Continuities and Disjunctures in the Transformation of the U.S. Agro-Food System

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Virtually every rural social scientist and rural policy-maker is conversant with the basic storyline of the twentieth-century development of U.S. agriculture. Much of this storyline is captured in Lobao and Meyer’s (2001) overview of the “great agricultural transition” of the twentieth century. Lobao and Meyer note that the essence of this transition is “the abandonment of farming as a household livelihood strategy. This transition is evident in both the mass decline of the farm population and in the structural transformation of agriculture, whereby most remaining farm units are marginal units incapable of fully employing and sustaining families” (2001, 104). Over the course of the twentieth century, especially during the four or five decades after the Great Depression, there were successively fewer and larger farms, farm sales and assets became increasingly concentrated, farm enterprises and farming regions became more specialized, agribusiness concentration and control over farmers’ management and technology choices progressively increased, and the federal agricultural policy apparatus provided enormous subsidies to the largest farms. At the same time, American government officials increasingly championed trade liberalization and were harsh in their condemnations of nations for protecting their agricultures with “market-distorting” subsidies and import restrictions. Most any social or policy analyst of U.S. agriculture at the beginning of the twenty-first century would identify these twentieth-century themes as the major ones that continue to characterize agro-food system change in our time.

As much as there is a good deal of continuity between the structural change processes that characterized the American agro-food system during the twentieth century and those that are predominant today, the basic argument of this paper is that for approximately one decade there have
been some major and emergent discontinuities in the transformation of the American agro-food system. These discontinuities have not attenuated or reversed the master twentieth-century trends; indeed, the nature of these turn-of-the-century discontinuities is that they not only reinforce the familiar twentieth century trends, but also make them even more irreversible, more politicized, more global in scope, and more difficult to address from a public policy standpoint.

An American Agro-Food System with No Farmers?

One enlightening—though highly flawed—way to think about the emergent great transformation of American and world agricultures at the turn of the twenty-first century is from the perspective of the provocative “Blank hypothesis,” proposed by Steven C. Blank, an agricultural economist and Assistant Vice Provost at the University of California-Davis. In Blank’s hotly debated book, The End of Agriculture in the American Portfolio (Blank 1998), and in a series of related articles (e.g., Blank 1999), he makes the seemingly outrageous argument that in roughly two generations American agriculture will essentially disappear. Note that Blank’s hypothesis is not that American agriculture will merely go through a “great transformation” (as Lobao and Meyer have depicted for the twentieth century) that will result in many fewer, larger, nonfamily farms cultivating about the same amount of land. Blank has in mind a far more radical disappearance of agriculture—not only the end of a way of life and a household livelihood strategy, but essentially the end of agriculture as a rural land use.

Blank argues that there are four major forces that will increasingly propel the disappearance of American agriculture. First, U.S. agriculture is already essentially uncompetitive with several powerhouse agro-food exporting nations (e.g., Brazil, Argentina, Australia, Canada, and New Zealand), and shortly will be uncompetitive with other major world regions (e.g., Ukraine, Russia, Mexico, Uruguay, Paraguay, and much of Eastern Europe) as they modernize and become low-cost agricultural producers. The lack of competitiveness of U.S. agriculture is revealed in the progressively worsening profitability squeeze in American farming—one that would have been truly devastating in its impacts if it were not for lavish federal subsidies (mostly “emergency” payments) that began in the late 1990s (Ray 2000) and that have continued under the 2002 Farm Bill. Second, global agribusiness, including firms with U.S. headquarters, is increasingly seeking out the least-cost suppliers of commodities on a global basis through multiple sourcing of agricultural inputs, strategic alliances, cross-border intersubsidiary movements of products, direct foreign investment, and other means of getting access to the cheapest sources of inputs into their processing and distribution industries.

Third, Blank argues that U.S. farmers are becoming increasingly competitive in the domestic rural land market. Nonfarm owners and users of land (homeowners, real estate developers and speculators, governments, municipalities, tourist industries and vacationers, and so on) are increasingly outbidding farmers for rural land. Higher farmland values are contributing to high production costs and the profitability squeeze. Fourth, consumers and nonfarm people will continue to be well fed at cheap prices. In addition, they will value the rural land at their disposal for parks, vacationing, second homes, trout streams, water, subdivisions, tourist sites, and shopping centers more than they will value having farms in the hinterland. Consumers and citizens will thus be largely comfortable with the end of agriculture and the (mostly irreversible) conversion of rural land into nonfarm uses. Urban America, in Blank’s view, is tired of subsidizing farmers. And now that there are well under one million full-time farmers in business, farmers will not have nearly enough clout to win any political battles against the over 260 million people who like cheap food that can be provided by the global market and who value nonfarm uses of rural land.

When Blank’s book was originally published in the late 1990s, it did not generate much attention, and a good many people who read The End of Agriculture in the American Portfolio felt that it was an extreme perspective that ignored the persistence of noncorporate production forms in the agro-food system, especially in farm-level production (for a particularly insightful review by a well known agricultural economist, see Harl n.d.). Blank’s ideas have been attacked even more vigorously by some members of the public (see, for example, the letters to the UC Davis Magazine [2000] in response to his article in a previous issue). Yet if the book has attracted a swarm of criticism, why has it become more widely read with each passing year since its publication date?

Blank deserves credit for putting his finger on the late twentieth century and early twenty-first century as being the confluence of several critical trends in agriculture: declining food agricultural commodity prices and the profit squeeze on American producers despite unprecedented federal subsidies, the shifting locus of control over the food system as multinational food firms increasingly make decisions on a global basis to ensure access to cheap commodity inputs, rising local (U.S.) costs of production due to competition on the rural land market, and technological changes that are facilitating very large production units and/or reduced labor demands. Indeed, below I will discuss the emerging, incipient great transformation of
agriculture in the twenty-first century, my rendering of which has some superficial similarities to Blank’s list of symptoms that currently affect U.S. agriculture. In addition, while agricultural policy has long been contested, and while there has been considerable similarity in the fault lines of agricultural policy conflict for more than two decades, there seems to be a growing, more widely shared sentiment that the current policy conjuncture will determine the course of development of American—even world—agriculture for decades to come. Thus, while Blank’s book generated little disciplinary acclaim or policy attention when it was published—the flagship journal of the American Agricultural Economics Association did not even review it—the events and policy struggles of the ensuing years have given his ideas a certain cachet.

The Emergent Great Transformation of the Twenty-First Century

What are these turn-of-the-century discontinuous social forces that are reinforcing and rendering even more irreversible the “great agricultural transition” about which Lobao and Meyer have written so elegantly? In my view there are seven fundamental components of the new American agro-food milieu at the turn of the twenty-first century. Each of these fundamental components has implications for alternative policies and for the future agenda of rural sociological research.

The first major discontinuity is the elaboration of long-distance food supply chains—what economists typically refer to as “value chains” (Boehlje et al. 1999) and what sociologists more often refer to as “commodity chains” (which are buyer-driven, according to Gereffi 1994). Value or commodity chains are corporate agribusiness systems for managing and optimizing supply from farm inputs and farm-level production through processing, marketing, and consumption. Global value chains are a melding of socioeconomic relations and physical structures that are entered into by food processing, manufacturing, and retail firms in order to cheapen the cost of inputs, to obtain efficiencies through better flow scheduling, to improve food safety and reduce other risks, and to enable firms to respond as quickly as possible to changes in consumer demand. In sum, these strategies are undertaken because, for the dominant actors and with respect to most commodities, undertaking some combination of these strategies is obligatory to maximize profits, meet competition, and increase the chain’s share of consumer food expenditures. The shift toward the predominance of value or commodity chains in the agro-food system is leading to increased interdependence across food chains, and to growth in mergers and acquisitions, strategic alliances, and networks among firms.

The Transformation of the Agro-Food System

The chief manifestation of long-distance food supply systems or chains at the farm level is the growth of contractual relationships between farmers and processors and the disappearance of “open markets” (see Tweeten and Flora 2003; Heffernan 1999). At the extra-farm level, these long-distance food supply systems involve not only industrial consolidation and oligopoly, but also an increased prevalence of joint ventures, vertical integration, strategic alliances, and other types of interfirm networks (Heffernan 1999).

These value chains are increasingly global in nature (Bonanno et al. 1994; McMichael 1994; Heffernan 1999), and global vertical coordination is leading to a steady shift in the locus of decision-making power within the food system. During the great transformation of agro-food systems during the twentieth century, the master process was the quest for economies and rents that was undertaken mainly through horizontal integration (i.e., merger and consolidation), resulting in larger agribusiness firms with relatively centralized national decision-making. While many of these firms initiated multinational subsidiaries, each tended to operate mainly as a national-level firm. The beginning of the twenty-first century is an era in which new considerations are leading to global-scale vertical integration and other forms of cross-border coordination. Some of these considerations are risk, food safety concerns, differentiated consumption, debates over new agricultural technologies (such as genetically modified foods), and the development of new technologies and techniques in agro-food chains (e.g., information, packing, transport, and other technologies in food manufacturing that enable “flow scheduling” in commodity chains, and an increased ability to control product attributes across the food chain). Accordingly, power in agro-food systems has increasingly shifted from the level of the nationally centered product sector to an increasingly global level of vertically coordinated interfirm relationships among transnational grain traders, food manufacturers, farm input suppliers, and retail chains.

The second major agro-food structural discontinuity is also revealed, albeit indirectly and imprecisely, in Blank’s work. Blank writes tellingly in the closing paragraph of his contribution to the University of Georgia College of Agriculture and Environmental Science’s 2001 Symposium on the Future of American Agriculture that the difficulty American agriculture has in fighting these trends has this bottom line: everything that is happening in this development of a global market is good for U.S. agribusiness

1. It goes without saying, however, that the global integration of agro-food systems is by no means new. Indeed, in some sense it is the case that the turn-of-the-century version of global integration is less pronounced than that of the nineteenth century, when the world economy was characterized by British specialization in manufacturing and its importation of foodstuffs from its far-flung colonies.
firms and American consumers” (Blank 2001, ii). This second discontinuity is the global neoliberalization of agriculture. Note that while the neoliberalization of agriculture is closely related to the matter of (global) value chains, the former refers to a policy environment that makes certain structural changes such as value chains more logical and more imperative, while value chains themselves are a structural phenomenon that drives, as well as derives from, global neoliberalization.

Global neoliberalization is not simply “globalization” (the international integration of agricultural and food product markets and growth in the volume of world agricultural trade) or “trade liberalization” (“freer” trade or reduction of state subsidies of agriculture), though both globalization and trade liberalization play significant roles. Nominally, the global neoliberalization of agriculture involves major changes in national agricultural policies such as the reduction of national “market-distorting” subsidies of agriculture, the reduction of trade barriers on agricultural goods, the subordination of national food regulatory standard setting to globally “harmonized” standards, and especially the removal of import barriers and nontariff barriers to trade. Perhaps most fundamentally, though, neoliberalization is a set of pro-corporate policies that are aimed at creating profitable opportunities for private firms in agro-food and other sectors with the idea that stimulating private investment and encouraging mobility of investment capital will yield social benefits.

Since the ratification of the North American Free Trade Agreement (NAFTA) in 1994 and the World Trade Organization (WTO) in 1995, there has been a definite trend toward increasingly synchronized global markets in most agricultural commodities. The covariation of the implementation of these trade liberalization pacts with the downward trend in farm commodity prices suggests a causal relationship of some sort. An equally important consequence of these trade pacts is that they make it more difficult to advance alternative policies. Most fundamentally, global neoliberalization of agriculture involves the actual or self-imposed global veto over U.S. agricultural policy alternatives (and over alternatives available to other nation-states) that derives from the commitment to trade liberalization agreements such as those of the WTO (and NAFTA). The establishment of increasingly hypercompetitive conditions in world agriculture have led to progressively lower price ceilings for most commodities also serves as an implicit veto over national policy alternatives. Nelson (2002), for example, points out how U.S. government obligations under the WTO—and perhaps even more fundamentally, the fact that government noncompliance with the WTO agricultural agreement would undermine U.S. leadership in seeking to deepen trade liberalization—might serve to rule out many alternatives for domestic support of and investment in agriculture.

It should be stressed, however, that as much as global neoliberalization of agriculture is a palpable trend, many of the components of global neoliberalization are proceeding in highly discontinuous and contentious ways. In practice, NAFTA, and especially the WTO, has been far less efficacious in “liberalizing” agriculture than many proponents and opponents of these policies accept. In the current unipolar world in which the United States dominates economically, militarily, and politically, American interests tend to dominate to a considerable degree. But while all of the U.S. administrations since the 1980s have favored trade liberalization, and the current administration does so with particular vigor, this administration has permitted—sometimes even encouraged—protectionism of various sorts (e.g., massive emergency payments to farmers in the late 1990s, import restrictions on sugar, and many of the provisions of the 2002 Farm Bill). Also, there is still sufficient support for farmers (not to mention steel and textile manufacturers) in Congress that it has continued to vote for huge farm subsidies, and seems scarcely more prepared than fifty years ago to let American farms be annihilated though unfettered global market forces. Most every world nation wants to be part of the World Trade Organization, but most would prefer to see its agricultural rules substantially changed. There is now very little active support for the U.S.-backed Uruguay Round Agreement on Agriculture (the WTO’s current agriculture agreement) outside of the seventeen members of the U.S.-led “Cairns Group.” Yet because most every nation reasons that it cannot survive economically without being in the world trading system, there does not seem to be a truly conceivable policy alternative or a viable coalition in opposition to current trade liberalization agreements and policies.

The third great turn-of-the-century discontinuity is that the structural differentiation of agriculture has now progressed so far—and so rapidly—that American farms now have very little in common with each other, despite the fact that they are among a handful of survivors of the great transformation about which Lobao and Meyer have written. For example, the Hoppe et al. (2001) Family Farm Report to Congress contains some revealing 1999 data on the current structure of agriculture, employing the U.S. Department of Agriculture Economic Research Service farm structure categories. For the vast bulk of American farms, and for all but about 10 percent of the largest operations, farm income is minimal and usually negative. Over 40 percent of farms are “residential or lifestyle” farms, and another 14.1 percent are “retirement farms.” Limited resource” farms have declined extremely rapidly over the past decade (from approximately
14 percent of farms in 1993 to 7.3 percent of farms in 1998). Another 20 percent of farms are “low-sales” family farms—farms whose annual sales volumes are under $100,000, and thus incapable of generating an adequate family income. These farms have essentially nothing in common with the roughly 18 percent of farms that fall in the “high-sales family farm,” “large family farm,” “very large family farm,” and “nonfamily farm” categories that dominate U.S. agriculture in terms of sales and assets. The two larger-than-family-farm categories (large family farm, very large family farm) and the nonfamily farm category alone accounted for 68 percent of U.S. production in 1999.

The fourth great discontinuity is the extraordinary industrialization and concentration of livestock production. For the first few decades of the twentieth century, livestock production provided family farmers a means to intensify production without investing in more land, to utilize surplus family labor, and to capture “added value.” Hogs, for example, were widely known as “mortgage burners” for family farm households. The last four decades of the twentieth century, however, have witnessed an extraordinary decline of commercially viable moderate-scale independent livestock production (McBride 1997). Similar independent production has largely disappeared in poultry. Moderate-scale independent production of fed cattle has also largely disappeared in its major production regions (the Great Plains and the Intermountain regions). Moderate-scale independent production is well on its way to disappearing in the pork sector, and is becoming increasingly threatened in dairy production, which is the only remaining family farming dominated livestock sector. The demise of commercially viable moderate-scale independent livestock production represents an enormous handicap to the survival of family-type farms, since one of the cornerstones of successful moderate-scale production of the basic crop commodities has traditionally been to supplement with animal and livestock enterprises in order to achieve the integration efficiencies of crop rotations and utilization of animal manures. This formula has also tended to be the foundation of sustainable agriculture practices.

The fifth major turn-of-the-century discontinuity is the role played by a new class of agricultural technologies, typified by genetically modified crop varieties such as Bt corn and cotton and herbicide-resistant (HR) soybeans. In contrast to the dominant forms of technological change during the heart of the twentieth century that generally required—and augmented—management skill, the nature of these new technologies is that they substitute for management, and substantially remove management barriers to enormous increases in the scale of field crop production. As these new technologies substitute for management, they reduce previous management limits on large-scale crop production. HR soybean varieties in the Midwest, for example, significantly reduce the need for managerial decision-making about weed control, and when combined with no-till technology, they enable one farmer to manage far larger acreages than was possible before the advent of HR soybeans. These new technologies and the management simplification they facilitate would seem to make field crop agriculture more likely to become contractually integrated into the global value chains discussed earlier.

A sixth discontinuity in the structural configuration of agriculture is the culmination of the trend that began in the early 1970s—the relocation of agrarian protest outside of mainstream production agriculture. Agrarian protest no longer consists primarily of aggrieved rank-and-file farmers acting as leaders to contest established power relations in governments or in private agricultural organizations. Instead, the impetus to agricultural reform and protest—and even the provision of alternative policy ideas and research to support them—now comes largely from nonfarm groups (Benbrook 1996; Stumo 2000; Wallace Center 2001). A host of mostly nonfarm nongovernmental organizations (NGOs) and a few farm activists fight persistent battles—sometimes successful ones, others more future-oriented or rear-guard in nature—in Congress, as well as against agricultural-administrative agencies such as the USDA and against the agribusiness establishment. Even though these struggles seem to have low chances at success, the nature of agrarian movement mobilization—the availability of philanthropic foundation funds to support agrarian protest, the strength of the sentiments of prospective agrarian activists, and the political obstacles to elected politicians pulling the plug on the family farmers who remain—creates a milieu of endemic and indefinite politicization of agro-food issues. And while some farm people and groups (such as the National Farmers Union) remain involved in agricultural protest activities, aggrieved farm people are more prone to pessimism, disillusion, and cynicism from the many failed attempts at agricultural policy reform than they are to allegiance to agrarian policy reform movements.

The seventh great transformation of U.S. agriculture is its incipient “environmentalization,” by which I mean agriculture is becoming increasingly subject to environmental criteria and regulations. To be sure, the environmentalization of agriculture has proceeded rather slowly. It is still the case, however, that among many farm groups, mention of the fact that...
agriculture has for some time been the nation's biggest polluter or destroyer of water resources—or even that agriculture has much of an environmental impact at all—brings forth anger and denial. Many of the most powerful agricultural commodity groups and general farm organizations deny that the hypoxia zone (Boesch et al. 2001) in the Gulf of Mexico actually exists, has anything to do with agriculture, or is of any significance. Farm groups remain formidable in resisting state government regulations on agricultural sources of water pollution. But, slowly but surely, there is growing recognition that agriculture's environmental performance must be substantially improved. Some of the reasons why agriculture must deal with environmental constraints are obvious. There is general, though soft, public support for the environmental reform of agriculture. There is some evidence that agricultural run-off and pollution could be substantially reversed if agriculture production units became smaller in scale and more agro-ecologically diverse, and if distribution chains became more local and regional in scale. To the degree that this is the case, one could imagine a trajectory of agricultural/environmental reform that would involve regulations or market incentives (strict taxes on agricultural chemicals, subsidies for crop rotations, and strict regulations on concentrated animal feeding operations [CAFOs]) that would make the

3. One additional impetus for environmental reform of agriculture comes from a number of world nations, especially the European Union nations and Japan, that see environmental protection not only as valuable in its own right, but also as a possible strategy to permit a certain level of support for family farmers (and also some measure of protectionism) within the rules of the WTO. The notion of multifunctionality—that agriculture performs a number of important nonmarket functions (such as rural development, tourism, biodiversity conservation, and so on) in addition to producing food commodities—has become a significant issue area in the Millennial (or Doha) Round of negotiations of the World Trade Organization's agriculture agreement.

Alternative Policies and New Research Agendas

The 2002 Farm Bill involved subsidies to large commercial producers that are inconsistent with the spirit, if not the intent, of the Uruguay Round of the WTO. At this writing in 2003 the Doha Round agriculture agreement negotiations are just beginning. This is one of the most important social policy junctures for American and world agricultures, but a frank assessment of the course of these debates is that while rural sociologists potentially have much to offer, they have not been active players. These policy discussions are dominated by agricultural economists as well as commodity and other agricultural groups, and the range of debate is limited to the range of views that exists within U.S. agricultural economics. To some degree the lack of involvement of rural sociologists in these debates is not surprising, since it is the nature of sociology to question institutional arrangements, power relations, and orienting assumptions such as the structures and policies of the contemporary agro-food system. But it is also worth mentioning that sociologists have not been as active as one would like in researching many of the key issues where their input is most needed.

Rural sociology's research agenda must include several new or expanded areas of work in order to make more definitive and effective responses to these policy issues in the future. There are, to be sure, some important areas of research among rural sociologists today (e.g., Heffernan 1999;
Bonanno et al. (1994; McMichael 1994) that are highly relevant; however, some of the needed areas of policy research have not been common among rural sociologists. In very rough terms, a model for some of the work that needs to be done is Lyle Schertz and Otto Doering’s (1999) book The Making of the 1996 Farm Act. While this is a work of agricultural economics, it presents a detailed institutional and historical rendering of the coalitions, discourses, strategies, and unexpected turns of events that were involved in the passage of the 1996 Farm Bill. The same type of work is necessary to understand the nature of global neoliberalization and its institutional moorings. Another example of needed research is in the arena of the political economy of U.S. antitrust law and its relationships to agricultural laws and policies. Many groups contesting agricultural policy today lament the fact that agricultural transformation is characterized by concentration of agro-industrial sectors and anticompetitive practices. U.S. antitrust law was largely enacted in the early twentieth century and is increasingly outmoded in addressing the nature of power exercised by transnational agribusiness firms in global agro-food commodity chains in the early twenty-first century (Sexton 2000). There is a desperate need for rural sociological research on industrial structure in relation to antitrust laws of various sorts.

There has been some promising rural sociological research on agro-food commodity chains, the shifting sociopolitical relations of food regulation, and the role of consumption, but much of this work has been done outside of the United States. There is a need for this research to be policy relevant and to explore not only the benefits and costs of existing arrangements but also the possibilities for alternatives.

There is also a strong need for comprehensive rural sociological research (as well as multidisciplinary research) on the ecological implications and impacts of both the “great agricultural transition” discussed by Lobao and Meyer and the turn-of-the-century transformations that are now upon us. What are the ecological performance and risks associated with production systems of different types, including the impact of the socioeconomic characteristics of operators and of the ecological characteristics of farms? To what degree does thoroughgoing agro-ecological reform require structural changes in farming, and how would alternative agro-ecological reforms induce structural changes in agro-food systems?

There are two general types of alternative policies that have been discussed by various parties interested in the future of agricultural systems and rural sociologists who share these interests. One set of policy alternatives is that of localism, or what Kloppenburg et al. (1996) have referred to as “foodshed” analysis and policy, through efforts to build more direct local farmer/consumer relationships. The other set of policy alternatives is to seek either dramatic reforms in existing trade liberalization agreements (e.g., the pursuit of multifunctionality payment systems within the WTO agriculture agreement that would eliminate subsidies for overproduction and instead subsidize ecosystem service provision and social spin-offs from agriculture), or a significant roll-back of the provisions of the Uruguay Round Agreement on Agriculture. Rural sociological research is needed on these approaches to policy reform to understand their sociopolitical viability as well as their socioeconomic impacts and unintended consequences.

Imagine that well before the end of the twenty-first century one or more rural sociologists will write a review article much like that of Lobao and Meyer (2001), in which there is a qualitative and quantitative assessment of the great transformation of twenty-first-century agro-food systems. This article might well document a significant decline in the number of U.S. farms, but the outcome is unlikely to be the disappearance of production agriculture as a rural land use; indeed, two or three decades hence there could very well be citation to the Lobao and Meyer piece about the reasons why there tend to be substantial linkages between rural households and primary production of agro-food commodities. There will probably have been a profound elaboration of some of the new forces discussed in the present paper. Rural sociological research priorities will almost certainly have shifted, perhaps to some degree along the lines advocated above. It is quite likely that this future review article will chronicle the continued contestedness of the policies and practices regarding agro-food systems. One hopes that this article will also document how rural sociologists increasingly came to be major players in agro-food policy debates as the twenty-first century unfolded.