# New Materialism and the History of Agribusiness

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In the mid-1990s, Monsanto CEO Robert Shapiro insisted that the firm he headed, primarily known since its founding in the early twentieth century as a commodity chemical manufacturer, had become a forerunner of a new and "more ethereal strategy—sustainability."[1] Biotechnology was core to this strategic transformation, explained Shapiro, for only via "the substitution of information for stuff," that is, by shifting from agrochemicals to information technology, could multinational corporations like Monsanto confront the environmental degradation caused by unsustainable industrial agriculture.[2]

Three decades later, Monsanto was acquired by the German chemical firm Bayer, largely for its expertise in biotechnology and digital agriculture. Yet for all the continued promises to substitute "information for stuff," Monsanto remains one of the world's largest producers of agrochemicals. Glyphosate, developed by Monsanto and marketed as Roundup since the early 1970s, continues to be the most widely used herbicide in modern agriculture. Despite long being touted as environmentally friendly owing to its compatibility with conservation tillage and its relatively short persistence in soil after application, the material realities of glyphosate's environmental impacts have become increasingly visible in recent years. The emergence of glyphosate-resistant "superweeds," the successful waging of lawsuits targeting Roundup as a harm to human health, and environmentalist critiques of genetically modified Roundup Ready seeds highlight the political and ethical issues that have only become more urgent in the time since Shapiro's departure from Monsanto in 2001.[3]

The relationship between the history of corporate agribusinesses and the contemporary challenges of developing more sustainable approaches to agriculture is a particularly inviting arena in which to explore the possibilities offered by new materialist thinking. Proponents of New Materialism, I suggest, would especially highlight the ontological, methodological, and ethical affordances offered by the approach.

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Ontologically, new materialists are united in their insistence on monism. The rejection of dualism—particularly the notion that "nature" and "culture" are somehow separate—is fundamental to the new materialist worldview.[4] The consequences of such an ontological shift are profound. New materialists such as Jane Bennett would have us accede to things—foods, commodities, agrochemicals, genetically modified seeds—"their due" as active rather than passive constructors of the (one) world that we all inhabit.[5] Doing so fundamentally undermines the dualist project of creating a hierarchical world in which the needs and interests of rational humans dominate over all other beings. A new materialist reading of Robert Shapiro's definition of agricultural sustainability as a triumph of "information" over "stuff," therefore, would suggest that such thinking is nonsensical at best and deeply misleading at worst. Stock market investors might like to imagine a world in which multinational agribusinesses sustainably feed the world simply by manipulating genetic sequences, but for a new materialist the rise of "superweeds"—impervious to the latest agricultural technology, and with devasting consequences for global farm yields and livelihoods—is just one stark example of the power of material things to elude the control of even the most hubristic of human enterprises.

Methodologically, new materialists are remarkably diverse in their approaches, but across the field there is a commitment to exploring systems and things as dynamic processes, always in a state of becoming.[6] This is not a new idea for agricultural historians, for whom the methodological assumption that all things are the product of change over time is hardly controversial. Yet in the hands of new materialists, the turn to processes of becoming can be exceedingly useful for investigating surprises and paradoxes, and thus overturning simplistic assumptions. For proponents of New Materialism such as Jane Bennett and David Goodman, the study of agrofood systems looks very different from the perspective of a human body composed largely of bacteria rather than a passive conduit for the sugars and fats of an industrial food regime.[7] Reflective new materialists, much like most historians I know, do not seek universal truths but instead are always creatively searching for new ways of understanding the complex world we inhabit; in this, agricultural historians and new materialists share a pragmatic approach to methodology that seeks to interpret and understand as much as (if not more than) to explain and predict.[8] In the case of understanding the history of a multinational agribusiness such as Monsanto, the pragmatic methodological sensibility of New Materialism is perhaps most useful for rejecting teleological assumptions, as if the past predicts the future in some linear fashion. If all things, including

multinational corporations and the political institutions that sustain them, are in the process of becoming, then even the most entrenched and seemingly all-powerful organizations are far from "unassailable."[9]

The ethical upshot of New Materialism both follows from and precedes its ontological and methodological aspects. If nature and (human) culture are inseparably entangled, and understanding this entanglement involves rejecting linear logics, then, according to new materialists, a giant rip is torn in the dualist ethical shroud that prevents humans from acting more responsibly, gently, and carefully in the material world. This is perhaps most evident in Anna Tsing's investigation of exotic mushrooms that resist the machinery of industrial capitalism, the matsutakes that she holds up as exemplars of "what manages to live despite capitalism," organisms that model a capitalism "[that] has no teleology."[10] New materialists would reject the anthropocentric claims to "sustainability" made by an agribusiness CEO who insisted that only through the monopolistic might of a multinational corporation can a hungry (human) world be fed. From the ethical position of New Materialism, the question is not how to scale up industrial food production to meet the challenges of global environmental degradation, but instead how to rescale and rethink capitalism, ultimately moving to a new process of becoming built not on hubris but on responsibility in and to the material world.[11] Not all agricultural historians will share this new materialist political vision, but the urgency of their ethical stance is difficult to ignore when the subjects of our studies—organisms and organizations, lives and livelihoods, processes and power—are so thoroughly intertwined.

Yet for all the attractive elements provided by new materialist thinking for confronting the history of agribusiness, there are a number of valid concerns that suggest a need for some critical distance. For one, monist ontologies have for many years been derided by philosophers as "idiosyncratic" at best and "ridiculous" at worst.[12] It is far beyond my capability either to defend or attack the logical consistency of a monist ontology, but I can see great value in the earlier concept of "second nature" developed by Alfred Schmidt, Neil Smith, and William Cronon.[13] Although Bennett criticizes the concept of "second nature" for reifying a distinction between human culture and the material world,[14] for the many environmental and agricultural historians who have deployed the concept, precisely the opposite has been the intent. Indeed, when Schmidt developed the concept by applying Frankfurt School thinking to Karl Marx's writings on nature, the explicit goal was to replace a dualist ontology with a dialectic approach, to explore dynamic and not static processes of power in a material world. New materialists bring fresh language of "assemblages"

and "entanglement" and "vitality" to the fore, but even some of the field's strongest proponents are not entirely clear on whether the ideas are fundamentally "new" or whether they more humbly seek to build on long-standing concepts and approaches to elicit "a fresh 'rhythm' in academia today."[15]

Some new materialists have likewise reflected on the field's prioritization of ontology and ethics over epistemology.[16] Many agricultural historians would be taken aback by the suggestion that all knowledge is situated and subjective; even new materialists such as Bennett appear to bracket concerns about the nature of knowledge as distractions from the strategic advantages of pursuing a "vital materialist ontology."[17] From the perspective of cultural theorist Paul Rekret, new materialists' failure to engage with epistemological questions leads to studies that "obscure, and at times even risk naturalising the logics by which non-human nature enters into social relations."[18] Indeed, we might see in the turn to "new" materialism a loss of the "old" attention from social scientists to human-conceived structures of power that are objectively real, even when nonmaterial, as with corporate agribusiness's efforts to strategically manipulate stakeholders by distorting or even disowning their own historical actions.[19] Microorganisms such as bacteria are clearly powerful "actants" in history, but so are immaterial human concepts and actions such as the financial speculations and institutional arrangements that are increasingly defining the "nature" of contemporary agricultural production and consumption.[20]

Neither Monsanto nor its new corporate parent Bayer has so far been entirely successful in replacing agrochemical "stuff" with digital "information." Nor have multinational agribusinesses succeeded in bending the matsutake mushroom to the logics of industrial agriculture, or in stemming the tide of glyphosate-resistant superweeds. Yet for all the agency of the nonhuman material world, inhabited by actants ranging from microorganisms to inert matter, it is nonetheless striking just how many organisms have been subjected to forces that, at least to this historian, seem firmly in the control of human agents. Cows in industrial-scale milking parlors, soybeans genetically programmed to require Monsanto's chemical inputs, and peas transformed into burgers that taste astoundingly like beef raise many troubling ontological, ethical, and epistemological questions about the nature and sustainability of modern agribusiness. I am confident that agricultural historians will continue to play an important role in addressing these questions. For at least some of us, the ideas developed by New Materialism, when considered with careful critical distance, can and should play a role in generating our research questions and methods.

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## Notes

1. K. Bennett, "Managing Growth," 43.
2. Shapiro, "How Genetic Engineering Will Save Our Planet," 29.
3. Elmore, "Roundup from the Ground Up."
4. Connolly, "'New Materialism'"; Dolphijn and van der Tuin, *New Materialism*.
5. J. Bennett, *Vibrant Matter*, viii.
6. Connolly, "'New Materialism'"; Coole, "Agentic Capacities and Capacious Historical Materialism."
7. J. Bennett, *Vibrant Matter*, 39–51; Goodman, "Ontology Matters."
8. Connolly, "'New Materialism,'" 409.
9. Coole, "Agentic Capacities and Capacious Historical Materialism," 453.
10. Tsing, *Mushroom at the End of the World*, viii, 23.
11. Connolly, "'New Materialism'"; Coole and Frost, *New Materialisms*.
12. Rekret, "Critique of New Materialism," 226; Schaffer, "Monism."
13. Schmidt, *Concept of Nature in Marx*; Smith, *Uneven Development*; Cronon, *Nature's Metropolis*.
14. J. Bennett, *Vibrant Matter*, 115.
15. Dolphijn and van der Tuin, *New Materialism*, 89.
16. Dolphijn and van der Tuin, *New Materialism*, 16; Rekret, "Critique of New Materialism."
17. Rekret, "Critique of New Materialism," 227.
18. Rekret, "Critique of New Materialism," 237.
19. Hamilton and D'Ippolito, "From Monsanto to 'Monsatan.'"
20. Clapp and Isakson, *Speculative Harvests*; Hamilton, "Crop Insurance."

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