Unlike the Oxford companion editors, who pronounced pastoral proper as having declined with the ascent of a more acute and visionary Romantic poetry, Marx argues that the “pastoral ideal” migrated with European settlers to become a “distinctively American theory of society” (4)—from Thomas Jefferson's well-known agrarian ideals to the kind of freewheeling frontier mentality of “New World” settlers. America's wide open

spaces, the perception of immensities of land and relatively few people, promised a moral, social, and geographic utopia denied to effete, urbanized Europeans. His analysis centers on the spiritual and cultural transformations encapsulated in the metaphorical and sometimes literal intrusion of the “machine”—the new technologies of the late 1800s, such as the railroad, the factory, and telegraph, that were abruptly collapsing space and time—into the proverbial “garden,” here the untrammelled expanses of the American continent, with reference to both Scriptural and literary pastoral utopias.

Importantly, for Marx, this entry of the technological into the pastoral is not altogether negative, certainly nowhere near the common reading of technology as pernicious agent that might be said to predominate in this age of anxious environmental awareness. Rather, Marx suggests that the shock of this encounter can yield extraordinary insights—as in Thoreau’s description of a locomotive’s passage through his beloved Concord woods—and that the complex, superficially paradoxical blend of agrarian ideals and machinic enthusiasm has come to characterize the American way of life. Of course, Marx developed his thesis at a time when environmental concerns had not yet come to the forefront of the American sociopolitical agenda. His chosen texts recall an earlier, though also pivotal time, when both the shock of mechanical invention was more apparent, but it may have been easier to see the machine less as an interloper than as a vital catalyst.

We might turn to Marx to explain the apparent paradox of a virtual farm, where the machine is present not only within the game (as tractors, combines, and even the genetic manipulation of seeds) but also as the game’s framework: the infrastructure (computers, mobile devices, and networks) without which the game could not be played—not only the machine in the garden, but also the garden in the machine.³ But Marx’s formulation only seems revelatory if one begins with the assumption that technology is necessarily disruptive to or damaging of the qualities enshrined by pastoral thinking. Only when technology and the pastoral are seen as mutually exclusive, can Marx envision a partial reconciliation of the technological and the pastoral through the inspiration that the shock of their encounter generates in the artistic mind. However, to see *FarmVille* as a direct descendant of the pastoral tradition, or even as an extension of Marx’s nineteenth-century productive encounters between the mechanical and the natural, is to miss the way *FarmVille* and games like it naturalize technology so that it becomes an undifferentiated part of the agricultural landscape. Pastoral in this modern form has lost any need to self-consciously examine its relation to technology,

because it has already incorporated technology wholesale into its fold. Reminiscent of the subliterate genre of wholesome marketing claims made in high-end grocery stores dubbed “supermarket pastoral” by journalist Michael Pollan, pastoral in its contemporary manifestation in farm games could not exist without technology and its time- and labor-saving devices.

At the beginning of the twentieth century, American agriculture was still largely driven by horsepower and human manual labor. Nearly half of Americans either lived or worked on farms, with a significant portion of their daily exertions applied toward raising livestock and crops for subsistence purposes. By mid-century, dramatic gains in the efficiency of agricultural production (measured both by yield per acre and labor required for cultivation) had made it both easier and cheaper for farmers to buy their food at the store than to raise it themselves. In the years that followed, as farm technology grew more sophisticated and markedly more expensive, reducing the need for human and animal labor, millions of farm owners and workers had little choice but to leave the profession and seek employment in urban centers. Consolidation followed, as multitudes of small, community farms gave way to fewer and fewer yet larger and larger commercial farming operations.

Following an exhaustive account of twentieth-century improvements in farm technology and changes in federal farm policy, historian Paul Conkin expresses a fundamental ambivalence over American agriculture's comprehensive shift toward technological infrastructure. While by and large he celebrates many of the massive gains in production efficiency enabled by tractors, combines, rural electrification, synthetic fertilizers and herbicides, and selective breeding, he also recognizes the dwindling number of farmers and the often damaging effects that intensive farming has had on the nation's land and waterways. Conkin acknowledges that following the Second World War, American farms “became so capital intensive that the cost of entry into farming discouraged most aspirants” and that the new range of tools and machines “exponentially increased the amount of land needed for efficient farms” (100). At the same time, he little regrets the “enormous reduction in human labor” and the “huge shift from labor to capital inputs” (101) caused by developments in mechanical harvesting, most notably by the invention of the combine and the automated cotton picker, because they enabled a staggering increase in American agricultural productivity and the country's consequent ability to support a burgeoning internal population and hungry masses abroad. What may strike many as a lasting irony, however, is that American agriculture has been so effective at

driving up yield, replacing workers, and eliminating pests, pathogens, and the necessity of time-consuming crop rotation, that in many respects it has fallen victim to its own manifold successes. For much of the century following the short period of balanced supply and demand before the First World War, American farmers have consistently faced massive production surpluses and market saturation, which has driven prices down and invited near-constant government intervention in the form of production regulations and hefty subsidies. In the meantime, pests and diseases affecting both plants and animals have returned in novel, strengthened forms to plague the vast monocultural landscapes of single-crop farms and concentrated animal feeding operations, while any number of alarming public-health trends, most notably, a rise in childhood obesity and type 2 diabetes, have indicted an American food culture based on excessive processing and caloric overabundance.

Few of these problems arise in the farm game, where technology, much as in the real world, permits the displacement or erasure of labor, waste, and natural contingency. In *FarmVille*, work that typically takes entire seasons to come to fruition, that in the physical world is vulnerable to all sorts of natural reductions, is condensed into the easy work of a few minutes and hours. A modest parcel of land is given to you free of charge just by beginning to play the game, and though at first, you must laboriously plow your land, plant seeds, and harvest crops, your profits quickly roll in and enable you to purchase top-of-the-line farm machinery—tractors to plow, seeders to plant, and harvesters to collect—vastly simplifying the earlier processes. Eventually, players can even build combines, which merge all three tasks for one-click harvesting, plowing, and seeding.

Farm games' technological effacement of human, animal, and environmental labor in many ways simply extends conventional pastoral notions of country life, which tended to obscure labor by imagining rural living as somehow both productive and idle. Raymond Williams, in *The Country and the City*, offers a particularly perceptive genealogical tracing of the pastoral genre, and its predication on a studied inattention to the discomforts and dislocations of the laboring class. Drawing on his rural childhood on the Welsh border, Williams is less concerned with pastoral as a literary conceit than as a testament to changing social and economic relations in England. Having carefully demonstrated that every generation casts back to an earlier era for a supposed agricultural purity, on and on almost without end (the "escalator" theory of pastoral recursion), Williams sets about carefully restoring socioeconomic truth to the pastoral ideal in

English literature. First, he excavates the often injurious and less glamorous systems of land tenancy and enclosure that underlie the romantic tales of courtship, marriage, and gentlemanly intrigue that permeate the novels of Jane Austen and Thomas Hardy. Then he pairs pastoral with an equally important “counter-pastoral” impulse exemplified, for him, by authors like George Eliot in *The Mill on the Floss*, who struggled not to let domestics and laborers fade into insignificance or local color. One can only imagine what Williams, with his cultural materialist and socialist emphases, would have made of this recent spate of farm games. No doubt he would have taken issue with the giant disparity between these games’ happy-go-lucky representations of farm work and the actualities of agricultural labor, just as he chided the country-house romances of Austen for their strategic excision of the poor tenant farmers whose labor sustained the life of the landed gentry.

In the United States, the official narrative of agricultural distress over the past century has largely centered on the diminishing ranks of white, middle-class, Midwestern farmers. The plight of the archetypal American farmer is increasingly an established trope in the national psyche, conjuring tales of small, family farms driven to bankruptcy or neglect by youthful flight to urban centers; consolidated agribusiness; the high price of the latest technological innovations in machinery, pesticide control, and irrigation; drought and aquifer depletion; legal battles over patented seed stock; and even the unrefined palates of at-home consumers. But when the EPA, citing Purdue Research, reports on the continuing decline in the number of American farmers, it summarizes data limited to self-reporting farm owners and legal workers, a “graying” population that is allegedly aging out of existence like the equally romanticized frontier cowboy. As sobering as this trend is on its own, it leaves aside critical subtexts from the agricultural South and West, the stories of thousands of undocumented, border-crossing workers and the nearly complete exodus of African-Americans from farming despite their long yet fraught relationship to the land as slave laborers and tenant farmers.

Farm games, with their default cast of pale, cheerful faces, appear intent on ignoring such realities. An astonishing number of titles feature fair-skinned, redheaded heroines, who sport nary a freckle or sunburn even after toiling in the hot sun for months on end. Yet as a study in the *American Journal of Public Health* reveals, ethnically diverse migrant workers constitute a critical but underserved segment of the nation’s agricultural workforce:

Migrant farmworkers constitute almost half (42%) of the population employed in seasonal agricultural work in the United States. The majority of farmworkers (70%) are foreign born, and of those, 90% are Mexican. In California, about half of the estimated 1 million farmworkers are migrants, and as many as 98% are Mexican. . . . most farmworkers are married and have children. They are also poor, with a median personal income between US \$2500 and US \$5000, but despite these meager earnings few use publicly assisted social services. (608)

When we turn to those that still own or manage farms, American agriculture has even less to boast of in terms of economic, racial, or sexual diversity:

Agriculture is, by far, our least diverse economic sector in terms of race, ethnicity, and gender. More than 97 percent of principal farm operators are white, and just over 90 percent are male, although women make up a much larger share of nonprincipal or secondary operators. African Americans, once so critical to southern agriculture, have almost completely deserted farming. Only 29,090 are principal operators, meaning either owners or tenants. (Conkin 147–48)

Given recent, high-profile Congressional debate over settlements for black farmers who have experienced both outright and systemic discrimination, the general lack of racial diversity in the contemporary farm game may be blamed for extending the injustices already embedded in American agricultural history. In depicting a kind of agricultural utopia void of workers but replete with labor-saving technology, farm games thus inadvertently reprise the capitalist drama of modern agricultural history and economics. They also unwittingly cleave to one side of a longstanding divergence of opinions between agriculture's boosters and dissidents—favoring those who believe modern industrial agriculture represents “an outstanding, and somewhat neglected, success story” (Giovanni Federico, in the tellingly named *Feeding the World*) over those who see contemporary agribusiness as either delivering a monopolistic deathblow to ancient and inherently anticonsumerist forms of peasant culture (John Berger in *Pig Earth*) or willfully ignoring natural limitations on growth (an environmental scientist like Mitchell Thomashow, who

raises an eyebrow at “the optimistic, green revolution projections of plentiful food and filled tummies” [31]).

In fact, just as farm games overlook the politically unpalatable realities of exploited and historically excluded agricultural workers, they also turn a blind eye to nonhuman labor and the equally unpalatable ecological realities of industrial waste, entropy, and resource limitation. Economists have traditionally designated both renewable and nonrenewable “natural resources” like sunlight, breathable air, and fossil fuels and “environmental services” like air purification and waste treatment as free gifts to the market economy, but as human impact on the natural world has become more pronounced, threatening to exhaust an environment poorly protected by perceptions of its vastness and resiliency, the need for economic and philosophical models that more adequately express human dependence on the natural world has sharpened. Herman Daly, one of the founders of ecological economics, has built his heretical economic philosophy around proving that the mantra of “sustainable growth” is a destructive oxymoron (7). Responding to classical economics’ axiomatic treatment of economies as closed, self-sustaining systems populated by abstract, largely symbolic producers and consumers, Daly insists that human economies must be regarded as subsets of the material world with the consequent imposition of natural contingencies and constraints, not the least of which is the bounded, finite character of our physical planet and its energetic inputs. To this end, Daly grounds his models on thermodynamic principles, in particular the first law regarding the conservation of energy and the second law regarding entropy. Thus, the environment serves not only as a “source” but also as a “sink,” as we make use of its resources and return to it the often toxic byproducts of manufacturing, like the questionable legacy of near-immortal plastics. Though the environment offers potent absorptive and regenerative capabilities, Daly recognizes that the scale of human activity now threatens to overwhelm the world’s “ecological carrying capacity” (4), putting us squarely in the midst of what some scientists have dubbed the sixth megaextinction in our planet’s history, or a massive reduction in biological diversity triggered by humans and their unprecedented industriousness.

Despite their outward natural orientation, agriculture-themed games like *FarmVille* imitate the artificially closed systems of classical economics, rather than the environmentally open systems of Daly’s theories. The lack of sobering ecological limitations—what classical economists like to call externalities to the market, in a mirroring of the rhetoric of environmental gifts and services—make such games dubious models for any genuine back-to-the-land sentiment. Farm

games offer bucolic paradises where the use of machinery and intensive agricultural methods never leads to environmental degradation, where animals may be harvested for products without coming to noticeable harm, and where key natural resources like clean water and nutrient-rich soil are always available and never subject to competition. Along with the inevitable depletion of soil and other resources, farm games also bypass the typical restrictions of climate, season, and weather, both by excluding them from instantiation in the game and encouraging the clever use of technical solutions, ranging from the plausible, such as greenhouses and chemical fertilizers, to the fantastical, such as the infamous “unwither” spray in *FarmVille*. Given this range of technological conveniences and magical cheats and saves, virtual farmers possess effective mastery over their cultivated landscapes as well as the broader environment that subsumes them.

Perhaps the most important way in which farm games could become more environmentally intelligent would be through their treatment of soil, which is for Conkin “the one resource most closely tied to farming” (169). At present, in *FarmVille*, players begin on a featureless green square of flat land, noticeably devoid of trees, flowers, rocks, and other topographical markers. The bland monotony of the terrain begs for alteration, and conveniently enough, the plowing “tool” (that rare software tool that is actually a tool) is automatically selected, so that clicking anywhere on the land creates a square of plowed earth. Hard-working farmers plow their entire allotment of land and use it for endlessly repeated cycles of planting, seeding, and harvesting, but here the game’s environmental logic breaks down in a crucial way. While in *FarmVille*, harvested land becomes “fallow land” and must be re-plowed to accept new seeds, the game applies no production penalty for continuous land use, which is also to say it offers no encouragement for leaving land idle, as the same plots can be planted and replanted without any material difference in yields or soil quality. In the real world, high yields cannot be achieved indefinitely without the use of fertilizers to replace depleted stores of nitrogen in the soil, or without planting nitrogen-fixing cover crops, legumes like clover and alfalfa, between other harvests, or without leaving the land fallow for an extended period of time to allow natural restoration of soil nutrients while preventing soil erosion.⁴ Even then, fertilizers are far from a panacea, often creating problems that outweigh their admitted benefits. Conkin observes that “modern fertilizer-based agriculture has a greater pollution risk compared with traditional farming” (171). So, for example, nitrogen-based fertilizer applied at the wrong time will be poorly absorbed by crops, and the resulting runoff poisons waterways via eutrophication.

Farm games avoid confronting environmental limitation as carefully as environmental degradation, though such realities lie at the heart of the thermodynamic principles underlying ecological economics. Just as always ready, nutrient-rich soil is a given in farm games, rather than an objective, fresh water is also plentiful and available at no cost—this despite water's deeply contested status in the real world, and the many limits on its quantity and quality. Tremendously convoluted water-rights laws have evolved to adjudicate competing claims on this resource that perversely falls, flows, and seeps irrespective of cartographical boundaries, while billions of federal and state dollars have been spent on dam and irrigation projects in often questionable attempts to guarantee consumer and agricultural water supply.

As a case in point, although much of California is semi-arid desert, it is the nation's top agricultural producer; its key Central Valley farming regions could not exist without the millions of gallons of water pumped hundreds of miles from the Sierra Nevada and the Colorado River watershed. As *Cadillac Desert's* author Marc Reisner has scrupulously documented, water has become the defining resource of the American West not due to its natural abundance but rather its inevitable scarcity. Farmers all over the nation have recklessly depleted groundwater supplies deposited over millennia, perhaps most famously in the case of the massive Ogallala Aquifer found beneath the Great Plains. In the United States and elsewhere, agriculture has also been effectively stymied by rising soil salinity, caused in large part by improper irrigation practices and inadequate drainage. As experts predict growing shortages of fresh water alongside climate change and population expansion, with the increasing likelihood of armed conflict over water rights, farm games, and their insular disregard for water sourcing and disposal smack of ecological fantasy.

Incredibly, *FarmVille* ignores the problem of water almost entirely. Though wells, fountains, and ponds are available for purchase, they are primarily decorative objects. Without transporting a single drop of water, *FarmVille* players may repeatedly raise bumper crops of their favorite virtual fruits, vegetables, grains, and flowers (Fig. 1).⁵ Most farm games, both online ones like *Happy Farm* and *Sunshine Ranch* and downloadable ones like *Farm Craft* and the aptly named *Virtual Farm*, do require their players to water crops in a timely fashion or the crops will die. In some games, players must bring the water up by hand from old-fashioned pumps or wells, in order to water plots with a watering can; in others, watering is made vastly easier with hoses or automated sprinkler systems, presumably



Fig. 1. A recent day on my land in the *FarmVille* English Countryside. Trademarks are the property of their respective owners. Game content and materials (c) Zynga Inc. All rights reserved.

connected to a municipal water supply, though in the case of *Fantastic Farm*, the player simply summons magical rain clouds to drizzle over parched land. While these games usefully acknowledge water as a necessary factor in agriculture, the water used is abstract, uniform, and endless. These generic qualities allow players to feel “blissfully productive” within the closed, perfectible systems of their imagined farms, without worrying over the broader, environmental context.⁶ Unlike real-world farmers, virtual farmers need not understand where their water comes from, or where it goes after serving its purpose. There are no water tables or downstream neighbors in these worlds, where water never runs out, costs nothing, and is always pure. Virtual farmers have no reason to suspect that the water is materially transformed by its use, though as Conkin notes, “the majority of nonpoint water pollution in most of the world derives from agriculture, followed by household wastewater. Nonpoint sources are small but widely distributed sources of pollutants that are difficult to identify and control, unlike the point-specific pollution of a factory or a large hog or poultry farm” (170). They might be shocked to learn that “Irrigation accounts for more than 80 percent of all fresh water utilized in the United States” (171), or that the largest energy consumer in California is the state water project that supports agricultural operations. In their glib treatment of water, farm games

could be said to model the very opposite of informed localism, or the kind of geographically specific knowledge advocated by bioregionalism, in which bioregions are most commonly defined by shared watercourses.

Perhaps the clearest evidence of entropy and environmental externalities to economic systems lies in waste, whether it is legally and ethically marked as pollution or trash or, as is more often the case, goes unnoticed or is deliberately overlooked until its sheer size and severity cannot be ignored. Though capitalism's players would prefer to imagine otherwise, commodities cannot be created out of whole cloth, and production can never achieve 100 percent efficiency—such are the fantasies of perpetual motion, Dyson spheres, and the lossless Carnot engine. Fascinated where others have been repelled, concerned where others have been indifferent, literary ecocritic Timothy Morton has given the name “dark ecology” to all those ugly substances lurking beneath the glossy veneer of consumerism, in a philosophical attempt to counteract luxury culture's repression of death, excess, and decomposition. For Morton, typical invocations of ecology speak in superlatives, stressing positivity and harmonious living, but this is, in its own way, as closed a system as the abstract ideal of classical economics. Where the marketer and the effete consumer see grocery and department store shelves lined with a reassuring panoply of products, dark ecology looks beyond the point of acquisition and the brief lifetime of a product's use. Delighting in the scatological, Morton also mocks our failure to think “beyond the U-bend,” teasingly referring to that crooked spot at the base of our toilets beyond which our own excrement travels, leaving an overtly pristine bowl of clear water but joining the feces of a thousand others in aging pipes and pools at waste treatment plants or flowing directly seaward. Dark ecology reminds us that ecology is not solely about the bright optimism of interconnection and interdependence, a warm, furry, mammalian comfort in our cohabitation, but also a universe of waste, dirt, shit, and trash that does not disappear, though it may fade or become otherwise as it gets taken up again and again by a sprawling web of organisms and inorganic actors.

By this standard, farm games at best mimic or at worst perpetuate distaste for the murkier sides of a consumer culture based on convenience, choice, plenty, and growth. Virtuality becomes both blessing and curse in this respect: on the one hand, it serves as an opportune shield against criticisms of ecological inaccuracy, but at the same time, it is the very basis for a vital disconnect between the raising of food and the politics of its consumption. Currently, *FarmVille* farmers assiduously raise crops only to sell them to an abstract marketplace.

While a few harvested bushels can be sold to neighbors via homey-looking farmer's market stands, crops bought in this way can only be used as raw materials, turned into pig slop, or expended for meta-physical "mastery" bonuses (players "master" crops by planting and successfully harvesting them in great quantities). Crops transformed into goods in bakeries, wineries, and other structures cannot provide gustatory satisfaction, but can be traded for fuel, which powers farm machinery. Ultimately, even as farm games leverage the growing grassroots interest in organic, locally sourced food and what we might call "personalized agriculture," their clean, carefully antiseptic landscapes more closely resemble the impersonal bounty of bulk-discount stores than artisanal farmer's markets or roadside stands. Sunlit, verdant fields admit no suggestion of consumer waste, let alone the industrial waste generated by intensive farming or concentrated animal feeding operations. Viscerally lacking, farm games treat animal and plant life little better than innocuous parcels of prepared, frozen, and packaged food—designed for quick, mindless consumption within a flattering master narrative.⁷ Not surprisingly, Zynga regularly negotiates corporate partnerships or advertising agreements that allow outside content to appear directly in their games, and in the case of *FarmVille*, many of the featured brands play directly to the game's promise of wholesome, direct-from-the-farm food. McDonald's, Stouffer's, and Frito-Lay have all made "guest farm" appearances in *FarmVille*, and players that take the time to visit and tend these temporary farms are rewarded with in-game bonuses and branded farm décor (e.g., a Frito-Lay delivery truck or a harvestable Stouffer's macaroni-and-cheese tree).

Cynics might well argue that farm games all too accurately model the basic nature of agriculture as manipulation and alteration of land, as well as the longstanding affinities between farming, capitalism, and technology—a triad now so deeply engrained across the world that only a tiny minority of hobbyist or subsistence farmers might claim to operate outside of it. Almost all farms constitute artificial ecologies that reduce the complexity and biodiversity of natural ecosystems to monoculture, an approach that has proven inherently susceptible to pests and diseases as well as troublingly reliant on synthetic fertilizers to replace depleted components of the soil. Far from embodying the evolutionarily rich interconnections of Darwin's entangled riverbank, farms replace variety with uniformity, or the smooth, heterogeneous spaces of natural systems with striated, homogenous rows and fields. Even for Conkin, the devoted farm historian, agriculture and environmentalism suggest an unavoidable antipathy:

Of all human activities, the cultivation of crops has had the largest impact on the face of the earth, beginning with the elimination of up to half of all forests. If one places a high value on an environment little affected by humans, then agriculture by necessity is hostile to environmental health. It has eliminated wilderness, shifted the balance of plant and animal species, altered the hydrological cycle, and, in a limited way, altered climate. (169)

Though Conkin clearly favors the anthropocentric end of the decades-old preservation versus conservation debate, siding with those who seek sustainable use over those who seek to enshrine wild land, Conkin reserves a Dalyesque skepticism for the concept of sustainable farming: "I doubt that, in the strictest sense, any system of farming is fully sustainable, because of at least a few nonrenewable inputs such as fossil fuels" (185). Conkin ultimately recommends that we reinstitute crop-rotation practices, use integrated pest management to reduce toxic pesticide use, and return to alternative forms of agriculture that minimize tillage or soil disruption. Transitioning back to what he calls "low-input" agriculture, with its emphasis on the recycling of nutrients, might bring farming back in line with the ideals of natural escape and country simplicity sought by players of farm games all over the world.

That *FarmVille* and games like it inevitably caricature complicated biological and economic processes comes as no surprise. Games, like other media, must selectively present or order experience without attempting to replicate reality. Already, games of all stripes simplify what would otherwise be very difficult tasks to perform: firing a gun, scaling walls, even piloting intergalactic spacecraft. At the same time, games can easily enliven tasks which in the real world would seem onerous: waitressing in *Diner Dash*, or running a household while working 9 to 5 in *The Sims*. Farm games partake of both strategies, offering cheerful simulations that render the dull, offensive, or harsher aspects of agricultural work reassuringly mundane. Though the results can seem vaguely parodic, especially when viewed with socioeconomic or ecological interests in mind, game designers would no doubt protest that their priority is entertainment, not verisimilitude. Games play upon widely recognized, culturally encoded frameworks—pastoral retirement, rags-to-riches entrepreneurship—but stop well short of accuracy when that entails alienating drudgery and demoralizing failure. Their aim is less total fidelity than just enough realism to produce imaginative play that is both familiar and

relevant.⁸ Accordingly, farm games are deliberately simple affairs; only a few minutes of exploration will teach you what you need to know to operate successfully in their domain.

Yet while there may be little worth in holding farm games to an impossible standard for environmental and historical truth, the games nevertheless exert an important influence on how millions of players conceptualize country life, food production, and right relations between humans, animals, and the environment. Contemporary farm games represent an array of missed opportunities to model more meaningful game ecologies that would attempt to capture the richly entangled dealings between plants, animals, people, fungi, bacteria, and inorganic matter, for example, by encouraging smart crop-rotation practices or symbiotic cross-species interaction. We need game environments that respond to human agency and yet seem to possess life independent of player actions: this would constitute a radical but constructive decentering, as well as a call to wonder actively at the place of people within natural environments, both real and virtual.

NOTES

1. National Agriculture Center. "Demographics." Environmental Protection Agency, 10 Sept. 2009. Web. 22 June 2011.

2. "FarmVille." AppData. Web. 3 Mar. 2011.

3. This helpful formulation was suggested to me by one of the short, daily musings curated on the online technoculture forum In Medias Res, in particular a post on December 8, 2010, by contributor Ted Friedman. Friedman offered a generally positive reading of *FarmVille* not only as a model gift economy but also as evidence of a "new techno-pastoralism." While Friedman's term is suggestive, as is his titular inversion of Leo Marx's notion of "the machine in the garden," my aim has been to suggest that pastoral had to undergo a transition not only to its agrarian form but also its modern sympathy with technology.

4. In *FarmVille*, applying fertilizer to one's fields is optional, but as fertilizer is made readily available and has the appealing effect of boosting your crops' size and yield, its use is effectively constant.

5. In late 2010, Zynga gave *FarmVille* players the ability to purchase and build "orchards," with each orchard able to store up to 20 trees. Harvesting orchards may produce "mystery" tree seedlings, and to raise each seedling into an adult tree, players must apply 10 watering cans.

6. For an explanation of "blissful productivity" in games, see McGonigal, Jane. *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. New York: Penguin, 2011.

7. In *FarmVille*, farm animals are glorified pets that can be bought and sold but never slaughtered for food. Many yield nonsensical products (horses

are brushed for horsehair and penguins produce ice cubes). In *FrontierVille*, now called *The Pioneer Trail*, harvested animals do yield the relevant food products (pigs produce bacon, pork chops, etc.), but still come to no visible harm. In this respect, virtual farm animals are more like fruiting trees than livestock.

8. That said, many games rely on claims of especial realism for their appeal (“the most realistic first-person shooter ever”) or strive to incorporate realistic detail either for political statement or ambience.

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