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The once and future georgic: agricultural practice, environmental knowledge, and the place for an ethic of experience

Benjamin R. Cohen

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Abstract This paper re-introduces the georgic ethic and the role it has historically played in debates about new agricultural practices. Public engagement, participatory research, and greater local involvement in crafting new means to work the land flood the literature of agrarian studies. Putting the experience- and place-based georgic into that discourse can help deepen its character and future possibilities. The paper draws from recent sociological research into the acceptance and resistance to new practices to show the georgic's explanatory, descriptive utility in studies of those controversies. It also highlights how agricultural and environmental ethicists can draw from the georgic tradition for its prescriptive and normative possibilities to put practitioners back into the agricultural policy process and to draw more firmly from the notion that knowledge of the environment is constituted in practices of living in it. Placing the language and terms of the georgic ethic more centrally into public conversations about agricultural ethics and policy can enrich those conversations by structuring them with attention to experience, place-based values, and the moral space of interaction between humans and the land.

Keywords Ethics · Experiential knowledge · Genetically-modified · Georgic · Participatory · Pastoral · Place-based · Pragmatist philosophy · Scientific practice · Sustainable agriculture · Technology · Virgil

Abbreviations

GMOs	Genetically-modified organisms
PFI	Practical Farmers of Iowa

B. R. Cohen (✉)
Department of Science, Technology, and Society, University of Virginia, A237 Thornton Hall, Charlottesville, VA 22904, USA
e-mail: bcohen@virginia.edu

"Georgic…is what we need now." (Sayre 2005, p. 189)

Introduction

Agriculture is hard work. This is no secret. Historically, that labor intensity has been regarded as a virtue, a key factor used to demonstrate the cultural and political value of the farming life. Although Thomas Jefferson was certainly not the first to think it, his 1780s claim that "those who labor in the earth are the chosen people of God" was meant to provide the cultural underpinnings of an agrarian worldview (Jefferson 1999, p. 48). The claim was conceived in terms of cultural ethics to suggest how society should organize its means of production, but it was also an assertion that held together environmental knowledge and environmental ethics: as a moral statement, it presupposed that those who worked the land knew it best. Ethicists in the pragmatist tradition speak with a similar view when they note that doing is knowing; that, for example, working in the soil is a means for knowing what that soil is. Their perspective addresses a prevailing undercurrent in moral and political questions about right action on the land, which is to wonder who can answer such questions.

At the core of the Jeffersonian aphorism was the value of experience, a value both cultural and environmental. The possible association of this attention to experience with pragmatist thought is not incidental: by viewing work and direct engagement with the land as great teachers, Jefferson was crafting an agrarian philosophy that ethicists such as Thompson and Hilde (2000) have since interpreted as bearing relation to later pragmatist orientations to the world. From this, one environmental ethics payout for Jefferson and the later ethicists was that decisions about land management and soil treatment were best addressed

by those with the experience of working that land. Thus, to the question of who has the epistemic authority to address such concerns the answer was the farmers, those with lived cultural and environmental experience.

This observation has been corroborated not just within the literature on agricultural ethics, but as a broader observation about how humans come to know nature overall. The environmental historian Richard White argues, for instance, that "Work itself is a means of knowing nature" (White 1995a, p. 171). Recent scholarship by environmental ethicists such as Andrew Light (2002) and Ben Minteer (2006) lead similarly to the view that human concepts of the non-human world should be understood as deriving from humans practices *in* that world, not just by assessing abstract or foundationalist concepts as if outside that world. With more specific reference to agricultural contexts, labor, experience, and work offer a sense of connection to the land and from that the opportunity for direct engagement. To be sure, that engagement is now of a far different sort than in Jefferson's pre-industrial lifetime, mediated to a large degree by the modern techno-scientific enterprise. Since the story of modernity is also a story of humans moving away from daily practice on the soil, attention to the value of labor, work, and experience on the land—attention that I would like to draw in this article—must thus be attentive to how that experience is mediated through the infrastructure of technologies and scientific practices. In a point White (1995b) develops by reference to hydro-electric power production, this means that studies of experience and knowledge have to take into account how those techno-scientific practices provide the means of connection, not that we moderns are no longer connected (see Thompson 2001).

By focusing on work and experience as the space of interaction between humans and the land, agrarians in the Jeffersonian tradition, pragmatist philosophers like Thompson and Hilde, and historians like White all highlight interaction as the meaningful space of ethical focus. What matters for an analysis of ethical issues in agriculture is the interplay between two sides, humans and land, not the two sides in isolation. In this framing, neither a foundationalist appeal to disembodied moral principles (which might be based on attention to the human side) nor lessons derived from the land by itself (with might be a plea to "listen to the land") can anchor discussions of what is right or good for the land or the humans; instead, the *interaction between them* provides the basis from which such debates about right action are set (see Minteer 1998; Light 2002; Light and DeShalit 2003; Minteer et al. 2004; Minteer 2006; Thompson and Hilde 2000; Thompson 2001).

Focusing on interaction and experience provide a strong basis from which to approach questions of agricultural ethics, questions such as: How do humans relate to their land? How do they make choices about what is right or good for the human manipulation of the soil? How do they evaluate the viability or acceptability—morally and practically—of new agricultural practices? From these questions and with the dynamic mode of interaction as my focus, I want to push for greater attention to the ethical characterization of that *space between*, the space traditionally understood as the basis for making meaning *of* the land and for generating moral virtue *from* it.

In this paper, I consider that this space is most capably cast as "georgic." The georgic ethic is a place-based and experience-based ethic, one that draws from the value of practice and engagement and one likely most common to the contemporary reader, if at all, because of Wendell Berry's sometime identity as a neo-georgic writer (Smith 2003). The georgic ethic has not received full scholarly attention within the forums of environmental ethics, agricultural history, or agro-environmental policy. I argue that, as an experience-based ethic, it should hold more prominence in those discourses.

Rather than the georgic, it is the pastoral ethic that stands as the most favored reference in such studies, offering an ideal of human relationships to the land that appeals to a placid image of tranquil landscapes. In its best expressions the pastoral ethic espouses a sense of appreciation for non-human nature, though even then this appreciation stands outside the realm of labor or work. The contemplative mode of engagement it promotes thus limits the ethicist's ability to fully examine agricultural experience as a space of work. On this count, one would do better to enroll Virgil's *Georgics* (Mynors 1990; Lembke 2007). The georgic ethic posits that labor is life, standing in distinction to, not just extension from, a pastoral ethic that promotes the aesthetic that leisure is life. Because it puts the space of interaction between humans and the land into the foreground, georgic, as the environmental writer and agricultural organizer Laura Sayre has put it, "is what we need now" (Sayre 2005, p. 189).

In what follows, I draw from recent work in pragmatist-oriented agricultural and environmental ethics to pursue the character of the space of interaction between humans and the land as georgic, not pastoral. A study of the georgic shows that interaction demands moral attention because it is about the relations between people and the land, and between one person and another; in this sense, it offers ethicists and agrarian commentators a descriptive and explanatory tool because it provides a term with which to describe the moral character of interaction itself. But one also finds that a study of the georgic represents a positive means of recognizing how practitioners *should be* involved in the introduction of new practices. In this sense, it wields prescriptive possibilities, allowing a means by which ethicists can inform the policy process.

I introduce the georgic below and the role it has historically played in debates about new agricultural practices. I then draw from recent sociological research into the acceptance and resistance to new practices to show the georgic's explanatory and descriptive utility in studies of those controversies. By way of conclusion, I highlight how agricultural and environmental ethicists can draw from the georgic tradition for its prescriptive and normative possibilities to put practitioners back into the agricultural policy process and to draw more firmly from the notion that knowledge of the environment is constituted in practices of living in it. Public engagement, participatory research, and greater local involvement in crafting new means to work the land flood the literature of agrarian studies. Putting the georgic into that discourse can help deepen its character and future possibilities. In the least, placing the language and terms of the georgic ethic more centrally into public conversations about agricultural ethics and policy can allow for those conversations to be enriched by structuring them with experience- and place-based values.

Placing the georgic

The georgic ethic takes its original expression from Virgil's poem *The Georgics*. Written in 29 B.C.E, before his *Aeneid* and after the *Eclogues*, the Roman poet's verse was didactic, aimed at inspiring Romans to return to the labor of the land and away from their transition to militarized state (Lembke 2005). Virgil's poems have since provided reference points for agriculture and agrarian identity, rural virtue, and practical directives on working the land. His *Eclogues*—sometimes known as the *Bucolics*—offers the pastoral ethic, an ethic that became particularly prominent during the nineteenth century. Its imagery of passive contemplation, of staff-holding shepherds resting in mountain valleys, provided the connotation of humans leisurely frolicking in nature well-suited for Romantic values. As the classicist Bruno Snell framed it a half century ago, the Arcadia of Virgil's *Eclogues* is set in "a far away land overlaid with the golden haze of unreality" (as quoted in Martindale 1997b, p. 110).

The pastoral ideal, not the georgic, has been influential within environmental studies, its legacy continuing to pervade modern imagery of the agrarian life. Its wide popularity and ready reference outside classicist circles may owe much to Leo Marx's landmark work, *The Machine in the Garden* (Marx 1999). There, Marx explored the ascension of a pastoral ideal in American literature and thought, one speaking to a tension between settlements of the East and an expansive, untamed frontier to the West. As a contribution to American Studies, Marx had the pastoral standing as the organic, life-affirming antipode to dehumanizing technology. Beyond Marx, the analytical and descriptive utility of the pastoral comes perhaps from its relevance for a wide range of scholarly approaches. The environmental historian Roderick Nash (1982), in his influential *Wilderness and the American Mind*, sees the pastoral helping define a middle-ground along a spectrum from wilderness to civilization; for the ecocritical scholar Lawrence Buell, it suggests an ideal of literature that emphasizes "an ethos of rurality or nature or wilderness over against an ethos of metropolitan" (Buell 1995, p. 439). Donald Worster (1993), in *Nature's Economy*, draws clear distinctions between the Arcadian (as synonymous with Pastoral) and imperial studies of nature. That Arcadian view represents a peaceful relationship to the world within which humans live (as with, for example, Thoreau) while the imperial school of thought is understood by its goal of controlling and dominating nature (as with, for example, Linnaeus and Bacon).

The pastoral offers a tool demarcating one view of nature from another—civilization from wilderness, culture from nature, city from country, mechanical from organic. It is born of the aesthetic and emotional response to timeless, gentle, and leisured cultivation. At its best, the pastoral situates humans as part of the natural world, not outside it; even as they cultivate, herd, and develop their resources, they do so within the constraints of a world greater than themselves.

Virgil's *Georgics* offers a different ethical emphasis, making the work of the farmer, not the leisurely observer, the focal point of agriculture. The georgic is "not a Golden Age where apples drop freely from the boughs," as one literary scholar put it, "but a fallen world of hardship and toil where one lives by the sweat of one's brow" (Dowling 1990, p. 36).[1] To be sure, it promotes a cooperative relationship between human and non-human nature, as the pastoral or arcadian ethic does—and for this reason it has often been referred to as a "hard" pastoral—but it does so with more tension and friction. With a deliberate, difficult, labor intensive life as its basis, the *Georgics* is at once about dirt and dung, about metaphysics, and about knowing-by-doing (see Batstone 1997). "Georgic," the ecological literary critic Timothy Sweet writes, "treats those aspects of pastoral, broadly construed, that concern not the retreat to nature or the separation of the country from the city, but our cultural engagement with the whole environment" (Sweet 2002, p. 5). It offers a fundamentally active and engaged ethic. A recent translator called the

[1] The Thoreauvian scholar James Tillman, writing about *Walden* and Thoreau's mixture of pastoral and georgic ideals, casts the pastoral as "essentially characterized by *otium*, pleasure, and the enjoyment of poetry and contemplation" while the georgic "is characterized by labor, painstaking forethought, and respect for science and common sense" (Tillman 1975, p. 137).

Georgics "a poem for our time," because it advocates "caring without cease for the land and for the crops and animals it sustained" (Lembke 2005, p. xiii). I read the *Georgics* and the ethic it expresses as relevant to our age for reasons of care as well, but for reasons that do not rely upon a return-to-the-land philosophy. Rather, the georgic ethic is an ethic for our day because it places the means of human connection to the land back at the center of an agricultural ethic.

The active, experiential element of the georgic resonates well with pragmatist studies in environmental ethics that encourage attention to the experience of humans on and for the land. Thus, recent scholars calling for human labor to again stand as the basis for a stronger environmental ethic, who ask us to debate environmental matters based on practices in nature, not just abstract reflection about it, also stand as part of this obscured ethic's tempered legacy. In the environmental ethics literature, Paul Thompson, Ben Minteer, and Andrew Light, though in different ways, have brought out this basic point of focusing on living practices in nature. Most prominently, in the broader discourse on agrarian values, Wendell Berry's work is rightly understood for its neo-georgic appeal—his is a strategy for engaging the land on which people live and depend (Berry 1980, 1996). It is not the mere fact that Berry's work is agrarian or that it elevates the virtue of the farming life that makes it georgic, but that it is engaged, intensive, and experiential (Smith 2003). His neo-georgic call asks us to return human labor to the core of an environmental ethic in ways furthered by Wes Jackson's focus on agrarian contexts as sites for human moral identity (Jackson 1985, 1996).

As differently directed as their work may be, Berry, Jackson, Light, Minteer, and Thompson all speak to an approach to agricultural issues that asks us to debate environmental matters based on practices in nature rather than abstract contemplation outside it. They each usefully move beyond questions of disembodied intrinsic value alone to questions of embodied humans living and working on the earth. Though not using the terminology, they generally characterize the space of interaction between humans and the land as georgic, not pastoral. At the same time, rural sociologists attentive to the lived cultural experiences of those at the front lines of new agricultural and environmental practices, to whom I return below, make the case that the success or failure of those new practices depend on their relation to pre-existing, familiar, and thus trustworthy modes of interaction with the land (Henke 2000; Carolan 2006a, b; Kondoh and Jussaume 2006). In such analyses, lived cultural experience is not a sidebar to the discussion, but the basis from which the discussion can more forward. Within this set of conversations, the georgic thus offers not only a philosophical reference point, but an agriculturally moored ethic that can help cinch them together—both to understand and change agricultural practice.

As for the place of the georgic in traditional studies of farming and virtue, it need not be subordinated as merely a "hard" form of the pastoral. Rather, it is distinct, and, for the sake of agricultural and environmental ethics, importantly so. In terms of environmental knowledge, the georgic is especially relevant for the sake of agricultural discourse since it requires attention to the forms of interaction that produce knowledge. As part of the agrarian philosophy in evidence with Jefferson, the very idea of agricultural knowledge and of knowing the world are articulations of cultural value. The next section of this article puts that georgic ethic to work, drawing from the cultural value the experience-based ethic holds while using it as an explanatory tool for understanding agricultural debates about controversial new practices.

Environmental knowledge production and agricultural ethics

The georgic context of new agricultural knowledge-making practices

Contentious agricultural issues come about not just because they bring into question how to produce agricultural goods, but because they confront in some way the production of agro-environmental knowledge. For example, addressing questions of whether or not to introduce genetically-engineered seeds, whether or not biochemical solutions to soil fertility are acceptable, or whether or not the ecological advantages of sustainable practices are possible or worthwhile rely in part upon one's knowledge of prevailing agricultural practices (see Wynne 2001; Chrispeels and Mandoli 2003; Verhoog et al. 2003; Deckers 2005; Sterckx and MacMillan 2006). Novel means for working the land, or to manipulate soil, seeds, and crops are thus not mere intellectual issues. They are possibilities for different ways to practice living in and understanding those elements. They are irreducibly material and intellectual, physical and moral.

These contemporary issues of ethics and politics speak to a broader historical context. In this case, the history of new agricultural knowledge-making practices is particularly instructive. When agricultural communities have historically resisted new practices, they have not simply resisted new ideas from a basis of anti-intellectual or backward-directed stubbornness. They have been, rather, contesting ways of acting and living in the world that stood in tension with then-dominant practices, what I consider *knowledge-making practices*. When knowledge-making

practices are viewed through a georgic and pragmatist lens and when they are interpreted as irreducibly moral and material, they require further attention to how that knowledge is born of working and living on the land. They require in that sense attention to the value of experience and place. The ethical issues born of debates about knowledge-making practices offer an area of scholarly attention that can benefit from the language and terms of the georgic ethic.

Expressions of the georgic ethic were resurgent in the eighteenth century and have their basis in such questions about the production of environmental knowledge. Washington and Jefferson, for example, kept active correspondences with Arthur Young and William Marshall, two of the most famed georgic tourists and contributors to the georgic genre of writing in Enlightenment Britain (Sayre 2002). In the US, Washington and Jefferson sought with their neighbors to promote new agricultural practices based on the testimony of experimenting farmers, those reporting in subscription treatises and letters on the successes and failures of their innovations on the land for the benefit of neighbor and nation alike. Through this mechanism of early American communication, the new practices could be vetted as following from trustworthy community citizens.

The formative years of modern agricultural science into the mid-nineteenth century grew from that earlier georgic context. That era in the United States roughly spanned from the generation after Jefferson's death (1820s) to the formation of the USDA (1862). As the history of this era has been told, the details about agricultural science are those of agricultural chemistry: the British chemist Humphry Davy's (1813) *Elements of Agricultural Chemistry* launched the sequence; the German chemist Justus von Liebig's (1840) *Organic Chemistry and its Relations to Agriculture and Physiology* completed it. Thus while Davy's organic, humus-based theories of soil fertility and composition codified principles of soil management commonly understood by practicing farmers, Liebig's mechanistic, mineral-based theories of the 1840s provided the underpinnings for the modern nitrogen-phosphorous-potassium (NPK) paradigm of mineral soil identity. More immediately, Liebig's mechanistic theories also paved the way for artificial chemical fertilizers like super-phosphates while providing uniform and repeatable measures that made state and then federal governance of agricultural production possible. After Liebig and the 1840s, the trail to modern scientific and industrial agriculture could look back to find its source.

Yet in a case of resistance to new knowledge-making practices, farmers and the broader agricultural communities of the antebellum years—both North and South—argued with great resolve that Liebig's contributions were ill-conceived (Rossiter 1975). The standard story of the rise of agricultural science I just rehearsed casts them as intellectually unprepared farmers, their feet simply stuck in the mud, bracing against an inevitable tide of new chemical theories (Gates 1960; Demaree 1974). If only the farmers had understood and accepted chemical authority earlier they would have solved problems of soil exhaustion and allowed for more effective western settlement more quickly. In the progressivist narrative, the farming community put up irrational resistance.

But as understood within the working cultural context of the antebellum years—and not the context of disembodied theory and proto-professional scientists—the agricultural community's actions appear more nuanced than a presentist account might suggest, as they often replied with empirically backed, culturally situated, and value-based reasons. In part, their beef with Liebig was that he was no farmer (Brock 1997; Cohen forthcoming). Many contributors to the nascent agricultural press painted him and his prescriptions for agricultural practices as born of speculation and agricultural inexperience. When they wrote in the 1840s, as in *The Southern Planter*, that "[Mr. Liebig] knows about as much of agriculture as the horse that ploughs the ground," they were questioning the chemist's working experience and bristling at the suggestion that they work their own fields differently (Anon. 1845, p. 23). A few years earlier, the editor of the same paper had considered the entire "fad" of systematic agriculture this way: "That many of these theories, concocted by the philosopher in his closet, are destined to fall before the superior knowledge of the *practical* farmer, we do not doubt. The philosopher must exchange his laboratory for the open field" (Botts 1842, p. 187). Rural citizens demanded that the merits of Liebig's technical work and the general claims of natural philosophers everywhere (in this case, chemists) follow an assessment of his character; his character in that agrarian world was understood by engaged experience.

For farmers and planters alike, that is, cultural credibility was understood through existing experience-based mechanisms. From the view of the farmers and non-chemists, prescriptions for new ways to augment the soil were contested as ways to redefine the activities of their everyday life. In so doing, agrarians continued to draw on a georgic sensibility to set the groundwork for new land practices in America. It is not without relevance that one of the more widely distributed agricultural works in the Early Republic in the years before Liebig was titled *The New England Farmer, or Georgical Dictionary*. Wending its way through three editions into the 1820s, Samuel Deane's (1822) dictionary drew extensively from the Englishman Alexander Hunter's (1770–1774) eight-volume *Georgical Essays*.

The georgic ethic characterizes the relationship between Liebig and the farmers well, providing the interpretative and descriptive framework for scholars examining the credibility of new modes of agricultural practice and characterizing the space of interaction between farmer and soil in a way more faithful and revelatory than pastoral imagery. I highlight this example not to suggest that one need keep the georgic within the context of its late-Enlightenment resurgence, but to show that ethical tensions in new agricultural practices have long been predicated simultaneously on contestations with new ways to work the land and how to know it.

Extensions and demonstrations

A common pattern in analyses of controversies over new agricultural practices—knowledge-making practices—has continued since the early years of agricultural science and often in the form visible in Liebig's case: pre-existing, experience-based value systems and concepts of the land and soil shape the acceptance and rejection of new agricultural practices. Put into the language of one interested in promoting new and amenable policies, farmers more likely accept new practices when they are introduced within a credible cultural framework, one that promotes the virtue of the agrarian life and one that has trustworthy agents doing the introducing. Here too the pattern can be understood through a georgic lens, as that experience-based ethic provides the basis from which agrarians have understood the new practices. Trustworthy agents, that is, are those who have the lived cultural experience to back them up.[2] Although this pattern of analysis is visible within the nineteenth century, twentieth century cases further exemplify it.

Agricultural extension services illustrate the point well. The extension service began in the early twentieth century to address deficiencies in university-farmer relations. Before then, and within a historical context of which Liebig's ascendance in influence over soil management was also a part, the Morrill Land-Grant College Act of 1862 allowed for the development of state agricultural and mechanical colleges to provide higher education to state citizens in matters of practical importance. The land-grant movement soon related to the production of agricultural knowledge in a direct way through the experiment stations founded as early as the 1870s. As the historian Margaret Rossiter (1975) has written, the experiment stations represented the culmination of four decades of research in agricultural science, research that clarified the means to identify soils and to prescribe soil management practices. The experiment stations were staffed by university officials, often working in laboratory-like conditions away from actual farms. In their early formation, they mostly worked on problems of long-term basic research, seeking to add to the agricultural productivity of the nation by treating agriculture as a site to be analyzed like a specimen. As part of the growth in scientific professionalism in America, the experiment stations also ended up encouraging perceptions of a difference between layperson and expert.

Rather than working on long-term basic research, as the experiment stations were considered to be doing, farmers needed immediate attention to everyday agricultural problems. Tensions had developed between farmers who worked the land against a backdrop of lived experience speaking to everyday, immediate needs and the experiment station advocates whose constitution had them advocating patience for long-term benefits. The extension service was developed to help resolve such tensions (Danbom 1979; Rasmussen 1989). Specifically, the Smith-Lever Act of 1914 provided funding to the land-grant schools to develop an extension service, where advisers would move out into the fields to bring and then to produce their research (Henke 2000).

More relevant to a larger argument about experience, place, and the georgic ethic is that the extension service operated under the "demonstration method." Under this model, agents sought to overcome the resistance to "book learning" farmers often had by demonstrating helpful agricultural practices in the field, on the farm itself. As the sociologist Chris Henke has argued, when extension agents "demonstrate the advantages of a given technique or technology in the growers own community," they are able to enroll the farmers and growers in the production of that knowledge rather than seek simply to diffuse their knowledge through a pipeline from university to farm (Henke 2000, p. 487). Research, Henke continues, "may come down the pipeline and to an agricultural community [but] it is unlikely to be accepted by growers unless it is developed" for a specific place (p. 489). That "place," the agricultural site, is cultural as well as physical, imbued with ethical as well as material meaning. Particular conceptualizations of place and trust provided the basis from which to gauge new knowledge-making practices.

Henke has studied University of California farm advisors in the late twentieth century, those working within the legacy of early century extension service developments. I adumbrate the example of the extension service to note that Henke's analysis speaks to the more basic issue of how new agricultural practices are interpreted by those who work the land. Namely, the origins of the extension service

[2] Such claims about trust as warranted through networks of familiarity not only resonate with the georgic vocabulary, but find common cause with feminist ethics of care and community. See Paul Thompson (1998, 2007), who has made the case that the agrarian tradition indeed has strong affinities with feminist ethics of care.

speak to current debates about producing new agricultural knowledge and, more specifically, about how the "who" of the debate is as crucial as the "what." Henke writes that "unique farming *practices* that are already being used" are implicated in the success of the extension service's demonstration model (Henke 2000, p. 490; emphasis in original). Scientists' success came about when they paid attention to two cultural elements of the agricultural life: when they conceived of the farm as a unique "place" that required respect of and conversation with local growers; and when they brought the farmer into the conversation instead of seeking to simply diffuse their knowledge through a pipeline from university to farm. With place-based values put into the foreground, the demonstration method developed in the early twentieth century provided the basis for those patterns of interaction later in the century.

The case is georgic. In its best operations, the interactive model of the extension service's demonstration method is more active, more direct, and more dynamic than the passive tenor of knowledge diffusion in the experiment station model. To be sure, experiment stations have been useful and have had success; my claim here is not to refute that. My interest, rather, is to consider the two models (the experiment stations and the cooperative extension service) and, from that, to view the ideals represented by the cooperative extension service in their original context as an improvement over experiment stations. In this comparison, I suggest that where the extension service saw success, it had come when perceived as more grounded, more practice-based, and more georgic than the experiments station system. The tension between farmers and researchers was approached and resolved through georgically conceptualized field-based work. By bringing the new technique to the field, those new agricultural practices could be understood on the farmer's own land and on their own terms. Not only, though, was it a matter of seeing the new practices on their own terms (an issue of physical placement and proximity); it was also a matter of warranting the moral status of the material practices. The power of the georgic in this discourse is that it brings the practices included with extension service activities—as having moral and practical value—into central focus. It then draws attention to the normative consideration that acknowledging the values embedded in those practices should inform actual decisions and practices on the land.

Extension services provide a rich subject for science and agricultural studies. They still operate with the conceptual task of making the field a site of scientific demonstration. Field trials, in this sense, offer a very literal description of the scenario. They are at once a form of agricultural knowledge production (in *the field*) and a means to develop trust and credibility for those practices (as a *trial*). Predicated as they are on the value of place-based ethics, on the work-based cultural dynamics of trust building, and on the assumption that new ways to practice agriculture are new means of interaction with the land, the extension service offers a helpful example where the georgic ethic provides descriptive and analytical utility while providing the basis from which normative claims can be made.

Examples of the georgic's explanatory utility are thus not relegated to remote historical contexts when direct use of the term was still in vogue, as with early agricultural science, nor to strategies of soil management that have been under debate for decades, as with the extension service. Two recent cases from the literature on agricultural values and rural culture allow us to place the georgic sensibility in a twenty-first century context of contested agro-environmental practices. One centers on farmer attitudes toward genetically-modified crops, the other on adoption patterns of sustainable agriculture. Both cases represent a contemporary situation where the introduction of new or different agricultural practices has produced resistance and debate. Both offer a window onto ethical dimensions of contested forms of knowledge production.

Against the "distant, disembodied, and disembedded"

Genetically-modified crops (GMOs) clearly provide one of the signature themes in the current discourse on agro-environmental ethics. GMOs introduce ecological, cultural, political, biotechnological, historical, and ethical dimensions to that discourse. From one view, this range of possible analytical dimensions makes the subject available to a wide range of scholars wishing to examine the meaning and impacts of genetic modification. From another view, this mere listing of possible interpretive approaches to GMOs demonstrates the degree of possible contestation for the new practices. Some policy-makers, farmers, and activists will treat the introduction of GMOs as a debate about what is new or different with respect to crop and farm management (Comstock 2000); others will treat that introduction as a matter of risk and benefits (Jasanoff 2002; Jensen et al. 2003; Weaver and Morris 2005); still others might treat it as the basis for a political economic study of local decision-making or global agro-business dominance (Hansen 2004; Millstone and van Zwanenberg 2004; Deckers 2005). In all of these cases, no matter the focus, one consistent moral dimension is how those practices of genetic modification fit into pre-existing experiences of working the land. Be it a policy analysis of what to approve or reject, an economic question of what is more profitable or less, or a cultural question of who decides and how those decisions are made—and certainly these questions are rarely, if ever, as clearly separated from one another as this listing might suggest—a core element

of the debate is how actors understand the role the new techno-scientific practices play in their relationship to the land. Put into the language I used earlier, how do GMOs fit into the space of interaction between humans and the land? Given the complexity of such issues, one manageable way to approach GMOs is to examine how farmers themselves perceive their benefits and how they go about evaluating their value.

GMOs

In a recent study, the rural sociologists Kondoh and Jussaume (2006) did so, examining farmer' attitudes toward genetically modified crops in Washington State. They sought to assess how "farmers' interest in GMOs is being shaped not only by their personal knowledge of the technology but also by external social and economic conditions" (Kondoh and Jussaume 2006, p. 342; also see Glenna and Jussaume 2007). By analyzing self-reported attitudes in a state with diversified agricultural production, the sociologists were able to identify how cultural factors like trust and credibility factored into farmers' evaluations of new practices. The study represented a view less of material agricultural production than of the production of agricultural knowledge. This becomes more apparent when the analysts place knowledge production into a cultural context of trust-building.

Kondoh and Jussaume found that "Farmer interest in trying GMOs is a result of complex thought processes wherein farmers weigh their personal assessment of the technology against the assessment of other actors in which they participate" (Kondoh and Jussaume 2006, p. 349). They conclude their analysis of survey data by noting the importance of the farmers' past and present social networks and life experiences. "Farmers' assessment of risks associated with using a conventional technology," they write, "are likely the product of their personal knowledge of the technology [and] their social interaction with other actors in…social groups" (p. 344). Farmers assess risk in complex ways, undermining the assumption that formal education, which might indicate how much farmers know about technical details of agro-biotech systems, and willingness to use GMOs are direct correlates. The study found that farmers would incorporate a new technology or technological system like GMO crops into their farm operation—potatoes would be the most likely crop genetically modified in Washington, where other GM crops like soy, corn, and cotton are not commonly grown—based on how "innovations fit within the specific context of their farm" (p. 344). If the technologies or modes of interaction with the land were consistent with experience-based knowledge of working that land, they were more likely to accept the technique as worthwhile.

From the standpoint of an environmental ethicist, the example is telling because it shows that contact with the land, whether subtle, mediated, or direct, provides a basis from which actors begin their evaluations of new practices. It is meaningful for agricultural ethicists because it provides insight into how one might understand that labor and then draw from its value to inform decision-making practices themselves. In the broader picture, what stands out from this example is less the raw data on farmers assessments of GMOs and more the ways those assessments represent the relationship actors had with their lands. In this sense, Kondoh and Jussaume provide a perspective that can be characterized as georgic. The attitudes towards GMOs are indicative of the means by which new agricultural practices are resisted or accepted. The Washington State farmers indicated that those practices coming from trustworthy sources had credibility, especially, they noted, when they fit within the specific context of their farm. To be sure, the study examined "interest in using GMOs, not the respondent's knowledge of the technology or the ethics associated with GMO use" (p. 349). But this is to place ethics in a purely passive light. As an applied philosophy, a georgic environmental ethic here provides explanatory utility by suggesting that interest in GMOs is related to, not distinct from, knowledge of the technology. When that technology is understood as part of the experience of farming, as part of the connection farmers have to their land, and as a member of space of interaction between farmer and land, the data suggest it is more likely that it will be accepted. By situating the case in a context of georgic values, ethicists can seek to shape those technology-farmer-land relationships.

Sustainable agricultural practices

One final example—this one focusing instead on sustainable agricultural practices—helps clarify the utility of the georgic ethic for understanding current agro-environmental debates. It also, as I suggest again later, offers clarity as to why the georgic ethic can help agricultural ethicists apply their work to the policy arena. It may be that organic, local, and/or sustainable agriculture offer the most potent forums for the georgic ethic since they are often predicated on the cultural value of closer connections to the land. As an alternative to mainstream practices, sustainable agriculture in particular requires specific attention to how advocates gain credibility with farmers, policy-makers, and consumers. That is, if one understands mainstream to mean common, accepted, and non-confrontational, then alternatives always begin facing a wall of cultural stasis. Advocates of alternative systems must demonstrate that their knowledge is trustworthy and valid in a way that allows them at once to move beside or

beyond mainstream techno-scientific structures—the modern industrial system—but also claim the same degree of social credibility those structures historically offer. The georgic context suggests a kind of normative intervention space for ethicists in debates of this sort, showing that bringing a respect for moral and practical values of agricultural work helps provide the trustworthiness necessary for new practices.

A series of recent studies on farmers' adoption patterns of sustainable agriculture addresses the point. Like Kondoh and Jussaume, the rural sociologist Michael Carolan has provided an analysis of local interpretations of new farming practices. Rather than focus on the introduction of new genetic techniques, as with GMOs, Carolan studied the introduction of new, local "sustainable" practices (Carolan 2006a, b; also see Eshuis and Stuiver 2005).[3]

One study examined the rise of sustainable agriculture as a legitimate farm management system in a west-central county in Iowa. The research program was conducted through a combination of direct interviews with farmers (on their farms), focus group analysis, and participant-observation at county agricultural events. Data from that research show that favorable interpretations of the new techniques were tied to the farmer's ability to establish local cultural legitimacy. Those who accepted the new techniques did so when the techniques were understood as part of wider, already legitimate social networks. This suggests that the material specifics of the new farm management system were subordinate to the production of stable social networks. "By constructing networks of familiarity," Carolan concludes, "individuals come to know one another through sustained relationships, which result in their interests becoming (further) encapsulated. From this, (active) trust associations are forged" (Carolan 2006b, p. 336).

In language remarkably similar to the long legacy of agricultural debates about new practices recapped above, Carolan finds that Iowans see themselves as debating right ways to produce knowledge, not whether or not one should be doing so. "The distinction," Carolan observes, "is not that conventional farmers trust science while sustainable farmers do not. Rather, it was the type of science—or, more accurately, the view of how science should be done—that was the point of contention" (Carolan 2006b, p. 331). The crucial point for the farmers is how one interacts with the land, how one's practices conform to pre-existing modes of engagement with the soil. Thus, despite nearly two centuries of ever increasing credibility in the scientific form of interaction with the land, twenty-first century Iowan farmers make strikingly consistent points with their historical antecedents in the Early American Republic about the means for accepting or questioning new scientific techniques. While antebellum farmers wrote to their rural press editors that their resistance to Liebig was less about the technical merits of his proposals and more about his credibility as an experienced farmer, twenty-first century farmers in central Iowa explained to their ethnographer that possible resistance to new techniques on their land was based not on a caricature of Luddism, but on an appreciation for how the values of science fit a local cultural context. So it was as well for farmers and the extension service in the early twentieth century; so it was for farmers wrestling with the value of GMOs in Washington State a century later.

As it happens, the Iowa farmers are yet more evocative of a georgic ethic in their fuller telling. They convey a well-developed perception between active and passive modes of engagement with agricultural knowledge practices that relate to georgic conceptualizations of place and trust. During PFI Days, an event hosted by the sustainable agricultural organization Practical Farmers of Iowa to support new crop and livestock practices, farmers walked the fields where demonstrations were being held. They had tactile experiences, touching different crops, literally getting their feet dirty. The sustainable agricultural PFI farm field days were experiential. They were predicated on the value of place and active engagement in their very framing; they were dedicated to the values of those who would be asked to accept the practices, the farmers themselves. In this construction, PFI farm field days were not a choice between science and experience, but an example of scientific practice that sought the virtues of experience.

By contrast, an earlier field day demonstration by an agro-business company had placed scientific experts as disseminators of information to a wary, distanced, and passive audience. Once again evoking the earlier twentieth-century tension-filled examples of university experts discussed above—those where scientists treated their experiment station knowledge as a product to be disseminated one way from lab to field—the agro-business model fell short of a true demonstration method. The sustainable growing techniques were a form of dual production, providing a new way to materially manage the farm and a process by which new agricultural knowledge practices could be built. But the agro-business model failed. "The knowledge process," Carolan aptly observes, "remained distant, disembodied, and disembedded" (Carolan 2006b, p. 331). As a consequence, farmers' trust in the new techniques was starkly different between the two forums.

[3] The "local" descriptor helps bring the visibility of cultural context into the foreground, since even in self-description the sustainable practices (as technologies) are tied to a particular, familiar, *local* place. Credibility, legitimacy, and trust come together in those local settings, where "social perceptions and everyday evaluations of knowledge are rooted in concrete social relations" (Carolan 2006b, p. 326).

As opposed to the passive trust asked for by the GMO demonstrators, the sustainable agriculture field days built upon an active trust, an engaged, embodied trust, based not only on the acceptance of facts but on the broader integration of those facts and techniques within established social and ecological networks. Understood within a much broader historical context that places agricultural ethics and scientific practices within a common fold, those contrasts come across as pastoral versus georgic. The agro-business forum relied upon trust-building mechanisms that assumed farmers had a more pastoral and passive, disengaged relationship with their land and their agricultural communities. PFI Days promoted and took into account the work-based, interactive, engaged and embodied practices of farmers. They conceptualized the space of interaction between farmer and the soil georgically. PFI Days led to "an active trust, built upon the sustained intimacy of social networks and those individuals embedded within those networks" (Carolan 2006b, p. 332).[4] Theirs was a georgic sensibility about agricultural practices.

Conclusion

I have sought in the above examination of historical and contemporary agricultural controversies to show that the georgic ethic provides explanatory utility in studies of the acceptance or resistance to new agricultural practices. More than mere scenarios of disembodied ethical conflict, those new practices challenge the lived cultural experiences of the potential new practitioners. Rather than resisting scientific or technological solutions to problems of the farm out of ignorance or the caricature of naïve Luddism, as older, positivist analyses of technological diffusion have suggested, farmers, growers, agrarians, and likely even gardeners will often provide well-informed, well-rooted critiques of the new practices based on their connection to the knowledge-making places where they live. For the agricultural and environmental ethicist and rural sociologist, the georgic ethic's explanatory utility serves a descriptive purpose. It helps explain and describe modes of acceptance and resistance. It rightly deserves a more elevated place in current agricultural discourse as an ethic of experience. On this count, my purpose has been somewhat straightforward in seeking to make more prominent the language and meaning of the georgic ethic as a way to talk about agro-environmental issues and contentious agricultural practices.

But in that descriptive power is a prelude to normative intervention: the georgic also represents a positive means of recognizing how people *should* be involved in the introduction of those new practices. In this capacity it fits more traditionally into the prescriptive aims of environmental philosophy. Here agricultural and environmental ethicists have a discursive tool with which to capture the value of lived cultural experience and how awareness of that value might feed into the policy arena. But ethicists also have a means with which to pursue further the possibilities of an applied philosophy. This last point touches on a consistent concern of agricultural and environmental ethicists and likely agrarian studies scholars everywhere—if not all academics—which is the possible public import of their work.

Here too the georgic can help. In contemporary debates about new agricultural practices—be they about accepting or resisting genetically-engineered crops, the possibilities of an agriculturally-sustainable food infrastructure, or the promotion of other ecologically attentive food-producing practices—analysts could use georgic rhetoric and a georgic framework to understand and then promote more culturally viable configurations of humans and the land. Through a georgic lens, ethicists in conversation with policy agents could do more to call on the experiences of farmers and those who work the land to explain how and why humans treat the land the way they do. This may be merely a matter of resetting and re-scoping which questions are relevant to ask with respect to experience and practice, especially given the high degree of techno-scientific mediation that defines the forms of interaction between humans and their land. In particular, we might ask *whose* practice, in *what* forms, from *which* value basis, and towards *what ends* matters.

A second and related point from this paper's discussion is that the georgic's experience- and place-based connotations help highlight that environmental knowledge is constituted in practice. Rather than being the end point of a dissemination process from experts to citizens, agricultural knowledge is produced by the practices of agricultural agents. This point draws attention to the practices of farmers, to be sure; but it can also cut in the opposite direction to suggest that analysts can better recognize the limitations and new possibilities for agricultural knowledge from food consumers (i.e., everyone) by examining the practices that connect them—or create the appearance of *disconnection*—to food production systems. In most cases, those consumer practices are limited to picking items from a grocery store aisle. Increasingly, though, those practices

[4] It is possible to interpret this cynically through a marketing lens and, in that case, with motives more insidious than I would hope for—perhaps an agro-business need read up on the georgic literature to find out how to convince farmers to go along with their program. This danger certainly exists if one were to interpret the lessons of the georgic as lessons in deceptive marketing. However, while acknowledging this possibility I encourage a reading of the georgic's value from a different angle to suggest that its primary value is one that respects and seeks to draw from the virtue of agrarian communities, not to denigrate them as no more than marketing subjects.

involve participation in local food coops, farmers markets, and community supported agriculture, where advocates for more sustainable and non-industrial agricultural systems could highlight such forms of interaction as knowledge-making ones. Whichever the case—the farmer or the consumer—I offer that the same questions—whose practice, in what forms, from which value basis, and towards what ends—might better be placed as central, not ancillary, to the formulation of new agro-environmental policies. Put another way, with further attention to the experiential, practice-based component of farming, advocates for new agricultural policies might go beyond questions of material *production from* the land to treat the locus of examination as *interactions between humans and the land*—where such interactions are the basis for knowledge production, not just material production.

Third, and finally, one finds that the tradition of studies into participatory research has run along several though not always intersecting tracks with studies of practice and experience-based ethics. Scholars looking beyond the wealthy nations of the United States and Europe have long argued for the validity and importance of local knowledge and it goes well beyond the scope of the present paper to review that vast literature. In brief, though, this can be illustrated by the work of the development economist and rural sociologist Robert Chambers (1989), who has argued that farmer participatory research allows for a more culturally-embedded model of developing new practices on the farm (also see Kloppenberg 1991; Scott 1998). Yet one can also note that shifts from the tradition of experiment stations to the cooperative extension service—and then within cooperative extension away from a top-down model and toward a hands-on in situ demonstration model—were conceptually modeled along the same lines well before late twentieth century scholarship advocated similar models. Scholars in science and technology studies have made their own arguments in favor of participatory research, noting the potential for more democratic, more practical, and more just models of research that involve non-scientists in the framing of research questions and designs (Bentley 1994; Thrupp and Haynes 1994; Irwin and Wynne 1996; Fischer 2000; Carr 2004; Carolan 2006b; Irwin 2006; Leach et al. 2006). The pragmatist literature in environmental ethics has the potential to mark out a similar line of reasoning in its framing of democratic participation in the environmental policy arena. So it is that Ben Minteer, with Robert Manning and Bob Pepperman Taylor, respectively, speaks to the convergence of participatory democracy and pragmatist philosophy with environmental ethics (Minteer and Manning 1999; Minteer and Manning 2000; Minteer and Taylor 2002). The language and terms of the georgic ethic should rightly find a home in the ethics and policy literature as an aid to those conversations and public debates.

The georgic ethic is useful descriptively by helping examine the roles labor and experience—work—play in issues of agricultural and environmental ethics. It is also useful normatively by suggesting that ethicists and policy advocates might draw more directly from the experience of farmers, on the one hand, or by focusing on the means of knowledge production about the land, on the other, in the process of agricultural policy development. In distinction to the pastoral, the georgic highlights the active engagement of humans on the land instead of a more passive account of humans watching and contemplating a land apart from them. Where ethicists like Andrew Light seek to allow anthropocentric values into the central thrust of environmental ethics by observing that "most other environmental professionals look at environmental problems in a human context rather than try to define an abstract sense of natural value outside the human appreciation of interaction with nature," the georgic breaks down the divide of human and nature, offering a way to carry forward the same conversation by transcending distinctions between human and land, culture and nature (Light 2002, p. 444). Viewing agricultural practice as work, the georgic ethic does not presuppose separation between humans and the land. Yet it cannot be fit as a strictly anthropocentric ethic. It is not, on the other side, an ethic which leads to intrinsic value debates about non-human nature (the soil, for example). But neither is it one that leads us to view the land as nothing but a location for human activity, a location that needs to be respected for its value to humans. The meaning of the georgic comes from the relations between, not the supposed end points—human and dirt—between which those relations are defined. That space between is what counts.

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Author Biography

Benjamin R. Cohen is an assistant professor in the Department of Science, Technology, and Society at the University of Virginia. His research focuses on agro-environmental history and ethics, with a particular interest in the place of scientific and technological practices therein. Some of his prior work has appeared in *Environmental History* and *Organization and Environment*. His book, *Notes from the Ground: Science, Soil, and Society in the American Countryside*, is forthcoming from Yale University Press.