



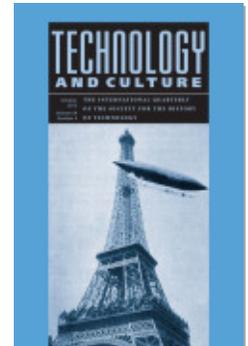
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Seeds, Science, and Struggle: The Global Politics of Transgenic Crops by Abby Kinchy (review)

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peasants' needs and livelihoods, even though it is clear that many policy-makers deliberately chose instead to prioritize commercial farmers and crop production for export markets. Moreover, Harwood's eagerness to have history inform policy recommendations is unusual in our profession, and he seems frustrated that scientists of the late twentieth century failed to consider the work of south German plant breeders three generations before. Nevertheless, he insists, "those of us who know something about the past should speak up" (p. xv). Backed by a wealth of details (with much supporting information to be found in the dense endnotes) and a thorough reading of both historical and public-policy literature, Harwood's book will be valuable for historians of German agriculture, of the postwar green revolution, and of the applied sciences. And if his wishes are granted, the book will have an impact on twenty-first-century policymakers as well.

MARK FINLAY

Mark Finlay was a professor of history at Armstrong Atlantic State University and the author of *Growing American Rubber: Strategic Plants and Politics of National Security* (2009) and of a dissertation that addressed the nineteenth-century history of German agricultural science.

Seeds, Science, and Struggle: The Global Politics of Transgenic Crops.

By Abby Kinchy. Cambridge, MA: MIT Press, 2012.
Pp. xviii+220. \$22.

Despite the attempts to boil genetically modified (GM) crops down to simple narratives, the controversies that have swirled around these new technologies in different countries are in many ways strikingly different. In the United States, where farmers plant far more GM acres than anyone, disputes and controversies have been kept to surprisingly low levels (labeling initiatives and contaminations notwithstanding), but our two neighbors have both had major dust-ups. In *Seeds, Science, and Struggle*, sociologist Abby Kinchy shows how very different the issues, conflicts, and outcomes have been. The result is a book that is a valuable addition to the literatures on GM crops and on science studies. These literatures already include several multicountry comparisons of resistance to GM crops; Kinchy claims distinctiveness on the basis of her focus on farmers and rural communities and on her concern for how struggles over "genes out of place" unfolded differently in Mexico and Canada (p. 19). Actually, farmers and rural communities are not a strength of the book, but her account and analysis of the different sets of struggles is valuable, substantive, and well-delivered.

We routinely hear the complaints that activists are *politicizing* deliberations that should be based purely on science. Kinchy argues that this is exactly backward: we are actually *scientizing* discussions that are really about what kind of agriculture we want to have and, at the end of the day, about the social order. The point is much larger than GM crops; since the

1950s, the role of science has switched from informing policy to defining policy (as STS scholar Brian Wynne has argued). Basing social policy and regulation primarily on science and technocratic decision-making frequently promotes industry's interests, writes Kinchy; and rather than creating a neutral basis for decisions, scientization excludes less powerful actors and marginalizes their input. Kinchy looks carefully at how this scientizing occurs; at the surprising, often unpredictable, and rapidly changing role of science in GM struggles; and at the tensions and contradictions these cases leave us with.

To organize the differences between the Mexican and Canadian cases, Kinchy focuses on the common denominator of *genes out of place* (from Mary Douglas's famous definition of dirt). Both countries had famous cases of "out-of-place" genes: in Mexico, it was a claim of transgenes in traditional farmer varieties of corn; and in Canada, it was a claim of patented GM canola in a field whose owner had not bought the seed. These are not the only subjects examined in Mexico and Canada (for instance, there is a good account of the organic farmers' attempt to sue Monsanto prospectively), but they feature prominently. Both claims led to epic, protracted conflicts entangled with national cultures, governance structures, international trade relationships, environmental treaties, intellectual property law, and global anti-GM mobilizations. At every step, contested constructions of science were pivotal. Mexican GM opponents made gains when they persuaded scientists to side with them (a process for which Kinchy uses the ungainly term *epistemic boomerang*); Monsanto prevailed when the Canadian court sided with its scientists over local knowledge.

The organizing theme of "genes out of place" is an interesting and effective way to tie together the disparate cases, although it occasionally leads to some key issues being shortchanged. For instance, while it is true that activists were stirred by the presence of out-of-place transgenes in Mexican landrace corn, most of the heated criticism in the journals focused on another issue—whether the transgenes were unstably integrated, or if this was an artifact of Quist and Chapela's use of inverse PCR (polymerase chain reaction).

Kinchy's careful account of the case of Percy Schmeiser (the Canadian farmer accused of patent infringement) is probably the best I have read. In this discussion, an interesting footnote would be that the whole reason that Monsanto had patents on the transgenes in the first place was that they had been put out of place: the legal rationale for the patentability of genes is that biotechnologists isolate them from their natural DNA home. Since they are out of place, they are no longer "natural" and therefore a patent-eligible invention.

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