THE GREAT AGRICULTURAL TRANSITION: Crisis, Change, and Social Consequences of Twentieth Century US Farming

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One of the most profound changes in the United States in the past century is the national abandonment of farming as a livelihood strategy. This change is evident both in the exodus of Americans from farming and in the conditions faced by the farmers remaining, most of whom are marginal producers in an increasingly concentrated industry. In this article, we provide a retrospective account of the empirical and sociological fate of family farmers. While sociologists have had longstanding interest in agrarian change, research on contemporary farmers is largely confined to speciality publications, with a loss to the discipline at large. We examine three distinct research traditions that continue to document farm transformation: research on macro-level transformation, community impacts, and household response. While these traditions evolved separately, we describe how they overlap and inform each other. Most notably, research on household and community responses delineates meso- and micro-level institutional factors that extend macro-level theory. Research on the contemporary farm population offers an alternative context in which to interrogate conventional accounts of economic development; such research yields insights about aspects of social life being rediscovered as part of the new economy and continues to pull sociologists into politically charged public policy debates.

INTRODUCTION

The exodus of Americans from farming is one of the most dramatic changes in the US economy and society in the past century. In the early 1900s, more than one of every three Americans lived on farms, a number greater than that at any other point in our country's history. At the century's end, the farm population stood at under 2%, and even for those who remained in farming, almost 90% of

household income came from nonfarm sources. By and large the magnitude of this transition and its social consequences have been missed in the general sociological literature. Subfields, particularly rural sociology, have a rich legacy of addressing agrarian change. The literature, however, tends to be fragmented, visible mainly in specialty journals, and its significance for the general sociological discipline remains underestimated. This article examines the epic transition from farming, the theoretical explanations for this transition, and the social consequences for farm communities and households.

By the agricultural transition, we refer to the abandonment of farming as a household livelihood strategy. This transition is evident both in the mass decline of the farm population and in the structural transformation of agriculture, whereby most remaining farms are marginal units incapable of fully employing and sustaining families. While a number of literatures span this topic, we limit our focus to research concerned foremost with the fate of the independent farm population, family farmers or those who provide most of the labor, management, and capital in operating their farms. Our goal is to provide a retrospective account of the changes experienced by family farmers by taking stock of this population at the twentieth century's end.

We examine three research traditions that address changes experienced by the independent farm population. First is the large literature on the structural transformation of farming, which tends to be macro-level theorizing about national trends. This literature provides conceptual explanations for the empirical contours of the agricultural transition, such as the decline in the number of farms and growth of inequality in the existing system. The consequences of these macro-level transformations are manifest at lower analytical levels across communities and households. The second research tradition incorporates a longstanding, often politically charged, literature on the impacts of farm change on communities. As family farming declines, analysts generally hypothesize that community class polarization increases and local well-being deteriorates, even in a postindustrial society. The third research tradition addresses the effects of farm change on households, much of this centering on the gender division of labor and on social-psychological well-being. Considering these three traditions allows us to examine the major paths by which sociologists have sought to understand farm transformation, capturing heuristically the changes experienced by farmers at the national, community, and household levels.

¹Family farmers hold class positions that approach the petite-bourgeois ideal. Empirically, today's family farmers range on a continuum from this ideal. Most are semi-proletarianized through family members' off-farm work; others are closer to the capitalist class in depending on wage labor. Family farms are often contrasted to non-family units, where labor, capital, and management functions are provided by different entities. Terms often used synonymously for the latter are industrialized, corporate, capitalist; scale references are also made. We do not focus on non-owner farm workers nor on production networks beyond the farm gate, such as global commodity chains and local food systems. These are important topics, meriting separate reviews.

The next section provides an overview of sociological attention to farm change. We then describe the agricultural transition and turn to each of the three research traditions above, describing research themes and conceptual bases. To provide a synopsis of these large literatures, we necessarily present a selective and schematic account.

THE SIGNIFICANCE OF RESEARCH ON THE FARM POPULATION IN SOCIOLOGY

Sociologists have long looked to the farm population to understand major issues of the discipline, but the visibility of this research varies historically. The agrarian sector was the starting point for Marx, Weber, and Durkheim, who saw changes in agriculture as reinforcing capitalist expansion. Early US sociology took a social problems orientation with two strands, a focus on urban social organization epitomized by the Chicago School, and a rural counterpart consisting of rural and regional sociology. Rural sociology developed in large part from federal concern with the farm population (Summers 1986). Political unrest in the countryside from widespread economic hardship as well as concern that farmers would out-migrate en masse to urban areas led to federal creation of the Country-Life Commission in 1908 and, in turn, to rural sociology's institutionalization in land-grant universities. Regional sociology gained prominence from the work of southern regionalists, who shared the Chicago School's human ecology paradigm but focused largely on the rural farm population (Odum & Moore 1938). The significance of the farm population for most sociologists today comes mainly through its historical role in US society. Farmers serve to illuminate key historical issues about state transformation (Gilbert & Howe 1991, Hooks 1990, Moore 1996, Skocpol & Finegold 1982), social movements (Mooney & Majka 1995), and African American's northern exodus (Mandle 1978, Tolnay 1999).

Despite the centrality of the farm population to early and historical sociology, one is hard pressed to find any articles on contemporary farmers published in major, general sociological journals. While the Annual Review of Sociology has featured some articles on the rural population, the last one devoted to farming was published nearly twenty years ago (Newby 1983). Sociologists tend to take a modernist view of US economy and society, which privileges formal sector, paid work, manufacturing and services, and urban locations. This prevailing account of work renders invisible populations engaged in alternative livelihood strategies and industries such as farming, whose organization does not fit neatly into frameworks purporting to explain contemporary economic structure. Modernist, mass society assumptions center urban social relationships as topics of sociological investigation and discount diversity based on rurality (Falk 1996, Lobao 1996, Lichter & McLaughlin 1995, Tickamyer 1996). By neglecting farming, sociologists miss significant aspects of national social change, an opportunity to interrogate conventional conceptualizations of work and economic development, and a key policy sector.

Despite the decline of the farm population, farming remains essential for charting national social change. Farming, direct production of food and fiber, is the cornerstone of agriculture, which includes inputs, processing, and distribution and employs nearly 20% of Americans (USDA 1999:27). Farming itself is important both as an export sector in global commodity chains and as a source of income in rural communities. Some of today's most serious social issues, such as use of genetically modified organisms, environmental conservation, land use preservation, and food safety, arise from farming. Farmers also retain a significant ideological role, evidenced in global free-trade debates and World Trade Organization protests over preservation of family-farming, as well as in media attention in films and Farm Aid events.

Second, as a business dependent on unpaid household labor, farming always possessed distinct characteristics now being rediscovered as part of an emerging post-Fordist economy. Farming provides a fertile empirical example for studying the informal sector and household livelihood strategies; conceptually, this example raises the questions of why family businesses still characterize this industry amidst their failure elsewhere. More than 98% of the nation's 2.07 million farms are classified as family operations. Only 3% are incorporated, and of these, nearly 90% are closely held by the operators' families rather than external shareholders (Sommer et al 1998:iv).

Third, farming presents a unique case for interrogating conventional sociological views about the economy. Farming has not followed a linear development path, and its organization does not fit neatly into industrial sociology's categorizations. Partly due to the biological basis of farming, direct corporate involvement has lagged, and the family, which can adjust labor to match seasonal production cycles and consumption to match income flows, remains the typical operating entity (Mann & Dickinson 1978). Farming also reflects vestiges of different capitalist eras. As with early simple commodity production, it is typified by home-base production. Postwar industrial segmentation theory recognizes farming as a peripheral industry, composed of small firms producing bulk commodities, sandwiched between oligopoly input and output industries. Some also see evidence of post-Fordist trends. Rising inequality in US society has created a segment of affluent consumers driving demand for speciality commodities. New technologies and flexible production methods are tailoring output toward these high value, shifting, niche markets (Kenney et al 1989).

Uneven development also is evident as marginal units are reproduced in the midst of growing concentration. Farming is often described as a dualistic system, composed of a large number of small farms that cannot sustain families and a few large farms with expanding market shares. In 1997, small farms (defined here by annual gross sales under \$50,000) made up nearly three-fourths of the nation's farms but accounted for only about 7% of sales, while the top 3.6% percent of farms (those with sales over a half million dollars) accounted for more than half of sales nationally (US Bureau of the Census 1999:676). Moderate-sized farms that support a family through farming alone and require little hired labor are edged out

of this system. Inequality among farmers is thus high. In 1990, the Gini coefficient for income inequality for farm households was 0.64, nearly 50% percent higher than that for all US households (Ahearn et al 1993).

Finally, the farm population is significant from a state-policy standpoint. Farmers are subject to a legacy of interventions from land grant college research, extension service outreach, farm bill legislation, export promotion programs, and numerous USDA programs. Unrecognized by most sociologists is that there is probably no other workforce over which our discipline has such extensive policy influence, mainly through rural sociologists' long history of work with federal and state officials on farm and rural development policy (Jahr et al 1986, Swanson 1988b).

Though the sociological significance of the existing farm population is underestimated, one would expect greater disciplinary visibility on the basis of its large literature alone. For most of twentieth century rural sociology, "rural" was equated with "farm" and hence, there was intrinsic concern with farm families and communities. However, the economic development of farming was neglected, a topic left to agricultural economics. Emerging in the 1970s, the sociology of agriculture centered on agricultural development and drew largely from Marxian theory (Friedland et al 1981, Newby 1983). This literature long focused on domestic farm organization and more recently on global commodity chains (McMichael 1994, 1996, Bonnano et al 1994), local food systems (Kloppenburg et al 1996, Olson & Lyson 1999), and women in farming (Sachs 1996, Whatmore 1991). The farm population also is of intrinsic interest to rural demographers (Brown et al 1993, Brown & Wardwell 1981, Fuguitt & Beale 1989). For other researchers, farmers serve more as a rich empirical case to inform a specific disciplinary concern. Studies addressing life course and family (Elder & Conger 2000), gender divisions of labor (Rosenfeld 1985, Lobao & Meyer 1995), spatial inequality (Lobao 1990), and civic society (Tolbert et al 1998) see farmers as providing useful insights for these literatures.

THE AGRICULTURAL TRANSITION

Structural changes in farming over the past century (Table 1) show a decline in the number of farms and in farm population, growth of larger farms in terms of acreage, sales, and real estate capitalization, and gradual replacement of family with hired labor.² The post-World War II period ushered in the most rapid transformation, brought about by New Deal interventions and diffusion of new technologies (Goss et al 1980). From 1940 to 1980, the farm population declined tenfold, the number

²The Census definition of a farm has changed ten times since 1850. Prior to 1974, definitions were based on acreage and sales criteria. From 1974 to 1992, a farm was any establishment that generated \$1000 or more of agricultural sales in the past year. This farm definition was expanded in 1993 to include several new categories of commodities.

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TABLE 1 Structural changes in U.S. farming in the twentieth century^a

Year	Farm ^b numbers (1,000)	Farm population ^c as % of total	Land in farms (100,000 acres)	Average farm size (acres)	Gross sales per farm (constant \$1982)	Value of land & buildings per farm (constant \$1982)	Family or unpaid workers/ hired workers
1900	5,737	I	839	146	I	I	
1910	6,361	34.7	628	138	10,817	63,651	3.00
1920	6,447	30.0	956	148	10,341	54,060	2.96
1930	6,288	24.8	284	157	10,141	51,408	2.92
1940	960'9	23.1	1,061	174	10,577	40,769	3.10
1950	5,648	15.2	1,202	213	21,084	57,322	3.26
1960	3,955	8.7	1,171	296	27,831	111,974	2.74
1970	2,944	4.7	1,098	373	40,849	173,810	2.85
1980	2,428	2.7	1,036	427	67,167	366,861	1.84
1985	2,327	2.2	1,016	437	55,655	266,528	1.84
1990	2,146	1.9	284	460	59,122	242,880	2.24
1995	2,196	1.8	963	438	52,681	244,404	2.26
1999	2,191	1	956	436	55,238	255,496	2.27

farm size, and value of land and buildings, USDA, Economic Research, Service, Agricultural Outlook; land in farms, gross sales per farm, and unpaid workers per farm (reported Figures from 1900–1985 and their sources are reported in Lobao (1990: Table 2.1). Figures for 1990–1997 are updated from comparable recent sources: farm numbers, average as family workers through 1970), USDA, National Agricultural Statistics Service.

Agricultural Statistics Service.

[&]quot;The farm population was not estimated by the Bureau of the Census prior to 1910. The figure for 1995 is from the most recent (1992) estimate and is reported by USDA, National PThe definition of a farm was most recently changed in 1993 to include several new categories of commodities, slightly inflating the number of small farms.

of farms declined by more than half, average acreage more than doubled, and real average sales increased sixfold. In addition to long-term structural changes, farmers experience periodic crises. The 1980–1990 decade includes the most recent farm crisis, illustrated in Table 1 in declining real estate values and farm sales relative to their 1980 peak.

The increase in both size and number of large farms and decrease in number of smaller farms is accompanied by production polarization (Buttel & LaRamee 1991). The market share of sales by the largest 5% of producers has steadily increased from 38.3% in 1939 to 54.5% by 1987 (Browne et al 1992:22). Agribusiness firms have expanded through vertical integration but more typically by production contracts through which farmers become the equivalent of factoryhomeworkers, raising commodities to be turned over to agribusiness that they generally do not own. While only about 3% of farms operate under production contracts, they produce almost all poultry, half of all hogs, and a quarter of cattle (USDA 2000:51,54). At the same time, most farms have become marginal production units that cannot fully employ or sustain families. To survive in farming, families take off-farm jobs. Almost 90% of farmers' household income now comes from non-farm sources (Sommer et al 1998:48). A USDA commission recently determined that annual gross sales below \$250,000 cannot adequately support a family, and that survival of farms below that size "is most endangered" (Sommer et al 1998:69). About 94% of US farms fall into this category.

Within the agricultural transition, there is much ethnic, regional, and gender diversity. African Americans were virtually entirely uprooted from farming. The number of African-American farmers peaked in 1920 when they accounted for 14.3% of farm operators compared to 1% today (Sommer et al 1998:40). This uprooting is attributed to the general decline of small farms, land erosion and boll weevil infestations of cotton, New Deal farm programs benefitting white landowners, postwar cotton mechanization, repressive ethnic relations, and the lure of northern jobs (Fligstein 1981, Mandle 1978, Seavoy 1998, Tolnay 1999). Remaining African-American farmers faced institutional discrimination and are older and poorer than others (Beauford 1986, Brown et al 1994, Jones 1994). Research on other ethnic groups as farm operators, rather than laborers, is limited. Hispanic and Native American farmers are usually considered in light of non-farm changes contributing to high rural poverty among these groups (Foley 1997, Snipp 1989, Snipp et al 1993). Whites now comprise 97.5% of farm operators, Hispanics 1.5%, African Americans, 1%, and Native Americans, 0.5% (US Bureau of the Census 1999:675). The agricultural transition also introduced regional change (Molnar 1986). As small farms have declined, the farm population has shifted from the South to the Midwest (Beale 1993).

Finally, the agricultural transition was experienced differently by gender as a large literature on farm women indicates. Women's role in farming, however, tends to be invisible, in part because it is difficult to document through the Census of Agriculture that allows for only one self-defined operator per farm. Census data show women increased from 6.3% of operators in 1987 to 8.6% a decade later.

Women's role is significant because farming involves orchestrating family work strategies, whether on- or off-farm. Surveys of farm women nationally (Rosenfeld 1985) and regionally (Barlett et al 1999, Lasley et al 1995) find a distinct gender division of labor in farm tasks. Midwestern women also are more likely to work off-farm than men, their proletarianization making possible the survival of family farming.

CONCEPTUAL EXPLANATIONS FOR AGRICULTURAL TRANSFORMATION

What social forces have displaced family farmers and led to the present system with its increasing concentration and reproduction of marginal units? Several perspectives address how farming in advanced nations evolves. It is worthwhile to note the neoclassical economic perspective because of its ideological dominance in the agricultural establishment and because it serves as a foil of sociological critique. The neoclassical perspective rests on several assumptions: the present farming system is socially desirable; individuals' behavior is guided by rational-choice decision-making; and human capital factors and life-style choices explain why families remain on nonviable units. The historical trend of larger and fewer farms results from natural market competition in an industry where domestic demand is inelastic. Farmers are on a technological treadmill to expand production (Cochrane 1979). Some farmers outperform others by using more advanced technologies and achieving economies of scale. Displacement of farmers from farming, in effect, is an indicator of the system's success.

Though its recent influence is less pervasive, the major sociological paradigm for analyzing domestic agricultural development remains Marxian political economy. Like the neoclassical perspective, the political economy paradigm acknowledges market competition and the technological treadmill as reasons why farms have grown larger and fewer. The major difference between the two perspectives lies in who controls and benefits from agricultural development. The political economy framework sees market competition as socially produced and regulated in ways that benefit large capital in and outside farming. The result is a food system detrimental to most farmers, consumers, and the environment. At least two volumes (Buttel & Newby 1980, Friedland et al 1991) and numerous articles summarize the political economy view of domestic farm organization.

The political economy paradigm draws from Kautsky's and Lenin's classical agrarian analyses of the early 1900s, which suggested that the ideal-type "family farmers" whose farms sustain the family and depend on its labor might persist for an extended time but would gradually become differentiated into large capitalist farmers and semi-proletarianized producers. Most focus has been on capitalist enterprises and persistence of family farming rather than on semi-proletarianization. A large literature explains why family farming persists. Capital still encounters barriers to profit-making in farming (Mann 1990), avoids low-profit production

niches occupied by family farmers (Mottura & Pugliese 1980), and gains from exploiting farmers through agribusiness exchange (Davis 1980). Families remain an optimal farm workforce (Friedmann 1978), and family farms provide a legitimation function that presents the illusion that large capital does not colonize farming (Bonanno 1987). While political economy theory traditionally emphasized private market forces, greater attention is now given to the central state. Building from French regulation theory, analysts argue that federal programs and policies raised productive capacity, integrated farmers into global markets, and promoted lowcost food, all of which contribute to larger and fewer farms (Goodman & Watts 1994, Kenney et al 1989).

Taking stock of the political economy paradigm since Newby (1983) heralded its promise reveals the following issues. Research explicitly building from political economy principles has tended to move from focus on domestic farmers to the global agricultural system (Bonanno et al 1994, Marsden & Arce 1995). Sociologists who analyze US farming still widely use political economy theory to understand its macro-level development. However, when concern is with lower conceptual levels, such as farm households and communities, political economy theory is invoked more implicitly. While it may be used to set the structural context of change, analysts usually muster causal elements beyond the conventional paradigm. This disjuncture in employing theory is not only an artifact of moving to lower conceptual levels, but it also reflects the limitations of political economy theory, even for understanding macro-level development. First, as a structural approach, the political economy paradigm tends to ignore human agency and culture. It says little about how farmers' choices, beliefs, and political actions shape farm transformation. Second, as with neoclassical economic theory, there is a productionist bias: production exigencies promoting the growth of capitalist farming are emphasized over household or consumption-related factors that reproduce marginal units. Third, feminists note that when farm households are considered. they are often treated in a way similar to that of neoclassical economics, as a unit of consensus. Finally, the macro-level focus of political economy theory inherently downplays the role of subnational territorial units, such as communities and regions, in sustaining farm inequality.

Taken as a whole, the previous limitations reflect the neglect of institutional sources of farm system change "created by the sustained social practices of farmers themselves and their interaction with other actors," particularly as these involve gender, the household, state, farmers' political organizations, and community (Lobao & Meyer 2000:30). As researchers invoke ever-more eclectic elements to explain farm change, a coherent body of work is emerging that not so much challenges as extends the political economy paradigm toward consideration of meso-and micro-level institutional forces. First, farm households have customary social practices, values, and beliefs that make them exit or adapt to a farming system that disadvantages all but the largest producers. Cutting back on consumption and taking off-farm employment are well-known adaptive strategies. Values about the desirability of farming as an occupation and life-style and the desire to pass down

land to children are incentives to remain in farming (Brown et al 1998, Garkovich et al 1995, Hinrichs 1998, Mooney 1988, Salamon 1992). Jackson-Smith (1999) concludes that survival in farming depends as much on such micro-level household dynamics as it does on strategic business behavior.

Second, feminists see institutionalized gender relationships as affecting farm change. Women underwrite farm survival through their household work, on-farm work, and off-farm work.

Third, the institutional legacy of the state at various levels affects farm change. While large farms reap greater government benefits, small and moderate-size farms also draw from various commodity, insurance, environmental, and disaster relief programs. In the 1996 Farm Bill, the Republican-controlled Congress attempted to deregulate farming, overhauling much remaining New Deal legislation. But declining prices and other problems in the interim have resulted in hefty federal farm aid packages, over \$15 billion in year 2000 alone. Clinton's Agriculture Secretary Dan Glickman recently pronounced the 1996 Farm Bill a failure (*New York Times* 2000:A20). The importance of subnational state institutions is also recognized (DuPuis 1993). The decline of African-American farms provides a poignant example. A class action suit won in 1999 found that African-American farmers were denied federal loans and other aid given white farmers, with most documented discrimination due to county administrators (Sack 2000).

Fourth, farm households are embedded in local and regional contexts that affect farm survival (Pfeffer 1983, Schwarzweller & Davidson 1997). Ecological factors affect farm size and structure. Labor market conditions affect the ability to combine farm with off-farm employment. Urban proximity presents opportunities for niche marketing and local food system development.

Finally, farm transformation is a function of farmers' political actions. Farmers' mass-based political action has declined over time. A corporatist model has emerged in which most major farm organizations represent the interests of large producers. Farmers in marginal social positions appear to withdraw politically, excluding cases usually involving far right influences (Meyer & Lobao 1994). Inequality in the farm sector is maintained in part because most farmers are disengaged from political action and the organizations that might represent them.

In summary, while not necessarily a stated purpose, much recent sociological work provides an institutional response to the limitations of political economy theory. It remains to be seen if a more coherent approach that combines macrolevel theory with meso- and micro-level insights might be worked out under the broader political economy banner.

Other approaches to farm change have received less attention. Human ecology traces the evolution of farming systems as individuals and organizations adapt to changing environmental resources, technologies, and population density (Albrecht 1997, Albrecht & Murdock 1990). Friedland (1991) argues that Jeffersonian populism characterizes some approaches that identify agribusiness corporations as responsible for the endangerment of family farms (e.g., Goldschmidt 1978, Rodefeld 1974). Populist approaches long have been contrasted with political

economy theory that gives primary attention to the structural exigencies of capitalism over specific corporate behavior. Over the past decade, market concentration proceeded rapidly in hog and beef processing and expanded in grain processing and inputs, giving rise to a new round of social science concerns with corporate agribusiness. Though political economy theorists share this concern, to some extent the traditional divide persists; they take a systemic approach, viewing corporate behavior in light of broader capitalist development. In contrast, populist approaches are intrinsically concerned with creating competitive markets and preserving small farm businesses.

AGRICULTURAL TRANSFORMATION AND ITS EFFECTS ON COMMUNITIES

Sociologists have produced extensive research on the community impacts of the agricultural transition (Berardi 1981). This research is usually concerned with three interrelated trends: farm population decline; the relative growth of large, hiredlabor-dependent, "industrialized" farms; and the relative decline of moderate-size farms. The first trend, decline in farm population overall, a demographic change, was of foremost interest in the pre-1970s period of rapid farm decline. Concern was that small rural communities would decline as families left farming. For most places, however, farm population loss resulted in only short-term or negligible decline because of urban industrial influences (Swanson 1982). Present concern with farm population decline centers mainly on parts of the rural Midwest and metropolitan areas affected by urban-rural-interface land use issues (Pfeffer & Lapping 1994). The bulk of sociological literature is on the second two trends, which are structural in nature—growth of industrialized farms and the declining middle sector. Semantic reference may be to either or both changes, because they are treated as opposite sides of the same social problem, rising inequality. Four generations of research address this inequality.

The detrimental consequences of inequality in farming were recognized by sociologists in the 1930s (Tetreau 1938, 1940). Catapulting interest in the topic during the 1940s was a USDA report by anthropologist Walter Goldschmidt which presented a case-study of two California towns: Dinuba, a family farming community, and Arvin, a community dominated by large farms. Goldschmidt (see 1978 reference) found poorer conditions in Arvin: a smaller middle class, lower family incomes, poorer public services, and less civic participation. He argued that the scale of farming affected farm and local stratification patterns and, in turn, other community outcomes. Angry over the findings, owners of large farms staged burnings of Goldschmidt's report and Steinbeck's *Grapes of Wrath*, and they launched attacks that closed Goldschmidt's USDA department.

Controversy surrounding Goldschmidt's study contributed to the neglect of research on industrialized farms for over thirty years. With the advent of the sociology of agriculture, a flurry of studies emerged on the topic in the 1970s.

This second generation "Goldschmidt literature" involved updating that focused on postwar farm concentration and tested relationships quantitatively, typically using territorial units such as counties. Sociologists examined the relationship between indicators of farm scale and structure and indicators of local socioeconomic well-being, such as income and population change. Lobao's (1990) review of 18 studies conducted from 1972 to 1985 shows that half reported support for the hypothesis that growth of large farms and/or decline of moderate-sized farms adversely affects communities, while 7 noted mixed support and 2, no support. Critiques of this second generation research emerged in the 1980s. Methodologically, studies were cross-sectional, usually regionally specific, and often omitted pertinent, nonfarm control variables. Conceptually, analysts were unclear whether farm scale (e.g., sales, acreage) or structure (e.g., use of hired workers, incorporation) was the significant causal force, and non-farm intervening factors were given little attention.

A third generation of Goldschmidt-type studies continues the quantitative tradition. This research attempts to address the issues above (Buttel et al 1988, Flora & Flora 1988, Gilles & Dalecki 1988, Lobao & Schulman 1991, MacCannell 1988, Skees & Swanson 1988, van Es et al 1988) and also to extend the topic to new theoretical questions. Examples of theoretical extensions include spatial inequality, how the fortunes of regional and local populations vary due to economic structure, the state, and other factors (Crowley 1999, Lobao 1990), and civic society, how vibrant local society is enhanced by small, locally owned business such as family farming (Irwin et al 1999, Tolbert et al 1998).

Third-generation findings about industrialized farms are more mixed. Of the studies above, MacCannell, Crowley, Tolbert et al, and Irwin et al report detrimental impacts; Buttel et al and van Es et al report no detrimental impacts; and the remainder are mixed. Some analysts find a curvilinear relationship between scale and well-being, with small units also related to poorer conditions (Skees & Swanson 1988). Impacts of moderate-sized farms, when significant, are usually beneficial. Regional differences suggest that institutional context, such as state regulatory efforts, citizen activism, and labor market conditions, may buffer adverse effects of industrialized farms. However, these institutional factors are yet to be fully elaborated. A lack of clarity remains as to whether farm size or structure is the relevant causal concept, though empirically both are related (Wimberley 1987). More broadly, the causal mechanisms by which farming affects communities remain under-conceptualized, and their empirical assessment is inherently limited by existing data and methodologies. Sociology has no equivalent of economic's input-out modeling, which, however problematic, is concerned with empirically disentangling how shifts in enterprises filter down to communities. Finally, it is noteworthy that most third-generation studies report some significant impacts of farm structure. These persist nationally, across varying levels of rurality and farming dependence, and over time. Even in a post-industrial society, farming affects communities, though obviously not to the degree of services and manufacturing.

Concurrent with third-generation studies is an emerging, new fourth generation focus on agribusiness expansion, mainly in livestock, where production is more

easily rationalized. The most recent research involves case-studies of communities with hog confinement operations (NCRCRD 1999, Seipel et al 1999, Thu & Durrenberger 1998). These studies indicate that large confinement operations further erode family farmers' share of production. Communities receiving large operations may increase total income and employment but are also likely to experience increased social polarization and environmental problems.

To further carve out the rich sociological legacy regarding the community consequences of farming, the following issues remain. First, systematic comparisons across place and time are limited. Quantitative, longitudinal, and comparative case studies beyond 1990 are needed. Greater attention should be given both to conceptualizing the causal paths by which farm changes filter down to communities and to overcoming methodological barriers of assessing these paths. Research is still rather insular in terms of informing broader sociological theory. Institutional factors that mediate farm impacts require more attention. Some analysts suggest that maintenance of family farming itself is a marker of institutional context, signaling a healthy civic society (Tolbert et al 1998). Finally, this research tradition continues to pull sociologists into public controversy. An example is a recent lawsuit by agribusiness interests seeking to overturn a widely supported South Dakota law regulating industrialized farms. The suit pits sociologists whose research supports the public's vote for the law against economists whose position supports agribusiness.

AGRICULTURAL TRANSFORMATION AND HOUSEHOLDS

Research on the consequences of agricultural change for households is voluminous but less systematic than that on communities. Since enterprises and households are inextricably linked, farm transformation is reflected in family work and well-being. Even so, the farm economy and household were treated as separate spheres for much of the past century. Hence, most research explicitly linking farm economic and household change is of contemporary origin. While the 1970s brought political economy theory to the farm enterprise, the household continued to be treated as a unit of shared interests, much in the vein of functionalist and neoclassical economic theory. Though some researchers (Wilkening 1968, 1981) examined gender divisions of labor earlier, not until the 1980s, largely due to feminist influences, was the farm household widely subject to critical scrutiny. Farm economic and household dynamics of the past are revisited in critical, feminist historical studies (Adams 1994, Fink 1986, 1992). The sociological literature largely centers on the effects of the contemporary farm economy on households' labor strategies and well-being. It has the following characteristics.

First, the literature proceeds from two starting points, one from rural sociology's intrinsic concern with farm household survival, the second from other disciplinary-based concerns such as work, family, life course, and mental health. Second, research is conceptually eclectic, drawing from political economy,

feminist, and general family, labor market, and social-psychological theories. As noted previously, these conceptually eclectic elements help to provide an institutionalist extension of political economy theory: farm households' customary labor and consumption strategies enable family farmers to survive and compete with larger-scale units, although often with social costs. Third, concern is with two types of farm transformation—long-term, macro-structural change, usually treated as manifest in present enterprise characteristics, and shorter-term financial stress from the 1980s crisis. With the exception of farm crisis case studies, almost all research draws from cross-sectional inferences. In some sense, this problem is irremediable unless small area studies are employed, as national longitudinal surveys do not adequately capture farmers. Finally, analysts recognize various survival strategies (e.g., Moen & Wethington 1992), including consumption adjustments (Brooks et al 1986, Bultena et al 1986), and political strategies (Meyer & Lobao 1997) that merit attention. However, for only two types of responses labor strategies and social-psychological—have sustained research traditions developed.

Sociologists have examined the consequences of farm structural change and shorter-term financial hardship for both on- and off-farm labor strategies. The gendered nature of these labor strategies is well documented. Farm women participate in production tasks, are typically responsible for bookkeeping, and nearly entirely responsible for household tasks. Men participate more in direct farm production, and their work, whether on- or off-farm, is more closely tied to enterprise scale and structure than is that of women (Simpson et al 1988, Wilson et al 1994)—relationships that appear to hold even in the more progressive sustainable agriculture community (Meares 1997). Structural changes in farming affect off-farm work of both men and women. As farms become smaller, both men and women expand off-farm work. Researchers also question whether the gender division of labor in farming is altered by structural change (Haney & Knowles 1988). Some studies find that women's involvement in production tasks increases when farm units are smaller and less profitable (Buttel & Gillespie 1984, Coughenour & Swanson 1983, Sachs 1983).

The farm crisis period shows how shorter-term financial downturn affected work strategies. With regard to on-farm work, Gladwin's (1991) research in Florida and anecdotal evidence suggested that women increased their time and scope in farm work during the crisis. In contrast, research across twelve midwestern states (Lasley et al 1995) and case studies (Barlett 1993, Salamon 1992) found that the division of labor on the farm itself changed little during the crisis. Both men and women moved away from farming by taking off-farm work during the crisis, but the change was greater for women. Nationally, in the 1980s, farm women increased their labor force participation relative to earlier years, to farm men, and to other rural women (McDonald and Peters 1991, Ollenburger et al 1989). Over one third of Midwestern farm women and one quarter of men reported taking employment due to financial need during the crisis (Lasley et al 1995).

The social-psychological costs of farm change have received considerable attention. While some studies have focused on how farm structural position influences mental health outcomes (Martinson et al 1976), most contemporary attention is on shorter-term financial hardship from the farm crisis. At first, analysts were concerned with negative mental health outcomes of the crisis, often drawing from research on workers displaced by industrial restructuring. Later attention was given to intervening variables that lessen the effects of economic hardship, such as supportive networks and coping strategies, typical of mental health research. There is a need to broaden focus to other factors that mitigate stressors in the farm context, such as church membership and belief systems. Political activism also can be a useful crisis response, supplanting or supplementing other social-psychological coping mechanisms (Meyer & Lobao 1997). Finally, there is recent interest in the resiliency of farm households, reflecting social psychologists' concerns with emotional hardiness and happiness.

Research on stress and depression in the farm crisis replicates both findings from social psychology and extended sociological understanding of the interplay between economic hardship and mental health in contexts where economic problems are community-wide, not individualized, such as disaster settings and plant closings. Findings demonstrated the association between economic hardship, characteristics of farming as an occupation, and farmers demographic attributes with negative mental health outcomes (Armstrong & Schulman 1990, Belyea & Lobao 1990, Davis-Brown & Salamon 1987, Heffernan & Heffernan 1986, Lorenz et al 2000, Rosenblatt & Anderson 1981, Walker & Walker 1987). Gender comparisons found women bore disproportionate stress (Berkowitz & Perkins 1984). Findings from research on non-farm populations were often confirmed with a few exceptions: more educated and younger farmers had greater mental health problems because this group was more likely to have overcapitalized during the crisis. Conversely, older farmers had few mental health problems, provided their physical health was good. Other research centered on the impact of the crisis on paths of successive farm generations. The longitudinal studies of Iowa rural families, particularly their youth (Conger & Elder 1994, Elder & Conger 2000, Lorenz et al 2000) examined the ways in which family bonds and community supports counter the effects of agricultural downturn. In one of the few panel designs, Lorenz et al (2000) provide cross-time evidence that farm economic hardship results in depression, but that families who lost farms were resilient in recovering emotional health as financial stress abetted.

In summary, we have noted limitations with the literature on farm households, including its reliance on cross-sectional data and the need to more fully explore other adaptive strategies, particularly political activism. Research on farm households is important because it extends sociological generalizations to contexts overlooked by conventional research, places where work and household intertwine. It also raises new questions for sociology. For example, why are gender boundaries so inflexible in business labor allocation, even where the household itself, rather than an external entity, controls these decisions? What is special about a

childhood embedded in the land and family work that confers resiliency in the face of hardship?

CONCLUSIONS

In this paper, we provided a retrospective and necessarily schematic account of the empirical and sociological fate of the independent farm population. In the course of the twentieth century, the farm population effectively disappeared from the national and general sociology landscape. Americans at large were expelled from farming, and most participating in this production sector were subject to material deprivation alleviated only by further withdrawal from farm work and reliance on the state. We caution against romanticizing the loss of this population, which represents a landed elite when compared to the mass of rural poor and landless Americans. However, farm decline does reflect the incursion of capital into possibly the last domestic economic sector dominated, at least numerically, by family businesses. And there has been a loss to sociology. The discipline as a whole missed one of the greatest sociological stories of the twentieth century as research on farm transformation became evermore confined to speciality journals. Examining farming can extend sociological inquiry beyond conventional contexts where household and enterprise are distinct. Unique industries such as farming allow interrogation of prevailing conceptualizations about domestic economic organization. More broadly, the farm sector provides an alternative social context that helps refine, revise, or challenge longstanding sociological generalizations presumed to hold across mass society.

We outlined three research traditions, those dealing with macro-level farm transformations, community impacts of farming, and household responses. While the three traditions developed as relatively distinct bodies of work, we noted their overlap. First, taken together they capture the major changes experienced by the farm population. Farming as a production system continues to undergo rapid transformation. The farm enterprise is inextricably connected to the household, so that production changes become reflected in work roles, hardship, stress, and resilience. As farms decline in number and grow in size, their effects reverberate across communities. Second, the three traditions recognize similar transformations, long-term structural and shorter-term changes. However, the causal paths by which these macro-level changes filter down to lower analytical units of household and communities tend to be assumed rather than explicitly explored. Although we noted methodological limitations for doing so, this topic merits more serious attention. Third, research on households and communities provides evidence of institutional mechanisms behind national farm transformation, in addition to private market and central state forces denoted by political economy theory. Attention to household and community institutions can extend current theory. Finally, research on communities and households needs to develop stronger theoretical underpinnings and links to sociological theory. While all three traditions speak to central issues of the discipline, there is a lack of effort in addressing broader audiences,

compounded by general sociology's reluctance to be informed by peripheral places and the people who study them.

What lies ahead for the remaining farm population and for sociologists studying agriculture? In addition to continued interest in contemporary family farmers, research is becoming segmented along two different topical areas, reflecting global and local issues, noted earlier. The first is concerned with global production chains in which family farmers themselves play a relatively small part of the sociological story which centers largely on the actions of agribusiness, the state, and increasingly, non-governmental organizations concerned with trade and environment. The second area centers on farming and its embeddedness in local landscape and food systems. A growing literature on the urban-rural interface deals with farmland preservation in the context of metropolitan growth. Because farms are smaller closer to urban areas, such efforts may enhance family operations as well as local eco-systems. A related literature examines local food systems, which provide emerging opportunities for smaller, niche-oriented producers, often engaged in more sustainable agricultural practices. Some argue that the entire agricultural system itself is undergoing bifurcation, whereby remaining producers are moving towards operating in virtually separate, global or local oriented markets, the latter far more amenable to family farmers. In sum, as the classical agrarian political economists argued at the turn of the last century, the fate of the farm population is not yet sealed.

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