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Agriculture and Class: Contradictions of Midwestern Family Farms Across the Twentieth Century

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AGRICULTURE AND CLASS: CONTRADICTIONS OF MIDWESTERN FAMILY FARMS ACROSS THE TWENTIETH CENTURY

A Dissertation Presented

By

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DEDICATION

To my grandmother

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ABSTRACT

AGRICULTURE AND CLASS: CONTRADICTIONS OF MIDWESTERN FAMILY FARMS ACROSS THE TWENTIETH CENTURY

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In this dissertation I develop a Marxian class analysis of corn-producing family farms in the Midwestern United States during the early twentieth century. I theorize the family farm as a complex hybrid of mostly feudal and ancient class structures that has survived through a contradictory combination of strategies that includes the feudal exploitation of farm family members, the cannibalization of neighboring ancient farmers in a vicious hunt for superprofits, and the intervention of state welfare programs.

The class-based definition of the family farm yields unique insights into three broad aspects of U.S. agricultural history. First, my analysis highlights the crucial, yet under-recognized role of farm women and children's unpaid labor in subsidizing the family farm. Second I offer a new, class-based perspective on the roots of the twentieth century "miracle of productivity" in U.S. agriculture, the rise of the agribusiness giants that depended on the perpetual, technology-induced crisis of that agriculture, and the implications of government farm programs. Third, this dissertation demonstrates how the unique set of contradictions and circumstances facing family farmers during the early twentieth century, including class exploitation, were connected to concern for their ability to serve the needs of U.S. industrial capitalist development.

The argument presented here highlights the significant costs associated with the intensification of exploitation in the transition to industrial agriculture in the U.S. The family farm is implicated in this social theft. Ironically, the same family farm is often held up as the bedrock of American life. Its exalted status as an example of democracy, independence, self-sufficiency, and morality is enabled among other things by the absence of class awareness in U.S. society. When viewed through the lens of class, the hallowed family farm becomes example of one of the most exploitative institutions in the U.S. economy. The myth of its superiority takes on a new significance as one of the important non-economic processes helping to overdetermine the family farm's long survival, while participating in foreclosing truly radical transformations of these institutions to non-exploitative alternatives.

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CHAPTER 1

INTRODUCTION

This dissertation develops and deploys a class analytical framework to examine the situation of family farms in the Midwestern United States during the early decades of the twentieth century. This new way of understanding the family farm constitutes the overall contribution of this project. One implication of this analysis is to re-conceptualize the particular, crucial importance of women's role in the contradictory condition of U.S. agriculture at the time being investigated. A second implication is to recast the competitive struggle among corn farmers, state policy, and the trajectory of U.S. agriculture development in class terms. A third implication is to show how the unique set of contradictions and circumstances facing family farmers at this time, including class exploitation, had profound implications for the subsequent development, not only of U.S. agriculture, but of U.S. capitalism as well.

This first chapter is organized as follows: I first outline the theoretical framework which will be developed and deployed in further detail in the next chapter. I develop the framework using an analogy between the family farm and the medieval European manor. I then describe the historical context for the study of Midwestern farms from 1900-1930 by examining how the "farm woman problem" came to national attention during this time. I explain how farm women's descriptions of the problem can be understood in terms of class and the struggle over surplus labor. I conclude the historical overview with a discussion of how the farm woman problem, and farm women's work in general, played a role in the technological revolution that would transform American agriculture across the twentieth century, and how this transformation would enable the development of U.S.

capitalism in a way that it would not have otherwise done. The final section of the chapter outlines the plan of work for the rest of the dissertation.

Manor Economy: A Class Analytical Framework of the Family Farm

U.S. agriculture has historically displayed a rich variety of organizational forms. These have included, for example, the communal village plots of some Native American communities, the feudal Dutch patroonships along the Hudson River Valley in the Colonial period; the slave plantations of the South until the Civil War; the complex sharecropping system that grew to replace slavery, as well as the massive capitalist ranches that dotted the Western prairie across the late nineteenth century. One enduring organizational form has been that of the family farm, often touted as a uniquely American form of agricultural organization. Culturally iconic and politically influential, the family farm remains a mainstay of U.S. agriculture.[1]

What is a family farm? The overdeterminist epistemology that informs this analysis implies that answering this question is no simple matter. In fact, it is the work of this dissertation to develop one. Different theories generate different definitions of, or "truths" about, their basic concepts, even when those concepts share the same name. Deploying these uniquely defined concepts, each theory constructs its own conceptual world, and generates its particular and partial explanations of that world (Wolff and Resnick 1987, 18). Different theories, or ways of thinking, therefore carry different

[1] The USDA, for example, reports that 98 percent of farms in the United States are family farms (Hoppe and Banker 2010, i). The USDA defines a family farm as one in which the majority ownership and control of the business resides with a group of related individuals (Ahearn and Weber 2010).

implications and influence us to act differently in the worlds they show us (Wolff and Resnick 1987).

This dissertation develops its own unique conceptual object called the "family farm." This is the first analysis to delineate and describe this particular object in terms of its constituent class processes, and to examine the role of class in shaping the development of U.S. agriculture. No other researcher has yet applied this kind of class analysis to this particular conceptual object. In doing so, this analysis renders visible that which was previously invisible in other explanations of the family farm, with the goal of generating unique insights into its complexity, its crises, and its transformations during the time period under consideration.

The concept of class used and developed in this analysis is an adjective referring to the processes of production, appropriation, and distribution of surplus.[2] The surplus-based notion of class is one that Marx developed and systematically applied, particularly throughout the three volumes of his most developed work on his theory of the capitalist economy, *Capital*. This dissertation follows the body of work developed by Resnick and Wolff (1989) and others in this tradition which aims to provide a fuller formulation of Marx's surplus-based definition of class, and to apply it in various ways. I both draw upon and contribute to that body of work in deploying the class analytic framework toward an understanding of the family farm and its constituent class processes. That theoretical framework is introduced below. Detailed theoretical and empirical exposition of the family farm's class structures is presented in subsequent chapters.

[2] The fundamental class process involves the production and appropriation of surplus, while the subsumed class process refers to its distribution and receipt.

The family farm will be specified as a hybrid of different kinds of class structures – capitalist, feudal, and ancient.[3] Kenneth Levin's 2004 work on the concept of class structural hybrids provides the foundation for this specification. Based on his reading of various passages in Marx's works, he defines a hybrid as a combination of "different kinds of class structures at the same site" (Levin 2004, 5). He further defines a concept of "primitive hybrid" as one that combines "different forms of the same kind of class structure" rather than different kinds of class structure (Levin 2004, 29). Although Levin concentrates his investigation on hybrid class structures involving only two kinds of class structure – capitalist and one other – he includes the possibility of multiple kinds of class structures combining in one site (6). I apply the conceptual framework to investigate this possibility, and add the coexistence of different forms of hybrids in the same site, the family farm, or what may be called a hybrid of hybrids.

This follows from the way I conceptualize the class structural hybrid that constitutes the family farm as containing two linked but distinct locations: the farm enterprise and the farm household. The family farm is a composite of its household, where members of the farm family are produced and reproduced; and its enterprise, where farm products and livestock are produced and reproduced. Both the farm household and the farm enterprise will be shown to be the site of one or more forms or kinds of the class processes contained in a family farm, but they typically do not contain

[3] There are five kinds of class structure: ancient, slave, feudal, capitalist, and communist. All but the communist class processes are understood to be exploitative in the sense that the communist class process is the only one in which surplus is produced and appropriated by the same group of people. While the slave, feudal, and capitalist class processes involve the exploitation of the direct producer(s) by the first recipient(s) of surplus labor, the ancient class process involves auto, or self-exploitation. See Gabriel (1989) for a discussion of exploitation and the ancient class process. See Resnick and Wolff (1989, 117–118) for explanation of the five basic kinds of class structures.

the same forms or kinds of class processes. Because of this, I conceptualize them as distinct locations within the family farm, and as distinct manifestations of hybrids.

The manor economy of medieval Europe provides an analogy to illustrate the unique class taxonomy of the family farm that I develop and apply in this dissertation. The manor typically included a feudal class structure in which serfs, linked to lords through ties of personal devotion and dependence, performed surplus labor on the lord's demesne.[4] Through the system of corvèe (which literally means "demand" or "requisition"), lords appropriated the surplus labor of their serfs who labored in the lord's fields, meadows, and stables, as well as in his household, workshop, mills, woods, etc. The demesne labor force also included wage laborers, who were employed to work in the fields, especially at harvest time, or for other tasks that were not covered by the customary services owed by the serfs. Household servants were retained as wage laborers, as well. Sometimes the serfs themselves also kept serfs or employed wage workers in their households as servants, or to perform the labor services owed to their lords in their stead. Finally, the manor included self-employed artisans working as ancient carpenters, butchers, bakers, brewers, coopers, tanners, and in similar "by-employments." Ancients sometimes worked in the demesne fields repairing fences and other structures, for example. In addition, the lord employed ancients as tutors, midwives, healers, and entertainers in his household.[5]

Consequently, the manor, like a family farm, was a site of different class structures – feudal, ancient, and perhaps capitalist – occurring together. As such, the

[4] The demesne is the portion of the manor retained by the lord for his own use. The remainder of the manor was let out to the serf tenants.

[5] In certain time periods and locations, the manor labor force also included slaves, who performed the bulk of daily maintenance tasks, in the Lord's household, for example, rather than wage laborers (Duby 1998, 37).

manor was the site of a feudal/ancient/capitalist class structural hybrid. These different kinds of class processes occurred in different spaces or locations within the same manor, including the lord's enterprise and the lord's household. The demesne enterprise and household displayed different forms of hybrids, as different kinds of class structures combined differently in the enterprise and the household. The enterprise was the site of mostly feudal, and only sometimes capitalist or ancient class processes, while the lord's household regularly combined feudal, ancient, and capitalist forms of surplus (Duby 1998).

Not only was the manor a complex hybrid of different kinds of class structure, individuals in the manor often personified the intersection of multiple class positions in interesting, and perhaps contradictory ways. In many instances, this intersection involved individuals occupying different positions in different fundamental class processes. Wealthier serfs, as mentioned above, often hired servants to work in their homes, or kept serfs of their own. In these situations they personified a capitalist or feudal exploiter. In performing surplus labor on the lord's demesne, however, they occupied the position of feudal exploited. A serf often also worked as an independent craftsman, therefore participating in an ancient fundamental class process, individually appropriating his own surplus labor, as well as being exploited in his labor for the lord.

The intersection of class processes might also have involved individuals occupying two or more positions in both fundamental and subsumed class processes. In England, for example, a reeve or grave was elected annually from among the serfs to supervise and manage the performance of labor services in the lord's agricultural enterprise. The serf/reeve therefore occupied both the position of exploited feudal serf,

and also of feudal subsumed class manager, overseeing and enabling his own and others' continued feudal exploitation.

Like the medieval European manor, a typical family farm included a feudal class structure. This was displayed in a unique form in which a married woman and her children occupied class positions as serfs performing surplus labor for their lord-husband/father in both the farm household and the farm enterprise. In addition, the family farm sometimes included a possible capitalist class structure, as the farmer periodically employed hired hands to work in the fields. The husband was not only a feudal lord and possibly sometimes a capitalist, but he also labored on his own in farm production, performing and appropriating his own surplus labor as an ancient.

Also like the manor, a typical family farm displayed different forms of hybrids, or different combinations of class structures in its two locations. The household typically displayed different forms of the feudal class process. Most of the labor performed there was performed by the farm wife, and occurred together with the feudal class process. Female children were often required to help their mothers, laboring alongside her possibly as her serfs, making a primitive hybrid of different forms of feudalism. Only in rare, special cases was hired help employed in the farm household. In the farm enterprise, most of the labor performed in the farm fields most of the time occurred along with the ancient class process. Most of the labor performed in the barnyard and garden, and some of the labor in the farm fields occurred with the feudal surplus labor of wife and children. Finally, some labor may have occurred there along with the capitalist class process. [6] Hence, while the typical family farm household was only feudal, the typical

[6] The presence of a market in labor power is one condition of existence of a capitalist class process, but does not in itself necessarily imply it. Various other economic,

family farm enterprise was either a feudal/ancient, ancient/capitalist, or feudal/ancient/capitalist class structural hybrid.

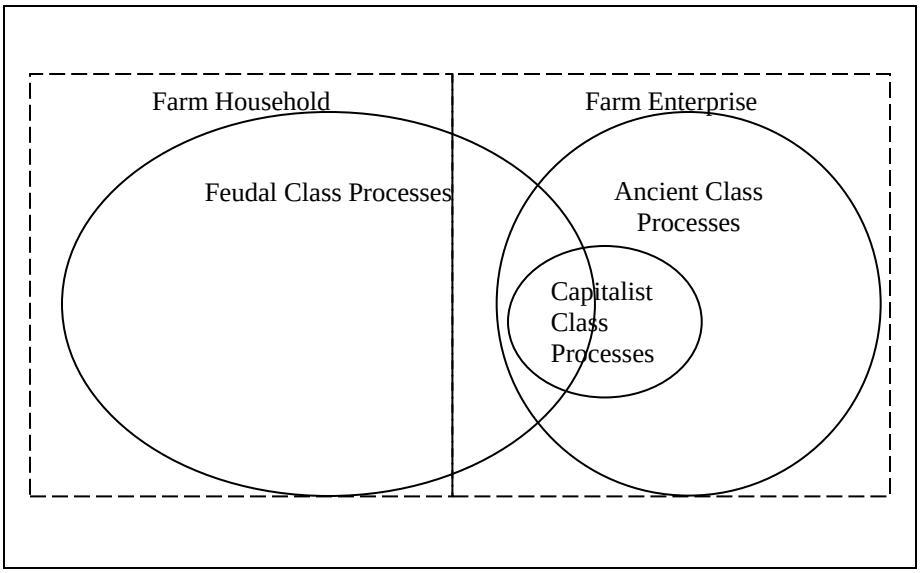

Figure 1: A Typical Family Farm.

Figure 1 illustrates the class taxonomy of the typical family farm as described above. The family farm is comprised of its two locations, the farm household and the farm enterprise. Each location contains one or more kinds of class processes. The feudal class structure of the family farm occurs in both locations, either by itself, or in conjunction with other class structures. It occurs by itself when the farm wife labors alone in the household, barnyard, and garden. It occurs in conjunction with other class structures when the farm wife and children labor alongside the farm husband, and

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political, and cultural conditions participate in producing a capitalist relationship between employer and wage laborer. It is unlikely that the labor of hired "girls" in the family farm household occurred in the context of a capitalist class process. On the other hand, many of the hired hands in the ancient farm enterprise were likely to have been engaged in a capitalist class process. This may have occurred, for example, if the ancient family farmer was also a capitalist employer, or as Marx referred to him, a "small master" (Levin 2004). The various possibilities are discussed further in Chapter 2, but it seems likely that hired hands often labored in the context of capitalist class processes in commercial farm production.

sometimes hired farm workers, in the farm fields. As shown, the farm household is only feudal, while the farm enterprise is a hybrid of different kinds of class structures.[7]

Like individual manor occupants, farm family members navigated multiple and sometimes conflicting class processes and positions. A farmer/husband was feudal, ancient, and sometimes possibly capitalist appropriator. As such, he faced the complexity of securing conditions of existence for up to three different fundamental class processes through distributions of his appropriated surplus. A farm wife might have occupied the position of feudal serf in the production of household goods and services, while occupying the position of ancient subsumed class manager in her capacity as keeper of farm accounts, a situation that many farm women experienced (and still do). She might therefore have been exploited in one capacity, while at the same time holding some command over value flows as farm manager, and in this capacity enabling her husband's freedom from exploitation by others (or in other words, his self-exploitation as an ancient). If she also managed household accounts, she would also, like the English reeve, have been feudal serf, as well as subsumed class enabler of her own, and possibly her children's, exploitation by participating in securing the conditions of existence for the family farm's feudal class structure.

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[7] The labor of the ancient farmer in the family farm enterprise was most often directed toward the production of commercial crops, or means of production such as fodder, for these crops, while the labor of the feudal farm wife (unless she was helping the ancient farmer) was most often directed toward the production of farm produce or proceeds of these for the use of the farm family. I therefore refer, for example, to the "ancient farm enterprise," the "ancient commercial farm enterprise, " the "ancient/feudal hybrid commercial farm enterprise," or the "mostly-ancient hybrid commercial farm enterprise" to distinguish the former portion of the family farm enterprise. Likewise, I refer to "ancient farm production," "ancient commercial farm production," "ancient/feudal farm production," or "mostly-ancient farm production" to distinguish the former kinds of labor processes, and "feudal farm production" to distinguish the latter.

Equation 1 represents the hybrid class structure of the family farm, and its revenues and expenditures in simple class terms:

$$SL(A) + SL(CAP) + SL(F) + NCR = SSCP(A) + SSCP(CAP) + SSCP(F) + Y \quad (1)$$

The first three terms on the left hand side designate the surplus labor produced and appropriated in the family farm's three kinds of class structures: ancient (A), capitalist (CAP), and feudal (F). The corresponding terms on the right hand side designate the subsumed class payments necessary to secure the conditions of existence for each of the three kinds of class structure. Recall that the ancient and capitalist class structures most often occurred only in the family farm enterprise, along with the labor of the farmer/husband, while the feudal class structure occurred in both the farm enterprise and the farm household along with the labor of the farm wife and children in both farm and household production. The NCR term stands for non-class revenues, and Y for whatever expenditures were required to ensure their continued receipt. Such revenues and distributions may have arisen from the transfer of value between the different kinds of class structures within the same family farm. Alternatively, they may have arisen from the transfer of value between the same kinds of class structures between family farms, or between different kinds of class structures between family farms and non-farm enterprises or government. Chapter 2 focuses on the former: It examines the patterns of non-market interaction among farm family members and workers shaping and shaped by these value transfers. Chapter 3 presents an analogous analysis of the latter: It examines the patterns of market interaction and competition among farmers shaping and shaped by these value transfers (called superprofits), and between farmers and non-farm agribusinesses or government.

The class structural complexity of the family farm has significant implications, as it contributes to explaining its constant existence in crisis, at the same time that it sheds light on its tenacity, and the particular and crucial adaptations it made to survive. The several kinds of class structures occurring in different combinations in different locations on the family farm create multiple opportunities for class crisis to occur. If conditions of existence are not secured for any one of these class processes, the family farm may suffer from crisis. However, just as crisis points are multiplied, class structural complexity increases the flexibility to generate resolutions to these crises. Surplus produced and appropriated in one kind of class structure can be transferred to another kind of class structure and between sites of production to help secure threatened conditions of existence as needs arise. For example, revenues from the sale of hybrid produce could be used to support feudal class structures in the farm household. Likewise, revenues from feudal farm produce could be used to support feudal class structures in the farm household, or transferred to the ancient class structures in the farm enterprise. Which of these strategies family farmers employed to resolve the crisis they faced during the early twentieth century, and with what contradictory consequences will be a focal point of this analysis. Family farm production as a whole will be shown to depend on the coexistence of its different kinds of class structures, even as those class structures shrink and expand in response to crisis and prosperity at various times and under various circumstances. Despite dramatic changes in these class processes and their conditions of existence, the family farm has continued to survive, and in many cases to flourish.

For a variety of complex reasons discussed further in Chapter 2, the ancient class structure took priority for most family farms. Even though it was but one among the

different kinds of class structures occurring there, the ancient class process was widely considered to be the heart, or essence, of the family farm, and that for which its members toiled and sacrificed. Ancient farmers were not likely to be able to appropriate enough surplus from their own labor to sustain and reproduce themselves as ancients. Even if they were, the limitations of self-exploitation rendered them less able to respond and adapt to changed conditions of existence. In his groundbreaking work on the theory of ancients, Gabriel identified the limitations of the ancient producer thus: "It is not possible for the ancient producer to obtain more necessary and/or surplus labor than the total labor she performs.—This may be a problem that is unique to the ancient producer, in the sense that the only source of additional wealth or of reduced production costs within the ancient fundamental class process is the labor of the appropriator" (Gabriel 1989, 171–172). Feudal and capitalist workers changed the picture. They could be enlisted to provide more surplus labor, to help reduce costs of production, or both. Equation 1 begins to show how family farm members adjusted all of the equation's revenue and expenditure variables so as to maximize net outlays for the ancient class structure – the essence and the "real" business of the family farm. The primacy of the ancient class structure in the family farm hybrid, coupled with its limitations, combined to create the conditions for its continued existence, so that family farm hybrid has not been a temporary, transitional form, as it is often conceptualized.

In the next chapter, I focus on the implications for the reconceptualization of farm women's (and children's) importance in the family farm as feudal serfs laboring in both the farm household and the farm enterprise. It was the family farm's feudal class structure that was an important source of subsidies to the ancient class structure of the

farm enterprise. These subsidies came in the form of the feudal surplus labor of wives and children laboring in the fields, tending livestock, and growing farm produce. The feudal surplus labor of farm wives also enabled a reduced necessary labor in farm production since the ancient farmer's consumption (as well as that of his workers) derived from the household feudal surplus labor appropriated from his wife. This subsidized consumption allowed the farmer to appropriate a large proportion – perhaps all – of his labor as surplus, and distribute it toward the survival of the ancient farm enterprise. In this way, the hybrid class structure of the family farm enabled the ancient farmer to transcend the limits of the ancient class structure, constrained as it is by the lone producer of surplus, and pushed the boundaries of necessary labor toward zero. At the same time, this arrangement required an increasingly insupportable rate of feudal exploitation in family farms, contributing to a crisis for U.S. agriculture. That crisis took the form of "the farm woman problem."

Class Struggle on the Farm: Constructing the "Farm Woman Problem"

Midwestern farmers enjoyed unprecedented prosperity during the first two decades of the twentieth century. As Secretary of Agriculture Wilson noted happily in his fourteenth annual report in 1910, "Year after year it has been my privilege to record another most prosperous year in agriculture" (USDA 1908). Secretary Wilson's enthusiasm was not unjustified – 1910 marked the thirteenth year of recovery from a downturn in 1897 and the beginning of what would become the Golden Age of high and stable prices from 1910-1914. The good times would continue unabated through World War I, until demand and prices sagged in the summer of 1920.

Yet, progressive reformers grew increasingly concerned with the "backwardness" of agriculture – a lack of sufficient economic, social, and cultural progress – that ostensibly threatened not only rural, but national well-being. For a nation in the throes of industrialization and urbanization, farm prosperity presented a paradox. Prices were high and stable because production was not keeping pace with population and export growth. For urban consumers of both food and labor power – workers and capitalists – the Golden Age raised fears of Malthusian style food crises and instability. Workers' access to cheap and plentiful food was an important factor in keeping wages low and profits high while maintaining (or in the case of falling food prices, even increasing) workers' standard of living. Cheap and plentiful food was a lynchpin of U.S. economic development because it enabled continually intensifying rates of exploitation of workers offset by rising consumption. Together, these would finance the combination of economic growth and domestic stability that would become a foundation for the United States' global dominance (S. A. Resnick and Wolff 2006). Spurred by these concerns, President Theodore Roosevelt appointed the Country Life Commission to study the problems of rural life in 1908. In his letter of appointment to the Commission's chair, Cornell Professor Liberty Hyde Bailey, he explained his motivations thus: "There is but one person whose welfare is as vital to the welfare of the whole country as is that of the wage-worker who does manual labor; and that is the tiller of the soil the farmer – for it is upon their welfare, material and moral, that the welfare of the rest of the nation ultimately rests" (Roosevelt 1908).

The dynamics of class struggle between capitalists and workers, and their joint interest in access to cheap food pitted them against farmers, helped raise the issue of rural

progress to the forefront of national attention, and shaped the construction of "the farm woman problem." The Country Life Commission grew into the Country Life Movement, a coalition of young intellectuals including mostly rural journalists, editors of farm journals, and educators (including agricultural college professors), along with some urban businessmen with an interest in rural prosperity, government agricultural officials, leaders of rural organizations, and urban do-gooders. The Country Life reformers sought to bring American Progressivism to the farm (Bowers 1971, 212). One of their primary goals was to promote the application of scientific methods and the use of mechanized equipment in farming. This "New Agriculture" would increase efficiency, ensuring that farmers could still produce enough food to feed the growing population – even as their own numbers declined (Jellison 1993, 4).

Fears of an impending scarcity of food were linked to the perception of rural flight, as well as to the problem of flagging productivity growth. The vision of the New Agriculture relied on a population of farmers who were prosperous and stable enough to afford the new equipment, and educated enough to be able to use it effectively. Rural depopulation threatened to drain the countryside of the required people and resources. As a Michigan farm women wrote in 1915, "The rural community is robbed of its most helpful influences by the constant exodus from the country of its brightest boys and girls" (USDA 1915, 26). Advertisers, journalists, and policymakers directed their attention to the pressing question: "How we gonna keep 'em down on the farm?" (Kleinegger 1988; Neth 1998)

A second primary goal of the Country Life movement was to address this question by promoting "rural uplift," to "make the social, intellectual, and economic

aspects of country life more satisfying" (Bowers 1971, 211). The New Agriculture, with its focus on mechanization and rationalization of farm production, meant that farm labor requirements would decline, freeing family members, especially farm women, to focus on this "rural uplift" component of the Country Life agenda. As the keepers of hearth and home envisioned by reformers, who sought to promote the urban homemaker ideal in the countryside, women instead of men would "naturally" have responsibility for these tasks. The problem was that young farm women were leading the charge to the city.

In 1913, the prominent Country Life reformer Herbert Quick, labeled the rural flight problem "largely a woman movement" in an article that appeared in *Good Housekeeping* magazine (in Jellison 1993, 5). Decades before the mass extinction of farms grabbed national attention following World War II, farmers' daughters led the exodus from rural areas. Consistently rising male to female population ratios in the rural Midwest attest to the scarcity of women in rural areas (Banks and Beale 1973; Jellison 1993). In an article entitled "Why Young Women are Leaving Our Farms", the *Literary Digest* traced the problem to the long hours of work, isolation, and drudgery of farm life for many Midwestern women. "Becoming a trifled bored with this unexciting round of toil," the author explained, "the farmer's daughter casts an understanding eye at the neighboring farmer's son who has been hanging around her ivy-clad porch, reflects upon what he has to offer, and catches the next train to Squedunk or New York" (1920). Henry Wallace, a member of the Country Life Commission and editor of the widely read *Wallace's Farmer,* opined in a 1914 editorial, "Until we make life on the farm satisfying to the farmer's wife, we will labor in vain to check the drift of rural population to the towns and cities" (in Jellison 1993, 5).

The question of rural flight had another dimension, related to the influence of eugenics, to which a few prominent Progressives, including Theodore Roosevelt, subscribed. As the "brightest boys and girls" departed for the greater convenience and opportunity of city life, reformers feared that those left behind would be of "inferior" quality. The influx of immigrants – mostly from southern and eastern Europe – both to overcrowded cities, and to depopulating rural areas spurred these concerns. Adhering to a form of agrarian mythology, country life reformers contrasted these immigrants, who they characterized as "illiterate, docile, lacking in self-reliance and initiative" and their "peasant agriculture" with their own idealized version of the independent, progressive, hard-working yeoman farmers of northern European descent, who they viewed as the backbone of the nation (Bowers 1971, 217). They looked to the (white, northern European, middle class) farm family and rural life as the quintessential American institution and experience – a bulwark of "American" virtues and values against the onslaught of "foreign" ideas and people.

This aspect of the Country Life agenda served the interests of urban capitalists, as well. Here, the concern was with maintaining a steady supply of cheap, well-disciplined, and reliable workers. The notion of "child crops" expresses this notion, and the importance of rural areas in supplying the necessary workforce to feed growing industry. Arguing for the importance of funding "rural uplift" for the health of the whole nation, reformer Mary Meek Atkeson made these connections explicit. "In payment for this interest shown by the city people the farm will return not only its corn and hogs and cattle, but also a steady stream of bright-eyed young people to carry the best American traditions into every city in the land. As the farmer will tell you jokingly, his young folks

are indeed the 'best crop' of his farm" (Kline 2002, 91). As farm women were key producers of this "child crop", the eugenics component further highlighted farm women's role in the Country Life agenda, and contributed to their view of "the farm women problem."

The Country Life Commission delivered their report in 1909, and pointed to the farm woman as a prime suspect in rural problems. "Whatever general hardships, such as poverty, isolation, and lack of labor-saving devices, may exist on any given farm, the burden of these hardships falls more heavily on the farmer's wife than on the farmer himself" (Country Life Commission 1917, 104). The overworked farm woman took center stage, and the success of farm life – and therefore of the nation as a whole – was seen to rest on her tired shoulders.

The Commission's report sparked a flurry of surveys, reports, and articles on "the farm woman problem" (See Table 1 below). The white, middle class farm women at whom reformers' efforts were aimed were a highly literate group, and they took these opportunities to express their concerns. *The Ladies' Home Journal* published excerpts from hundreds of letters from one of the earliest surveys by Mattie Corson, a farm woman whose mother had died of overwork. One woman wrote that she "would rather take my chances with my girl on Broadway… than to have her walk the sure road to the county asylum that I am heading for" (1909).[8] Martha Bensely Bruère and Robert Bruère described the "Revolt of the Farmer's Wife" in a series of articles published in *Harper's*

[8] The belief that rural women were prone to insanity was so widespread that the USDA felt obliged to address the problem directly in its 1915 report on a survey of the wives of crop correspondents. Having found no evidence to support the charge "that farm women contribute largely to the inmates of asylums," the report authors explained that "statements to the effect that life on farms drives women insane have been omitted" ("Social and Labor Needs of Farm Women 1915, 24; Sachs 1983, 23).

Bazaar in 1912. They summed up the situation, thus: "Shall the nation go hungry because the farmers' wives don't like their jobs?" they asked. And then, "For, after all, a man will not live on the farm without a wife" (1912, 539).

In fact, if a man would not live on a farm without a wife, a woman could not, with rare exceptions, live on a farm without a husband. Women rarely had access to farming at all except as farmers' wives, or future farmers' mothers. On rare occasions they were "lady" farmers, but never just "farmers." *His* job was to be the farmer. *Hers* was to make life bearable for him. Making life bearable, however, was becoming an almost unbearable burden for many farm women. Farm women and their advocates described their struggle with long hours of work, isolation, and lack of proper equipment.

Intolerable working conditions were only part of the problem. Farm women struggled with their situation of dependency, drudgery, subordination, and undervaluation of their labor. Attention to the "farm woman problem" gave farm women and daughters the opportunity to protest not just their working and living conditions (as reformers had hoped), but also to express a much deeper injustice – that of the exploitative system that relied upon and reproduced the inequalities relegating them and their work to secondary status, in spite of the value of their contributions to the survival of farm families and family farms. Class blindness of U.S. culture meant that farm women could criticize their circumstances in terms of the absence of equality, justice, and democracy, but never in terms of class, and largely did not recognize the role of class in their situations. Nevertheless, I argue that class did in fact play a significant role in explaining farm women's situations and in understanding the failure to address and resolve it.[9]

[9] Adding this class dimension to the analysis constitutes an intervention in the debate among feminist economic historians about whether or not changed work processes or

Marx identified what was for him "the principal and as yet invisible violence of capitalism" in "the existence of a hidden flow of labor (taking the form of "surplus value") from the worker to the capitalist (Gibson-Graham et al. 2001, 7). In the process of constructing and addressing the problems of rural life, reformers recovered a similar "invisible violence" occurring on family farms – that of class exploitation. Instead of occurring in the context of a wage relation, between capitalists and workers, this type of exploitation was occurring in the context of a marriage relation, between farmers and their wives. One set of class struggles – between capitalists and their workers – brought another to the surface. Lacking the language of class, farm women never explicitly identified their problems as associated with class exploitation – with the division of their workday between necessary and surplus labor, and with the desire to appropriate the fruits of their own labor. Yet many of them made clear that resolving "the farm woman problem" required something more than access to running water and an electric washing machine.

In 1913 Secretary of Agriculture David F. Houston solicited feedback from the wives of the USDA's 55,000 volunteer crop correspondents. Based on the 2,241 replies, the USDA began publishing a summary and series of four pamphlets in 1915. The *New York Times* published excerpts of the letters in a May 1915 article entitled "Farm Women Find Life Hard." While official interpretations of the responses focused on the need for labor-saving devices and extension services for farm homemakers (as suggested by the Country Life agenda), a deeper dissatisfaction was expressed in many of the letters.

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access to new technologies was "liberating" for farm women or not. In fact these things had contradictory impacts, overdetermined as they were by the process of class, a factor which is largely unrecognized in these discussions much as it was in the discussions about the farm woman problem of the time.

"Women have an innate longing for appreciation and a feeling that they are partners in fact with their husbands and not looked upon as subordinates," wrote one Iowa farm woman. One from Missouri complained of the undervaluation of farm women's work. "[T]he men needed to be educated up, as so many men think women's work does not amount to much and consequently has no commercial valuation." A woman from Minnesota compared her life on the farm to a life in jail, and professed to prefer the captivity of the latter over that of the former. "I have always lived on a farm except the first five years of my marriage, and I think I might almost as soon have been in jail, because the work is so hard and is never done" (USDA 1915).

Minnie Boyer Davis of Josie, Nebraska wrote to Secretary Houston in 1916 explaining that the responses "from women all over the country tell the story, not complaint of work or lack of conveniences, but of *unequal status"* (Jellison 1993, 19). In addition to raising her two children, cooking, cleaning, gardening, sewing, working in the fields, and cooking for hired hands, Davis also wrote regularly for farm periodicals. In a 1916 letter to the *Farm Journal*, she argued that "You can not consider agriculture without women. In short, there isn't any." Nevertheless, farm women (and therefore agriculture in general) suffered from an "unfortunate condition" because

> there is no equal status of women with men; because in the farm life the woman, though she shares the drudgery, has no initiative; because, though she is a producer she is seldom a spender; because, though she is the mainstay of the home, her work and part are not held in respect, nor given the position they should have; because her life and that of her children is largely shaped by some one other than herself; because, in short, the farm is a sort of monarchy instead of a democracy (Davis 1916).

In 1921, *The Nation* declared "Feminism on the Farm" when it published the "Nebraska Farm Women's Declaration of Independence" which called, not only for labor saving

devices for the home, but equality for the women's and men's spheres of work in the home and the farm. Their final demand? "Our share of the farm income"(1921, 440).

Farm women expressed a deep sense of injustice about their circumstances, while at the same time noting the special advantages of rural living and farming as a way of life, even if these sentiments did not conform to their own direct experiences. "In spite of all our disadvantages, the farm is the best place to live and raise a family of healthy, happy boys and girls" wrote a North Dakota farm wife in response to Secretary Houston's survey (USDA 1915, 20). This ambivalence can be viewed as an expression of the contradictory circumstances shaping the exploitative class structures on family farms, of which the farm woman problem was an expression. Some women theorized their positions on family farms in ways that celebrated, excused, or justified these positions. One example of these contradictory experiences and interpretations lies in Mary E. Wilkins' story, "The Revolt of Mother" and its aftermath. The fictional account of a woman who moves her family into the newly-constructed barn in protest of the comfort provided to the animals and not to people on her farm first appeared in *Harper's New Monthly Magazine* in 1890 (Wilkins 1890, 553–61). Wilkins' story was widely read and performed in homes, schools, and public venues, and was extremely influential in shaping the debate about farm women's lives and the farm woman problem (Garvey 2009). Wilkins later recanted the story, explaining that a real life farm woman "would have lacked the nerve," the "imagination," and "would never have dreamed of putting herself ahead of the Jersey cows which meant good money" (in Kleinegger 1988, 175). Her denial of the story seems only to have confirmed the conflict, while merely denying the possibility of revolt, but it nevertheless signifies the multiple and sometimes

contradictory ways that farm women and others recognized and responded to their circumstances. This, in turn, reflects the multiple influences conditioning the existence of family farm class structures, and their contradictory impacts in both supporting and undermining those structures. Table 1 summarizes the above discussion of "the farm woman problem" as reflected in various publications of the period.

Table 1: "The Farm Woman Problem".

Title	Description	On Farm Women:
"The Revolt of Mother" by Mary E. Wilkins, 1890	Mary E. Wilkins penned this story of a farm wife who moved her family into the new barn in protest of the disparate living conditions between human and beast on her farm. She later recanted the story, saying the real life farm women "would have lacked the nerve", "the imagination", and "would never have dreamed of putting herself ahead of Jersey cows which meant good money" (in Kleinegger 1988, 175).	Her mother scrubbed a dish fiercely. "You ain't found out yet we're women-folks, Nanny Penn," said she. "You ain't seen enough of men-folks yet to. One of these days you'll find it out, an' then you'll know that we know only what men-folks think we do, so far as any use of it goes, an' how we'd ought to reckon men-folks in with Providence, an' not complain of what they do any more than we do of the weather."
Country Life Commission, 1909	7-member, all-male commission appointed by President Roosevelt to study the problems of rural life; stemming from Progressive concerns which linked urban stability to rural prosperity, scientific agriculture, and rural uplift. Inspired by the Commission's recommendations, the rural arm of American Progressivism, the Country Life Movement, emerged.	"Realizing that the success of country life depends in very large degree on the woman's part, the Commission has made special effort to ascertain the condition of women on the farm." - *Report of the Commission on Country Life*, January 1909
Mattie Corson's Bachelor Girls' Club survey, 1909	Organized by Mattie Corson, a farm woman whose mother had died of overwork. A survey of "girls and women of marriageable age and over, single and married, in the	"I would rather take my chances with my girl on Broadway, than to have her walk the sure road to the county asylum that I am

	country." The over 900 responses were excerpted in *Ladies Home Journal*.	heading for."
Martha Bensley Bruère and Robert Bruères' series of articles entitled "The Revolt of the Farmer's Wife" and "After the Revolt" in *Harper's Bazaar*, 1912	The Bruères raised several issues pertaining to the farm woman problem, and linked the issue explicitly to the problem of rising food prices for the rapidly increasing urban population.	"Shall the nation go hungry because the farmers' wives don't like their jobs? For, after all, a man will not live on the farm without a wife."
Secretary of Agriculture, David F. Houston's survey of the wives of USDA volunteer crop correspondents, 1913	Based on the 2,241 replies, the USDA began publishing a summary and series of four pamphlets in 1915. The *New York Times* covered the report in a May 30, 1915 article, "Farm Women Find Life Hard."	"I have always lived on a farm except the first five years of my marriage, and I think I might almost as soon have been in jail, because the work is so hard and is never done" (USDA, *Social and Labor Needs of Farm Women*, 46).
The Farmer's Wife	Published 1896-1939 when it was absorbed by *Farm Journal*. With a circulation of 1.25 million, it was the most popular women's magazine for a rural audience.	
Nebraska Farm Women's Declaration of Independence, 1921	Published in an October 19th article "Feminism on the Farm" in *The Nation* magazine.	"Our Demands: 1. A power washing-machine for the house for every tractor bought for the farm. 2. A bath-tub in the house for every binder on the farm. 3. Running water in the kitchen for every riding-plow for the fields. 4. A kerosene cook-stove for every automobile truck. 5. A fireless cooker for every new mowing-machine. 6. Our share of the farm income."

Conclusion and Plan of Work

The farm woman problem was itself an expression of the contradiction stemming from the unique hybrid of the family farm's class structures. Farm women's labor helped subsidize the cheap and abundant food for urban dwellers, as well as the survival and prosperity of the family farm. Yet, this survival was being purchased at the expense of the farm family. The onerous burden on farm women was reflected in the concern for their plight expressed by Country Life reformers. Even in the most prosperous of times for American farmers, "[t]he farmer was making a living, but out of the lives of his womankind – careful to the last degree of his cattle and his swine, but utterly careless of the human beings of his home" ("Is This the Trouble" 1909). The resulting crisis and disintegration of the family farm feudal class structures reacted back to disable the ability of ancient farmers therefore to continue to serve capitalist industry.

The farm woman problem must be situated in this larger context of concern for what was viewed as a general problem of rural backwardness, and its potential negative impact on capitalist industrial development, as seen in the stagnant productivity growth and high agricultural prices during agriculture's Golden Age. The problem of rising food prices was "one of the most talked-about economic issues" of the time (Danbom 1979, 30). The family farm's hybrid of class structures both supported and undermined its ability to serve the needs of capitalist industry in providing the required workers, cheap and abundant food, and markets for industrial goods. Attention to the farm woman problem was a reflection of the importance of the farm family and therefore of the farm household as a central institution in the success or failure of family farms and rural life.

The farm woman problem, therefore, became a device through which the inadequacy of family farm production to serve an expanding industrial capitalism's needs could be discussed, investigated, and dealt with as either "solvable" within the framework of existing rural institutions, or else unsolvable in such a context, and therefore requiring the reorganization of rural society in general and of the family farm in particular.

The broad coalition of interests that formed the Country Life Movement coalesced around the recognition that a revolutionary reorganization of rural life was necessary. This would require thoroughgoing change in not only the family farm household, but also in the family farm enterprise – in both the feudal and the ancient class structures. Because discussion of the role of class processes and exploitation in generating the dilemma was never recognized, this agenda for radical restructuring did not, of course, include the transition toward non-exploitative class processes in family farms. Nor did the parameters of official "solutions" aim to address for the most part even the injustices that farm women did identify and struggle to challenge. If, as I argue, the farm woman problem was in fact overdetermined by the contradictions and limitations of exploitative feudal (and ancient) class processes in family farms, it was therefore never resolved. Instead, a central thrust of reform efforts was to promote the application of technology and scientific management practices to improve "efficiency" in the farm home and especially in the farm enterprise.

In a sense, the answer to the limits of feudal exploitation, as well as the limits of ancient self-exploitation, became this second of the two major prongs of the Country Life agenda, that of technical change in commercial farm production. Internal subsidies from farm women and children were thereby supplemented by external subsidies from other

farmers (through the hunt for superprofits) and the state (through government farm programs). These processes of technical change in ancient farm production, and the associated ruthless competitive struggle among family farms shifted U.S. agriculture onto a new trajectory of development which fueled the rise of capitalist agribusiness at the same time that it produced a rural landscape increasingly littered with failed farms and crumbling communities, and hence the need for the state to supplement the subsidies from farm women with its own massive subsidies to ancient farmers. This reorganization gradually replaced the complex model of general farming in place in the Midwest at the time with a different one of highly-specialized, ever larger, "factories in the fields." The limitations of the ancient/feudal hybrid of class structures in family farms were partially surmounted through increased productivity and state supports which shaped a hunt for superprofits, resulting in an expanding mass and rate of surplus in family farming. This became the vehicle for "resolving" the problems of rural life and backward agriculture in terms of fuelling capitalist industrial development. Labor-saving technology in ancient commercial farm production "released" millions of farmers and workers from rural areas, created markets for industrial products for the farm enterprise and the farm home, and ensured a steady and abundant supply of cheap food. These successes would come at the expense of massive dislocation in the countryside as millions of family farms collapsed. One agricultural scientist, Eugene Davenport, explained this necessary march of progress in the interests of the greater good:

> The great laws of evolution and the survival of the fittest will continue to operate, and, in the interest of progress, they ought to operate. Progress is not in the interest of the individual, and it cannot stop because of individuals. Everything must surrender to the central idea that this is a movement for the highest attainable agriculture in the fullest possible sense of the term (in Danbom 1979, 40).

As this dissertation shows, these developments were neither necessary nor necessarily "progressive" but rather the complex, contingent, overdetermined results of class struggle within and between family farms, and between family farms and the non-farm economy, as well as the non-class processes conditioning these struggles.

The remainder of the dissertation is organized as follows: In Chapter 2, I present the detailed description of the family farm's ancient/feudal hybrid class structure. I focus on the transfers between the feudal and ancient class structures within the same family farm, and show how its survival has relied on a ruthless exploitation of farm women, children, and men in rural life. Chapter 3 adds to the analysis by examining the transfers between ancient class structures in different family farm enterprises, and between family farm enterprises and non-farm agribusiness and government. I show how the survival of the family farm has been connected to a ruthless competition in which some farmers cannibalize others in a hunt for superprofits shaping technical change in ancient farm production, while non-farm agribusinesses thrive on the carnage. I develop a class analysis of state policies and how these provide a necessary supplement to the subsidies from the feudal to the ancient class structures within the family farm, while also serving to intensify this perpetual crisis that mainly benefits the few at the expense of the many. Chapter 4 presents a concluding summary of the main points of the dissertation, as well as its significance.

CHAPTER 2

THE FAMILY FARM HYBRID, FEUDAL-ANCIENT SUBSIDIES AND THE FARM WOMAN PROBLEM

At the turn of the twentieth century, the Midwest[10] served as the nation's breadbasket, supplying cattle, hogs, wheat, corn, and dairy products. Except in Michigan and Ohio, agriculture dominated the Midwestern economy, and family-operated farms dominated the agriculture. Most farms were general farms, specializing in the crops they marketed while producing a wide variety of products for family use. Commercial crops produced on each farm were generally some combination of livestock and field crops. Corn was the major field crop in every state except North Dakota, where wheat had already gained a firm foothold. Wisconsin and Minnesota farmers were developing a specialization in dairy products, but corn and corn-fed livestock, especially corn-hog operations, were the most widespread specializations in the region.

It was at this time that the term "family farm" was first used to describe "a farm organized around the labor and economic support of a nuclear family" (Fink 1992, 28).[11] Farmers themselves, with the help of their families, did most of the work, most of the time (Fink 1992; Hurt 2003; Jellison 1993, 5; Neth 1998). The nuclear family was the primary economic, social, and educational institution in the countryside, and

[10] According to the Census Bureau definition, the Midwest includes Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Nebraska, North Dakota, South Dakota, Kansas, and Missouri. This corresponds roughly with the area included in the Corn Belt, defined as the portion of the Midwest where corn has traditionally been the dominant crop. The Corn Belt includes the primary corn-producing states of Iowa, Indiana, Illinois, and Ohio, as well as portions of neighboring states.

[11] According to Fink (1992), the rural sociologist George Beal dates the possible first us of the term to 1914.

responsibility for the family farm's fortunes rested there. Each farm household occupied its own parcel of land, physically and socially separated from its neighbors. Even though they relied on markets to connect them to the outside world, and faced intense competitive pressures there, American farm families were more self-sufficient in comparison to both urban and European farm families (Danbom 1979). Geography and economics, among other factors, combined to both insulate and isolate family farms, providing crucial, if contradictory, conditions of their existence.

Figure 2: Midwestern Farm Family, circa 1915 outside Fayette, MO (unpublished photograph from author's personal collection).

For the prominent Country Life reformer and journalist Herbert Quick, the fact that "wife and children are economic assets instead of liabilities" was a key benefit of country living (Lauters 2009). Family labor was, therefore, crucial for the viability of Midwestern agriculture. Farm men and women worked from dawn to dusk year-round, mostly without vacation to meet the family's needs and to earn an income. Farm families

could ill afford to support a family member who did not contribute, so farm children were expected to work as well. Labor was divided according to gender, with farm men largely responsible for livestock and field crops for the market, and farm women for household, childcare, and other farm production tasks geared toward meeting the farm family's consumption needs. Farm women's income went toward the farm family's living expenses, while men's income paid for farm equipment and supplies, livestock, and other expenses related to the commercial farm enterprise (Fink 1992).

At this point, it might be useful to provide a preliminary framework for contextualizing the discussion that follows in terms of class. Recall from Chapter 1 the following equation for the family farm's hybrid class structure:

$$\textit{Family Farm Class Structure: } SL(A) + SL(CAP) + SL(F) + NCR = SSCP(A) + SSCP(CAP) + SSCP(F) + Y \qquad (1)$$

The first three terms on the left hand side designate the surplus labor produced and appropriated in the family farm's three kinds of class structures: ancient (A), capitalist (CAP), and feudal (F). The corresponding terms on the right hand side designate the subsumed class payments necessary to secure the conditions of existence for each of the three kinds of class structure. The NCR and Y terms stand, respectively for non-class revenues and expenditures to ensure the continued receipt of these revenues. This chapter focuses on describing the family farm's class structures, focusing in particular on the feudal, along with the non-class revenues and expenditures as they arise from the transfer of surplus between the different kinds of class structures within the family farm, especially from the feudal to the ancient.

To simplify that analysis, I divide the class structures in the aggregate equation above, and introduce two new equations mapping the family farm's feudal and ancient class structures separately. For simplicity, I assume for now that the family farm contained only two simple forms of class structure: the ancient in which the labor of the farmer in the farm enterprise occurred, and the feudal in which the labor of the farm wife in the farm enterprise and farm household occurred. I assume for now what was the most common case in which the farm wife did no additional work alongside her husband with livestock or crops for commercial production in the farm enterprise. I also leave aside the labor of children and hired hands for the moment, although this will be discussed at length below. I can then map the feudal class process in which the farm wife labored as follows:

Feudal Class Structure: $SL(F)^{FFH} + SL(F)^{FFE} = SSCP(F)^{FFH} + SSCP(F)^{FFE}$ *(2)*

The terms $SL(F)^{FFH}$ and $SL(F)^{FFE}$ stand, respectively, for the feudal surplus labor (SL(F)) of farm women in the family farm household (superscript FFH) and in the family farm enterprise (superscript FFE). This includes the cooked meals, sewn clothes, and other goods and services (or the proceeds from their sale) that resulted from her household production, as well as the eggs, milk, vegetables and other goods and services (or the proceeds from their sale) that resulted from her farm production. It is "feudal" because these labor processes occurred in the context of a feudal class process, and it is "surplus" because it includes that portion of her production beyond what she needed for her own consumption in order to reproduce her feudal labor power.

Her husband, as feudal lord, was the first recipient of his wife's feudal surplus, and distributed it in order to secure the conditions of existence for the family farm's

feudal class process in both farm household and farm enterprise. These distributions, or subsumed class payments (SSCP) appear on the right hand side of the equation. Like SL(F) in the family farm's household and enterprise, the subsumed class payments took either a monetary or nonmonetary form. Each payment represents a claim on the feudal surplus, while securing one or more conditions of existence for the continued production and appropriation of that surplus. Outlays included things like payments for property taxes, church tithes, or additional household means of production, or "volunteer" time and donated goods for local social groups and schools.

Similarly, the ancient class process can be mapped as follows:

$$\textit{Ancient Class Structure:} \quad SL(A)^{FFE} = SSCP(A)^{FFE} \qquad (3)$$

Ancient surplus labor (SL(A)) occurred along with the farmer's labor processes in the family farm enterprise (superscript FFE), in the production of crops and livestock for market exchange, or in the production of constant capital used in the production of these commercial products. It is "ancient" because these labor processes occurred in the context of an ancient class process, with the farmer producing and appropriating his own surplus. And it is surplus because it included the portion of the ancient farmer's production beyond what was required to reproduce his ancient labor power. Ancient surplus so produced and appropriated was available to be distributed by the ancient farmer in order to secure and reproduce the conditions of existence for the ancient class process in the family farm enterprise.

Additional revenues on the left hand side of either equation, all else equal, could allow expanded access to conditions of existence. Likewise, a subtraction of surplus available on the left hand side of either equation, all else equal, could inhibit the

reproduction of the affected class structure, by threatening the ability to secure one or more of its conditions of existence. Thus, expanded conditions of existence for one class structure, if these came at the expense of a subtraction of surplus available for the other, could have contradictory impacts on the family farm hybrid of these class structures, as one of its constituent class processes expanded by throwing the other into crisis. These were precisely the impacts of the transfers from the feudal to the ancient class structures in the family farm.

These transfers most commonly took two forms or strategies: "making do" and "helping out." In class analytical terms, the strategy of making do involved the many ways in which the feudal surplus labor of the farm wife was appropriated by her husband in his role as feudal lord, then transferred to his (or his workers') consumption in his role as ancient (or in his role in some form of ancient hybrid). The strategy of helping out involved the direct performance of feudal surplus labor by farm women and children in commercial farm production. The class analysis of both of these strategies and their impacts are discussed at length below.

The additional revenues thus made available were extremely important in shaping the survival and development of ancient class processes in family farms, helping ancient farmers cope with the inherent risks of farming due to weather, unstable prices, and intense competition from other farmers. Extra surplus was required to finance the conversion to scientific methods and mechanization of ancient farm production processes promoted by the Country Life agenda and government agencies. With extra surplus, ancient farmers could purchase newly available machinery like tractors or harvesters, and/or the additional land to farm with that new equipment. If they could not purchase

these items outright, extra surplus could be used to access the credit to finance expanded means of production. These increased distributions for credit, accumulation, and expansion, enabled by the increased surplus of farm women and children, were important in shaping agricultural development in the decades that followed, and will be discussed at length in the next chapter.

As mentioned in Chapter 1, the ancient class structure took priority for most family farms, shaped by ideological processes that defined the job of "farming" as such. Even though it was but one among the different kinds of class structures occurring there, the ancient class process was widely considered to be the heart of the family farm, for which its members toiled and sacrificed. Ancient farmers could not, however generally appropriate enough surplus from their own labor to sustain and reproduce themselves as ancients. The priority placed on the ancient class process, coupled with its inability to survive on its own, created the conditions for the hybrid family farm. At the same time, that very hybrid was rendered invisible, and non-ancient class structures were thereby pushed into the position of subsidizing the ancient. The discussion below will focus on how family members adjusted the right and left hand sides of the feudal and ancient class structural equations so as to maximize the net outlays for the ancient class structure – the "real" business of the family farm, the contradictory impacts of these adjustments, and the powerful conditions of existence of the family farm hybrid, in spite of the overwhelming demands on its members.

In this chapter, I develop a model of the family farm and its interdependent class structures. I highlight the crucial role of women's "invisible" labor in the survival of the family farm, as well as the conflicts within family farms stemming from that role. I begin

by describing the family farm's ancient class structure as it occurred along with the labor of farm men in the family farm enterprise. I describe the conditions producing the reliance of the ancient class structure on the feudal subsidies from farm women and children. I then describe the labor processes of farm women and children, and the feudal class structure in which that labor occurred. The ancient/feudal class structural hybrid was shaped by contradictory conditions of existence including important ideological processes of gender and agrarianism. The next section of the chapter discusses a selection of these non-class processes that served to both support and undermine the family farm's class structures. I then turn to the class analytics of the value transfers between the feudal and ancient class structures comprising the family farm household and enterprise. By reconceptualizing the important practices of "making do" and "helping out" in terms of class, I show how farm women and children's labor underwrote the survival of the family farm's ancient class structures. The work of farm women and children helped insulated the ancient class processes from crisis and underwrote their expansion, because bonds of feudal obligation called forth the flexibility required to respond to and ameliorate crisis. Survival, even prosperity, for the family farm had its price, however, as these strategies simultaneously produced contradictory effects that threatened that very survival. The heightened contradiction that arose from the increasingly onerous and untenable burden placed on farm family members is reflected in concern for the "farm woman problem" which I revisit to conclude the chapter.

The Ancient Corn Belt Farming System and Feudal-Ancient Subsidies

As previously mentioned, ancient farmers could not in general appropriate enough surplus to reproduce the necessary conditions for their continued existence as ancient farmers. Even if they could, the limitations of the ancient class process itself rendered them ill-equipped to respond to unanticipated crises or even opportunities for expansion. This issue was further exacerbated in the particular case of ancient class processes in farming during this time period. As mentioned in Chapter 1, and worth repeating here, the ancient producer is the sole source of necessary and surplus labor, hence it is not possible for his surplus to exceed his total labor. Nor is it possible for his total labor to exceed his physical limitations on performing it. Any efforts to increase either his absolute or relative surplus labor therefore come at his own expense. Increasing absolute surplus means stretching physical limits and cutting into time for rest and rejuvenation of labor power. Further, any increase in relative surplus through reduced necessary labor must come at the expense of the ancient producer's consumption, and therefore also threaten his ability to reproduce his own labor power (Gabriel 1989).

The limitations of the ancient class process in general therefore hobbled the ancient farmer's ability to adapt to changed circumstances. These limitations constituted a severe handicap for the ancient farmer in particular, subject as he was to the risks of price fluctuations and intense competition in the context of relatively lengthy production processes in addition to the whims of weather, disease, insects, and animals. The inherent risks of farming participated in shaping a complex system of diversified farming in the Corn Belt at this time as one way of insuring against these and other unpredicted disasters. The increased labor requirements of such a system, however, participated in

shaping the ancient's farmer's dependence on the labor of others and on non-ancient class structures within the family farm, even as this system rendered him more independent vis à vis non-ancient class structures in the outside world because he produced a significant portion of his required means of production himself. This insulation served to increase the ancient farmer's isolation, which was further exacerbated by limited access to communication and transportation technologies. Lack of labor-saving technologies in farm and home production further contributed to long hours of work, and because of this, increased isolation from the outside world and further dependence on others inside the family farm. Finally, ideological processes that celebrated land ownership and the supposed independence accompanying it elevated the status of the land-owning ancient farmers to the uppermost rung on the socioeconomic ladder. Even though the days of free land were gone and vertical mobility was on the decline, the rags to riches mythology still persisted, bolstered by individual neighborhood examples of laborers-turned-landlords (Danbom 1979). This contributed to a shortage of available non-family labor for hire in rural areas as those who could do so pursued this goal for themselves.

All of these factors combined meant that ancient farmers simply could not purchase many of the goods and services they needed to consume, either because they were unavailable, or they lacked easy access to markets selling them. Furthermore, they lacked access to an abundant and reliable supply of non-family laborers that could be hired and fired on demand. The inherent risks of farming, the intense competition in farm commodity markets, along with isolation and insulation combined to produce the conditions limiting the ancient farmer's ability to produce and appropriate enough surplus to survive on his own. The ancient farmer required a relatively captive labor force that

could be called upon as needed to supplement his own labor in commercial farm production, as well as a means of providing for his consumption. He simply could not do enough on his own. His continued survival as "independent" ancient farmer meant his dependence on non-ancient class processes with the family farm. The addition of the feudal class process, and the formation of the ancient/feudal hybrid that was the family farm met those needs. Hence, this is one set of factors shaping the existence of the family farm hybrid as a relatively stable and long-lived, as opposed to a temporary and transitional class structural form in U.S. agriculture. The myth of the independent family farmer has likely always been just that – simply a myth. As the muckraking journalists, the Bruères pointed out, "For, after all, a man will not live on the farm without a wife" (M. B. Bruère and Bruère 1912).

A few details may help to illustrate the specific situation of ancient farmers in the Corn Belt during the time period under consideration, roughly 1900-1940. Farm men (and women) worked long hours each day, from dawn or before until dusk or beyond, leaving few hours for leisure time and little room for an extended vacation from the farm. Studies showed that farmers generally enjoyed only about three hours of leisure time on average per working day (Vanek 1980). Farm families rarely took vacations, and if they did, it was usually for a brief period of time (Clark and Gray 1930). The average length of the workday for Midwestern farmers ranged from a little less than 10 hours in the winter to almost 13 hours in the summer, or 11 hours on average throughout the year (Rankin 1928; Vanek 1980). Farmers (and their families) worked six days a week, and a little less on Sundays, when they worked an average of three to six hours (Vanek 1980). Farmers had very little time to spend in household production – cooking meals, cleaning

clothes, etc. to meet their own consumption needs – as almost all of their working time was needed for commercial farm production.

Ancient farm enterprise systems in the Corn Belt during this time period were complex combinations of overlapping production processes. Ancient farmers diversified to reduce risk by producing a variety of products for sale, as well as constant capital used in the production of those products. Hence farms usually produced a mixture of livestock and field crops for sale, as well as means of production including fodder for livestock and draft animals. Unlike the farms of today, which are highly specialized in either crops or livestock, and only one or a few varieties of each, the farms of this period were general farms. Commercial livestock included hogs and beef cattle. Commercial field crops included chiefly corn and wheat. Crops for fodder included oats, clover, alfalfa, and hay. The varieties of crops grown complemented each other in several ways. First, crops could be fed to livestock and to draft animals, which then produced manure to fertilize the crops for the next growing season. Rotating between crops and livestock, as well as among different varieties of plants vastly improved soil fertility and reduced the need to purchase fertilizer. For example, one study of Corn Belt farms found that corn yields per acre in the Corn Belt were 36 percent higher on farms with livestock compared to those without, as the manure replenished soil fertility as livestock grazed on crop residues in fallow fields (Martini 2003). Similarly, leguminous plants like alfalfa and clover that fix atmospheric nitrogen in the soil could be grown in rotation with nitrogen-thirsty crops like corn. The complex system of crops helped reduce risk and boosted the surplus produced from the ancient farm enterprise. It also required huge amounts of

labor given the horse-farming technology common at the time, particularly before the invention of the general purpose tractor in 1923.

While the variety of crops and livestock helped smooth labor requirements somewhat over the course of the year, there were still intense, brief periods during which labor required to complete production tasks swelled beyond the ancient farmers' physical capabilities and help was necessary. Figure 3 and its caption, reproduced from a 1921 USDA study, shows the distribution of man labor throughout the year for a typical Iowa farm, as well as the rich variety of livestock and crops grown there. As the figure demonstrates, livestock work was relatively steady throughout the year, aside from the seasonal requirements of birthing during the spring. The bulk of the farmer's work was concentrated in the spring, summer, late fall, and early winter during the months of plowing, planting, cultivating, and harvesting field crops and mowing hay. Corn production commanded the heaviest amounts of labor during short bursts in May for plowing and planting, and September for harvest. The labor-intensive methods used at the time during harvest illustrate why this was so. After the plowing, disking, harrowing, planting, and then cultivating three or four times throughout the summer, most farmers harvested the corn by husking it from standing stalks. The farmer, usually with the help of others, moved up and down the rows of corn picking the ears from the stalk, removing the husk, and throwing the ear into a horse-drawn wagon slowly pulled between the rows. Whereas the average labor required for all pre-harvest operations in the Corn Belt ranged between 8 and 13 hours per acre in 1919, depending on the region, harvesting from standing stalks alone required 5 to 6 hours of labor per acre. Average corn acreage was 63 (out of 135 crop acres) per farm (Macy 1938). As Figure 3 indicates, completing these

operations required help from hired workers (if they were available) or, more commonly, from unpaid family members.

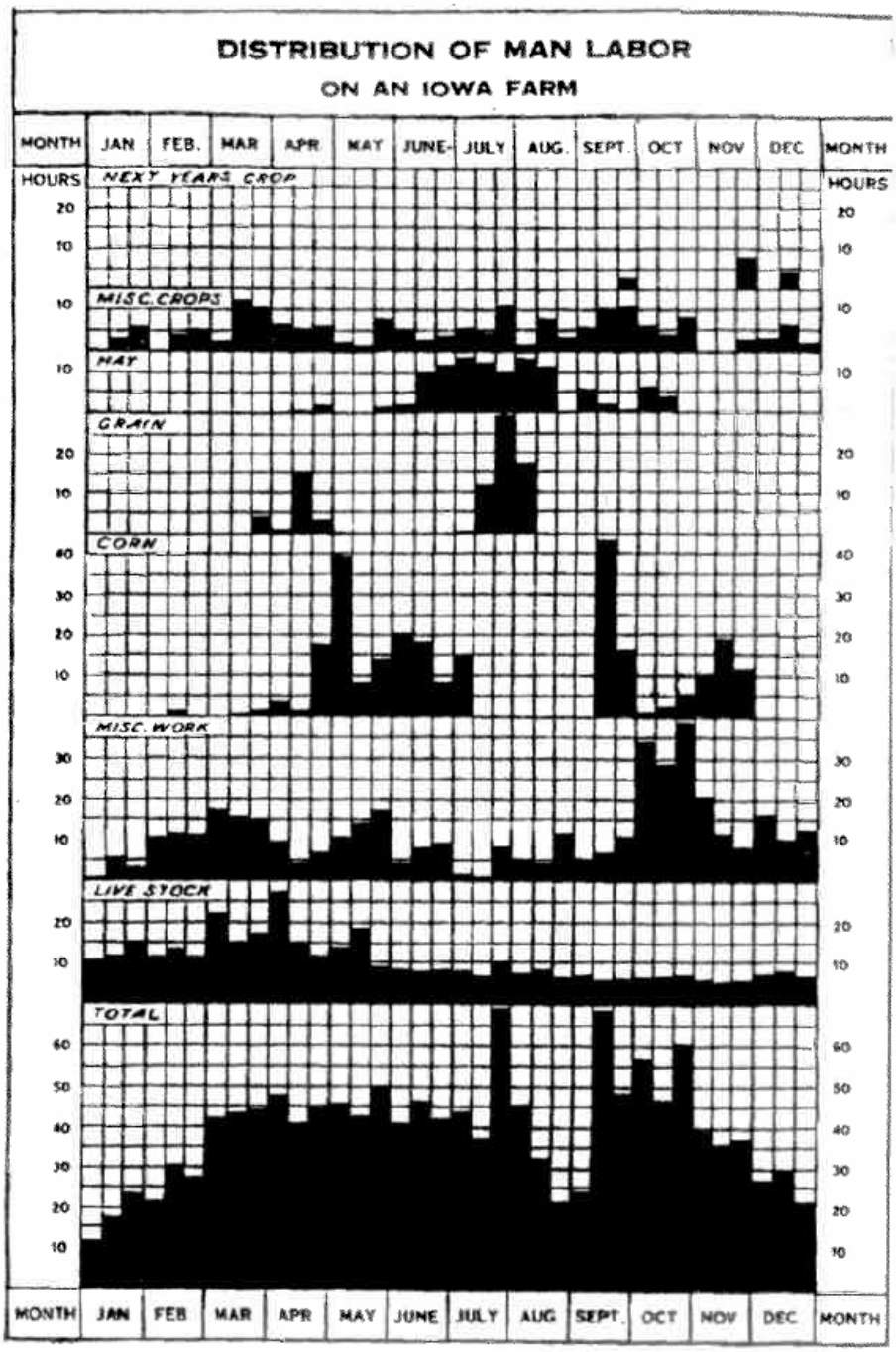

Figure 3: Distribution of man labor on an Iowa farm.

This farm had the following crop and livestock organization: silage corn, 26.4 acres; ear corn, 69 acres; corn hogged down, 5.75 acres; oats, 26.1 acres; barley, 15.88 acres; spring wheat, 4.7 acres; winter wheat, 17 acres; clover, 13.2 acres; timothy hay, 19.3 acres; timothy seed, 17.5 acres; alfalfa, 9.3 acres; potatoes, 3.5 acres. Total crop acreage, 227.63. The following live stock was kept on the farm: Horses, 14.1; cows, 6; steers, 24.2; beef cattle (breeding herd), 28.1; hogs, 16.1; making a total of 88.5 animal units. Black bars indicate average hours per day for each 10-day period" (Moorhouse 1921, 55).

"Unemployed" and Unpaid: What Did Farm Wives Do?

> From the experience of 30 years in the store business in rural parts of northern Minnesota, I do not hesitate to say that over one-half of the total work done on the farm has been done by the women of the house, besides they have done all their cooking and mending and have raised the families. – rural Minnesota man (USDA 1915)

The division of labor in family farms relegated the farm wife primarily to the crucial occupation of provisioning and reproducing the farm labor force, i.e. the farm family. In fact, adult women had access to farming almost exclusively through their roles as wives of farmers and mothers of future farmers and farm workers. While there were unmarried women farmers in the Midwest at the time, they were considered a neighborhood oddity, and most had inherited their farms from a husband or father (Jellison 1993). The Homestead Act of 1862 was the first to allow single women, as heads of families, to acquire their own land. Single women, nevertheless, rarely homesteaded, and when they did, it was often in order to sell their claim for cash in order to marry (Fink 1992). Married women could not acquire their own land under the Act. According to the 1910 census, rural women were more likely to be married than any other population group in the Midwest (Jellison 1993). So enmeshed were farming and family for adult women that a "farm woman" was assumed to also be a "farm wife" (Fink 1992, 58).

Entry into marriage, then, while rendering farm women officially without occupation, was often a condition for women's entry into the "occupation" of family farming.[12] Farm women thus (un?)employed performed long hours of labor in the

[12] The Census Bureau classified farm women along with other housewives as officially unemployed.

household, barnyard, and garden in the "important tasks of homemaking and domestic manufacturing,"(USDA 1915, 5). As the Minnesota man quoted above suggested, farm women's work was significant – both in terms of the burden for the women who performed it, and in terms of its importance for sustaining the farm and family. In 1920, Florence Ward, head of the USDA's extension work with women in northern and western states, published the results of a 1919 survey of the living and working conditions of ten thousand farm women. In her introduction, she noted the "singular anomaly" that "although the census places farm women with other homemakers in a class of those having 'no occupation,' the results of the survey indicate that "the farm woman might be better described as one having ceaseless occupation, so varied and insistent are the demand made upon her" (437). She went on to list some of the roles of the average woman in the survey: "cook, seamstress, laundress, and nurse, family purchasing agent, teacher of her children, and factor in community life, as well as producer of dairy, garden, and poultry products" (438).

In addition to Ward's 1920 survey two earlier studies were conducted by Ilena M. Bailey, a home economist with the USDA's Office of Home Economics. The first, begun in 1912 was a year-long study of farm home management in which thirteen farm women in Illinois and Indiana were asked to keep daily records. The second was a 1917 investigation of ninety-one farm homes in Michigan. Ward's survey, while groundbreaking in the extent of its coverage, did not ask about time spent on specific tasks. While Bailey's work was less extensive and even less extensively reported, it did include some of this information. Both studies included questions about the total length of the workday. Bailey's work formed the foundation for the extensive series of time-use

studies of farm women (and men) funded by the 1925 Purnell Act and conducted by state agricultural experiment stations with coordination by the USDA's Bureau of Home Economics (BHE) from the late 1920s to the 1960s. The early studies were conducted under the direction of Hildegarde Kneeland, who took over the leadership of the Division of Economic Studies from Bailey and adopted her clock chart survey technique for the studies.

Taken together, the studies paint a portrait of farm women's work in Midwestern states during this time period. Like other such efforts, including the 1913 USDA survey of the wives of 55,000 volunteer crop correspondents, responses were likely skewed by survey collection methods that overrepresented the more "progressive," prosperous, native-born, and white – the elite of farm families. Time use researchers, for example, often excluded non-English speaking women from their studies (Kline 1997). In addition, completing the daily logs required significant time expenditure itself, which meant that the busier, poorer, or less literate women could not keep the records and hence were not included in the studies (Kline 1997, 370; Kneeland 1928, 620). The lives of these "elites" who were overrepresented in the studies were by no means leisurely, even by the standards of the day, as evidenced by researchers' remarks, meaning conditions were likely more difficult for the majority of women.

All studies substantiated the perception that farm women worked long hours year-round, but they were especially busy during the summer months due to their seasonal chores like gardening, canning, and helping with fieldwork. Farm women (and men) generally began the workday around 5:00 a.m. in the summer and 6:00 a.m. in the winter. They finished work around 8:30 p.m. in the summer and 7:30 p.m. in the winter with the

evening chores after supper. The family was usually in bed by 10:00 p.m. (Bailey 1915; Bailey and Snyder 1921; Rankin 1928; Vanek 1980). In the Bailey studies, farm women were found to work between 10 and 13 hours per day, with the longer workday in the summer. The Ward study supported these findings, reporting an average length of the workday as 13.1 hours in the summer, and 10.5 in the winter (441). Other studies confirmed the average of between 10 and 11 hours per day (Vanek 1980, 424).

Farm women (and other family members) worked six days a week. Only Sunday was a day of relative leisure but even then farm women worked half a day. Even though they took the day off from their usual chores like cleaning and sewing, they spent more time in meal preparation as the family often had guests and more elaborate meals on Sundays. Time use studies through the 1920s and 30s recorded an average workweek of about 62-64 hours for farm women (Kline 1997).[13] [14] In her 1928 report on some of the time-use survey results, Kneeland noted that although "[t]here is much talk nowadays about the housewife with too much leisure" the farm woman suffered no such fate. "Of her the old saying still has significance: 'Man works from sun to sun, but woman's work is never done'" (Kneeland 1928, 620).

A farm woman's responsibilities centered around household and family maintenance, and included tasks like "dishwashing, laundry work, gathering eggs,

[13] BHE researchers appear to have classified the time for eating meals as non-working time for personal care, while others classified this time as working time. For example, Bailey specifically noted that mealtimes were worktimes since farm wives were still "on duty" and expected to serve others even while they were eating. This difference in classification would amount to an average of 1 hour's difference in reported worktime per day (Bailey 1915; Bailey and Snyder 1917; Kneeland 1932).

[14] Researchers found little variation in the workday across geographical regions, so I have included in the discussion surveys of farm women outside the Midwestern region. Indeed, the lack of variation in the workday is in itself a remarkable fact, as discussed further below (Vanek 1974; Vanek 1980)

picking fruit, and weeding the flower bed" (Bailey, Ilena M. 1915). Regular household tasks included "preparing and serving food, keeping the house in order, caring for children, and mending", and occasional tasks included "making garments, caring for the sick, and helping out with field work in times of emergency" (Bailey, Ilena M. and Snyder, Melissa F. 1921, 353). The Ward survey assumed that all farm women did housecleaning, and asked only for how many rooms they cared. (The average was 7.7). Over ninety percent of women did their own laundry (96 percent), sewing (92 percent), and bread baking (94 percent).

Table 2 lists time spent on "home-making" tasks for the representative farm woman from a 1928 BHE study. Food preparation tasks consumed the most time, followed by clothing and care of the house. Home-making tasks also included child care and "purchasing, planning, and management." Overall, household production consumed about 53 hours per week for the average farm woman in the study (Kneeland 1928).

Table 2: Distribution of Hours per Week for "Home Making".

	Hours
Preparing Meals	16.2
Clearing Meals	8.5
Food Preservation	0.9
Other Food Work	0.2
Food Total	**25.9**
Cleaning and Straightening House	8.3
Care of House	2.3
House Total	**10.5**
Laundry	5.4
Sewing	4.2
Mending	1.8
Other Clothing Care	0.2
Clothing Total	**11.5**
Care of Children and Others	2.4
Purchasing, Planning, and	1.8

Management	
Misc.	0.9
TOTAL	**53.0**

These labor-intensive tasks were made more so for the majority of women whose homes lacked electric lighting or power, who carried coal or wood for heating and cooking, and water for washing and bathing. Most farm homes lacked such labor-saving "modern improvements" as "running water, hot water, a set bathtub, some system of sewerage, gas or electric lights, and furnace," even though these were common in urban homes by this time. Table 3 below presents data on these items from the Michigan and Ward studies. Only two of the ninety-one homes in the 1917 Michigan study had all of these conveniences. Most farms used kerosene lighting, coal or wood stoves for cooking, and coal, wood, or oil burning stoves for heat. Only sixty percent of the houses had kitchen sinks – but not necessarily sinks with drains and sewerage systems. Seventy-eight percent emptied waste water in the back yard. The Ward survey confirmed that most farm women performed their duties without the help of this type of modern equipment. Seventy-nine percent used kerosene lanterns, 32 percent had running water, only 60 percent had a sink with a drain, and 61 percent were responsible for carrying the water they used. Ninety percent of farm homes had outdoor toilets. Only 22 percent had power machinery of any kind, including the 57 percent who had washing machines. Kerosene lanterns and wood stoves increased the work of cleaning, as did the grassless, dirt backyards gracing most farm homes, but one of the most onerous chores was the laundry, a strenuous task that in typical farm homes was reserved for one single and entire day (Neth 1998, 27). Laundry meant heating, carrying, filling, and emptying buckets of water; scrubbing, rinsing, and wringing fabrics, or turning a heavy hand-

cranked device. The Michigan women spent an average of 7.25 hours per week on laundry. As Nellie Kedzie Jones noted in a 1914 *Country Gentleman* column, "I wish it could be burnt into the consciousness of every man and every woman that washing under average farm conditions is man's work, not a woman's" (Kleinegger 1988, 171). By the 1928 BHE study 10 years later, in spite of efforts to promote labor-saving technologies for farm homes, farm women had managed to knock less than two hours per week from the time devoted to laundry (5.4 hours).

Table 3: Equipment in Farm Homes Surveyed, 1917 and 1919.

	Bailey, Michigan 1917, 91 homes	**Ward, 33 Northern and Western States 1919, 10,044.**
Lighting	88% kerosene lamps, 11% gas, 1% electric	79% kerosene lamps, 21% unspecified
Heating	82% stoves, 18% furnaces	Not Reported
Cooking	88% wood; 12% wood and coal and 74% also oil or gas	Not Reported
Water	24% with running water	32% with running water
Kitchen Sinks	55% with water in the house; 60% with kitchen sinks	65% water in kitchen; 60% sink and drain
Outdoor Toilet	90% with outdoor toilet	90% with outdoor toilet
Fixed Bathtub	19% (14% with hot water boilers)	20%
Sewer System	22% with septic tank or cess pool; 78% emptied water in the back yard	Not Reported

Farm women's customary responsibilities, unlike those of urban women, often extended to the barn, henhouse, dairy, orchard and garden to include work in the farm enterprise. Such work commonly included caring for animals, especially poultry and dairy cows, as well as vegetable gardens and orchards. The women in Figure 4 are

gathering wild berries. These activities produced eggs, milk, cream, cheese and butter, fresh, dried, and canned fruits and vegetables, jams and jellies.

Figure 4: Farm Women Gathering Berries circa 1915 outside Fayette, MO (unpublished photograph from author's personal collection).

The Michigan women spent an average of 2 hours a day on the "special kinds of work" associated with dairying (including making butter), gardening, and poultry work. All farms surveyed kept cows, poultry, and gardens. Most (75 percent) reported orchards, as well. In Ward's survey, sixty-seven percent of women in the Central states cared for gardens, eighty-nine percent cared for poultry, forty-five percent helped milk cows, and ninety-three percent washed milk pails. A majority of women, sixty percent, made their

own butter [15]. Figure 5 documents what Kneeland (1928, 620) referred to as the farm woman's "double job" – "farmer as well as home maker.". Like other studies, this one from 1932 showed that farm and urban homemakers spent roughly equal amounts of time in home production activities, or "home making," yet urban women enjoyed approximately 9 extra hours for leisure, sleep, and rest than farm women, due to the addition of "farm work" among the customary tasks of the latter (Kneeland 1932).

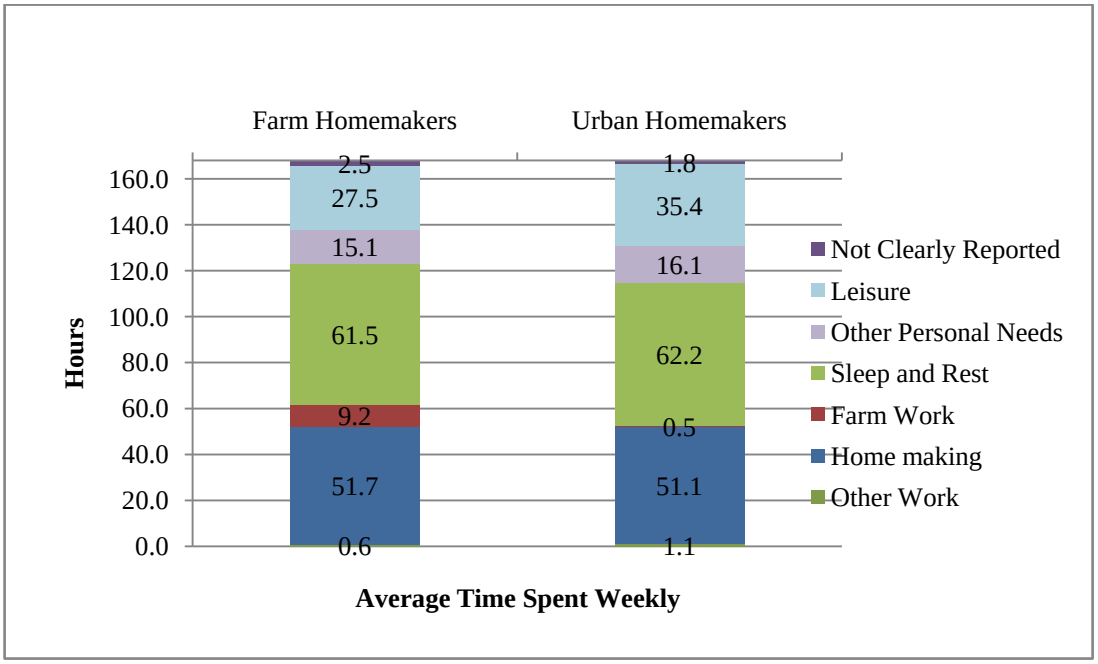

Figure 5: Average Weekly Distribution of Time, 1932.

In addition to providing products and services directly for family consumption, thereby providing for a large share of the family's subsistence needs, women often sold their products for cash. This income was directed toward meeting the needs of the farm

[15] If farm men and their employees or family apprentice-helpers performed the work, the poultry and dairy were considered to be primarily ancient farm commodities and took precedence over other products (and those who labored to produce them) whether these were marketed or not. This may explain why relatively fewer women were responsible for milking as opposed to gathering eggs, for example, since dairy products were more likely to be produced and marketed by male farmers as ancient farm commodities (USDA 1915, 17).

family. Ninety percent of the farm women in the Michigan study reported income from the sale of poultry, eggs, and dairy products. The Michigan women considered the income from their activities as "belonging distinctly to the home" (Bailey, Ilena M. and Snyder, Melissa F. 1921, 355). According to Neth (1998), "the connection between women's income and its use for family purchases appears almost universal". Egg, chicken, and butter money were often said to have "bought the groceries" which included cereal products, coffee, tea, meat, and sugar. Other commonly purchased items included fabric, some clothing, shoes, heating and cooking fuel, medicine, and medical services. Women in the Ward survey similarly reported marketing poultry and dairy products while not keeping the earnings for their own use. For example, only 9 percent of the 33 percent of women who made butter to sell had the butter money for their own use. Similarly, while 89 percent of farm women cared for poultry, only 25 percent had poultry money, and 16 percent had egg money for their own use.

Women's household production played a significant role in maintaining the living standards of farm families. Bailey's Michigan study showed that 80 percent of the living expenditures for the farm family "were met by the extra household activities of the housekeepers, leaving only 20 percent to be contributed from the proceeds of the principal products of the farm" (Bailey, Ilena M. and Snyder, Melissa F. 1921, 356). She noted that this, plus her unpaid labor time, showed that the farm wife made a significant contribution to the "economic support of the family as well as to its comfort and well-being" (Bailey, Ilena M. and Snyder, Melissa F. 1921). A study of 2,886 farm families in eleven states from 1922 to 1924 found that the farms furnished an average of 43 percent of the total value of goods for household use, including 67 percent of the total value of

food consumed (Kirkpatrick 1929, 56–57). A study of 147 Iowa families between 1926 and 1929 found that these families supplied three-fifths of their own food, including 95 percent of poultry, milk, eggs, and cream; 81 percent of meat; and 43 percent of vegetables (Neth 1998).

In addition to their work in household, barn, henhouse, and garden production, meeting the family's subsistence needs and reproducing the farm labor force, Midwestern farm wives sometimes engaged in the production of cash crops – non-dairy livestock, field crops and related activities – working alongside their husbands and other workers. In the Ward survey, 25 percent of women helped with non-dairy livestock and 25 percent helped in the field for an average of 7 weeks in the year. According to Neth (1998), the biases of the study mean these and other figures related to women's outdoor work are probably low estimates, since the more "progressive" farms likely to have been overrepresented in the survey were more likely to maintain a more strict gender division of labor (1995, 19-20). In addition, the construction of surveys was conditioned by the constructions of gender and ideas regarding the appropriate spheres of male and female work. Bailey's 1912 study, for example, did not enumerate tasks such as field work or helping with livestock among the labor classifications farm women could choose from (Kline 1997; Bailey, Ilena M. 1915). According to a 1927-28 study of Nebraska farm women, 35 percent reported doing some kind of outside farm work other than caring for chickens, gardens, and milking. These tasks included haying, corn husking, plowing, driving the hay rake, shocking grain, cultivating corn, harrowing, repairing fences, and running the tractor (Clark and Gray 1930, 25). Some farm women undertook these tasks as part of their regular work. For others, this work was more contingent and irregular,

undertaken as "an unusual task which arose because of the illness or absence of the husband, son, or hired man, or because of an unusual amount of farm work at certain seasons of the year" (Clark and Gray 1930, 25). Some women reported enjoying this type of work, and others said they preferred doing it rather than boarding and lodging a hired hand in the house. Women's work in this type of farm production was often described as "helping out."

Table 4 summarizes the above discussion of farm women's work as described by the 1919 Ward survey.

Table 4: Farm Women's Duties, 1919. (Ward 1920)

Household	**Percent of Women**	**Barnyard and Garden**	**Percent of Women**	**Other Farm and Field**	**Percent of Women**
Kerosene Lamps	79	Help Milk	36	Help with Livestock	25
Water to Carry	61	Wash Pails	88	Help in Field	24
Washing/Ironing	96	Make Butter	60		
Sewing	92	Sell Butter	33		
Bread Baking	94	Caring for Poultry	81		
		Caring for Gardens	56		

Family Farm Feudalism

How, then, are we to interpret farm women's work in terms of class? Consider the following letter by Mrs. E.G.R. of Michigan to *The Farmer's Wife* in 1924 exclaiming at the "blessing" of having "an allowance." She reasoned that her regular work, "if paid for at a conservative price, would amount to more in a month than I had been spending on my personal self in a year." She concluded, "You would smile at the amount of this

wonderful allowance but it is all mine and just because I haven't had anything except in common with the family, it seems munificent to me" (181). Her efforts at persuading herself, her husband, and readers of the magazine that she deserved some money of her own, seem to confirm the absence of self or communal appropriation of her surplus. As her letter indicates, she was not expecting, nor had she been, regularly compensated for her work, which involved providing for herself and for her family.

A farm wife's work was unpaid, and the use values she produced took the form of services like childcare and cleaning, products like cooked meals and sewn shirts, and cash from the sale of products like butter and eggs. One farm woman from Kansas wrote in response to the 1913 USDA survey of the wives of crop correspondents and asked, "When I have cooked, and swept, and washed, and ironed, and made beds for a family of five (two small children), and have done the necessary mending and some sewing, haven't I done enough?" (51). As this statement indicates, farm women produced use values not only for themselves, but also for other family members including their husbands and children. Their responsibilities in the farm household and farm enterprise were delineated largely according to their gender, and largely completed without expecting or receiving assistance from their husbands. A farm woman performed necessary labor, the fruits of which she received back to reproduce her labor power. In addition, she worked to produce more than what was socially necessary for her own reproduction. In doing so, she performed surplus labor, the fruits of which were appropriated and distributed by someone other than herself. Her husband, described as "lord and master" of the family farm was that person ("Is This the Trouble" 1909). As one woman from Nebraska wrote, "One of the most necessary aids to the farmer's wife is

that she should have the fruits of her labor. Hers is a life of toil just as long as she remains on the farm" (50). One farm woman from Oregon specifically noted the difference between her situation and that of her husband or even his hired workers:

> The farmer may aid a great deal by sticking to the 10-hour labor system, which will lighten the labor of the woman on the farm.—[T]he husband doesn't mind the long hours of labor because he thinks when he harvests the crop he will get his pay. The hired man gets paid for his work, but the tired housewife on the farm merely gets her board and clothing, the same as the farmer's work animals (52).

Much of farm women's labor, then, occurred along with an exploitative fundamental class process. Not only was farm women's work productive of surplus, but this surplus was appropriated by someone other than its direct producer. Building on the model of household feudalism developed and extended by Fraad, Resnick and Wolff (Fraad, Resnick, and Wolff 1994; S. A. Resnick and Wolff 2009), I identify this type of gendered class processes as a feudal class process in which the farm wife personified the role of serf, and her husband that of lord. This form of exploitative class process is neither capitalist nor slave. While farm women may have delivered surplus or received necessary labor in monetary form, wage labor relationships were notably absent from relationships among farm husbands and wives. Neither are direct producers the property of appropriators, hence the feudal designator for the class process. Farm wives did not opt to go on strike or walk out in the same way that capitalist workers might have when faced with similar working conditions. In fact, they may have felt their feudal exploitation was a necessary demonstration of their familial love and service for which the return of that love and appreciation was ample compensation (Ward 1920). The connection between farm wives and husbands as producers and appropriators of surplus labor in family farms was supported by various economic, political, cultural, and natural

conditions and obligations. As feudal serfs, farm women were tied to their exploiters by "marital oaths, ideology, tradition, religion, and power"(Fraad, Resnick, and Wolff 1994, 7). In addition, such conditions included important cultural processes producing gender and agrarian identities. A selection of these processes will be discussed further below. First, I discuss the role of children as serfs on the family farm.

Children as Serfs

As the discussion above shows, the typical family farm included a feudal class structure occurring with farm wives' work in its farm household and its environs such as the barnyard, garden, orchards, henhouse, and dairy. Not only the farmer's wife, but also his children constituted a reserve labor force that could be called upon as needed. Children's labor also typically occurred along with feudal class processes as children were usually integrated as additional serfs in both household and farm production. Children's serfdom was shaped by their age as well as the gender division of labor on the family farm so that young children and older girls might have served as serf-apprentice farm wives to their mother in the farm house, barnyard, and garden, while older boys served as serf-apprentice farmers to their father in the fields and pastures.

Farm husbands typically retained the subsumed class decision-making role of assigning older children to help with the production of farm commodities like field crops and livestock. Since these requirements usually superseded those of the farm household, this meant he also retained authority over household production indirectly, if not directly. Alternatively, the farm wife may have served as feudal appropriator of her children's surplus, while at the same time lacking some or all subsumed class managerial authority

over these arrangements. Similarly, the farm husband may have served as feudal appropriator of surplus, while his wife claimed managerial authority over these arrangements in household, barn, and garden production.

Evidence suggests that farm women managed the surplus of their young children when they could. In her study of Nebraska farm women during this period, Deborah Fink (Fink 1992, 151) places the farm woman in the role of "buffer between her husband's desire for child labor and her children's needs". She also describes how farm women assigned "women's work" to their daughters and younger sons. Census takers found that farm men often did not know the basic demographic information about the members of their household, indicating that this "accounting" was part of a farm wife's responsibilities.

However, farm women likely felt conflicted feelings about serving as feudal appropriator of their children's labor themselves, even if familial arrangements allowed this, as a means of easing the demands of their own feudal serfdom. Young children required an incredible amount of labor, especially in households that lacked running water and electricity, yet children also offered respite from the isolation, loneliness, and dependency of farm women's feudal serfdom. Given the burden of farm women's work, however, could they help but exploit them to ease their own labor once their children were old enough? Motherly love may have placed limits on that exploitation for most children, but accounts of the working conditions of orphans, even if they were extended family members suggests that motherly and fatherly love was limited. Hence, many children likely endured dual serfdom – to their mothers and to their fathers who appropriated the surplus they produced.

The Ward survey did not ask who did the work if it were not done by the farm women themselves, but other surveys, diaries, and photos of farm life indicate that children commonly performed this work (Neth 1998, 278). Chores were assigned to children as young as three or four, as leisure was an extravagance that most farm families could ill afford. The prevalence and importance of child labor on family farms was demonstrated by J.O. Rankin's 1924 study of Nebraska farm homes. He found that two-thirds of the 368 children over three years of age performed some type of daily work. The proportion of children working ranged from only 24 percent of those ages 4 to 6, to 95 percent of those over 14. A slightly larger proportion of girls than boys did daily work (70 percent of girls compared to 63 percent of boys), and girls began work at a younger age. While only 18 percent of boys 4 to 6 years old did work, almost a third of girls in that age range did work (Rankin 1928b).

Both young boys and girls helped their mothers in the household, barn, and garden work described above, who taught and oversaw their work. Older girls and boys took on gendered assignments, with boys taking work in the farm fields, with livestock, and operating farm machinery, and girls remaining to specialize in the tasks their mothers performed. In the 1928 Nebraska study, 94 percent of boys over the age of 14 did outdoor work, including care of animals, gardening, and other chores, while 85 percent of older girls did house work, mostly ironing, cleaning, helping with meals, and other kinds of housework. Only about a third of girls helped with the care of younger children. A USDA study of 559 homemakers published in 1930 verified that farm women received most (4.5 of the average of 9.25 hours per week) of the help they received from their daughters (and other female relatives). The rest was from farm husbands (2 hours), sons

(1.25 hours), hired help (1 hour), and guests (.5 hours). Caring for the children was found to be almost exclusively the wife's domain, with very little help from family members, even daughters (Moore 1930).

While work assignments were somewhat flexible for girls, the same was not true for boys. Girls of all ages were three times more likely to do farm work than boys were to do house work. While fully 59 percent of girls over 14 helped with farm work, only 3 percent of boys of the same age helped in the house. The indoor work of boys was often the result of the lack of suitable daughters to perform these tasks. Teenagers, if not performing their usual unpaid labor on the family farm, were expected to work for hire on neighboring farms, contributing their wages toward their own necessities and to the farm enterprise (Neth 1998, 20–21). This, too, varied by gender. Almost one fifth of older boys in the Nebraska study worked away from home on neighboring farms. Only 4 percent of older girls did so (Rankin 1928b).

Non-Class Conditions of Existence for the Family Farm Hybrid

As the discussion above makes clear, farm life was hard for everyone involved in it. Farm men, women, and children worked long hours doing strenuous work, for minimal and uncertain compensation. The ancient/feudal hybrid class structure was a stable form, yet the very strategies undertaken for its survival threw it constantly into a potential state of crisis. Powerful countervailing forces must have been at work to prevent the family farm from collapsing altogether under the weight of its inhabitants' exhaustion and the demands of their class positions. In this section, I discuss a selection of these forces, or conditions of existence for the family farm hybrid and its constituent

ancient and feudal class structures. Cultural, economic, political, and natural processes combined to provide conditions of existence for farm wives and their children to occupy the class positions of serfs and their husbands that of lords as well as ancient farmers. These processes participated in producing feudal dependence for farm women and the ancient independence of their farmer husbands. Because that family farm hybrid existed in constant contradiction and potential crisis, its conditions of existence both supported and undermined it at the same time.

Farm families in need of some sort of compensation for their hardships found that compensation in ideological processes defining their identity as farm families. Like the followers of Protestantism, farmers and their families were promised a reward for their hard work and hard life. Unlike Protestants, however, farm families did not have to wait until death to enjoy their exalted status, they were living the dream – the American dream that is – on earth. As historian David Danbom (1979a, 20) explains, "To justify their choice to themselves and to others, and to mask the hard realities of farm life, rural people often embraced a series of sentimental half-truths, symbols, and myths about themselves". The organizing principle for this mythology was that of agrarianism.

Agrarianism is "the belief in the moral and economic primacy of farming over other industry, and the celebration of farming and farmers as the heart of American society" (Fink 1992, 11). Agrarianism affirmed the superiority of farmers over non-farmers as individuals, and of agriculture over industry in the social order. Thus, agrarianism shaped the way farm men and women understood their lives and their role in society, and therefore how and whether they recognized their roles in exploitative class processes.

The notion of the essential virtue possessed by farmers, and cultivated through the practice of farming as a way of life has been woven into the fabric of collective American identity since Jeffersonian times. It was the independent, yeoman farmer working the land he owned who served as the foundation for Thomas Jefferson's vision of democracy – both economic and political – in America. For Jefferson, the independent small producer possessed all of the virtues necessary to serve as the founding citizen of a great nation. "Those who labour in the earth," he wrote "are the chosen people of God…whose breasts he has made his peculiar deposit for substantial and genuine virtue" (Jefferson 1853).

Agrarian mythology affirmed the economic, political, and cultural superiority of farming. A common economic view of farmers was that they performed the most basic, legitimate occupation, forming the basis of prosperity for industry, and that all other pursuits were somehow parasitic. This is closely related to the Physiocratic view that all true wealth comes from the land. William Jennings Bryan expressed this sentiment in his famous Cross of Gold Speech at the 1896 Democratic convention in Chicago when he warned, "Burn down your cities and leave our farms, and your cities will spring up again as if by magic; but destroy our farms and the grass will grow in the streets of every city in the country." Politically, farmers enjoyed the status of serving as the foundation for the republic, and in the urbanizing and industrializing nation, as the stabilizing middle class between capital and labor. As one Ohio spokesman explained, "The prosperity, peace and greatness of our American republic rests with the…American farmer" (Danbom 1979, 21). Finally, farmers were viewed as the guardians and representatives of American virtue. "The country home is the safe anchored foundation of the Republic. It

is the fountain-head of purity and strength, and will nourish and sustain the virtue and wisdom of this nation forever," proclaimed one agricultural booster (Danbom 1979, 22). Family farmers were therefore not mere "ordinary" citizens, but the very embodiment of "American-ness" for everyone, not just for themselves. Farming was not an occupation, but a way of life. Preserving the family farm meant not only providing for the farm family, but also preserving and nurturing a national resource to be passed down through the generations to come.

The mythology of agrarianism helped mask the realities of rural living and the hard work of family farming, and wrapped farmers and their families in self-congratulatory images of their lives so that they could view their work as legitimate and rewarding instead of horrifying. This provided an important support for both the ancient and feudal class processes. For the ancient farmer/feudal lord, it defined him culturally, politically, and economically as an independent producer, citizen, and head of family. For the feudal farm wife, it meant she was less likely to recognize or rebel against her exploited class position in the farm household, viewing it instead with a sense of service and fulfillment. The agrarian ideal also shaped the primacy of the ancient producer as the "real" farmer and the heart of the family farm.

The myth of agrarianism grew in importance, even as the actual lived experiences of farmers and their families failed increasingly to conform to it. In fact, the myth of superiority may have been attractive precisely because the realities of farm life were making it increasingly difficult to sustain, which increased the need for the myth to justify the circumstances of those who stayed in rural areas.

Ideological processes assigning meaning to gender also provided important conditions of existence for the hybrid family farm. In fact, agrarianism itself was a gendered ideology, prescribing different roles for men and women on the farm, and establishing a hierarchy between them. Fink discusses the gendered manifestations of agrarian ideology in depth, beginning with Jefferson's formulation. She demonstrates how Jefferson's agrarian vision of a land of free and independent producers was a vision for (some) men only. She explains how Jefferson's writings about farm women, though sparse, demonstrate that "[h]is agrarian vision hinged on the subordination of women. Women were not farmers… White women were the daughters, wives, and mothers of men, and their fulfillment came from comforting and supporting men within the family" (Fink 1992, 20). The ideal agrarian society hinged on the notion of separate spheres for men and women, with women relegated to the household and men to the farm enterprise. Hence, the prescription for the traditional feudal family was a fundamental component of agrarianism.

Gendered agrarianism helped to disguise women's work inside the farm household because their work was seen as part of a natural order – what women do, or were supposed to do. In his preface to the 1909 report on the problems of country life, President Roosevelt expressed this sentiment. "If the woman shirks her duty as housewife, as home keeper, as the mother whose prime function it is to bear and rear a sufficient number of healthy children, then she is not entitled to our regard" (Country Life Commission 1917, 9).

Even though farm women did much of the work of "farming" in the family farm enterprise – gardening, milking, and caring for chickens, for example – farm women were

never considered to be "farmers" themselves. Even their labor in commercial farm production was described as "helping out." Men were the "real" farmers. Farm women also often sold their products for cash. This income played an important role in supporting the farm family. Yet, farm women's work was viewed as having saved money instead of having earned it. Even though they were often the primary breadwinners for the family, farm women were not recognized as such.

Agrarianism also helped elevate the masculine work of farming over the feminine work of home-making and the ancient class process over the feudal. A common saying of the time was, "A barn can build a house sooner than a house can build a barn." This statement expresses the perception that expenditures for the farm household were unproductive and wasteful while expenditures for the farm enterprise were productive and profitable. Economic "rationality" required that limited resources be devoted to the commercial farm enterprise as the "real" source of income and the economic heart of the farm family.[16] A further implication is that sacrifice would be necessary, but temporary, and belt-tightening for the sake of the farm enterprise would pay off later with bigger houses as well as bigger barns.[17] Many farm wives, however, discovered that the new

[16] Even contemporary authors whose work is aimed at recovering the contributions of farm women in preserving the family farm maintain the perception that economic activity and production was confined to the farm enterprise and in particular the work of the ancient farmer. According to Kleinegger, the "hardheaded reality" was that "in their quest for modern conveniences farm women had to struggle against a compelling economic imperative requiring that limited resources be reinvested in the farm…because that was where the income was" (175). She continues, discussing how purchases of household appliances reflect farm women's role as consumers, ignoring both that production occurred in the household, and that such production often generated substantial income for the farm family. Elbert makes a similar mistake in conceptualizing farm women's labor in the household not as production (and therefore productive of surplus), but as consumption (and reproduction) (1933).

[17] The rhetoric and perception of economic imperative and sacrifice is similar to the argument often presented to workers in capitalist enterprises today. Accept lower wages,

barn was all they got. Consider the following excerpt from the 1909 article on Mattie Corson's survey:

> Three-fourths of the girls said that they did not want a farmer for a husband, because – and this answer was general – they had seen how, their mothers slaved from dawn and before dawn, to night: and they had seen – and this was significant – they had seen all too plainly how their fathers think of nothing but their cattle and crops, to the sacrifice of their wives. The cattle must have everything: Mother nothing.

The needs of the ancient class process took precedence over the needs of the feudal. The seasonality of men's work in the fields may partially explain why such work took precedence over women's work in household production. Yet, even when seasonal demands overlapped, the production of cash crops took precedence over home production. Women could not ignore the labor of men, whether they were engaging in it or not, because their work could be disrupted at any time with a call to help in the field. In addition, women had to adjust their work to accommodate the needs of the ancient farmer and his workers, by adjusting meal preparation times, for example, or providing meals and rooms for hired hands. Neth (1998) found that farm men rarely took note of women's weekly or daily production activities, and mentioned these only when they impinged on their own work. Women's work was therefore, largely "invisible to the men of the farm" (27). And because women's work in childcare and food preparation was ongoing and continual, while men's work was seasonal, farm men enjoyed periods of relatively free time during which they could pursue leisure or civic activities that further enhanced their status in the community.

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longer hours, and fewer benefits for the sake of saving the business. Workers' sacrifice is presented as the only and best option, and workers' wages are presented as an unreasonable drain on profits. Workers' role in producing value and in generating those profits is de-emphasized.

It was perfectly acceptable, even desirable, for women to perform masculine tasks when necessary, but the opposite was not true. Recall that many farm girls did farm work, but very few farm boys did house work. As the oldest child, one Iowa farm woman recalled being her "Dad's chore boy," driving horses, disking, and putting up hay (Neth 1998, 25). When women and girls stepped into the role of laborers in commercial farm production, they did so in spite of their female sex. They were allowed to assume a masculine role only because an appropriate male to perform the required work was unavailable or unaffordable. In doing so, they did not necessarily challenge the gender processes that defined the role as masculine, nor did they contribute to an increased recognition of the value of feminine work. More prosperous, and "progressive" farmers could afford to save their feminine hands for "feminine" work, and thus maintained a stricter division of labor between enterprise and household (Neth 1998, 25, 279). Boys who took on household tasks when women and girls were unavailable often felt inferior and "usually chafed at the lowered status" (Neth 1998, 27).

A central component of the agrarian vision is a celebration of rugged individualism, independence, and self-reliance. Yet it is not a vision of an individual farmer, but of an individual farm family. Like other aspects of agrarianism, this one was gendered, and had contradictory implications for the family farm's class structures. Farm families were deemed independent and self-reliant in relation to the outside world, but inside the family farm, isolation meant the farm family had to be a cohesive, interdependent unit relying on one another. Whereas farm families were representatives of democracy to the outside world, inside they were autocratic and ruled by the farmer as head of household. Any displays of individualism and independence on the part of

women and children were actively, and sometimes violently discouraged as a threat to family cohesiveness and therefore survival of the family farm. As the rural historian David Danbom (1979) explains, “It seems, therefore, that individualism, a rural trait both praised and damned by outside observers, was enjoyed by adult males only”.

This privileged access to agency, democracy, and independence was reinforced by legal structures and customs that gave adult males power to command the vital economic resource of land. In most cases, women and children had access to land only through their feudal relationships to men. Studies of inheritance patterns show that male children received land while female children received movable goods, education, or cash (Fink 1992, 124; Friedberger 1983). Even when women brought their own land to the marriage and retained title to it, custom gave the authority to decide its use to the husband. Political processes hence assigned power over the land on which both the farm enterprise and farm household resided to the husband, providing a condition of existence for both the feudal and ancient class processes. In addition, of course, was the fact that many women lacked the legal right to vote during the early part of this period, hence the recognition of their democratic rights as citizens.

The isolation that came with the relative self-sufficiency and emphasis on hard work and personal responsibility insulated the farm family, and in particular farm women, from economic and social contact with the outside world. This lack of contact reduced their exposure to alternative ideas and models of living that would have led them to question their own life circumstances. There were not many acceptable alternatives for employment for adult women in rural areas. This lack of alternative employment opportunities was compounded by the lack of time, education, access to loans, land, or

authority that would have allowed them to surmount the feudal exploitative relationship in family farming. Farm women lacked time and social networks, and were isolated geographically, economically, and socially. Their work rarely took them off the farm as that of men did, and even though many farm households had access to modern communication and transportation technologies like telephones and automobiles, women did not necessarily have access to these items without their husband's approval or accompaniment (Jellison 1993). The isolation of farm women and children provided conditions of existence for their feudal dependency, and ensured that the ancient farmer could avail himself of a captive, cheap labor force that was unlikely to be able to bargain for increased pay or better working conditions because they were tied to their ancient hybrid employer through familial obligations.

The demands of hard work, as well as rural isolation, and agrarian pride were reinforced by rural institutions including the church, the school, the neighborhood, and the family itself. Most farm people lived the way they had been raised, as prescribed by their churches, schooling, neighbors, and family. The bonds of feudal obligation were sealed with the marriage contract and a woman's entry into the role of farm wife. All of these conditions combined to entrap farm women, and also farm men, into their respective roles in the feudal class structure. These same conditions with their gendered impacts combined to produce and reproduce the ancient class process as well as the farmer in his role within it. Finally, these conditions shaped the primacy of the ancient class structure over the feudal, and helped shape the transfer of resources from the latter in order to subsidize the survival of the former.

The combination of ideological, political, economic, and other conditions of existence supporting the family farm hybrid also pushed and pulled it in contradictory directions which served to undermine it as well. The isolation that insulated farm families also increased the psychological and economics stresses associated with reproducing the feudal and ancient class structures. Agrarian mythology which celebrated rural living contributed to the appalling conditions there in part because it served to gloss them over. The increased concern for rural backwardness coming from the Country Life Movement was driven not only by this ideology, but also by the recognition of the gaping chasm between the beloved ideal and actual conditions. Attention to the problems of rural life served to increase awareness of the situation, and gave farm women and others a voice to express their discontent and to read about the discontent of others. Because neither reformers nor farm families were aware of the class dimensions of their problems, the solutions they proposed and adopted failed to address them. Faced with the intractable problems of rural life, increasing numbers of farm men and especially women fled farm life altogether.

Feudal-Ancient Subsidies: Making Do and Helping Out

As the preceding discussion indicates, farm women and children performed a variety of labor processes within the feudal class structure of the family farm – both in farm and household production. These labor processes subsidized the family farm enterprise's ancient, or ancient-feudal hybrid class structure in two ways. First, they resulted in services, products, and proceeds to meet the needs of farm family members, called "making do". Second, they supplemented the ancient farmer's surplus in the

production of commercial farm commodities, called “helping out”. The work of farm women, with the aid of their children, provided substantially for the reproduction of the farm family, and in so doing, provided an important source of subsidy to the family farm’s ancient class structure, enabling it to survive and prosper, even as the burden of work was shifted thus onto the shoulders of the feudal serfs - farm wives and their children. As Bailey (1915, 348) noted in her analysis of the 1912 survey of farm homes, the income from the “minor farm enterprises, such as the poultry, the garden, the orchard, and the dairy,” along with the “unpaid labor of the family *make the returns of the farm business a profit instead of a loss*” (emphasis added). It was the work of feudal serfs that played a significant role in purchasing the “self sufficiency” of farm families, and insulating them from the uncertainties of the farm enterprise income. In this section, I examine the value connections between the family farm’s feudal and ancient class structures by rethinking the important practices of “making do” and “helping out” in these terms.

Making Do

Women substituted their own labor in household production in order to save on cash expenditures. “Making do” or “saving money through the use of labor or simply doing without” was often used to describe what farm women did, or were supposed to do (Neth 1998, 9). The turn-of-the-twentieth-century equivalent of “reduce, reuse, recycle,” making do was a valued and celebrated skill, “the measure of a good wife”, according to one farm woman (Neth 1998, 31). Those who were not so talented were subject not only to denigrating gossip, but the possibility of failure during hard times when “making do”

was crucial for the family farm's survival. Popular farm women's magazines like *The Farmer's Wife* frequently published advice about how to make do, or economize in order to reduce expenditures.

In class terms, making do was a strategy to shape the flow of surplus between the feudal and ancient class structures of the family farm. Specifically, making do meant that surplus produced and appropriated within the feudal class process was diverted to that of the ancient, and therefore unavailable to secure the necessary feudal conditions of existence. It was a transfer of surplus produced by the farm wife, appropriated by her husband in his position as feudal lord, then transferred to the ancient farm enterprise by virtue of his position as ancient producer and appropriator. Making do operated to shift surplus from the feudal class structure to ancient farm production as needed to facilitate expansion during times of prosperity, or survival during times of crisis. The transfer of surplus to the ancient from the feudal class structures in family farms is analogous to the transfer of goods and services to children in the form of childcare in contemporary feudal households (S. A. Resnick and Wolff 2009). Just as the husband transfers his wife's appropriated surplus to children in various concrete forms in order to facilitate their survival and growth, the farm husband transferred his wife's appropriated surplus to the ancient farm enterprise in various concrete forms in order to facilitate its survival and growth. The farm wife's feudal exploitation, therefore, enabled and helped reproduce the ancient farmer's own auto-exploitation.

The following set of equations illustrates how the strategy of making do operated to shift surplus from the feudal class structure to the ancient and the ancient farmer's consumption.

Feudal Class Structure: $$SL(F) \quad -Y_i + NCR_j < +SSCP(F) \qquad (4)$$

Ancient Farmer's Consumption: $$NL(A) + NCR_i - Y_j = \hat{C}(A) + \hat{C}_F \qquad (5)$$

Where SL(F) is feudal surplus labor in the family farm household and family farm enterprise; SSCP(F) are feudal subsumed class payments for the reproduction of feudal class processes in the family farm household and family farm enterprise; and the remaining terms are explained below.

Equation 4 is much like Equation 2 introduced above, except that feudal surplus labor is not specifically delineated by household and enterprise, and, more importantly for this discussion, the addition of two new terms expressing the interdependence of the two class structures, and the transfer of appropriated surplus between them: Y_i, NCR_i, Y_j, and NCR_j. These terms represent the transfer of outlays between the two different class structures, via the ancient farmer's consumption. The term Y_i stands for expenditures from the feudal class structure to subsidize the farmer/husband's personal consumption. It was a transfer of surplus – in kind or in cash – produced by the farm wife, appropriated by her husband in his position as feudal lord, then transferred to his consumption as ancient farmer. The farmer used the Y_i expenditures from the feudal class structure to reproduce his ancient labor power for work in the family farm enterprise, as shown in Equation 5.

As the downward arrow indicates, the subtractions from the feudal surplus flowing into Y_i were made available as a non-class revenue (NCR_i), or a transfer of feudal surplus to the ancient farmer's personal consumption. Thus, $Y_i = NCR_i$. What the feudal class structure lost was gained by the ancient farmer for his consumption. These subsidies supplemented the ancient farmer's necessary labor, NL(A), the total value of

the goods and services the ancient farmer must consume to reproduce his labor power at the prevailing social standard. If children or hired hands were helping out in the production of ancient farm commodities (rendering them ancient/feudal/capitalist hybrid farm commodities), then Y_i would become $\sum Y_i$, multiple transfers from the farm wife to subsidize the consumption of these serfs and other workers, as well. Each of these terms would then flow into subsidizing the individual worker's personal consumption similar to what is shown in the case of the ancient farmer.

Similarly, Y_j stands for outlays from the ancient farmer to the feudal class structure. It represents a transfer of value between the ancient and the feudal class structures via the farmer/husband, because he occupied two different class positions. The flow Y_j came from a portion of the farmer's value of ancient labor power, or the wage he paid to himself for self-exploitation in his position as an ancient class farmer, transferred to his position as feudal lord and appropriator of his wife's surplus. This transfer may have taken a monetary form of proceeds from the sale of crops, or a non-monetary form of actual farm produce, like portions of grain to feed dairy cows and chickens, or beef from the production of livestock. It therefore represents a portion of the farmer's ancient necessary labor, which he diverted from his own consumption in reproducing the labor power he expended in the production of ancient, or ancient/feudal hybrid farm commodities, to the feudal class structure. As the upward arrow indicates, Y_j was made available to the feudal class structure to finance the outlays required for its reproduction, thus $Y_j = NCR_j$. As above, if the labor of the ancient farmer is supplemented by feudal or other kinds of workers in the family farm enterprise, the NCR_j would become $\sum NCR_j$,

multiple transfers to the feudal class structure from each individual worker's necessary labor.

The term on the right hand side of Equation 5 stands for the goods and services made available for the ancient farmer's consumption, either from the wage he pays himself, $\hat{C}(A)$, or from the portion of his wife's feudal surplus labor diverted to his consumption, $\hat{C}_F$.

While it may be the case that what is given up by the feudal (ancient) class structure in providing Y_i (Y_j) is exactly offset by what is gained from NCR_j (NCR_i), there is no necessity for this equality to hold, and every reason to believe that it often did not. As indicated by the inequalities, it is likely that $Y_i > NCR_j$ (and therefore $NCR_i < Y_j$), as the strategy of making do operated to shift surplus from the feudal class structure to the ancient as needed to facilitate expansion during times of prosperity, or survival during times of crisis. Farm women's work in making do helped meet the consumption needs of the farm family, thereby allowing for the production of a larger ancient surplus in the production of farm commodities. The high value placed on the practice of making do, and its importance in farm women's identity likely contributed toward reducing Y_j/NCR_j at any given time, and particularly in times of crisis for the ancient class process in the family farm enterprise. As discussed above, the services, products, and income generated by farm women's work met the majority of the needs of the farm family, and often much more, with little contribution from the ancient farm enterprise revenues or the ancient farmer himself. It seems likely that many farms experienced a situation in which the diversion of the farm wife's surplus to subsidize her husband's consumption as a farmer was not offset by an equal infusion from ancient necessary labor. Making do was

therefore an important strategy in overdetermining the family farm's hybrid class structure. By subsidizing her husband's consumption, a farm wife's labor enabled a lower NL(A), for a given level of ancient consumption. This lowered NL(A), in turn enabled a higher ancient surplus, SL(A), in ancient farm enterprise production, and hence a rising ancient rate of class exploitation, SL(A)/NL(A). The expanded ancient surplus would allow the ancient class structure in the family farm enterprise to access expanded conditions of existence as follows:

Ancient Class Structure: $$SL(A)^{FFE} > SSCP(A)^{FFE} \quad (6)$$

Where $SL(A)^{FFE}$ is the ancient surplus labor in the family farm enterprise and $SSCP(A)^{FFE}$ is ancient subsumed class payments for the family farm enterprise.

Family farmers' willingness to tolerate intense rates of self-exploitation is widely recognized (although not in those terms) as an important contributor to the conundrum of family farm survival. Whether it is called "the distinct calculus of the family farm" or "the peasant mode of production," the role of farm women's exploitation in enabling this survival has not to my knowledge been explicitly recognized until this dissertation (see Reinhardt and Bartlett (1989) for a review of this literature).

While the increased SL(A) became an important component of the survival of the farm enterprise, it simultaneously threatened the reproduction of the feudal class structure, by diverting the feudal surplus available to secure its conditions of existence, without an offsetting NCR_j from the ancient farmer's wage. One widespread response, or set of responses was to reduce the outlays necessary for SSCP(F), by reducing either the number of conditions of existence or their price.

The latter was accomplished as farm wives themselves often took on the responsibility of managing, supervising, and keeping accounts of their own surplus production. For example, Mrs. E.G.R. (1924) quoted above was responsible for handling the "whole family pocketbook", and had been managing the family's income for over thirty years without supervision (except her own). She explained that in spite of her decision-making authority over family finances, she almost never spent the money on herself. Thirty-two percent of women reported managing farm and 30 percent home accounts in the Ward survey. Twenty-nine percent kept dairy, and 45 percent poultry records. Ward explains that these women recognized the importance of "getting the most from a dollar and making sure that the home industry pays." With or without compensation for their services, farm women, then, commonly occupied subsumed class positions enabling their own continued exploitation in farm and household production by supervising and managing family farm value flows. The Smith Lever Act of 1914 provided funding for the USDA home demonstration agents to teach and encourage the spread of such farm home management practices, thus encouraging farm wives to take an even more active and explicit role in managing the extraction of their own surplus. Women's role in making such management decisions does not in any way undermine the exploitative feudal class process in which they participated. On the contrary, it served as one of its conditions of existence. These women wielded some command over value flows, and used their power over those flows to reproduce their own serfdom. That farm women often performed these functions without expecting or receiving compensation further strengthened the family farm's exploitative feudal class structure by reducing

subsumed class payments to reproduce this condition of its existence, thus helping to offset the inequality between NCR_j and Y_i in the feudal budget.

A second method of reducing SSCP(F) was to curtail the number of conditions of existence – to stop paying for one or several of them temporarily or permanently. In fact, reduced SSCP(F) for new feudal means of production, especially for farm household production, was an important component of family farm reproduction. Farm women did not typically have access to the same labor-saving conveniences that urban women did. Most urban homes had indoor plumbing, hot running water, central heating, electricity, and telephones, which, as noted above, most rural homes did not. Urban women also had access to a plethora of labor-saving implements for household production, including power washing machines, electric irons, ranges, and vacuums. In addition, urban women could purchase many of the products like clothing and food that farm women still produced at home (Knowles 1988, 313). In fact, with the exception of the sewing machine, farm women's means of production remained little changed from that of their mothers and even their grandmothers (Knowles 1988, 307).

Some of this discrepancy was undoubtedly due to the underdeveloped rural infrastructure or isolation, making some goods and services prohibitively expensive or simply unavailable in many rural areas. Some of the difference, however, cannot be explained by expense or availability, as many farm homes lacked what the farm enterprise did not. According to the Ward survey, for example, 48 percent of the farms had power to operate farm machinery, but only 22 percent had power in the farm home (Ward 1920, 442). This inequality between expenditures on new, labor-saving means of production and equipment in the farm home and in the farm enterprise was widely

remarked upon. A 1915 sociology textbook noted "Money is freely spent, when new machinery is needed on the farm, or another fifty-acre piece is added after a prosperous season, but seldom a thought to the needs of the kitchen" (Kleinegger 1988, 172–173). As Jane Knowles (1988, 314) acknowledged in her study of farm women's activism between 1900 and 1920, "Rural women clearly were disadvantaged in the material conditions of their daily working lives vis-à-vis both rural men and urban women."

Even though opportunities for increasing farm women's relative surplus product through productivity-improving feudal accumulation were limited, production of feudal absolute surplus remained high, and likely expanded as needed. This was another possible response to the inequality between NCR_j and Y_i required for the farmer husband's consumption. Farm wives' responsibilities were formulated in terms of tasks completed, rather than time spent. Washing, mending, and meals had to be accomplished on a daily or weekly basis, no matter how arduous or time-consuming the tasks. This piecework character of farm women's tasks helped maintain, if not increase, their production of feudal surplus. Another source of feudal surplus was additional serfs, as discussed above. Young children and older girls often helped their mothers in the production of feudal surplus.

Making do meant balancing and managing the needs of the family farm's complex and connected class structures. Equation 7 reproduces the terms from Equation 4, with the addition of arrows which represent the above discussion of making do and its impact on the reproduction of the family farm's feudal class structure.

$$\textit{Feudal Class Structure} \uparrow SL(F) \quad -\uparrow Y_i +\downarrow NCR_j =\downarrow SSCP(F) \qquad (7)$$

As shown, the budget for the feudal class structure is balanced by the farm wife's strategy of making do, as well as the addition of the feudal surplus labor of her children. There is no necessity that the equality will continue to hold, or that it signifies the long term viability of the feudal class structure. Indeed, the strategy of making do had contradictory implications for its continuing viability as a survival strategy, as it meant that farm women shouldered a heavy burden of long hours and backbreaking work. These were among the conditions contributing most to the "farm woman problem" and pushing women and girls from rural areas.

Helping Out

While the work of farm women (and children) and the feudal surplus they produced provided for most if not all of the consumption needs of the ancient farmer, thereby allowing him to increase the time during which he produced surplus, the physical labor requirements of the field crop and livestock operation at times swelled beyond his own means of meeting them, as indicated in Figure 3. At these times, it was necessary to supplement the strategy of making do with the additional strategy of helping out. In addition to their household, barn, and garden duties, farm women and children also "helped out" in commercial farm production – most commonly those tasks related to the production of livestock like beef cattle and hogs, and field crops like corn and wheat. Examples of helping out tasks included driving horses for plowing or disking, putting up hay, shocking wheat, picking corn, or driving the tractor (Neth 1998, 45).

Like the strategy of making do, helping out had the contradictory impact of resolving a potential crisis for the ancient class structure by displacing it onto the feudal

class structure, in turn impacting the long term viability of these strategies and the ancient class structure depending upon them. In the section that follows, I present the class analysis and ramifications of this strategy.

As discussed above, surveys found that many women helped with these tasks for several weeks out of the year. Poverty, hired labor shortages, or lack of suitable male feudal helpers could force women into the fields at crucial times of the year. This labor was usually contingent and irregular, although for some women it was not. Being able to save farm women's labor power for "women's work" was a badge of status, as farmers sought to emulate the urban middle class lifestyle associated with the male breadwinner-female caretaker model of the household. Wealthier, "progressive" farmers – those who could afford to adopt the cutting edge new agricultural production methods – could purchase their wives' freedom from the drudgery of helping out in order to conform, or to appear to conform, more closely to the urban ideal of the cult of domesticity. Advertisements and other media, educational texts, and religious messages shaped farm men and women's aspirations of mimicking the urban, middle class, white households in which women were seen as leisurely housewives, consuming and not producing, within the home. Just as housewives who did not work outside the home for wages were associated with higher income and status for their husbands, farm wives who did not work outside in the farm fields were associated with higher income and status for their farmer husbands, even if changing the mere geography of farm women's work did not actually reduce their workload. Not only could more prosperous farmers afford to replace female field workers with hired hands and machines, they also had larger farms, which meant longer distances between the fields and the farmhouse, and hence greater

physical separation between the feudal worksite in the home and its environs, and the ancient worksite in the fields and pastures. [18] Mary Neth's analysis of Midwestern farm women's oral histories is a case in point. She found that those on smaller farms (80 acres or less) were the most active in the barnyard and fields, while those on the largest farms (240 acres or more) were the least active (Neth 1998, 567).

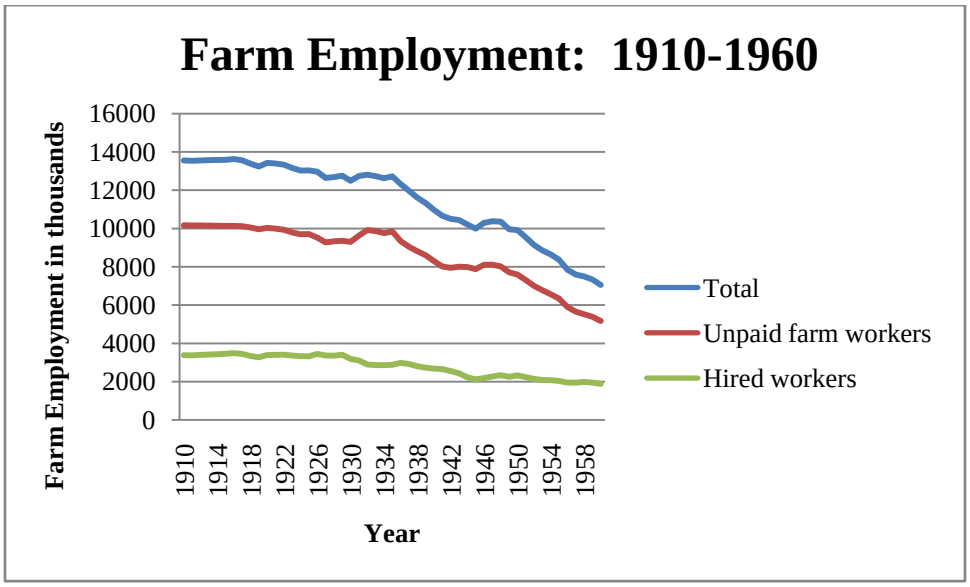
Given the requirements of "making do" along with the fact that the most onerous requirements for helping out likely coincided with the busy summer and fall months when making do also required more time for gathering, butchering, picking, canning, and drying of products associated with the farm wife's barnyard, garden, and household work, it would have been next to impossible for most farm women to add still additional work in the fields except for emergencies. If farm women were spending time working in the fields or tending to livestock, who did the cooking, washing, carrying water, cleaning the lamps, tending the children, planting garden produce, feeding the chickens, milking the cows, ironing, mending, sweeping, or baking? In short, how did all of her other tasks get accomplished?

In addition, the presence of young children would have served to constrain farm women's work in the fields unless they were able to take their children with them, especially since farm women received little help either from older children or their husbands with childcare. High birthrates in rural areas prevented many women from straying too far from the house to do field work. As discussed above, it was instead most older boys who helped out with ancient commercial farm production, working alongside their fathers in the role of farmer serf-apprentices. Their work was often supplemented

[18] A 1953 study showed that on more prosperous farms, there was a greater distance between the barn and the house (Kleinegger 170).

by the help of older girls. The discussion that follows, therefore focuses on the work of farm children in helping out, but it should be kept in mind that the discussion also applies to those many farm women who also did this work and added to their already onerous duties in the farm household, barnyard, and garden. As Carolyn Sachs writes in her history of women's agricultural labor, "women have always worked in the fields during periods of labor shortage, but rarely has their domestic workload decreased in relation to their involvement in field work" (Sachs 1983, 13).

In addition, the possibility of hired hands is considered, as their labor was also employed to supplement that of the ancient farmer, and their presence also impacted farm women's work. Figure 6 shows total farm employment, as well as the shares held by unpaid and hired workers, and indicated the greater significance of unpaid workers in total farm employment.



Source: Carter et al. 2006

Figure 6: Farm employment, 1910-1960.

Helping out meant that the unpaid feudal surplus labor of family members was added to the farmer's ancient surplus labor and ancient farm commodities became hybrid

farm commodities. I use the term helping out because this was the phrase commonly used to signify this type of work whenever it was not the ancient farmer doing it. In this way, the vocabulary preserved the ancient farmer's identity as the "real" farmer, even though he relied upon the labor of others on a regular basis. Helping out was analogous to the medieval European system of corvée, in which serfs joined a team of workers on the lord's lands either for a fixed number of days each season, or for assisting in a definite task until it was complete (Duby 1998).

Helping out was a strategy to promote the short term survival and long term reproduction of family farm ancient class processes. Farm children constituted a reserve army of labor that could be called upon as needed during crucial harvesting or planting times when the work requirements of the ancient farm enterprise swelled beyond the ability of the ancient farmer to accomplish them alone and required the help of his male apprentices and other farm family members. Children's labor was a crucial factor in the success of family farms. Studies of census data and family farm survival rates show a distinct correlation between the number of children and a family farm's survival over time. For example, Fink found in her study of Nebraska farms that of the families containing married women between the ages of thirty-five and forty-four in 1900, those that were present in the 1910 census had an average of 6.3 surviving children as opposed to those that did not, with an average of 4.7. She did not find the same correlation with the presence of hired hands (Fink 1992, 148). The significance and impact of helping out by farm children is evidenced, for example, by the difference in rural and urban school years. In rural areas, children's schooling was arranged around harvesting and planting times, with the result that they got less of it. For example, in 1910, the average rural

school year was 137.7 days, compared to the urban of 184.3. Rural attendance on any given day averaged 67.6 percent and urban 79.3 percent (Danbom 1979).

Farmer serf-apprentices ensured the long term reproduction of the ancient farm enterprise as they were meant to eventually become ancient farmers themselves through inheritance, marriage, or purchase. The unpaid labor of farm family members saved on expenses for hired field hands, particularly during those times when help was likely to be even scarcer and therefore more expensive. The child labor force was likely to be not only cheaper but also easier to discipline than hired workers, which contributed to farm families' reliance on their labor (Fink 1992, 148). Hybridization of this type of farm production through helping out thus provided an important condition of existence for the family farm ancient class processes by increasing the surplus available to meet its conditions of existence. Equations 3 and 8 express this strategy in class terms:

$$\textit{Ancient Class Structure:} \quad SL(A)^{FFE} = SSCP(A)^{FFE} \qquad (3)$$

$$\textit{Ancient/Feudal Hybrid Class Structure:} \quad [SL(A) + SL(F)]_{HY}^{FFE} > SSCP(A)^{FFE} \qquad (8)$$

Equation 3 depicts the ancient class structure without feudal surplus labor added. Equation 8 depicts the impact of "helping out" for the ancient family farm enterprise. The bracketed terms on the left hand side depict the surplus labor produced in hybrid farm production in the family farm enterprise (indicated by the superscript "FFE" and the subscript "HY"). Child serfs and farmer serf-apprentices performed feudal surplus labor (SL(F)) alongside the ancient farmer (SL(A)), producing a class structural hybrid in commercial farm production (contained within the hybrid of the family farm enterprise, within the hybrid of the family farm). The brackets indicate that the commodity

produced was a hybrid commodity because the labor processes occurred along with the ancient and feudal class processes at the same time.[19]

The terms on the right hand side of the equation depict the ancient subsumed class payments, SSCP(A) or distributions of surplus produced and appropriated in ancient class processes required to secure the conditions of existence for those class processes. Because helping out is merely an extension of existing family farm feudal class processes to different types of labor processes, it requires no further subsumed class payments to reproduce it. Likewise, ancient subsumed class payments are neither increased nor decreased with the formation of the helping out hybrid.

As shown "helping out" increased the surplus available to the ancient farmer, eliciting changes, in turn, on the right hand side of the ancient/feudal hybrid class structure. This likely added to the burden on farm women because of the increased demands of "making do" to subsidize the consumption of the ancient-feudal hybrid farm enterprise work force, including the work of reproducing and caring for young children. In 1900, there were about 800 farm children under 5 years of age for every 1,000 rural women. This was twice the number that urban women had. Average household size was 5.2, and this number did not begin to decline significantly until after World War II (Gardner 2006). A farm woman's children might have helped ease the psychological strains of loneliness and isolation, while also freeing her from the demands of helping out in commercial farm production, while at the same time adding to her burden of other

[19] This is opposed to feudal farm commodities, like eggs, produced by farm women. Egg production was a form of farm production, hence occurred in the family farm enterprise. However, farm women usually took care of poultry alone, hence the commodities they produced were feudal, even though their labor occurred in the hybrid family farm enterprise, in which both ancient and feudal class processes regularly but separately occurred.

kinds of work and demands on her feudal surplus. Thus, help for the ancient farmer in the family farm enterprise produced the contradictory results of both enhancing and undermining his wife's feudal existence, and therefore his own as ancient farmer (S. A. Resnick and Wolff 2009).

In addition to unpaid feudal serfs, ancient farmers may have employed hired hands to help out as well. Hired hands came mostly from a neighborhood pool of less prosperous farmers, tenants, or landless laborers, including teenage sons. Like hired girls, hired hands might have labored as part of a neighborhood work exchange of ancients or feudal serf-apprentices. In addition, hired workers might have been part of a crew hired for a specific service, or custom work, like threshing, for example. In this case, their employer, not the farmer purchasing the custom services, would have been the appropriator and distributor of any surplus these workers produced.

Aside from these examples, hired hands likely labored for the farmer as his capitalist wage workers. One indicator that hired hands were specifically differentiated from feudal serfs and therefore laboring in the context of a different form of relationship to their farmer employer was the concern expressed by some farm women with housing and feeding these "outsiders" among the farm family. Another is the concern with potential shortages of hired laborers caused by their mobility – geographical or socioeconomic, and the fact that hired hands were likely to be more expensive. These examples point to the absence of the dependency and feudal obligation that would provide a condition of existence for feudal class processes to occur with hired hands' wage labor. Hence while farm families sometimes employed a hired hand year-round, or

employed the same hired hands each season to ensure consistent quantity and quality of help, this would not necessarily be inconsistent with a capitalist wage relationship.

Capitalist wage workers would have established a new term, SL(CAP) in hybrid farm production. I confine the discussion that follows to the case of capitalist hired hands who were not part of established networks of feudal neighborhood workers, since feudal farmer-apprentices were included in the discussion above. The presence of hired hands necessitated further adjustments that did not necessarily reduce farm women's transfer of surplus labor, but merely changed the form in which surplus was delivered. Hired hands were paid in room and board, cash, or some combination of these (Garkovich and Bokemeier 1988, 217). Farm women did the work of meal preparation, cleaning, washing, and even sewing clothing for the non-cash component of hired hands' wages. Just as they did for feudal farmer serf-apprentices, farm wives subsidized a portion of hired hands' necessary labor, thus reducing the capitalist wage paid to them and increasing the surplus available to the ancient farmer. This subsidy was analogous to the ancient subsidy discussed above as the "making do" strategy. That hired hands placed an onerous burden on many farm women is evidenced by the fact that many "chose" to do field work themselves, rather than endure the intrusion of a hired man into their family lives, along with all of the work his presence entailed (Vanek 1980, 425). Thus, while hired hands reduced "men's work" for women, they did not necessarily reduce their overall workload, but merely changed its geography.

Help for farmers meant more work for farm wives. One Missouri wife lamented in the 1915 USDA survey, "Every one is urging the farmer to raise crops. Now, all this means extra help for the woman to cook for, since all these crops have to be attended,

harvested, and marketed (USDA). Comparing hired hands with other types of wage workers one Nebraska farm woman suggested that the hired hand should "furnish his own dinner the same as the mason, carpenter, and painter, and all day laborers in the city" (50). One woman's letter to Secretary Houston in 1915 compares the farm wife's situation with that of the woman in town who takes in boarders. Her statement speaks to the differing conditions of rural and urban wives as they pertained to the class structures of family farms and the transfers of value between them:

> Men hearing of the town man marrying and having his wife take in from one to a dozen boarders, speak slightingly of the man, even though his wife is young and strong, with no family, and buys her eggs, butter, lard, vegetables, has her washing done, and handles at least part of the money received. The same men, if they happen to be farmers and their wives have several small children, will expect those wives to board from one to a dozen men, raise chickens, make butter, try out lard, help with the garden, and do their own washing, and handle no money for the extra labor" ("Farm Women Find Life Hard" 1915).

The Ward survey found that on eighty percent of farms responding, five additional men were required for at least six weeks of the year (but recall that only 14 percent had hired help in the household). That the added burden weighed heavily on farm women is evident in their 1915 letters to Secretary Houston, many complaining bitterly of the extra work associated with hired farm help. The same woman quoted above described how "Serving hot, substantial meals at 6 o'clock A.M., 12 o'clock noon, and 6 o'clock p.m. and clearing up the dishes left no time for anything else, and declared that "Each wife can 'strike'" ("Farm Women Find Life Hard" 1915). Some women connected their troubles to the "so-called better farming, since it only meant more work for the whole family, with no real gain" (USDA 1915, 47). Thus, farm

women noted how the move to bigger crops, larger farms (and more hired hands), was occurring at their expense. Mitchell's (1915) report on the letters sums up the situation:

> Abundant crops need hands to harvest them, and the farm woman must feed the hands. To many this is the last straw…For them the labor problem is two edged. They can get no help themselves, and the help their husbands have they must care for.

Like making do, helping out meant balancing and managing the needs of the family farm's complex and connected class structures, always shaped by the primacy of the ancient class processes. Even if farm women were not helping out themselves in ancient/feudal hybrid commercial farm production, the increased surplus from feudal and capitalist workers merely transformed the farm wife's burden into the work of making do. As before, it is unlikely that the non-class revenue transfers from hybrid farm production to the feudal class structure were sufficient to offset the increased Y expenditures from the feudal surplus labor of the farm wife to subsidize hybrid farm production. One solution to the problems of helping out by feudal serfs or hired hands was that their labor could be replaced through the purchase of labor-saving machinery in hybrid farm production. This strategy and its impacts is the subject of Chapter 3.

The Farm Woman Problem Revisited

> The life of the farm woman is built on service. Through her busy days, with their multitude of homely tasks, she smooths the path of daily living for her family – whatever it is, no task is too humble, no sacrifice too great, if through it she smooths the path for someone else. They are the expression of the spirit of motherhood and 'neighborhood' that makes the pattern of her daily life ("A Portrait" 1928)

The job of making do meant that farm women substituted their own labor in place of expenditures, by producing goods and services, or the proceeds from these, for the use

of the farm family. The resulting long work hours were noted with concern in several studies, and by farm women themselves, during this period. Ward identified the long workday, along with the preponderance of heavy manual labor as two of the "outstanding problems" of farm women. The long hours of work were one factor constraining leisure and vacation time for farm women.[20] In the first Bailey (1915) study, several women reported an average of 3.5 hours per day for "personal" and "recreation" purposes, while "only two of the thirteen women had what might be termed a real vacation". Six were away from home for no longer than one day during the entire year. Women in the Michigan study reported an average of 2 hours of leisure time per day for the year. Nineteen of the 91 farm women reported having no leisure time during the summer months. Likewise, 87 percent of the women in the Ward survey reported no vacation during the year. The *Literary Digest*, reporting on a 1919 survey of fourteen hundred farm women by the New York State College of Agriculture at Cornell University found in their long hours and working conditions "Some Solid Reasons for a Strike of Farm-Wives" (1919). One Missouri farm woman wrote in response to the 1915 USDA survey of the wives of crop correspondents, "I have been a farmer's wife for thirty years and have never had a vacation." Another from Kansas noted that during eight months of the year, her workday averaged sixteen hours, her husband's fifteen. "There are neighbors within two miles," she wrote, "nice people, that we haven't seen for five years" ("Farm Women Find Life Hard" 1915).

[20] Other factors may have included lack of transportation or poor rural transportation or communication infrastructure. Studies showed that even when farm families owned a car or even a telephone, many women lacked the authority to decide their use, claim their use, or operate them (Jellison 1993).

The demands of making do during the busy summer months meant farm women worked longer days than in the winter, between two and three hours longer on average (Bailey, Ilena M. and Snyder, Melissa F. 1921; Bailey, Ilena M. 1915; Ward 1920; Rankin 1928). Letters to the *Farmer's Wife* portray similar situations, as well as farm women's dissatisfaction with their double, or even triple shifts of farm and household work. "Out-of-Breath Betty" wrote in 1929, "Is it really worth while to try to do the work of two or three women in a day? It is two or three, isn't it, when a woman does all the necessary work in a home and then helps her husband in the field, and raises a hundred chickens?" (Kleinegger 1988, 170). Figure 7 reproduced from Clark and Gray's 1927-28 study of the "routine and seasonal work of Nebraska farm women" shows the seasonal fluctuations in farm women's work. Although no information on total time spent on each task is given, the chart does indicate the continuous burden of many tasks, such as milking and butter making, as well as the seasonal increase in tasks such as garden, chickens, and canning fruits and vegetables. Interestingly, farm women seem to have found some extra time during the busy summer months by reducing time spent on things like sewing and household. Figure 8 shows the average number of extra meals served in each household per month (to both visitors and help) reported in the same study. The number was steady at about 17 per household through the winter and early spring, before springing up to an incredible 61 extra meals in July and 47 in August. As the authors note, the tremendous burden of these extra mouths to feed, was all the more so because it came during the busiest months (Clark and Gray 1930).

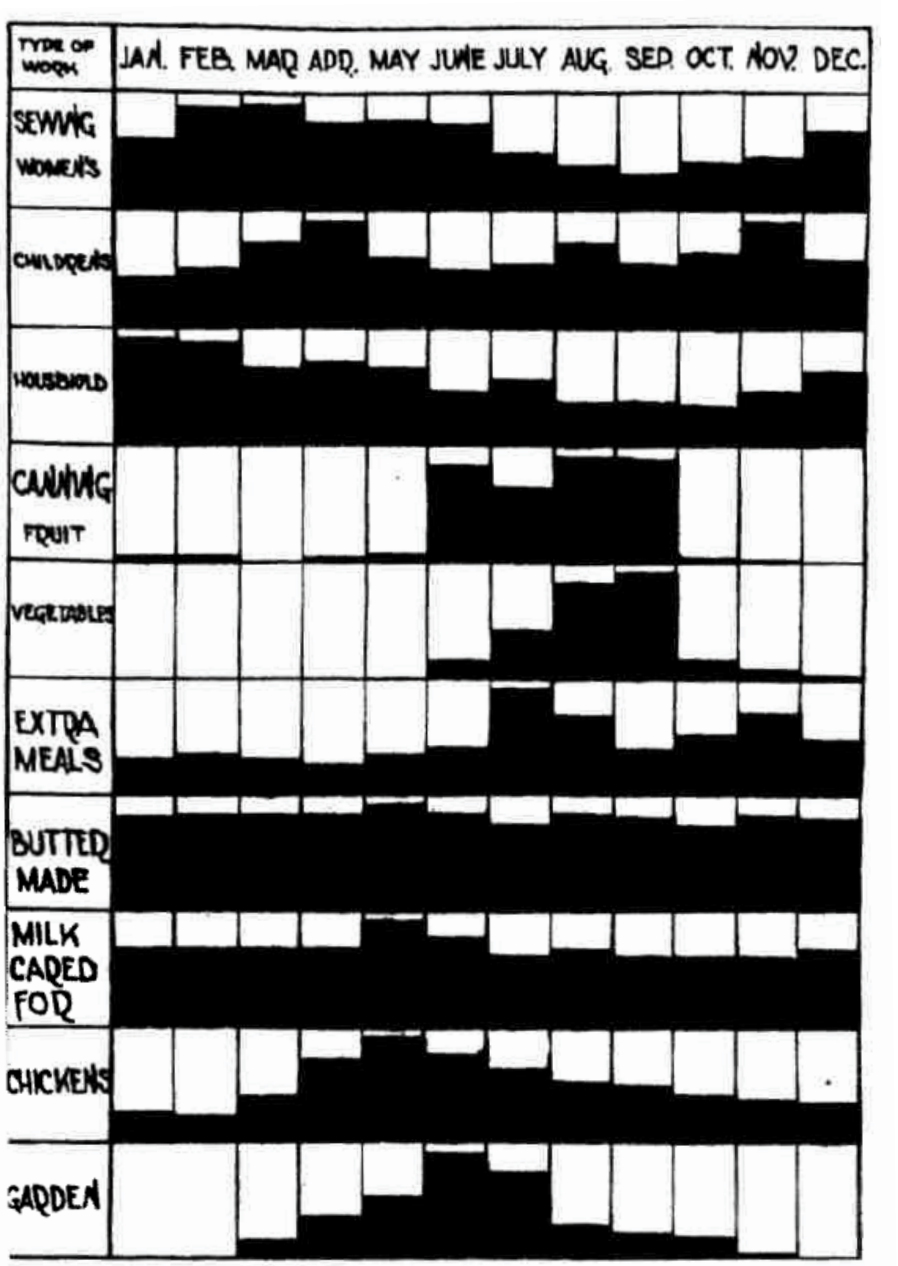
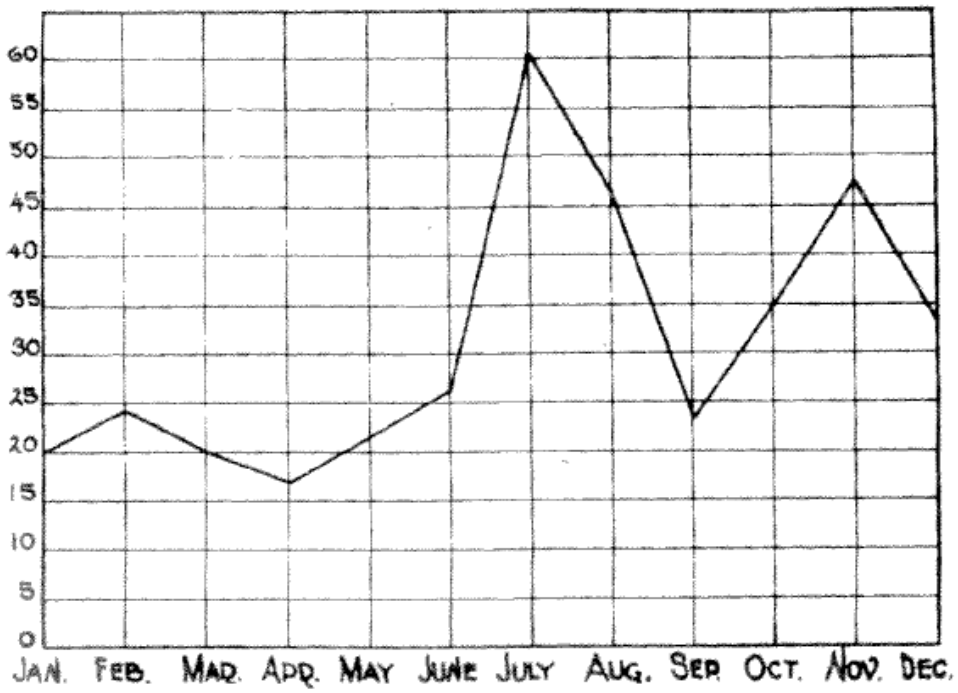


FIG. 9.—Summary chart, showing the months in which the various tasks were performed. The months in which the most of the various types of work was done are indicated by the largest black areas. The others are, for each type of work, percentages of the maximum.

Source: Clark and Gray 1930, 37

Figure 7: Seasonal Demands on Farm Women's Time.



Source: Clark and Gray 1930, 17

Figure 8: Average Number of Extra Meals Served in Each Household Per Month.

Equation 9 helps re-visualize the farm woman problem in class terms:

$$NL(F) + SL(F) + X(F,A) + R = 24 \quad (9)$$

The farm wife's 24 hour day is divided into four parts. The first, NL(F) represents her feudal necessary labor time. Second is her feudal surplus labor time (SL(F)). Recall that making do often required that farm women spend an additional number of hours performing feudal and ancient subsumed class services of bookkeeping, managing, etc. (X(F,A)). The remaining time she spent sleeping, relaxing, eating, etc. is R, her residual time. Using the data from the Rankin study, which seems to be representative, a farm wife's NL(F) + SL(F) + X(F,A) added up to about 12 hours in the summer and 9 in winter. She spent about 7.5 and 9 hours asleep on average, summer and winter respectively, and 1.5 on meals. That left her remaining R time for leisure activities at

only 3 hours per day in summer and 4.5 hours per day in winter on average (Rankin 1928b, 5).

The farm wife's time equation and estimates clarifies the extraordinary burden of making do for farm women, as well as the sacrifices it entailed. Just as the arrival of a child into the feudal household places added demands on a wife's time, so also did the necessity of supporting the ancient-hybrid farm enterprise and its workers. One of several adjustments was most likely as indicated by the data. First, the demands of making do were met in part by increasing a farm woman's surplus labor, by simply adding additional tasks to those which she already performed. This adjustment increased working time and reduced leisure time, as the statistics on farm women's working hours indicate. With all that she had to do during the summer months, a farm woman's ability to stretch her surplus absolutely likely approached or surpassed her physical and emotional limitations. An alternative was to continue surplus labor as before, but simply reallocate it to more pressing tasks. Figure 7 indicates that farm women did this too, as discussed above. Finally, it seems that farm women also found the extra they needed by reducing their own necessary labor and providing the difference as a gift to the ancient farmer and his workers. This can be seen, for example, in the reduced sleeping time during the summer compared to the winter and indicates that farm women were sacrificing their own needs during busy times, thus jeopardizing the reproduction of their own labor power over the longer term. Increasing SL(F) with a given NL(F), or reducing NL(F) with a given SL(F) would have increased farm women's rate of exploitation, or SL(F)/NL(F). In these cases, in addition to the added burden of increased exploitation,

the result would have been farm wives' physical and emotional exhaustion, which increasingly found expression through the "farm woman problem."

One adjustment that was relentlessly advanced by many observers, including home extension agents, BHE researchers, and other government officials, as well as rural reformers, and periodicals like the *Farmer's Wife*, was the option of raising household labor productivity through the increased use of labor-saving home appliances and so-called modern conveniences like running water, electricity, and sinks with drains. Raising farm women's labor productivity would have allowed them to produce more in the same amount of time. If this adjustment was used to reduce the farm wife's necessary labor hours while maintaining or increasing surplus labor hours, the rate of exploitation would also have risen. The demands of making do, as discussed above, as well as women's (and the farm home's) subordinate position made achieving this solution difficult, although many women tried. Finding the necessary cash outlays proved a challenge, especially for women who lacked the ability to appropriate their own surplus. In an article entitled "600 Ways to Get That Running Water," the *Farmer's Wife* printed readers' 600 responses to the question of how they used "psychology" to persuade their husbands to agree to that investment. Getting them carry the water themselves for a few days proved to be one of the more effective strategies, along with "calculating the net savings," "feigning illness," and "going on strike" (Kleinegger 1988, 177).

Farm women's efforts to subsidize their ancient/feudal hybrid farm enterprise participated in undermining those very subsidies by increasing the stresses and strains on farm women and their child serfs. The flight of women from rural areas is just one indicator of these tensions. Increasing numbers of women chose to leave their feudal

relationships through divorce, or to remain single in the first place (Fink 1986; Fink 1992). Overwork and rural flight also contributed to farm women's reduced ability to pursue alternatives to hard work such as education, rural community-building, and even child nurturing. Rural conditions were clearly deteriorating relative to those in the cities, and children who stayed on the farm to live as their parents had done were increasingly viewed as having squandered their opportunities and their potential. As the best professionals left the countryside as well, there was growing concern that those left behind to populate the farms as well as the country churches, and schools, and to provide medical care and other professional services were not likely to be the best and the brightest. Farm women's overwork played no small part in the decline. New mothers had little time to spend with their newborns after giving birth, and often lacked time to feed them properly, as well. Investigators reported six-month old babies being fed things like "corn, pork, coffee, green fruit, and fried potatoes" (Danbom 1979, 8). These problems were in addition to the ubiquitous child labor. Children as young as three were required to labor, and many young boys and girls worked as long each day as their parents did. Often their long work hours were enforced through beatings, and many young children ran away or left home as soon as they were able to escape. The shortened rural school year has already been mentioned. This, combined with the fact that teachers there were apt to be young and inexperienced or incompetent left rural people with little inclination or time for education. Few students were allowed even to finish the eighth grade, much less attend high school. This in turn contributed to the perception that lack of skill trapped those who stayed on farms. The lack of modern conveniences or the knowledge of proper sanitary practices led to an increased incidence of hookworm,

dysentery, malaria, and typhoid due to contaminated water supplies. A 1918 survey by the U.S. Public Health Service found that of 51.544 farm homes surveyed, "only 1.22 percent were equipped for the sanitary disposal of human excreta" (Danbom 1979, 8). Higher incidence of these diseases, of known cause and treatable at the time, as well as farm and household accidents due to absent mothers or children's participation in dangerous farm work contributed to raising the rates of infant and childhood mortality in rural areas compared to cities (Fink 1986; Fink 1992).

Why did farm women continue their work of making do given these conditions? Powerful non-class processes shaping the understanding of women's work as natural, or a "labor of love" contributed to the maintenance of the work of making do. At the same time, that understanding contributed to the extraordinary burden on these women, and drew intense criticism, as well. The census categorization of farm women as officially unemployed and its impact of rendering the work of farm women largely invisible is one formal manifestation of the social construction of farm women's work. Farm women's work was defined and (mis)understood largely in terms of passivity, or absence, and of what it was not. These qualities, in turn, were celebrated aspects of farm women themselves. Farm women were supposed to "smooth the path for others" through their work, being naturally inclined to exhibit the motherly virtues of self-sacrifice and service to family. As Florence Ward explained "motives of love and service", and the happiness of her family, were a farm wife's compensation for any hardships she might endure (Ward 1920). Making do was merely one manifestation of a woman's natural qualities.

A 1921 editorial on "Dignifying the Work of the Farm Woman" in *The Farmer's Wife* took up the criticism of the census classification, and posed the question: "Why

should there be a difference in the status of work done in the home and the same work done outside the home on a commercial scale?" The difference was that women's economic contribution to the family farm went unrecognized because it was viewed as "having *saved* money instead of having *earned* it" (Neth 1998, 233). The long work hours and immense production required to generate this savings were lost in this perspective. One Kansas farm woman pointed out clearly how her family relied not only on her labor, but on the undervaluation of that labor, as well:

> I protest against the hens. My husband shares the common, mistaken notion that the eggs and chickens we sell 'buy the groceries.' The truth is that if the fowls on our farm were charged up with all the grain they eat and the garden they destroy and half the value of the labor and care bestowed upon them they would come out in debt every time. In any fair division of labor between the farmer and his wife the man would take the outdoors and the woman the indoors. That would drop the chickens on the man's side, with the probably result that on most farms there would be no chickens (USDA 1915, 51).

The same processes that contributed to the undervaluation of farm women's work also participated in preventing them from obtaining suitable help from others. While farm women were often required to perform nearly every kind of work in the farm household and farm enterprise as needed, evidence suggests that farm husbands rarely helped with housework, and even more rarely with childcare (Kleinegger 1988, 171; Vanek 1974). Bailey (1915, 352) found that in only 17 percent of the Michigan families "the men carried wood and water, turned the washing machine, or did other heavier pieces of work". According to the Ward survey, recall that an average of 68 percent of farm homes lacked running water, and 61 percent of farm women reported having to carry water. This implies that in only seven percent of cases did farm men (or someone else) regularly take responsibility for this task. It was more common for men to share

occasionally in the weekly task of washing (Kleinegger 1988; Neth 1998). The 1930 USDA survey confirmed the small number of hours that men contributed to housework (2 per week on average) and childcare (less than 1 per week on average for families with children under 6), explaining that their main tasks of carrying wood, tending fires, pumping and carrying water likely took little time to complete compared to the relatively continuous tasks like preparing, serving, and cleaning up after meals, and caring for children.

The subordinate status of feudal class processes and the undervaluation of farm women's labor also meant that hired labor to help the ancient farmer had priority over hired labor to help farm women. While most farms employed hired hands throughout the year, their numbers multiplying during the summer, very few employed "hired girls" to help with the housework. Very few married women worked for wages in rural areas. Young, unmarried farmer's daughters constituted the primary available labor from which hired help (i.e. someone else's daughter), or unpaid help (i.e. one's own daughter) for farm wives was drawn. As discussed above, farm women received most of their help from their own daughters.

Bailey's (1921, 351) study of Michigan farm homes found that 10 percent of the women surveyed had hired help for a considerable time, while 10 percent for a month or less during the busiest time. "Whenever help was employed, it was required by some special condition, such as illness, an unusually large family, or extra work." The Ward survey respondents indicated that "the number of homes employing hired women the year round is almost negligible, while about 14 per cent of the 8693 families reporting

employed hired women for short periods perhaps during the peak of the heavy summer work" (443).

Not only did the subordinate position of the household place limitations on the effectiveness of this solution to the farm woman problem, but so, too, did the very farm woman problem the strategy was meant to address. Both the demand for and supply of household serf-apprentices was constrained. The burden of overwork and lack of alternative economic opportunities in rural areas – constraints shaped by the serfdom of farm women – contributed to the outmigration of farm daughters from rural areas (which, in turn, compounded the problem of overwork for women who remained). In his report on the 1915 Houston survey, Mitchell noted that the disparity between rural and urban living standards affected the farm woman "chiefly by drawing away those from whom she might otherwise obtain assistance" and went on to recommend the establishment of "official employment bureaus" to "divert the stream of immigrants from the cities to the country" (Mitchell 1915). A 1915 rural sociology textbook noted the problem of female outmigration thus: "Sometimes the drudgery of the farm is endured by the mother uncomplainingly, or even contentedly; but the daughter recoils from it with a growing discontent" (Kleinegger 1988). One Iowa farm woman portrays this tension between mothers and daughters. "Neither one of them was ever farmers when they was on the farm, she explains" (Neth 1998, 569). She continues, explaining her own complicity in aiding her daughters' rebellion. "I was quite a farmer. More of a farmer than my husband…I had to milk cows and do those kind of things, but I never expected my girls to do it and they never did" (Neth 1998, 569). Like her, many farm

women may have been reluctant to train their daughters for future rural serfdom, encouraging them instead to seek their living elsewhere (Neth 1998, 569).

Conclusion

Family farm life was hard for everyone involved. Men, women, and children worked long hours doing strenuous work for minimal and uncertain compensation in relative isolation, with little time for many diversions including education, and few alternative economic opportunities. The ancient/feudal hybrid class structure was a stable class structural form, yet the very strategies undertaken for its survival threw it constantly into a potential state of crisis. Persistence rates of less than fifty percent in some areas during this period meant that many family farms simply were not able to cope with these contradictions (Fink 1992). As discussed above, powerful countervailing forces were at work to hold those that remained to bear the burden of their respective class responsibilities. That burden weighed heavily on the shoulders of farm women and children as they bore the additional injustice of exploitation in their roles as feudal serfs. No wonder that journalist Herbert Quick wrote in 1913, “I have found the men on farms much more contented and happy than the women” (Fink 1992, 156).

The farm woman problem emerged in part from the peculiar relation among the class structures constituting the family farm hybrid and from its contradictory conditions of existence. The farm woman problem in turn provoked further changes in those class structures. The Country Life movement brought attention to the farm woman problem in particular and to the problems of rural life in general, in part because of the glaring discrepancy between the glossy agrarian ideal and the gritty reality for most farm

families. In shining the spotlight on family farms, reformers and observers increased farm women's own awareness of their situation, and empowered them to speak and learn about it, and to propose solutions. Reformers and government agents brought their own solutions, as well. While many, especially farm women themselves, expressed the need for some kind of radical restructuring of their lives, the main thrust of these efforts, stemming from the Country Life movement, was to make farm families more receptive to the adoption of new labor-saving technologies in farm and home production, and to the application of the principles of scientific management to their labor processes.

Reformers and farm women alike lacked the language or even awareness of class that would have led them to address the exploitative class structures contributing to their situation. And so, they ultimately failed to resolve the farm woman problem. Hence, new labor-saving technologies in ancient farm production progressively lightened the load of farm men's work, but the discrepancy between the conditions of farmer and wife continued, as making life easier for the farmer often translated into an added burden of "making do" for his wife. Similarly, time use studies from the 1940s, 50s, and 60s showed that both rural and urban women's household work time remained remarkably consistent (Cowan 1985; Joann Vanek 1974). Hence, even when they did gain access to labor-saving technologies in the home, women were not able to "save" their own labor, but continued to subsidize that of others, increasing the relative surplus they delivered to their feudal appropriators. Long before urban women began to experience the second shift of paid labor alongside their household work, farm women worked a double shift in farm and household production. When their labor on the farm was no longer enough, farm women went out to find jobs in the paid labor force. Today, researchers confirm

that many farm women continue to work a double, or even a triple shift of work – and even when they are the primary breadwinners for the family, they still describe that work and the income they earn as "helping out" (Gallagher and Delworth 1993; Naples 1994). The farm woman problem was never resolved, in part, because it was a "feudal" woman problem, exacerbated by farm women's obligation to subsidize their husband's "independence."

Susan Glaspell's 1917 short story, "A Jury of Her Peers" is instructive. It tells the story of a farmer/husband found murdered in his isolated house (Glaspell 1918). The sheriff and some men, accompanied by their wives, go to investigate the murder and to collect some things for the farmer's wife. While the men search around for clues to the perpetrator's identity they leave their wives in the kitchen. As the women look around, they realize that the so-called "insignificant kitchen things" hold the key to solving the farmhouse murder. The many jars of preserves on the shelves, put up in the hot weather, the shabby, "well-worn" clothing, the old stove, the water pail on the counter, and other things indicate the farm wife's dreary, lonely, and needlessly inhumane existence. As realization dawns, one of the ladies exclaims, "We live close together, and we live far apart. We all go through the same things—it's all just a different kind of the same thing! If it weren't—why do you and I *understand?* Why do we *know*—what we know this minute?" These women, like many others, were aware that they suffered injustice due to their shared experiences as farm women and feudal serfs. Yet they were also unable to name the "invisible violence" stemming from their exploitation. The ladies in the story continued by covering up the crime, apparently in silent acquiescence that this, at least, was a justifiable act of violence.

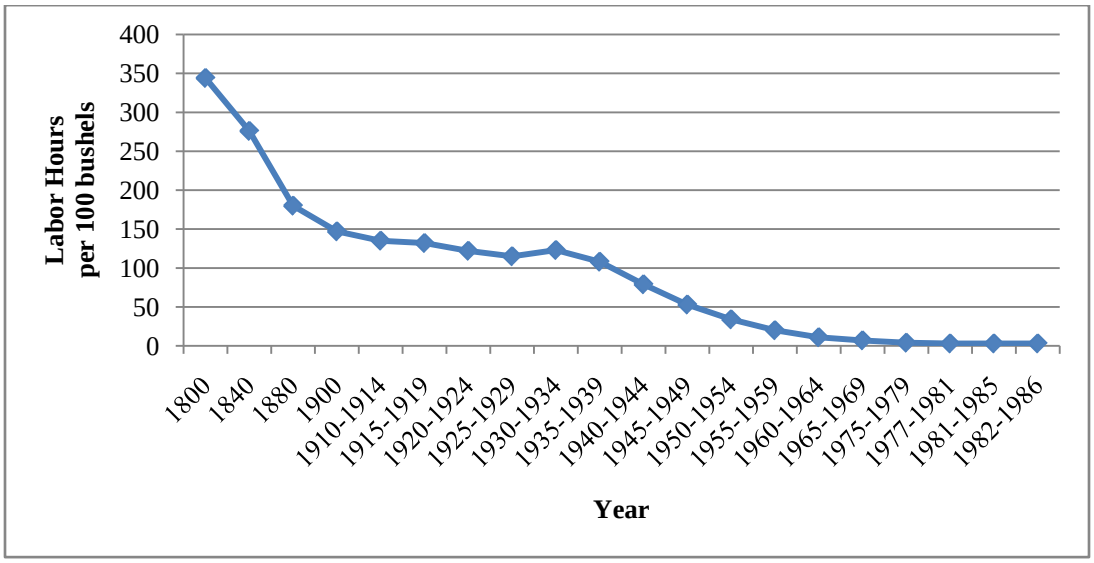
CHAPTER 3

TECHNICAL CHANGE, ANCIENT COMPETITION, AND THE HUNT FOR SUPERPROFITS

Chapter 2 focused on the transfers of value between the different kinds of class structures within the same family farm, showing how the survival of the family farm has been predicated on a ruthless exploitation of farm women and children in rural life. Now, Chapter 3 adds to the analysis by examining the transfers of value between ancient class structures in family farm enterprises and non-farm enterprises or government. It examines the patterns of market interaction and competition among farmers shaping and shaped by these value transfers called superprofits, and between farmers and non-farm agribusiness and government. I show how the survival of the family farm has been connected to a ruthless competition in which some farmers cannibalize others and nonfarm agribusinesses thrive on the carnage, as well as to state policies which actually serve to intensify this perpetual crisis that mainly benefits the few at the expense of the many.

U.S. agriculture crossed a watershed of development sometime during the interwar period so that by the start of World War II, the outlines of a new system were discernible. The object of this chapter is to explain the origins of that system using a Marxian class analysis of the scramble for superprofits among ancient corn farmers during the 1920s and 1930s. Agriculture shifted from an expanding to a contracting industry by many measures, and the accompanying decline signaled severe economic distress and rural dislocation. The 1920s and 1930s were periods of particularly sustained crisis. Farm employment began declining, as did the number of farms and

farmers. With relatively stable land in farms, the average size of farms began increasing, while millions of small farmers nevertheless persisted. Farmers and their families began migrating in large numbers to cities, leaving shrinking rural communities increasingly bereft of economic opportunity. Yet, while millions of family farms began suffering ongoing crisis and failure, they achieved unprecedented success in terms of productivity growth. After having nearly ground to a halt between 1900 and 1920, productivity and output resumed their ascension, particularly after 1935. (See Figure 9.) This was also the beginning of unprecedented government intervention in the agricultural economy. During the post-World War II Golden Age, no other sector outperformed agriculture in terms of productivity growth. In severe decline, subject to massive government intervention, family farms became the most technologically dynamic enterprises in the United States.



Source: Carter et al. 2006

Figure 9: Labor Hours per 100 Bushels of Corn, 1800-1986.

This chapter is organized as follows: I begin in this introductory section by presenting the historical background - explaining the rise of industrial agriculture, and the

transition from the "farm woman problem" to the "farm problem." I then turn to discussing the processes and ramifications of one of the technical changes, the adoption of the farm tractor, that began on Midwestern family farms in the 1920s to set the stage for the take-off in productivity growth along with the dramatic changes which accompanied that accomplishment. After first presenting an overview of the case of the farm tractor, I then explain how that technical change was shaped by competition among family farms in a hunt for superprofits, or what agricultural historian Willard Cochrane refers to as the "technology treadmill" (1993). In the third section of the chapter, I explain how these developments were further shaped and supported by state policy beginning in the 1930s, reinforcing the technical trends as set forth in the Country Life agenda and advanced by the USDA, some farmers, agribusiness and related commercial concerns including farm creditors. These competitive processes and state policies rewarded larger, landowning ancient farmers who borrowed to finance their purchases of new land and equipment. Finally, in the concluding section, I explain how technical changes and state policies had contradictory impacts on various groups including farmers themselves, farm wives and other farm family members, agribusiness, and the state. While most accounts of these structural shifts begin after World War II, the take-off in productivity growth actually occurred during the Great Depression. I focus on the interwar period and argue that the postwar changes would be more properly understood as rooted in this important transitional period and linked to the farm woman problem.

Industrial Agriculture

All of these developments are associated with the arrival of "industrial agriculture" and an accompanying technological "revolution" in U.S. farming. Twentieth century technical change in agricultural production occurred along three related fronts: mechanical, biological, and chemical. Together, these constituted a new system in which an industrial model of production was increasingly applied to methods of farming. Industrialization in agriculture began with the mechanization of wheat farms in the Dakotas, California, and the Great Plains after 1900, and soon spread to other crops, including corn (Clarke 2002). Industrialization has been accompanied by transformations in the act of farming, as well as in the broader agricultural system.

The adoption of these new mechanical, chemical, and biological technologies has meant that farmers increasingly purchased inputs which substituted for those previously produced on the farm. The internal combustion engine (tractors and trucks), began rapidly replacing animal power (horses and mules) in the 1920s in all aspects of the production of crops, from soil preparation and cultivation, to planting, harvesting, and hauling finished products. This required the increasing use of commercial fertilizers to replace animal fertilizer, previously produced by horses and mules. These, along with other chemicals to control weeds and insects increasingly came onto farms in the 1920s and 1930s, although rapid adoption did not occur until during and after World War II.[21] Finally, purchased hybrid corn seeds replaced non-hybrid, open-pollinated varieties in an extremely rapid process of adoption beginning in the 1930s. One of the leading

[21] Commercial fertilizers include organic nitrates and inorganic manufactured nitrates. The cost of producing the latter declined dramatically beginning in the 1940s so that the increased use of inorganic, sometimes called chemical fertilizers accounts for most of the dramatic increase in usage especially after World War II (Gardner 2002, 22-23)

historians of industrialization in U.S. agriculture, Deborah Fitzgerald explains, “Discrete activities were thereby transformed into industrial practices and reintroduced onto farms as inputs” (Fitzgerald 2003, 3). By the late 1960s, the basic elements of today’s industrial agriculture model had been widely adopted. In 1959, Time magazine hailed the new “pushbutton cornucopia,” observing optimistically that the same “assembly line techniques” applied in industry could be applied in agriculture as well (March 9).

Not only did various production processes move off the farm and into industrial factories, but farms came to look and act more like factories in many ways, as well. As the metaphor implies, innovations were linked with a shift toward an “industrial logic” in farming. The “New Agriculture” involved the modernization of farming through the application of methods of factory production and scientific management, such as those exemplified by Henry Ford.

Farmers adopted new ideas, practices, and relationships in a complex web of interdependence accompanying each new innovation. Farmers were increasingly located in what conservationist Benton MacKaye called in 1925 an “industrial web” and a “physiology of industrial empire” (Fitzgerald 2003, 3). Economist William N. Parket called it “vertical disintegration,” as farms spun off functions and became “small factories pouring industrial inputs into the land over the year and extracting a raw product for immediate sale” (Clarke 2002, 9). Lighthall and Roberts call this process “capitalist integration,” or the “expansion in the total share of surplus in production for agribusiness corporations via a progressively greater dependence of farmers on advanced production technologies” (1995, 323). As in industry, these changes had far-reaching impacts on farmers and their families. Farmers traded reduced risk for reduced flexibility and role in

the management of their production processes. Once they switched, they found the increased cash expenses difficult to manage. Nevertheless, farmers who climbed on the "technology treadmill," found they could not afford to get off unless they quit farming altogether. This period marked the beginning of the massive outmigration from rural areas and the increasing role of agribusiness in the farm economy as the adoption of the factory farming model led to the rise of large-scale, specialized farms, mass producing standardized products rapidly and with less need for skilled labor (or labor of any kind).

From the "Farm Woman Problem" to the "Farm Problem"

The end of World War I corresponded with the close of the long period of farm prosperity which, having crescendoed with a sharp wartime spike in farm prices from 1914 to 1920, then ushered in a longer period of chronic decline punctuated by occasional acute crises, a situation that would persist for the remainder of the twentieth century. In the two year period from 1919 to 1921, net farm income declined from a peak of $9 billion to just $3.4 billion, the lowest point of the century until then (Carter et al. 2006; Gardner 2006).[22] An eight year "age of uncertainty" for farmers precipitated by the post-war sag in European demand "ended" only with the certainty of the onset of the Great Depression in 1929, as the rest of the country finally followed farmers into the economic doldrums. These developments marked both short term crises, as well as longer term structural shifts characterizing a new phase of rapid technical change, chronic overproduction, falling prices, rising costs, and waves of farm bankruptcies. Both the

[22] Net farm income is the value of farm output minus expenditures on inputs, not including the cost of depreciation (Gardner 2006).

wartime prosperity and the farm depression that followed set the stage for these changes, and the shift from "the farm woman problem" to the now more familiar "farm problem."

In 1940, the USDA issued a report that placed the blame for the farm problem on the "maladjustment" precipitated by the sharp increase in demand for U.S. farm products accompanying the First World War. While the USDA report implied that these maladjustments were temporary, many of the problems identified in the report persisted, and similar episodes of crisis have replayed again and again. In this particular episode, farmers seeking to take advantage of the wartime windfall responded exuberantly to patriotic appeals to "Plow to the Fence for National Defense!" finding 40 million extra acres to plow under for food production during this period (USDA 1940a, 3). Farm prices remained high, in spite of efforts to increase production to meet the demand, provoking a rapid increase in land prices fueled further by speculation. Land prices peaked in 1920 at a level that was 70 percent higher than the 1912-14 average. Many farmers borrowed heavily on the basis of wartime prices to finance purchases of new land and equipment to expand production. Average mortgage debt per acre in 1920 was 135 percent above that of 1910 (USDA 1940a, 5).

Prices tumbled following the war as European producers geared up to achieve food self-sufficiency, while other supplying nations, newly-arrived on the world market now found themselves without their European markets, as well, and became new sources of competition for U.S. farmers. Land prices quickly followed farm prices, and many farmers found themselves unable to meet their loan obligations. Farm bankruptcies spiked as farmers' purchasing power declined along with their share of national income. The USDA summed up the situation thus: "Farmers had more acres producing more

efficiently for market, with smaller market outlets, a greatly increased debt burden, and drastically reduced prices for their products" (USDA 1940a, 5). While prices recovered somewhat following the initial shock, the situation for many farmers remained grim throughout the decade.

As a result of the farm depression, attention to the "farm woman problem" began to fade, and shifted instead to the "farm problem." Since the former was never really resolved, however, its continued existence shaped the context for the resolution of the latter. The second of the two-pronged Country Life agenda, that of rural uplift and social change, was discarded in favor of a singular and narrowed focus on promoting the "New Agriculture" or the improvement of farm business practices, mechanization, and the development of scientific farming methods. The shift was a reflection of the shift in general political sentiment away from Progressivism with its emphasis on social criticism and broad social change, and toward conservativism, as represented in Warren G. Harding's 1921 inaugural plea for "not revolution, but restoration." In agriculture, the shift toward conservativism was reflected in the growing influence of the American Farm Bureau Federation, or Farm Bureau, a private agricultural institution composed mainly of wealthy owners of large farms. Formed in 1920, the organization was a coalition of state farm bureaus with a nationwide membership of 320,000 in 28 states. The Farm Bureau served the interests of big farm businesses - large, commercial, land-owning farmers - and worked closely with government extension services to help farmers pursue competitiveness through increased productivity (Hurt 2003). Harding's secretary of agriculture, Henry C. Wallace, was a supporter of the group, which exercised considerable influence on government farm policy throughout the 1920s.

Even though (and probably also because) many farm women had seen little improvement in their situation, they no longer found the same outlets available to voice their protests. The broader push for equal status in the farm home lost considerable momentum when women won the right to vote in 1920. Having never really identified the role of class exploitation in their situation, and without this unifying issue, farm women lost the full political force of the feminist movement in their criticism of the inequities of farm life. The tone of the popular press changed, with articles and letters expressing offense and disagreement with the representations of farm women as overworked and deprived, and extolling the virtues and satisfaction of rural life appearing prominently (Kline 1997, 365). The USDA also shifted to a more optimistic portrayal of farm women's situations. A 1923 report on a survey of farm women and farm women's letters to *The Farmer's Wife* found many of the same issues expressed by women in Houston's 1915 survey, yet the report focused on the "happy and forward-looking farm women" for whom the joys of farm life outweighed any problems (Kline 1997, 365; Jellison 1993, 27). The formation of the Bureau of Home Economics in 1923 symbolized this new shift in official policy toward farm women. Its focus was on helping them to become better homemakers, creating a domestic haven for their farm businessmen husbands just as urban women were supposed to do for their nonfarm businessmen husbands. Labor-saving farm equipment would help facilitate farm women's domesticity. Broader issues of rural women's health, education, social life, and economic status were no longer on the USDA agenda (Jellison 1993, 26–32).

One reason for this shift was that the continuing farm depression meant that the official recommended "solution" of labor-saving equipment for the farm home remained

beyond the reach of many farm families (even as labor-saving equipment for the farm continued to be a focus of reform efforts). The causation also went the other way. That is, the inability to afford labor-saving equipment for the home contributed to the lack of resolution to the farm woman problem and hence the continued undervaluation of farm women's labor. On the other hand, and just as importantly, the lack of resolution to the farm woman problem and hence the continued undervaluation of farm women's labor helped shape the perception that farm families could not "afford" labor-saving equipment for the farm home, even as that same undervalued labor made the purchase of farm equipment possible.

Also gone was any reference to the solution of production cooperatives such as laundries and creameries which many farm women had suggested and which had met with considerable success in some communities (USDA 1915). While the USDA was at first supportive of these measures, and marketing cooperatives still remain common for farm enterprises today, farm and home production cooperatives were quickly passed over in official policy in favor of a focus on individual solutions through purchases of new equipment. Thus, official policy contributed to maintaining family farm isolation, while encouraging farmers' dependence on capitalist industry supplying farm and home implements as well as other inputs.

The slump also meant that focus shifted away from inequalities within the family farm, and toward inequalities between the farm and nonfarm sectors. Agricultural goals, for example, were formulated in terms of various measures of parity, or the balance of purchasing power between farmers and non-farmers, to assess the degree of "imbalance" that had developed between the two sectors since the Golden Age when the ratio of

incomes and prices was deemed to be “fair” and “balanced” (although even then, the quality of rural living was still clearly inferior to that of urban life) (USDA 1940a, 19). Much as farm women’s work was viewed as secondary to that of their farmer husband, the “farm woman problem” became subsumed within the “farm problem.”

The rosy rhetoric notwithstanding, the intractability of the farm woman problem, and of overworked farm family members in general, constrained possible strategies for resolving the farm problem. The choice of technical change, with all of its accompanying problems cannot be fully understood without this context, which I presented in the previous chapter. As discussed there, the use of family labor was one way that family farms remained viable, yet the contradictory result, of which the farm woman problem was one manifestation, was that the use of undervalued family labor was stretched to its limit. Hired labor was scarce and expensive, and likely to be even more so during crucial periods when crops were most vulnerable. Each stage of crop production – planting, cultivating, picking, and hauling – had to be completed in a timely manner or else risk damage to the crop. In any case, the presence of hired hands often increased the burden of work on farm women. Thus there was limited opportunity to increase production and absolute surplus by working family and hired laborers for longer hours. Not much more labor could be squeezed from women, children, or farmers themselves. The successes of feudalism presented a limit to further ancient expansion. Internal feudal to ancient subsidies needed to be supplemented in some way.

The solution that had worked until the closing of the frontier around 1910, was to rely on ever-expanding acres of land under cultivation (and hence increasing the rural population as well) as the frontier moved westward. After around 1910, there was

increased emphasis on more intensively working existing acreage by improving the efficiency and scientific management of farm production practices. The limits of both ancient and feudal exploitation combined to provide conditions of existence for the introduction of labor saving machines and technologies into ancient farm production as a viable long term strategy for weathering crisis or expanding during prosperous times. Thus, the farm woman problem served to reinforce the new focus of government policies, and conservative farm and business interests pushing the technology strategy for family farms. Hence, while technical change, mechanization, and "scientific" farming were partly to blame for the post-war farm slump as these had helped create the hangover of oversupply, they also remained features of family farming in the Corn Belt, the "solution" to the problems of the agricultural imbalances they had helped to create and thereby perpetuate.

In the next section of the chapter, I explain the processes of technical change on Corn Belt family farms during the interwar period. Focusing on the farm tractor, I highlight the contingent and contested context for these developments. I then present a class analytical model of these changes, and explain how they were driven in part by competition and the hunt for superprofits among ancient farmers. These processes laid the foundation for the modern industrial agricultural system. I examine the contradictory impacts of the hunt for superprofits on various participants in the farm economy, and explain how they both resolved and contributed to the farm problem during the interwar period, and set the stage for further development after World War II along with the intensification of the farm problem throughout the remainder of the twentieth century. The section that follows extends the analysis to include the impacts of state policy on the

hunt for superprofits after 1933. State policy will be shown to further reinforce the path toward the industrialization of agriculture and its accompanying trends toward fewer, larger, more capital-intensive farms, rural depopulation, and the growth of agribusiness.

The Tractor Dilemma: Through the Lens of Class

> "Shall American agriculture let an uncontrolled technology wipe out the independent family-sized farm, or shall American agriculture turn its back on technology, in order to preserve the family-sized farm?" -- Henry A. Wallace ("Wallace Attacks G.O.P." 1936)

In a 1940 report on farm technology, the USDA singled out the two most significant innovations of the century until that time: the farm tractor and hybrid corn (USDA 1940b). "The tractor more than any other force," the report's authors explained, "has brought an industrial revolution to our farms" (USDA 1940b, 9). Farmers began adopting lightweight tractors in large numbers in the 1920s, and hybrid seed in the 1930s.[23] The tractor represented the second phase of a mechanization process that had begun in the previous century for cereal crop production. The first phase involved the introduction of horse-powered farm machinery in place of hand-powered implements, and included innovations like Cyrus McCormick's reaper (1831), John Deere's steel-tipped moldboard plow (1937), and Hiram Moore's combined harvester (1834). These and many other new machines for planting and cultivating came into widespread use in the 1850s, and helped farmers reduce labor costs (particularly in response to labor shortages during and after the Civil War), and increase control of the production process.

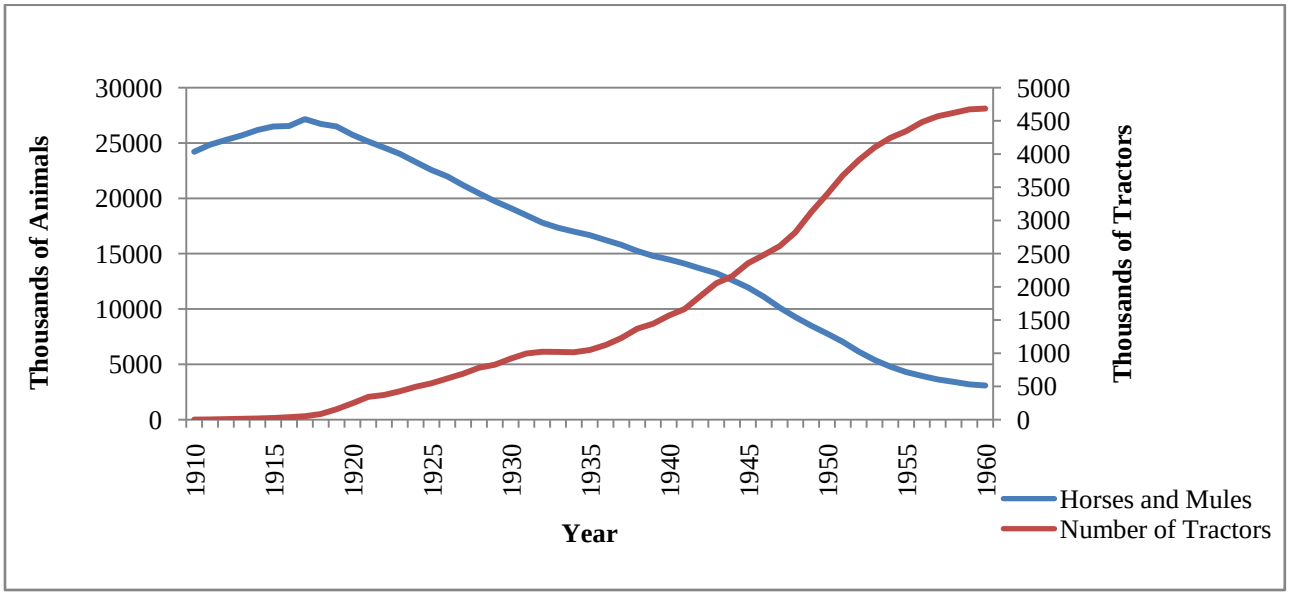
[23] For the details regarding the development and adoption of hybrid corn, see Appendix B.

A second phase of mechanization was launched with the internal combustion engine and the development of flexible, maneuverable traction – the farm tractor. The first operational gasoline-powered tractor was built in 1892, and Hart and Parr offered the first commercial tractor in 1901. The other major competing source of traction power was horses and mules, which were used for every major task on a farm including tilling, planting, cultivating, mowing and hauling. The number of horses and mules on farms peaked at 27 million in 1917, the same year that Henry Ford introduced the first small, multi-purpose, mass-produced and affordable tractor.[24] The Fordson Model F sold for $750, making it possible for the average farmer to own a tractor for the first time, especially with wartime demand boosting farm receipts. By 1925, Ford had built its 500,000th tractor, but it was soon overshadowed by International Harvester Company, which revolutionized the industry with the introduction of the Farmall in 1924. With its tricycle design wheel arrangement, it was the first low-priced tractor built for row-crop farming because it could maneuver through the rows of growing crops without damaging the plants, and soon made the Fordson obsolete.

In addition to the tricycle wheel design, other complementary innovations played a significant role in improving the tractor's performance and utility on farms. These included improved oil and air filters, implements, and hitches. The power take-off was added in 1918 so that the tractor could power other machines such as mowers and pickers. Pneumatic rubber tires introduced in 1930 replaced steel wheels, and allowed tractors to travel comfortably on roads, reduced vibrations and fuel consumption, and increased durability.

[24] King cites the Census as indicating the number of horses and mules on farms peaked in 1920, with the number of horses and mules in cities peaking earlier, sometime between 1910 and 1920 (King 1929).

Tractors, along with trucks, combines, and mechanical corn pickers quickly displaced human and animal power on farms throughout the Corn Belt. Between 1920 and 1930, farms with tractors in Illinois and Iowa, the heart of the Corn Belt, went from 9 to 30 percent (Ankli 1980). The number of tractors on farms increased from 246,000 in 1920 to 920,000 in 1930. Thanks in part to the New Deal agricultural policies enacted in 1933, the latter years of the Depression saw a dramatic recovery in tractor sales after an initial decline during the decade so that by 1940, tractors on farms had reached 1.56 million (Gardner 2006; Carter et al. 2006). (See Figure 10 below.) By 1930, farm power provided by internal combustion engines had surpassed all sources of animal power. Olmstead and Rhode suggest that the writing was on the wall for the horse industry by the mid-1920s. Even though horses were still required to complete many tasks on farms, they represented only between 15 and 30 percent of new investments in farm horsepower capacity (Olmstead and Rhode 2001).



Source: Carter et al. 2006

Figure 10: Number of Animals vs. Number of Tractors on Farms, 1910-1960.

While farm mechanization is sometimes presented as the inevitable result of the march of progress, the arrival of the farm tractor was neither inevitable, nor necessarily a harbinger of progress. In part reflecting the uneven distribution of benefits among farmers, rural communities, and businesses, the arrival of the "horseless age" was a hotly contested issue, and its social and economic ramifications were widely debated.[25] "It has been said that the forces of technology cannot be stopped, but they can be directed into more socially desirable channels," asserted the *New York Times*, and then proceeded to pose the difficult question of what exactly those "socially desirable goals" entailed. "Should agriculture strive for maximum efficiency in production with larger and larger units, more concentrated ownership and management, and fewer and fewer farmers?" ("Man With the Hoe Losing" 1937) Secretary of Agriculture, Henry A. Wallace posed the dilemma more starkly in a speech given at Council Bluffs, Iowa. "Shall American agriculture let an uncontrolled technology wipe out the independent family-sized farm, or shall American agriculture turn its back on technology, in order to preserve the family-sized farm?" ("Wallace Attacks G.O.P." 1936) How could the seemingly irresistible tractor be luring the family farmer to his demise?

Concern for the impacts of the tractor on farmers, farm structure, and rural communities was widespread, although many viewed these problems as a necessary price to pay for progress. Economist Willford King examined the evidence and found the tractor, and the gasoline engine in general, responsible for "the continuance of the farm depression ushered in by the price deflation of 1920." Nevertheless, he thought it

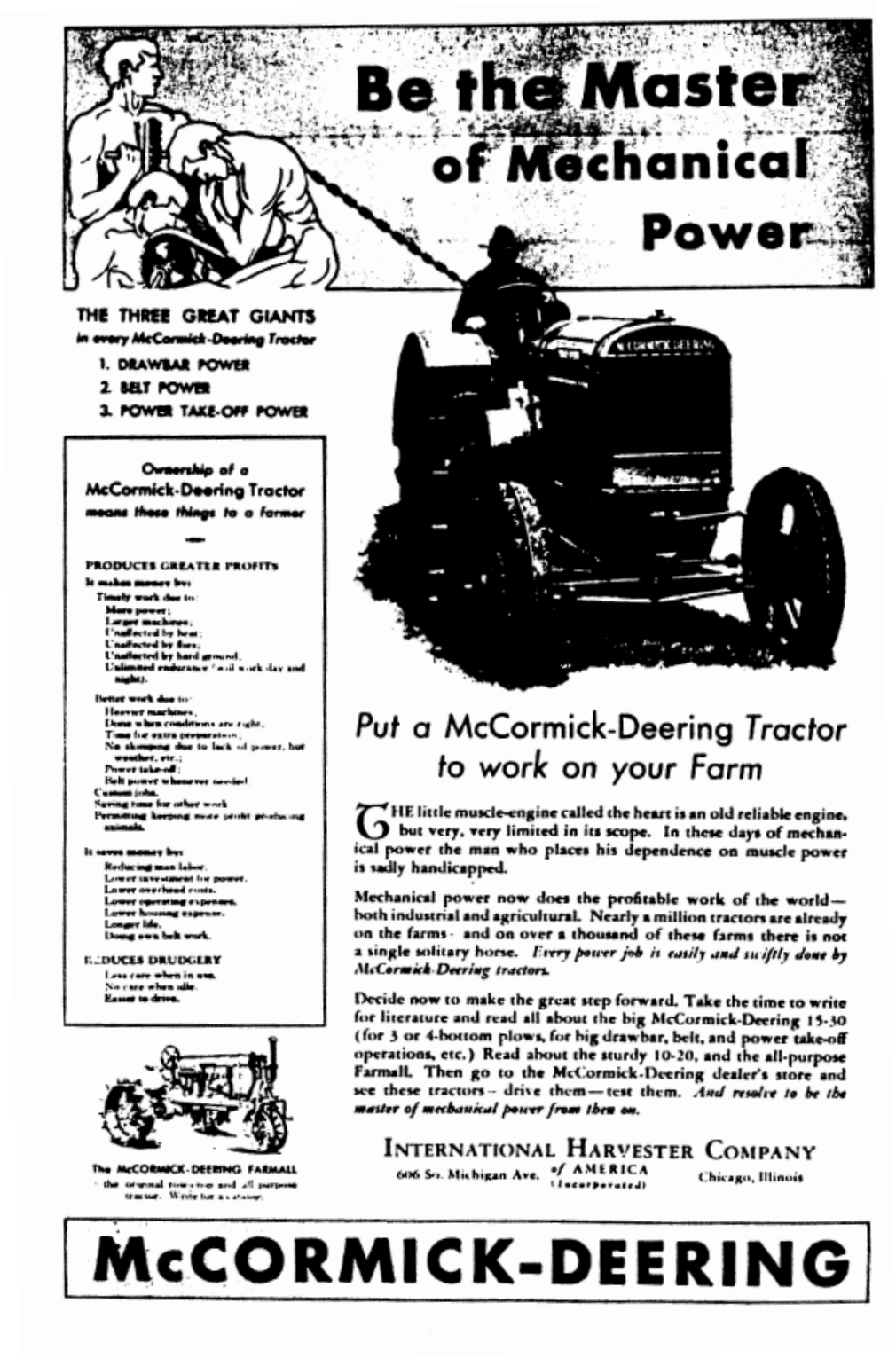
[25] In their study of the controversy in the interwar period, Olmstead and Rhode point out how the rhetoric of opposing sides in this technology debate continues to echo in debates about farm technology today. One example is the debate over genetically modified crops. Now, as then, the notion of inevitability along with charges of the backwardness of opponents is a rhetorical tool employed by the pro-GMO side of the debate (1994).

beneficial from a “national standpoint” as it likely contributed to a more efficient allocation of resources (King 1929, 72). The Horse Association of America (HAA), founded in 1919 was one of the primary organizations mounting a serious battle on behalf of those with vested business (and other) interests in the horse. The HAA also linked the decline of horses on farms with the farm crisis of the 1920s and 1930s, arguing that tractors were responsible for overproduction, falling prices, and farm bankruptcies. In fact, they claimed that a high percentage of those going bankrupt were tractor users because they had greater exposure to markets, not only in paying for their tractors, loans, and fuel, but also in marketing the increased output the tractors made possible. The HAA also claimed tractors brought with them dependence on distant oil and implement companies, rather than keeping incomes within local communities, and questioned the bias of USDA and university research, as well as farm creditors, toward mechanization.[26] In a 1937 report, the National Resources Committee, established by FDR to manage the New Deal emergency relief appropriations, warned of the “ever-widening gap between the man with the hoe and the man with the tractor.” The uneven impact of the new technology heightened tension among agricultural groups. “Unrestrained competition,” warned the committee, “will lead toward greater concentration of commercial production on fewer farms with an increase in the average size of these farms and fewer commercial farmers” ("Man With the Hoe Losing" 1937). Professor Paul S. Taylor, testifying opposite Fowler McCormick, vice president of the International Harvester Company and

[26] As an example of the bias, and the ways in which expectations about the tractor’s triumph became self-fulfilling, bankers responded to perceptions that the horse’s days were numbered by refusing to continue accepting horses as collateral for loans. Meanwhile, bankers as well as tractor manufacturers would carry notes for the purchase of a tractor. Farmers who relied on credit for acquiring new means of production therefore found it easier to purchase a new tractor rather than a horse.

grandson of Cyrus McCormick before the Temporary National Economic Committee investigating monopoly in 1940 concurred, explaining how “Already we hear half-articulate appeals from distressed and fearful farmers against ‘land monopoly,’ ‘land hogs’ and ‘tractoring out’” ("M'Cormick" 1940).

Tractor boosters touted the increase in productivity, profitability, and predictability offered by the transition to gasoline power. Advertisements for the Farmall described it as a “Great Emancipator”, freeing the farmer from the drudgery of fieldwork, and making him the “master of time and season.” International Harvester urged farmers to try out the tractor’s greatest asset, its power, and the profits it “produced.” On advertisement advised, “[R]esolve to be the master of mechanical power.” (See Figure 11). (Clarke 2002, 84–88). Reliable and steady, unlike work animals, the tractor never needed time off for rest, or care when idle, and could work through heat, insects, and hard ground. In his 1940 testimony, McCormick explained the many benefits of the tractor for farmers, including not only the relief from drudgery, but also the increased profit “by supplying speedier methods of evading the hazards of weather.” McCormick assured the Congressional committee that tractors “promised to preserve the family-operated farm as an American institution” ("M'Cormick" 1940).



Source: Clarke 2002, 84

Figure 11: "Be the Master of Mechanical Power," International Harvester Company advertisement from *Bureau Farmer,* November 1930.

In Marxian terms, the purchase of a tractor offered the early-adopting ancient farmers the possibility of capturing "superprofits" from laggard competitors by improving labor productivity and lowering their unit costs of production (Resnick 2006). See Appendix A for numerical examples illustrating the following arguments. If we assume again the simplified situation in which the ancient farmer labored by himself in the family farm enterprise, then Equation 10 represents the revenue flows and expenditures of this simple ancient family farm enterprise's class structure with the non-class revenue flows of superprofits added. As in Equation 3, the term on the left hand side signifies ancient surplus produced in hybrid farm production by the ancient farmer. The right hand side signifies the ancient subsumed class payments required to reproduce the ancient fundamental class process occurring in the family farm enterprise. Superprofits constituted an additional revenue flow on the left hand side, supplementing the surplus produced by the ancient farmer.

Ancient Class Structure with Superprofits: $S(A)^{FFE} + NCR_{SP} > SSCP(A)^{FFE}$ *(10)*

Farmers who adopted the tractor could increase labor productivity, producing the same amount of use values (bushels of corn) in less time. Or, as Marx explained it, "The exceptionally productive labour operates as intensified labour; it creates in equal periods of time greater values than average social labour of the same kind" (Marx 1975, 1:302). Not only did this free up a farmer's time to cultivate more acreage (if he had access to the additional land), but it also meant he could cultivate his existing acreage more efficiently. For example, one of the most arduous but urgent tasks on the farm was spring plowing, and it often required extra horses to complete. Either a farmer had to keep extra horses for the entire year, or gain access to extras at this time. Overcoming the springtime

bottleneck and completing the plowing in a timely manner could make the difference between a successful crop and a failure. For example, one study found that delaying springtime planting (which could only be done after plowing) by just 10 days reduced yields in Illinois by 3 bushels per acre (Ankli 1980, 139). Average yield per acre at the time was approximately 50.

A single horse required 10 hours to break one acre, so even a large team of six horses could plow only 6 acres in a day. The standard 10 horsepower tractor could plow approximately 10 acres in a 10 hour day. Ankli estimated that for all steps of corn production, a tractor saved approximately 7 man hours per acre compared to large team, and 24 man hours per acre compared to a small team (3-4 horses). Thus, for a farm with 40 acres of corn, the tractor could save, at minimum, roughly 280 hours, or nearly a month of work. (And this did not even include the time required to raise oats and hay to feed the horse teams) (1980).

The tractor also increased a farmer's effective land base, without necessitating increased subsumed class payments for ground rent. Even though most farms continued to rely on both horses and tractors until after World War II, a tractor still replaced an average of two to three horses per farm (Clarke 2002; Hurt 2003). Tractors could replace the otherwise unneeded horses the farmer kept for plowing and disking in the spring, but farmers still preferred to rely on horses for planting and cultivating (Reynoldson 1922). (Even according to International Harvester, the number of completely horseless farms numbered only 1,000 out of more than 6 million in 1929 (Clarke 2002).) A farmer gained three to five acres of cropland and pasture from producing feed and fodder for every horse replaced by a tractor. Thus, the farmer with a tractor had not only the

capacity to farm more acres more quickly, but also the additional acres available, further increasing the bushels of corn (use values) produced.

In Marxian value terms, average costs per bushel of corn are expressed as follows: (C+V)/UV, where C = constant capital; V = variable capital; and UV = number of use values. While the tractor clearly increased UV in the denominator for a given V, or reduced V for a given UV, it likely increased the magnitude of C, including both fixed and circulating capital. Even if it did not increase the magnitude of C, the tractor increased the cash portion of constant capital. Since most farmers did not value either non-purchased labor or capital at market rates, this increase in cash costs amounted to the same thing as an increase in costs as a whole (Clarke). Tractors required larger initial outlays than a team of horses, and taking full advantage of their potential required purchasing additional equipment as well, including a plow, disk, planter, and cultivator. For example, in 1929, a tractor cost around $1,000 while a team of 6 horses cost an average of $474 ($79 per horse) (Clarke 2002). The depreciation cost of the fixed capital was the largest component of a tractor's costs. In addition, the purchase of a tractor required additional cash outlays for circulating capital including fuel, oil, and grease, as well as maintenance and repair (if the latter were purchased as well). If tractors replaced draft animals, they may have also entailed increased costs for purchased fertilizers. Finally, the purchase of a tractor often required access to credit, and hence a new subsumed class payment for interest on the loan (Clarke 2002; Macy 1938, 58).

Because a tractor represented an increase in fixed capital costs, and in cash fixed and circulating capital costs, farmers of larger farms were more likely to experience a reduction in average costs and therefore to purchase a tractor (Ankli 1980; Olmstead and

Rhode 2001). Clarke estimated that at least 100 acres was needed to make the tractor cost effective for Corn Belt farms in 1929 (2002, 93). While most (72 percent) of farms in Iowa were more than 100 acres, only 45 percent of farms were larger in Indiana. For larger ancient farmers, the savings could be substantial, however. International Harvester featured one such farmer, Mr. Elza C. Lawson of Illinois in one of its ads. Lawson's costs per bushel of corn with a tractor on his 100 acres were 14.5 cents, compared to the official government estimate of 32.66 cents per bushel in the Midwest (or $7.23 per acre versus $16.33 at 50 bushels per acre) (Clarke 2002, 83). Since farmers usually planted about two-thirds of their land in crops, Lawson's farm was well over the 100 acre threshold.

Farmers like Lawson who purchased tractors during the early period in the 1920s were able to boost productivity, thereby lowering average costs below those of their competitors and reducing the private labor time necessary to produce corn on their farms. Because all farmers sell at the same socially determined market price (W/UV), those with lower unit costs gain a "superprofit," or a share of the surplus produced in the less productive enterprises, but realized by the lower-cost innovators. The private actions of innovating farmers were transmitted to others through market exchange processes, lowering the social average unit value, and therefore the market price of corn.[27] More efficient farmers realized more revenue in exchange than was expected in production because their actions drove a wedge between the social and private unit value of corn. The difference, or superprofit, was therefore equal to the difference between the social unit value faced in the market (W/UV) and the private unit value $(W/UV)_{PR}$ multiplied by the bushels of corn (UV) sold, where W stands for exchange value.

[27] I assume unless otherwise specified that the retail price of corn is equal to its value.

$$NCR_{SP} = \left((W/UV) - (W/UV)_{PR}\right) \times UV \quad (11)$$

As Equation 10 indicates, the additional surplus captured by innovating farmers placed them in a superior position to grow their enterprises, by gaining access to further productivity-enhancing inputs and the technologies they embodied, by acquiring land, or by acquiring the credit for these purchases. Acquisition of new chemical, biological, or mechanical equipments was important because these innovations were often synergistic. For example, while it was initially thought that farmers could utilize horse-drawn equipment with their new tractors, it soon became evident that the old equipment was not sufficient. If a plow became stuck in the field it would break under the increased drawbar power of the tractor as opposed to the horses which would automatically stop when stuck. Spending an additional $200 to $300 on new implements was therefore common. An additional problem created by the tractor was that of fertility. Since horses and mules on farms provided not only traction power, but also fertility, replacing them created the need for farmers to turn increasingly to outside sources for fertility, and as they did so the commercial fertilizer market began expanding beginning in the late 1920s. In fact, the most rapid growth of the industry, after WWII, coincided with the rapid increase in the number of completely horseless farms (among other things). In the 1930s, the tractor facilitated the adoption of hybrid corn, and vice versa. Hybrids were more uniform and their stronger stalks were resistant to lodging (falling down), facilitating mechanical harvesting. In addition, they could be planted more densely (an important source of their increased yields), which required a tractor rather than the wider spacing required for horses to work in the fields. Thus, superprofits provided a means for innovators to

further outpace their competitors through productivity-enhancing ancient accumulation, thereby continually lowering costs of production and gaining further superprofits.

Acquisition of land was especially important because it meant a further reduction in average costs as the tractor's fixed expenses could be spread over a larger production. Not only were more educated farmers of large farms more likely to purchase a tractor, but farms had a tendency to get larger as a result. Prosperous farmers were well-positioned to take advantage of the tractor's benefits in the first place, and the consequences reinforced their lead. Evidence seems to indicate that it was not for the most part small and medium-sized farmers who reaped the benefits of mechanization and were able to expand as a result, but rather the already large farmers who were able to pay the costs of mechanization and hence, also to gain the superprofits (Garkovich and Bokemeier 1988, 221). A variety of USDA and experiment station studies at the time showed that farmers increased acreage and changed cropping patterns after acquiring a tractor. A 1916 study of Illinois farms found that about 1/3 of tractor owners who stated that tractors were profitable increased the acreage they were farming, by an average of 120 acres per farm (Olmstead and Rhode 2001). Tractors and the income they generated also helped farmers gain access to credit, which was often needed to finance the purchase of land and other equipment. For example, by the 1920s, banks accepted tractors as collateral for loans, and farm implement dealers regularly extended credit for the purchase, as well. Horses, however, were no longer accepted in securing loans (Olmstead and Rhode 1994).

Obtaining, keeping, and expanding superprofits, however, created a contradictory situation for all farmers, even for the early-bird innovators. They faced the possibility of a variety of new claims on their surplus in the form of one or more subsumed class

payments for rent, capital accumulation, and interest, or $\sum SSCP_{SP}$. Not only were these new claims on the surplus, but they were mostly new *cash* claims on the surplus of innovating farmers. New inputs often replaced those previously produced by the farmer himself, including traction power, fodder, feed, seed, and fertilizer. The shift from produced to purchased C-goods, with the accompanying cash payments, constituted a dramatic change in the nature of farming costs, exposing farmers and their families to market risk to an extent that many had not hitherto experienced. For example, in 1929, Midwestern farmers spent an average of $1220 in cash outlays for annual farm expenses. The purchase of a $1,000 tractor therefore constituted a significant increase in cash outlays. Even if the purchase was financed, long term credit was scarce so the loan was likely to require relatively rapid repayment (Clarke 2002).

The relationships between the farm enterprise and the farm household, and between the hybrid class structures within the family farm was altered accordingly. For example, helping out directly in farm production became less necessary, while making do was more so, in order to save or generate more cash for the purchase and upkeep of the new equipment. In addition, added cash expenditures increased the need to keep track of farm accounts, an activity which farm women often took over, thus increasing the labor time they expended on this subsumed class activity (Garkovich and Bokemeier 1988, 223; Neth 1998). These changes are discussed further below.

While innovating farmers faced a contradictory situation – increased surplus realized, along with increased claims on that surplus, as well as increased exposure to a decline in cash earnings – others faced an unmistakable crisis. Innovators gained at the direct expense of others. Unless the laggard farmer's labor was of industry average

productivity (and thus $NCR_{SP} = 0$), his surplus was being siphoned away. Because the innovating farmer pulled down the average unit value of corn, the laggard found that his private unit value exceeded the market price/social unit value. In this case, he was in effect paying for the use of the market, in the form of lower-than-expected revenues realized, or a negative superprofit. What he lost in his encounter with the exchange process, his tractor-farming neighbor gained. From equation 11, since $(W/UV)_{PR} > (W/UV)$, $NCR_{SP} < 0$. Assuming the horse-farming ancient farmer's revenues and expenditures were initially in balance, he now faced a class crisis. The revenues he realized were no longer sufficient to cover the necessary subsumed class payments to secure his conditions of existence. As *The New York Times* put it in a 1937 headline: "Man with the Hoe Losing to Tractor."

Laggard farmers were forced to respond in some way, or else risk death as an ancient farmer and the loss of land to an innovating neighbor seeking to expand. Indeed, evidence suggests that increasing numbers of farmers either chose or were forced onto this path. Stable acreage under cultivation along with an increase in the acreage per farm required it (King 1929). Even though the post-War crisis was severe, it was short-lived, and relatively localized. Yet, farm bankruptcy rates continued to increase throughout the decade from less than 4 in 1,000 before the war, to 11 between 1921 and 1925, and to 17 in the late 1920s (Clarke 2002). Indeed, census numbers bear out what many observers began noticing at the time: the number of farmers was declining. More than a quarter of a million farmers abandoned their farms for the cities during the 1920s (King 1929, 69). Since the ratio of workers (family and hired) to farms was about 2, this means there was an explosion in the relative surplus population in the countryside leading to a massive

structural shift in the U.S. population. The USDA estimated that in 1944, the tractor saved roughly 1.7 billion man-hours per year in field work and caring for draft animals relative to the 1917-1921 period. Olmstead and Rhode estimate that this translated into approximately 850,000 workers (2001, 665). While the Great Depression interrupted this trend as many of the unemployed from the cities made their way back to the farms, swelling the ranks of the rural population, the trend toward mass rural to urban migration continued and accelerated after World War II.

Differently situated and differently impacted farmers pursued a variety of other strategies to stay in the farming game. Processes of technical change shaped the competitive environment, and vice versa, intensifying competition among ancient farmers and stimulating further rounds of technical change and diffusion. Many rushed to follow the innovator's lead by purchasing a new tractor, as well. As early tractor models steadily improved, second-movers may even have gained an advantage over the early adopters, erasing their superprofits and gaining their own from them. This process contributed to stimulating further purchases of new and improved tractors and other implements as innovators fought the onslaught by seeking to lower average costs further. Figures on new tractor manufacturing and farmer purchases suggest there was a high rate of discard and re-purchase, and consequently a short life of early models (Martini 2003). In addition, the price of a tractor steadily declined (or remained stable in spite of improvements) throughout the 1920s, allowing more farmers to jump into the fray.[28] For example, Ford slashed the price of the Fordson to $395 in January 1922 (Ankli 1980;

[28] This trend would reverse notably during the Great Depression, when tractor prices actually rose in real terms (Olmstead and Rhode 2001).

Olmstead and Rhode 2001). This suggests that tractor farmers were leap-frogging each other with each new tractor purchase as models steadily improved and grew cheaper.[29]

The process of diffusion unleashed contradictory processes that undermined all farmers' profitability, however. The increase in the productivity of abstract labor in corn production forced the unit value of corn constantly downward, erasing or redistributing gains and losses from the hunt for superprofits (even as subsumed class claims in the form of ground rent and interest payments increased). The increase in the organic composition of capital as the proportion of C-goods in total costs rose contributed to a falling value rate of profit in corn farming. That is, as C/(C+V) increased, S/(C+V) declined, where C stands for ancient constant capital, V for ancient variable capital, and S for ancient surplus.

The widespread adoption of productivity-enhancing technologies boosted the supply of corn (and other farm commodities). Just the decline in horses and mules on farms of roughly 6.6 million during the 1920s freed up between 20 and 33 million acres of land for food production. The USDA estimated that between 1915 and 1930, the 10 million horses and mules displaced from farms released 30 million acres of cropland and 15 million acres of pasture (USDA 1940a). By 1960, the number had climbed to roughly 60 million acres of cropland, or an area roughly equal to "two-thirds of the total cropland harvested in 1920 in the territory of the Louisiana Purchase" (Olmstead and Rhode 2001, 665). Combined with the increased yields per acre, the tractor brought an immense shift

[29] Small improvements could make a tremendous difference. For example, the invention of an adequate air cleaner significantly extended the life of the tractor. Otherwise, the dust and particles stirred up from plowing and other field operations could get sucked into the tractor's engine, causing it to seize (Martini 2003).

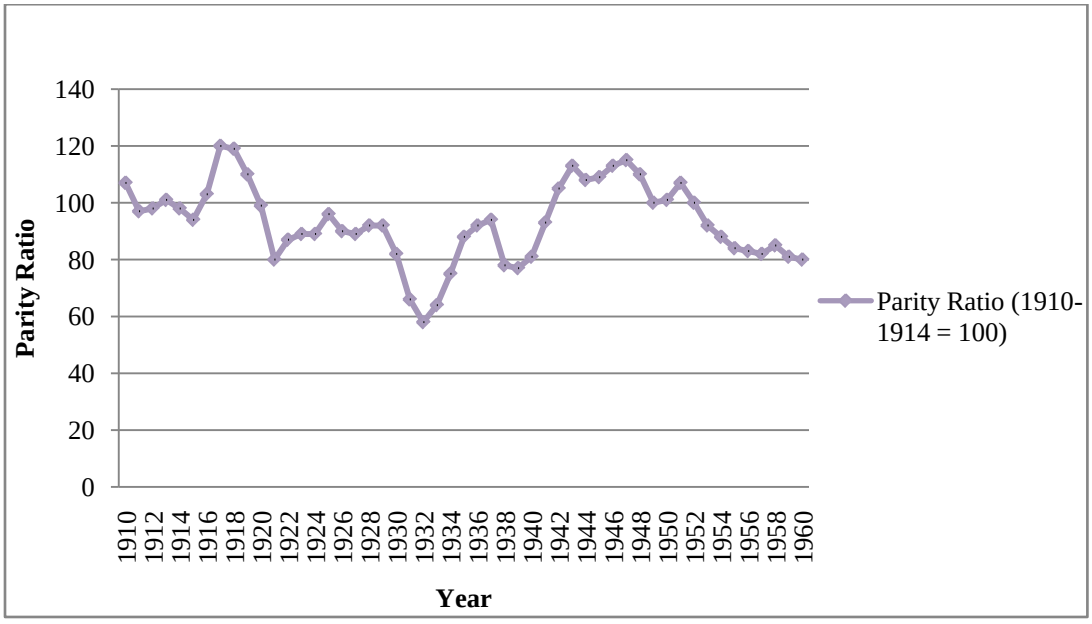
in cropping patterns toward the production of food crops like corn. Observers at this time began to speak of "structural oversupply" and its accompanying problems.

This increased supply forced the market price of corn constantly downward, as well. Since the demand for many farm commodities, including corn, cotton, wheat, and potatoes, was inelastic during this period, even small increases in supply could have larger relative impacts on price. The increased supply of corn could have forced corn prices below unit values, creating a negative nonclass revenue ($NCR_{P\neq(W/UV)} < 0$) for every farmer using markets. Even if this did not occur, the stage was set for a further round of technical change, crisis, and response in a process of "immiserizing growth" that agricultural historian Willard Cochrane called "the technology treadmill" (Cochrane 1993). Once farmers began climbing on the treadmill in the 1920s, they found it difficult to get off unscathed.

From the 1920s, the treadmill steadily gained speed, throwing off millions of farmers off who could no longer afford to keep up as they incurred debt and new claims on their surplus. Even though the index of prices received by farmers reached 148 in 1929 on the eve of the Great Depression (compared to the Golden Age period of 1909-1914), the parity ratio between prices received and prices paid by farmers had fallen to 92 by 1929, indicating that farmers continued to suffer a cost-price squeeze as agricultural prices received lagged behind behind costs.[30] (See Figure 12.) Declining profits in spite of seemingly unending work had driven farmers and their families from rural areas. By

[30] The parity ratio reported here is the ratio of the index of prices received to the index of prices paid to and by farmers, with 1909-1914 = 100. The parity ratio was originally intended as a measure of the standard of living of farm people, prices paid include various production expenses plus interest, taxes, and wages, as well as living expenses (Gardner 2006).

1929, the rural population had declined by almost two million from its 1916 peak of 32.5 million (Hurt 2003, 46).



Source: Carter et al. 2006

Figure 12: Parity Ratio: Prices Received/Prices Paid by Farmers, 1910-1960.

On the other hand, the technology treadmill set in motion processes that tended to offset the decline in the value profit rate by cheapening the wage good, food. At the time, corn usually made its way into the food supply as feed for hogs and beef cattle. Thus, a cheapening of the price and value of corn meant cheaper food for the population, including workers in farm implement factories, feudal farm family workers, and ancient farmers themselves. The lowered value of ancient and other labor power (V-goods) enabled by the process of technical change in corn production worked to offset the rise in the organic composition of capital by increasing relative surplus value, and contributing toward the cheapening of C-goods as well.

This point was not lost on supporters of either side of the tractor controversy. Tractor boosters played on concerns about food shortages stemming from World War I by posing the choice about mechanization as between "raising horses or feeding humanity" (Olmstead and Rhode 1994). They pointed out that tractors reduced labor costs and therefore food prices, benefitting everyone, especially the poor, and boosting incomes available to purchase industrial products. These newly prosperous industries would expand, providing employment for displaced farmers and farm workers. In fact, the people joining the ranks of the newly landless and unemployed weren't so much displaced, as they were newly-freed. Marx would have admired the turn of phrase: "The gasoline engine has released a considerable proportion of our population from agricultural work and has enabled them to produce articles which, for the moment, are in greater demand than are farm products" (King 1929, 70). In Marxian terms, they hoped for a rising real wage along with a declining value of labor power and rising rate of exploitation throughout the economy, enabled by the cheaper food commodities and the accompanying devastation of family farms. Thus, the technology treadmill was churning out the steady supply of cheap workers and cheap food (along with a bonus of demand for industrial products in the process) that had long concerned policymakers and others with which I began this story in Chapter 1.

State Policy and the Technology Treadmill: Through the Lens of Class

The importance of agricultural development – of a particular kind and for the benefit of particular interests – helped shape the context for state intervention in the agricultural economy. Faced with a technology-induced class crisis, farmers and farm

interests mobilized politically to press the state for policies to address the crisis. As discussed above, the Farm Bureau formed in 1920, and proceeded to consolidate support throughout the decade, aided by the formation of the bipartisan Farm Bloc in Congress in 1921. (The Farm Bureau was there to address its first meeting.) By the mid-1920s, support began to coalesce around government intervention to support "equality for agriculture" by supporting farm incomes and prices at an "equitable" level, especially as recognition spread that the situation was more than temporary. As Farm Bureau president Sam H. Thompson put it, "Farm relief is not any longer considered an emergency matter. The foremost subject, in the mind of agriculture and in the minds of the business people today, is that of proper adjustment of the agricultural industry in our economic life" (1926).

On the eve of FDR's inauguration, the farm lobby was recognized as "the most powerful single-industry lobby in Washington" (Hurt 2003). Even then, the term "single-industry" was misleading, as the farm lobby encompassed both much more and much less than the industry of farming itself. Agricultural policy had become the domain of farm implement dealers, fertilizer manufacturers, seed companies, and other agribusiness concerns, farm creditors, land grant universities, state and county extension agents, and USDA officials, to name a few, and of course, farmers, farm families, and rural communities. At the same time, the Farm Bureau, with its membership of the largest, commercially-oriented, prosperous farmers, dominated other farmers' groups. It is certainly true that the configuration of Congressional districts undoubtedly gave (and continues to give) disproportionate weight to the interests of farmers in federal politics, nevertheless it is important to remember that the industry constituted a powerful and far-

flung configuration of interests converging around support for government aid to farmers and the continuation of the technology treadmill.

What follows is a class analysis of those policies and the associated ramifications for these various stakeholders in the farm economy, including farm family members. State policy, motivated by the farm crisis shaped the impacts of technical change and competition among ancient farmers from the 1930s onward. State policy resolved the immediate problem of crisis for particular farmers while producing contradictory impacts for all those with a stake in the agricultural economy, including farmers, farm women and children, agribusinesses, and the state itself. State policies helped shape the direction of agricultural development, technical change, and competition after 1935.

Between 1929 and 1932, the Age of Uncertainty had become the Great Depression, and the already limping agricultural economy was utterly hobbled. Farmers faced a realization crisis as prices fell below unit values. For example, the average price of corn fell from 80 cents to 32 cents per bushel. The terms of trade, as measured by the parity ratio, declined from 92 to 58, and net farm income fell by 67 percent (Carter et al. 2006; Gardner 2006). Farm failure rates increased from 17 to approximately 38 in 1,000. Almost four percent of all farms in the United States failed in 1932. Farmers were unable to resolve the crisis themselves, in spite of efforts by the Hoover administration to encourage farmers to produce less. Instead, they responded to collapsing prices by producing more. By Roosevelt's inauguration in early 1933, farmers faced the worst economic situation they had confronted since the 1890s (Hurt 2003, 63–66).

The crisis provided the momentum to propel federal agricultural policy in a new direction under Secretary of Agriculture Henry A. Wallace.[31] Farmers, their creditors, and other agricultural business interests meeting in 1933 agreed that dealing with the crisis required addressing the twin problems of restoring commodity prices and reducing the size of farmers' outstanding debts, and that neither of these things could be accomplished by private individuals alone. There was widespread consensus that the federal government was needed to step in and provide the needed institutions to correct for the failure of private markets in agriculture (Clarke 2002; Hurt 2003). Doing so would strengthen capitalist industry, as well as large-scale, ancient commercial farmers. Federal officials argued that a strong agricultural economy was necessary to address the nationwide crisis. Restoring farmers' purchasing power would provide demand to pull industry out of the Depression, as well as to help stem the "backward" flow of the unemployed migrating to the countryside from urban areas. Although these measures were initially intended to be temporary responses to the emergency, they quickly became the entrenched objects of class and non-class struggle. The policies established during the Roosevelt administration became the basis for the federal government's response to the "farm problem" for the next sixty years. Through these policies, the federal government offered, and has continued to offer, more direct economic assistance to

[31] The Wallace family of Iowa produced three generations of prominent national agricultural leaders, all named Henry. Henry A.'s grandfather served as the head of the Country Life Commission and founded the national weekly *Wallace's Farmer*. Henry A.'s father, Henry C. Wallace edited the paper until Warren G. Harding appointed him Secretary of Agriculture in 1921 in the midst of the postwar farm depression. Henry A. took over the editorship of the paper at that time. He later served as Secretary of Agriculture, then Vice President under FDR. He narrowly lost the nomination for vice president to Harry Truman in 1944, and ran as the Progressive Party presidential candidate in 1948 (Meller 2005).

farmers than to any other economic group in the country, an astounding situation given the dramatic shift in the role of farming in the broader economy since the 1930s.

New Deal legislation passed in 1933 created three new federal agencies to deal with the farm crisis, and to help close the gap between required payments and available surplus in farm production in order to ensure the reproduction of ancient farm enterprises and rural communities. These were the Agricultural Adjustment Administration (AAA), the Commodity Credit Corporation (CCC), and the Farm Credit Administration (FCA). The AAA targeted seven commodities that were already in surplus: wheat, corn, cotton, rice, tobacco, hogs, and dairy production. It aimed to raise farmers' income by reducing production of these crops, thereby raising their prices to 1910-14 parity levels. Significantly, production controls were instituted through acreage allotment plans, not by direct marketing quotas. Thus, enterprising farmers could subvert production controls by increasing output per acre on non-idled land. Farmers idled land by essentially renting it to the government at a price per bushel of the crop normally grown there. Payments were calculated on the basis of average yields during a specified previous time period. The AAA "policy of scarcity" drew considerable criticism as the production controls instituted midway through the crop year in 1933 resulted in scenes of farmers slaughtering millions of piglets and plowing under crops while growing numbers of Americans suffered from malnutrition and hunger. The AAA was declared unconstitutional in 1936, but production controls continued as a focal point of farm policy, as did the aim of achieving "fair exchange value" or "a fair share of national income."

The CCC operated in conjunction with the AAA in establishing an "ever normal granary" to stabilize commodity prices. Farmers could participate in CCC price support activities only if they also agreed to production controls. In an attempt to counter the bad press associated with the production controls, Wallace referred to the twin pronged approach as "storing the grain in the soil" and "storing it in the bin." Initially corn and cotton were the covered crops, but the popular program soon expanded to other commodities. The CCC was (and still is) a government-owned enterprise responsible for managing the acquisition, storage, and sale of surplus crops. CCC price supports took the form of a nonrecourse loan with the crop pledged as collateral. Corn producers, for example, could obtain a loan at the "fair exchange value," called the loan rate, for every bushel of corn sealed in storage. If the market price rose above the loan rate, the farmer could sell the corn, repay the loan, and retain the net proceeds, thus benefiting from the higher prices. If the market price remained below the loan rate, however, the farmer could default on the loan, forfeiting the crop in payment of the debt, thus limiting losses to no more than the initial debt (in the upper limit case that the market price matched the loan rate). Loans were extended at very low interest rates, at or near CCC borrowing rates from the U.S. Treasury. Corn was mostly stored by the farmers themselves with government verification, while other crops were stored in public facilities. The success of the CCC in modulating corn prices after the drought of 1934, along with the sustained positive press given to the program succeeded in garnering widespread support. By 1937, the CCC had become the principal means of supporting farm prices.

The AAA and CCC attempted to address the problem of stabilizing farm incomes and commodity prices, thus boosting farmers' ability to repay their debts and stemming

the tide of foreclosures that followed in the wake of depressed commodity prices in 1933. The FCA tackled the issue of the supply of credit to match the revenue and expenditure cycles of most farmers. Existing sources of credit were mostly short term, while farmers often required intermediate term loans between planting and harvest, or long term loans for land or equipment. Further, deposits at local banks often fluctuated with farm prices and incomes, meaning rural banks were least able to offer loans in years when farmers most needed them. Through the FCA, the government became the chief financing agent for farmers, purchasing and refinancing mortgages, extending short and intermediate loan facilities, and lowering interest rates. Farm foreclosures decreased dramatically after peaking in 1933, as farm debt outstanding and interest payments fell. By 1937, FCA held forty percent of all farm mortgages, and had become the most important agency for supplying farmers' credit needs. FCA also presented competition for private lenders, who soon began offering longer term loan products and lower rates in response.

The farm crisis situation suggests that a growing number of farmers were subject to the possibility of a persistent and growing gap between revenues and expenditures. Government measures attempted to resolve the farm crisis by working on the shortfall between the ancient farmer's revenues and expenditures by either increasing ancient revenues on the left hand side, or reducing ancient subsumed class payments on the right hand side. Government payments also increased the cash component of any revenues. Increased revenues meant increasing ancient surplus (S(A)) and/or establishing a new revenue position for ancient farmers (NCR). Decreasing expenditures meant reducing the

number (i) and/or magnitude of ancient subsumed class payments ($SSCP(A)_i$).[32] Government farm programs generally impacted ancient surplus only indirectly, and impacted farmers directly by establishing a series of new NCR's from the state, as well as reducing the number and magnitude of subsumed class payments by providing a variety of ancient conditions of existence that the private sector was unwilling or unable to provide, at reduced or even zero cost to farmers.

AAA production controls encouraged farmers to store their corn "in the soil" by, in effect, renting a portion of a farmer's land in exchange for payments based on the average yield of the crop normally grown there, and the number of acres enrolled. These payments constituted a new source of revenue from the state, NCR_R as follows:

$$NCR_R = P_{FMV} \times \overline{UV}_{BP} \times N \quad (12)$$

Farmers' non-class revenues from rental payments from the state were equal to the government-set price at the "fair market value" for the crop (P_{FMV}), based on the goal of 1909-1914 parity, times the average number of bushels of the crop yielded during the base period (for corn it was initially 1928 to 1932, for example) ($\overline{UV}_{BP}$) times the number of acres (or portion of those acres) enrolled in the allotment program (N). Clearly, the more acres a farmer had to enroll in the program, and the more productive those acres, the higher the payments. The AAA both encouraged and enabled mechanization because farmers had both an incentive and a new source of cash revenue at their disposal to purchase new equipment. In addition, the program rewarded land ownership more so than land tenancy, since landowners were not obligated to share their benefit checks with

[32] Government farm programs explicitly or implicitly ignored feudal forms of farm production, including sharecropping, as well as farm women's feudal farm production in Midwestern family farms.

tenants, and acreage reductions meant fewer tenants.[33] Landowners could evict tenants, and continue to collect AAA checks on the basis of their tenants' past labor in production. If the landowner were also the farmer of the idled land, he would have occupied both the position of landlord and of farmer, and the NCR_R would, in effect, have replaced the SSCR for rent that he might have previously distributed to himself in exchange for the subsumed class service of access to his land. Instead of either paying himself, or providing the access for free, the federal government made an explicit cash payment approximately equal to the "opportunity cost" of the idled acres.

CCC operations addressed the realization crisis for farmers, with the government acting as merchant and financier as needed, thereby reversing what had become a negative NCR due to plummeting prices (below unit values) and surplus crops. The program established a new revenue position for farmers producing supported commodities that varied with the units of the commodity produced and placed in storage, as well as with the difference between the "fair market value" or loan rate, and the market price. The "fair market value" was expressed as a percentage of 1909-1914 parity. If the price support were operational, that is the loan rate was above the market price, the farmer in effect took a loan, or advance payment for his crop, at the loan rate per unit of commodity placed in storage, but paid it back at the lower market rate per unit of commodity placed in storage by "selling" his stored commodity to the federal government. If the loan rate were below the market price, the farmer in effect took a loan valued at the loan rate per unit of commodity placed in storage, and paid it back at the same rate per unit of commodity placed in storage, but sold his commodity at the higher

[33] These trends were particularly evident in the cotton South, as landlords evicted their tenants, consolidated plots, and mechanized causing massive dislocations and radically changed Southern agriculture.

market price, and pocketed the difference between the market price and the loan rate. The new revenue position can be expressed as follows:

$$NCR_{PS} = |(P_{FMV} - P_M)| \times UV \qquad (13)$$

If the market price were below the loan rate, the burden of the payment fell on the government, which also incurred the cost of storing and later marketing the forfeited crops. If the opposite were true, the cost was born by private buyers of the commodity. Theoretically, the CCC loan and storage operations were supposed to operate to keep the market price hovering around the loan rate, hence the term "ever normal granary." If it went above, the CCC could release some of its stores on the market to lower the price. If it went below, the CCC would withhold the forfeited crops from the market to raise the price. The loan rate therefore served as an anchor around which the market price of supported commodities was to fluctuate, with the farmer gaining no matter whether it was over or under, and the government incurring added costs only if it were under. Combined with acreage allotments to control the supply, the programs together were supposed to minimize government expenditures. In practice, the "ever normal granary" combined with acreage allotments encouraged farmers to increase productivity on their active acreage, thereby subverting acreage controls.

In addition to the cash NCRs provided through the new programs, the FCA provided the subsumed class service of providing access to the kinds of loans that had not been previously available to farmers and at reduced cost. Farmers thus not only enjoyed expanded access to intermediate and long term credit, but also a reduced subsumed class payment in exchange for that access.

Altogether, the new farm policies dramatically altered the balance of relationships in which ancient farmers were engaged. Access to credit lowered the cost to farmers of long-term investment decisions. In addition, the government now provided the important condition of existence of price and income stability, shouldering some of the risk in an already risky occupation, and especially controlling the risk associated with taking on cash commitments. By providing farmers guaranteed cash income, farm policies changed the decision-making environment for ancient farmers, and encouraged them to borrow and buy new machinery and land, to shift from non-monetary to monetary costs of production, and to capture the benefits of specializing in supported crops since the complex art of diversification to reduce risk was no longer as necessary.

These policies served to focus and magnify the workings of the hunt for superprofits and its accompanying ramifications. Farm programs channeled farmers toward the path of mechanization and technical change, rewarding larger, capital-intensive farmers who borrowed to finance the purchase of new machinery to improve per acre productivity, and then used their resulting superprofits to buy the land of their less fortunate neighbors. The federal government threw its resources behind the aim of helping already prosperous farmers become more so. Sharecroppers, tenants, and low-income farmers were virtually ignored, as they were considered too poor, inefficient, and/or backward to benefit from government assistance. Wallace solidified this policy direction in 1935, when he fired the “radicals” in the department who supported policy actions to distribute the benefits of agricultural policies more broadly (Hurt 2003, 74; Jellison 1993).

Policies promoting technical change to increase productivity might seem to conflict with production control measures, but not if we consider that USDA policies were not meant to help all farmers. They were meant to restart the technology treadmill after the disastrous crash, and in fact they did so. From this perspective, farm policies were a spectacular success, and the seeming intractability of the farm problem merely a manifestation of that success. Farm programs encouraged farmers to improve productivity by mechanizing and purchasing other new inputs. They placed the cash in farmers' hands, as well as the access to credit to do so. Acreage allotment programs provided an added incentive to farm active acres more intensively.

Even though the stated goal of farm policies was to restore parity between the farm and non-farm sectors, maintaining crop prices at their unit values, they encouraged farmers to undertake actions that depressed that unit value.[34] Hence, farm programs in practice served to maintain prices above unit values, and even fostered an increasing gap between the two. They encouraged the rise of agribusiness at taxpayers' expense, creating an ever-more-expensive and entrenched system of entitlements along with a new industry with a vested interest in the continuation of those programs. Finally, they increased volatility, crises, and disparity within the farm sector, speeding the decline of rural communities.

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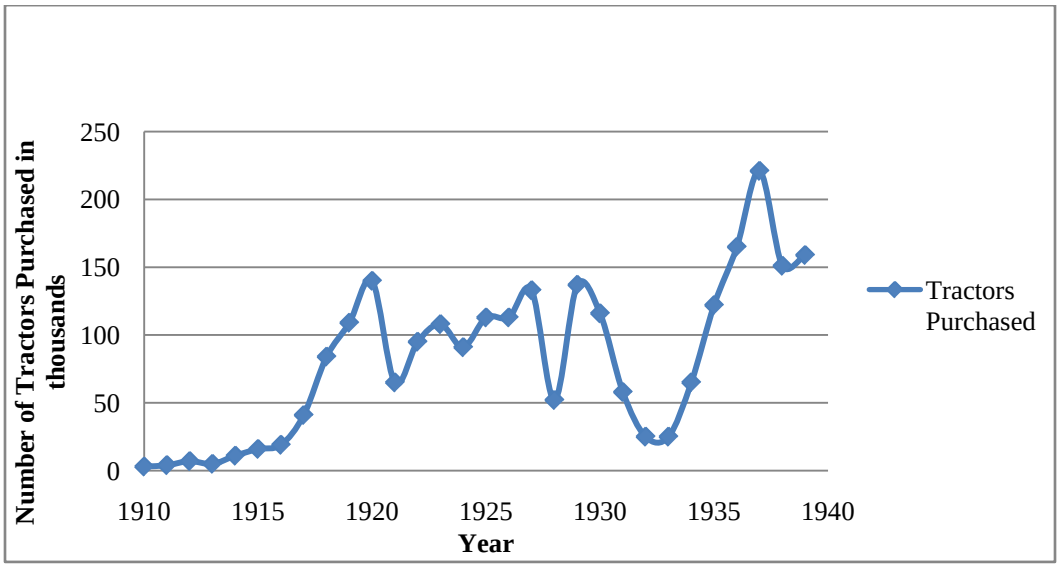
[34] "Parity means a price for the farmer's product which will give it an exchange value for things the farmer needs to buy equivalent to that in a specified base period. The base period used as a par is the five prewar years 1909-14." The index of current prices paid by farmers included prices paid for the "necessaries of life as well as for items used up in production", as well as taxes on real estate and interest charges. In Marxian terms, then, parity could be considered a rough approximation to C+V plus a portion of S (at least that portion of S distributed for subsumed class payments for taxes and interest payments). Farm labor costs in terms of wages were not included in the price index used to calculate parity (Time 1946).

The first government checks went out to farmers in the fall of 1933, and purchases of tractors picked up soon thereafter. By 1935, the leading tractor manufacturer, International Harvester was so far back in the black after experiencing its first losses in its history in 1932 and 1933, that it advised farmers, "If you'll need a tractor in 1936 you ought to order it now" (Clarke 2002, 162). According to the advertisement, the company simply could not keep up with the surprising flood of orders in 1935. The number of farms owning tractors in the Midwest increased from 25 to 42 percent. Tractor sales more than doubled between 1933 and 1934 from 25,000 to 65,000, then nearly doubled again in 1935 to 122,000. (See Figure 13). In addition to tractors, farmers increased purchases of hybrid corn, exploiting synergies between the two technologies. From less than one percent of planted acreage in 1933, hybrid spread to 90 percent of corn acreage by 1945 (Fitzgerald 1993, 340).



Source: Clarke 2002, 86

Figure 13: Tractors Purchased by Year, 1910-1940.

Just as before government intervention to support prices, the adoption and diffusion of productivity-enhancing technologies resulted in the decline in average costs

and unit value per bushel. (See Appendix A for numerical examples illustrating the discussion that follows.) However, government-supported prices, P_{FMV} did not automatically fall (although because they became increasingly expensive to maintain, political pressure mounted to lower them). As before, the farmer who innovated first, lowered his private unit value below the social average, capturing a superprofit from his competitors, NCR_{SP}. Also as before, the innovator's newly-lowered private unit value pulled the social average value down. If we assume that the government-supported fair market value was initially equal to the social average unit value before innovation, then in the context of government-supported prices at "fair market value", the following new situation arose: $P_{FMV} > (W/UV) > (W/UV)_{PR}$ for innovators, while $P_{FMV} = (W/UV)_{PR} > (W/UV)$ for non-innovators. The hunt for superprofits in the context of government price supports drove a wedge not only between the private and social unit values, but also between the social unit value and the price farmers received. Due to government price supports, the price remained above the social unit value, generating additional nonclass revenue for innovators and laggards alike as follows:

$$NCR_{FMV} = \left(P_{FMV} - (W/UV)\right) \times UV \qquad (14)$$

Government price supports encouraged farmers to undertake actions (the purchase of a tractor or other innovation), that lowered the exchange value of corn, but not the government-determined fair market value, the price that farmers received for the corn they produced and stored.

Innovating farmers received $NCR_{SP} > 0$ because their labor was of higher than average productivity. This nonclass revenue constituted a transfer from less productive ancient farmers. In addition, the innovating farmers receive NCR_{FMV} from the state, to

make up the difference between the unit exchange value and the fair market value that farmers received. Farmers whose labor was of lower than average productivity suffered $NCR_{SP} < 0$, a transfer of value produced by them, but realized by their innovating competitors. The loss they suffered, however, was in this case exactly offset by the transfer from the state, NCR_{FMV} which they also received, for each and every bushel of corn that was subject to the price support.

The relative distance between innovators and laggards still existed. The innovating farmer was still in a superior position to grow his enterprise, thereby intensifying competition, and forcing others to respond to his private actions. On the other hand, this competition played out differently than if farmers were subject to the declining market prices instigated by their actions. As noted above, one possible response was to imitate the innovating farmer, and purchase the new tractor or other inputs, which many farmers did. Pursuing this strategy, however, no longer produced the same contradictory consequences of falling prices and unit values due to expanding supply and increased productivity. Instead, prices did not fall, and farmers as a group now had *nothing to lose* by following the leading innovator. Initially, at least, farmers appeared to have escaped the contradictory consequence of a falling rate of profit accompanying their otherwise successful innovating actions. A rising organic composition of capital along with a rising rate and mass of profits in corn production was financed by state expenditures.

The Rise of Agribusiness

Of course, that is not the end of the story. Instead of resulting in falling market prices for corn, technical change with state price supports intensified competition in input markets. Ancient farmers, armed with bulked-up, state-subsidized profits, bumped up against other ancient farmers as they attempted to grow their enterprises and access expanded conditions of existence. This competition among farmers ratcheted up ground rent, increasing the wealth of landowners, and benefiting farmers who innovated and expanded more quickly. This relationship between productivity-enhancing technical change and land prices in the context of state price supports has been widely recognized (Cochrane 1993). What is less widely discussed is the relationship between this competition among ancient farmers and the development and structure of capitalist agribusiness supplying inputs such as machinery, seeds, fertilizer, and other chemicals to farming.

The significance of the cash bonanza enabled by government farm programs was not lost on farm implement companies, for example. Speaking of the CCC loan program, International Harvester Sales Manager, J.L. McCaffrey reported in 1939, "The significance of these corn loans is that they represent 36-cent corn in Minnesota on which 57 cents is obtained by the farmer, with the difference between these two figures representing cash he may use for purchases or other purposes." In other words, farmers would have been getting 36 cents for corn had the CCC loan rate of 57 cents not been in place. Implement companies also noted the benefits of government credit programs to finance farmers' equipment expenditures, thus saving implement dealers the cost and risk of carrying the notes (Clarke 2002, 197). The abundance of revenues in corn farming

constituted a veritable feast for agribusinesses, and government programs a perfect recipe for financing their gluttony at taxpayers' expense through the ruse of support for farmers.

Since government farm programs helped prop up farmers' demand for purchased inputs, altered demand relative to supply conditions in markets for inputs like tractors and seeds drove a wedge between prices and unit values of these items. As prices diverged from unit values, agribusinesses enjoyed additional revenues in the form of a positive NCR ($NCR_{P\neq(W/UV)} > 0$) while farmers, as buyers of the more expensive inputs suffered the corresponding negative NCR.

These additional revenues contributed to further developments in the agribusiness firms supplying inputs. What may have been initially a windfall due to demand and supply conditions enabled the pursuit of a deliberate strategy of monopolization. Input suppliers could distribute their additional non-class revenues toward pursuing strategies to maintain the price squeeze on farmers by garnering market power, thereby benefiting from farmers' government payments from price support programs. Such distributions included, for example, distributions for new product development, not only to stay ahead of competitors, but also keep the hunt for superprofits going, thereby intensifying competition among farmers to keep up or catch up with their neighbors; for mergers and acquisitions or other strategies to establish monopoly positions in the industry; or for lobbying and propaganda efforts to maintain and influence government farm policy.

International Harvester, for example, increased expenditures on "engineering and development" by more than 35 percent between 1929 and 1939, in an effort to capture farmers' dollars with new and improved products. The company succeeded in knocking the erstwhile leader, Ford, entirely out of the tractor market by 1928 with its new tricycle-

wheeled Farmall. The structure of the industry began moving toward oligopoly during the 1920s, giving implement manufacturers greater power to charge prices above values for access to their products. The number of manufacturers in the industry went from 186 at the peak of the World War I boom in 1921, to roughly 60 by mid-decade. Companies employed a variety of tactics to establish market power. For example, Henry Ford slashed prices for the Fordson in 1922 in an ultimately unsuccessful bid to capture a larger market share. The full-line implement dealers also distributed resources toward pressuring dealers to carry their lines exclusively ("Farm Tool Makers" 1938). The eight full-line farm implement manufacturers increased their share of the tractor market from 26 percent in 1921 to 96 percent by 1929. Their share grew to 98.6 percent of the market by 1937, with International Harvester holding over half (Olmstead and Rhode 2001, 684).

These strategies thus appeared to be effective in generating some degree of monopoly power, and thereby maintaining the price squeeze. For farmers, the negative non-class revenue on the left hand side of their revenue-expenditure equation contributed to changes on the right hand side. These changes took the form of new subsumed class payments to agribusiness firms whenever those firms were able to wield monopoly power such that they could charge a market price for an input that was higher than its unit value. In contrast to the post-World War I slump, when tractor prices declined, the 1929-1933 period saw nominal prices little changed, meaning real tractor prices actually rose, then rose more quickly from 1933 to 1935. By 1936, the unreasonably high prices had attracted regulatory attention. Congress charged the FTC with investigating monopoly practices in the implement industry. Among the primary reasons for “agricultural maladjustment” cited in a 1940 USDA report was “growth of monopoly and price fixing

by corporations" (USDA 1940a, 5). The report noted that although farmers lacked the organization capacity to wield market power, agribusiness suffered no such condition. Concentration, consolidation, and growth of capitalist agribusiness continued in the post-World War II period, ultimately producing some of the world's largest corporations.[35]

The competitive struggle among ancient corn farmers therefore became a condition for the continued transfer of subsumed class payments to agribusiness input suppliers. This period saw the beginning of the rise of agribusiness and the process of encroachment of capitalist industry into farming practices. Farm implement companies would be followed by seed, fertilizer, and other chemical companies. Those agribusiness giants had a stake not only in the farm sector, but also in the perpetual, technology-induced crisis of that sector and the farm programs enabling it. It is important to note, however, that contrary to other accounts of this process (see Lewontin (1998) for example), the process did not result in the increasing role of capitalist class processes in family farm enterprises, or in farm production itself, i.e. the "proletarianization" of the farmer." While capitalist agribusiness captured more and more production processes from farmers, and with these, an expanding share of the food dollar, capitalist class processes did *not* play an expanded role in farm production itself. In fact, even though family farm enterprises relied increasingly upon capitalist class processes to carry out farm production in the form of purchased farm inputs, capitalism retreated from family farm enterprises as well as from farming in general. This retreat was facilitated by technical change and the ancient hunt for superprofits, shaped by state price supports. These same processes strengthened ancient class processes in family farm enterprises.

[35] Cargill, for example, is the world's second largest private corporation.

Additional subsumed class payments could yield a crisis for ancient farmers if revenues fell below expenditures ($S(A) < SSCP(A)$), and there were no offsetting non-class revenue positions. Farmers may have responded by trying to increase their appropriated surplus from their own or others' labor, including from his wife, children, or hired labor to offset the rising demands on that ancient surplus due to monopoly pricing.

State price supports, however, produced the contradictory situation that threatened their continued existence while simultaneously increasing those with a stake in that existence. As the analysis above suggests, state expenses quickly grew larger as the hunt for superprofits continued, continually lowering social unit values and increasing the distance to the unchanged government support price. More and more corn was produced, as well, with the government making up for a growing gap with each and every bushel of corn produced. State expenditures ballooned into entitlements, with constant pressure to expand on one hand, but inviting opposition on the other. Also as the analysis above suggests, those same government farm programs, when evaluated in terms of their stated objective of resolving the "farm problem" appeared to be an utter failure. Production of supported crops remained high, in spite of government controls over production and marketing, because these could not compensate for improved productivity. Programs encouraged farmers to shift toward production of covered crops – the same crops that were already in surplus. Farm policies transferred nonclass revenues to farmers, but were silent about changes in costs (also not surprising given the above analysis) so that production and operating costs continued to rise. Farm programs increased the disparity between farmers, as large scale farmers benefited more than smaller scale ones. The

parity ratio averaged only 81 in 1940, compared to 82 in 1930, and 99 in 1920 (Carter et al. 2006; Gardner 2006).

The persistent structural oversupply, along with the continued "farm problem" made farm programs seem more and more expensive, yet ineffectual. Political pressure mounted to alter program provisions or to end them altogether. Parity measures themselves became the object of continual struggle, only to be eventually abandoned and farm prices continually ratcheted downward.[36] Differently positioned farmers were impacted differently by these developments, and responded accordingly. For many, that meant staying on the technology treadmill created by the constantly changed flows of surplus back and forth as the scramble for superprofits continued.

The combination of state price supports and production controls at first served as a floor under the price of important agricultural commodities, and thereby under the price of food as well. These measures thus constrained the rate of exploitation in industry from being higher than it might otherwise have been had food prices been allowed to fall to reflect their unit values. This point was not lost on agribusiness or other industry, and as soon as these measures were put into place, various interests went to work to alter program provisions by dismantling these aspects. The operation of these measures was gradually shifted across the decades, eroding the mechanisms supporting prices paid by those purchasing commodities from farmers. Today, farmers continue to receive revenues based on the state-supported fair market value of their crops, called the "loan rate", but there is no floor under the market price of corn which agribusinesses and other

[36] For example, the farm bloc tangled regularly with other lawmakers over adjustments to the parity formula, including altering the base years, adding interest and taxes into the index of prices paid (which was done starting in 1935), and adding farm wages ("Agriculture: Faith, Hope, & Parity").

buyers pay because the government no longer purchases and stores it, it merely makes up the difference between the market price and the loan rate whenever the crop is sold. All employers reap the benefits of improved agricultural productivity through cheapened wage goods, allowing a rising rate of class exploitation in industry while supporting the real wage. Agribusiness continue to benefit from the state-supported competition among ancient farmers.

Surviving the Treadmill: Making Do and Helping Out Revisited

As technical change shaped competition among farm enterprises, it altered the distribution of costs and benefits from technical change among and within farm enterprises. Different farm enterprises were differently positioned to adopt new technologies and to benefit from that process. Technical change thus exacerbated these differences as well. As already noted, prosperous farmers were already well-positioned to adopt new technologies more quickly, and using their superprofits, to gobble up the assets of their neighbors and grow even larger. In addition, the larger farmers who could purchase tractors first enabled them to use less hired help, thus reducing income earning opportunities for medium and small-size farmers or their children (Neth 1998, 227). The hunt for superprofits therefore contributed to an increasing unevenness among farmers. As some farmers grew ever wealthier and more productive, large numbers of smaller farmers nevertheless hung on (and still do) by exploiting a different strategy –

supplementing farm receipts with their own and family members' labor and transfers to the farm enterprise. [37]

As the labor requirements of corn farming declined with mechanization, shifting the conditions of hybrid farm production, ancient class processes were likely to have been strengthened on both larger and smaller farms. Mechanization transformed labor processes, reducing the physical effort required. Ancient class processes likely benefited as more work on more land could be done by a lone producer, without the aid of hired or family laborers. On larger farms the income generated was sufficient so that the ancient farmer did not have to seek employment off the farm, and the expanded access to new machinery and productivity-enhancing technologies continued to strengthen these ancient class processes. On smaller farms, those that were "long on labor and short on land", mechanization may have meant that the ancient farmer's time or physical capacity to work, or both were freed from the production of field crops, and could be allocated to other farm production activities to increase total farm income. Another common outcome as cash requirements increased was to devote less time to ancient farm production, freeing the farmer (along with his feudal farm apprentices, and eventually his feudal household serfs) for work off the farm earning income to supplement the ancient farm enterprise (Hurt 2003). One or both of these strategies may help explain the results of one 1933 Wisconsin time use study that seemed to show "more work for father." Farm men with tractors were found to work longer days on average than those without tractors (Kline 1997, 379; Neth 1998, 227). This could have been related to the addition of off-

[37] Today, the largest farms account for the majority of production, while the smallest, farming only part-time and relying on off-farm incomes, account for the majority of farms.

farm employment for farm men, or to the fact that the reduced physical toil of farming allowed ancient farmers to spend longer hours doing it.

The labor saved by the purchase of a tractor would have included not only that of the farmer himself, but also of his family and hired laborers. Figure 6 shows how the decline in farm employment of both unpaid family laborers and hired hands coincided with the farm mechanization, beginning during the 1930s, and then accelerating after World War II. One reason was that the tractor replaced non-purchased C-goods with purchased C-goods. Farm horses could be purchased, but were more often reproduced on the farm, as were the oats, corn and hay that were their feed. Tractors and fuel had to be purchased from off-farm manufacturers, but saved on the labor required in caring for horses and raising oats and hay. Raising an acre of oats required between 6 and 8 hours per acre. The time spent haying depended on the number of cuttings per season, but Ankli estimated roughly 9 hours for two cuttings (Ankli 1980, 142). (Clarke estimates 6.4 hours per acre for hay (Clarke 2002, 275). Thus, several hours of labor would have been saved by the replacement of each horse. Of course, part of this savings was offset since farmers spent extra time in repair and maintenance of tractors, as well.

The feudal class processes of the family farm household and enterprise also interacted with the hunt for superprofits among ancients in contradictory ways. The farm wife's subsidies of unpaid labor, for example, could hinder the initial purchase of new technologies, but serve to finance them after adoption. There is ample evidence of the importance of making do in allowing cash-poor and smaller farmers to delay the purchase of a tractor. Implement manufacturers and government agents were constantly frustrated by farmers' unwillingness to assign market prices (or any prices at all) to family labor,

because doing so made the purchase of a tractor much less attractive. Clarke found that a significant proportion of farmers who met the acreage threshold for tractors in the 1920s, nevertheless did not purchase one because they did not value family labor at market prices (Clarke 2002). Translated into class terms, feudal farm wives were subsidizing ancient farmers' consumption through practices of making do. Whether an ancient farmer pursued the technology strategy or not, his actions had contradictory consequences for the family farm's other class structures, as well as farm family members.

If he did seek to enter the fray with his innovating neighbors, his wife's feudal subsidies of unpaid labor were another factor that could offset the detrimental impacts of competition, and defray some of the costs of a tractor purchase. If the variable capital (V) employed in corn production included ancient, feudal, and perhaps capitalist living labor, the purchase of a tractor reduced all three components, contributing to the demise of hybrid farm production in the family farm enterprise, and strengthening ancient farm production. Even if feudal and hired laborers were not eliminated entirely, the need for them was reduced. At the same time, the feudal class structure of the family farm was likely strengthened, as the burden of farm women and children's work in helping out in the fields, as well as cooking and cleaning for hired hands was relieved. A Caterpillar tractor pamphlet from the early 1930s with the slogan, "At last we wives can have vacations" was apparently directed at farm women for just this reason (Garkovich and Bokemeier 1988, 211). According to the *New York Times*, for example, the majority of family farms relied very little on hired labor, and under those circumstances, "the main result of mechanization on the farm is not to lay off workers but to shorten the working

hours of the farm family and to relieve it of much drudgery" ("Machines on the Farm" 1940). Apparently, the purchase of a tractor was also motivated by the desire to "keep sons on the farm" by improving the conditions and interest of farm work (USDA 1940b, 9). Thus, contrary to many accounts, the "industrialization" of farming need not have entailed its transition to capitalism, but actually the strengthening of its non-capitalist class structures.

On the other hand, the circumstances of family farms were dramatically altered by these changes at best, and at worst, the laggard ancient farmer may have attempted to displace the technology-induced class crisis onto the feudal class structures and the farm wife. Again, the impacts of tractors likely differed according to income. Wives of less wealthy farmers likely experienced increased pressure to deliver more surplus in cash or noncash forms, and to increase subsidies for the ancient farmer's consumption to offset the increased claims on the ancient surplus. Laggard enterprises might even have been able to hang on for a little longer by redoubling efforts at "making do" to enable them to scrape up enough cash to purchase a tractor. One home economist reported on a 1920-24 study of Minnesota farm homes saying "Whether or not the commodities were produced for sale rather than home use it is impossible to state, but experience and observation have shown that many farm families still deprive themselves of milk, cream, butter, broilers, and other desirable products because of the money that may be obtained from selling them" (Studley 1931, 6). Increased cash expenses thus placed a different kind of burden on the farm family, leading them to alter their strategies of making do. Farm families had to increase marketed feudal farm and home production, or send family members to find outside employment in order to cover the switch. Especially from the

1950s on, farmers and their wives increasingly took off-farm employment to make ends meet (Hurt 2003). This may have contributed to the decline in farm women's feudal labor in the family farm enterprise, in caring for poultry and gardens, for example, as her time was increasingly devoted to earning cash income to purchase these consumption items for the farm family members. This decline was reinforced by government farm programs that provided support for ancient class processes in the family farm enterprise in livestock and crop production, but not for farm women's feudal class processes in the family farm enterprise in poultry, dairy, fruit, and vegetable production.[38] This shift in the strategy of "making do" need not have entailed the disappearance of feudal class structures from the family farm household, however. In fact, if it reduced farm women's isolation and drudgery, they may have been content to continue in their positions as feudal household serfs, particularly if farm mechanization and the increased cash income enabled the adoption of labor-saving household technologies, as well. In this case, farm women may even have experienced and tolerated an increased rate of feudal exploitation in the family farm household along with their off-farm employment.

[38] The gender and class bias of New Deal farm programs toward supporting ancient class processes on middle and upper class farms meant they failed to support these activities which were such a significant component of farm families' standards of living at the time, in spite of farm women's efforts to get these concerns addressed. The USDA instead continued to push the agenda of farm enterprise and farm home modernization (Jellison 1993).

CHAPTER 4

CONCLUSION

In this dissertation, I present a contradictory class history of U.S. agriculture using the example of Midwestern corn-producing family farms in the early twentieth century. No one else has examined the family farm in this way. In developing and applying an overdeterminist Marxian class analysis to an area previously unexamined by others in this tradition, this dissertation represents a contribution toward extending that literature.

In doing so, I bring new insights into the broader Marxian literature on class structural transformation. I theorize the family farm as a complex hybrid of mostly feudal and ancient class structures in its constituent components, the farm enterprise and the farm household. The family farm hybrid has not been transitional, but rather a stable class structural form in U.S. agriculture. Shaped by ideological processes that define the primacy of the ancient as the "farmer" and of the ancient class structure in the farm enterprise as "farming," it has been subsidized by the feudal exploitation of the family farm's women and children, by the cannibalization of neighboring ancient farmers in a vicious hunt for superprofits, and by the intervention of state welfare programs directed toward ancient farmers.

This analysis is one of the family farm, its transformation, and its survival that is more nuanced than the usual story about the "death of the family farm" and "the transition to capitalism." The twentieth century witnessed dramatic changes in the family farm's class structures and their conditions of existence, yet the family farm, a mostly non-capitalist entity, still survived, and in many cases flourished, even though that survival came at the expense of family members and one or more of the family farm's

constituent class structures, at the expense of neighboring farmers, and at the expense of taxpayers. Nostalgia for the family farm of the past has now been exposed as nostalgia, in part, for a particular form of serfdom, for a form of the family farm hybrid that relied on long hours of hard work, dependence, and exploitation of women and children in the context of the family farm's feudal class structures. Shifts in the family farm's subsidization strategies signaled not its extinction, but its continued survival as a non-capitalist entity partly enabled by the rise of capitalism in agriculture. Family farm members may have increasingly experienced capitalist class exploitation in their participation in non-farm class processes and capitalist class processes may have grown in non-farm agricultural enterprises, but the family farm remained in many ways impervious to the growth of capitalist class structures, despite their growing importance elsewhere in the agricultural system. Experiments with the capitalist "bonanza" wheat farms in the late nineteenth century highlighted the particular advantages of the non-capitalist hybrid form, as the capitalist corporations lacked the ability to exploit the unpaid labor of family members to maximize surplus and minimize costs in response to falling agricultural prices. Aside perhaps from some hired hands on family farms, capitalist class processes have remained largely absent from actual farm production, having retreated from initial inroads by the turn of the twentieth century. The twentieth century process of "capitalist integration" may well have strengthened both capitalist and non-capitalist class structures in agriculture – the former in the non-farm agricultural economy and the latter in farming itself. Ancient and feudal structures appear to have persisted in millions of family farms, aided by the flexibility of the hybrid form, which while multiplying crisis points, also multiplied possible strategies for responding to crisis.

In this way, the strengthening of capitalism in the non-farm agricultural economy has relied upon the continued existence and strengthening of non-capitalist class structures in farm production itself, and vice versa.

In addition, the class-based definition of the family farm yields unique insights into three broad aspects of U.S. agricultural history. First, this analysis highlights the crucial, yet under-recognized and under-examined role of farm women and children's unpaid labor in the survival of the family farm. While the family farm depended for its survival on the exploitation of all farm family members, the primacy of the ancient class structures rendered the feudal class structures and their importance, along with the hybrid form of the family farm, largely invisible. I have argued for the crucial role of women's "invisible" labor in the survival of the family farm, and examined the conflicts stemming from that role. The contradictory implication is that farm women's feudal dependence both supported and undermined the ancient farmer's "independence." Although not recognized as such, the successful exploitation of farm women within the feudal class structures of the family farm generated the backlash to that arrangement and its accompanying burden of long hours of strenuous work, isolation, and subordination that many farm women shouldered. Concern for the impacts of that rebellion on the health of rural society found expression during the early twentieth century in the Country Life Movement, and what became known as the "farm woman problem."

In highlighting women's role in family farms, I join the conversation with the existing feminist literature on rural women's history (Elbert 1987; Fink 1992; D. K. Fitzgerald 2003; Jellison 1993; Jensen 1981; Neth 1998; Sachs 1983). I contribute the added dimension of class to that literature on the question of women's "liberation" and its

relationship to things like women's participation in farm and household labor processes, access to technology, political empowerment, and other factors commonly debated and discussed. I argue that the dimension of class adds to the richness of our explanations and understanding of how women's struggles for justice succeed or fail. For example, whether or not changes in women's access to labor saving technologies in home production, or in their participation in farm production processes is empowering is conditioned by a variety of factors including ethnicity, socioeconomic status, familial relationships, educational attainment, etc. One of those factors includes their position in exploitative class processes. I emphasize the role of class not because it is more important than these other factors, but because it, unlike them, has been overlooked in the existing literature. Just as farm women failed to recognize or speak about their dilemmas in terms of class and so failed to resolve the farm woman problem, we as scholars fail to comprehend these dilemmas as well, if we do not include an awareness and language of class in our explanations.

Second, I offer a new, class-based perspective on the roots of the twentieth century "miracle of productivity" in U.S. agriculture, the rise of the agribusiness giants that depended on the perpetual, technology-induced crisis of that agriculture, and the implications of the seemingly infinite largesse of the U.S. government toward family farmers. Beginning in the 1920s with the adoption of the farm tractor, and accelerating thereafter, processes of technical change shifted U.S. agriculture onto a new trajectory of development toward the industrial agriculture model we are familiar with today. The change was accompanied by severe economic distress and rural dislocation as millions of family farms suffered ongoing crisis and failure. The 1920s and 30s were periods of

particularly sustained crisis, and as a result, the 1930s marked the beginning of unprecedented government intervention in the agricultural economy. After having nearly ground to a halt between 1900 and 1920, productivity growth took off, particularly after 1935. During the post-World War II Golden Age of U.S. capitalism, no other sector outperformed agriculture in terms of productivity growth. In severe decline and subject to massive government intervention, non-capitalist family farms became the most technologically dynamic enterprises in the United States.

My analysis adds a new, class-based understanding of these developments. In a sense, improved farm productivity through technical change, driven in part by the competitive struggle among family farmers, became an answer to the limits of class exploitation within the family farm, while also generating contradictory outcomes. The internal subsidies from family farm members were supplemented with those from outside the family farm – from other farmers in the form of superprofits, and from the state in the form of price supports and other farm programs. Like the feudal class structures within the family farm, these helped the ancient farmer transcend the limits of auto-exploitation, maximizing the revenues available without overtaxing his physical capabilities and threatening his ability to reproduce his own labor power. The few successful farmers cannibalized their neighbors and swallowed their assets, while the rural landscape became increasingly littered with the failed farms of the losers and the crumbling communities they left behind. The very success of ancient competition pushed the state into providing welfare to all those who participated directly in this competitive struggle. All of these developments helped fuel the rise of capitalist agribusiness depending on and

enabling both the continuous process of crisis-induced (and inducing) technical change, as well as the state welfare to ancient farmers keeping the technology treadmill going.

A third implication of this analysis is to show how the unique set of contradictions and circumstances facing family farmers at this time, including class exploitation, were connected to concern for their ability to serve the needs of U.S. industrial capitalist development. The farm woman problem itself was part of a broader concern with "backward" agriculture stemming from the stagnant agricultural productivity growth and resulting high food prices during the early twentieth century. Agricultural development was an issue of the utmost national concern during the early twentieth century. The hunt for superprofits combined with farm programs produced the combination of cheap food, a vast supply of workers from the countryside, and an expanding market for industrial goods in rural areas that proved a potent formula for economic development. It contributed to a rising rate of class exploitation in industry while supporting the real wage. These developments helped foster the post-war Golden Age, and catapulted U.S. agriculture to global dominance, but came at the expense of the intensified exploitation of farm families and massive dislocation in the countryside as millions of family farms collapsed.

As the world again faces the specter of Malthusian-style food shortages and perpetually rising food prices, as well as the human and environmental degradation associated with the industrial agriculture model, my work is particularly instructive. The U.S. model is often advanced as a formula for agricultural development elsewhere in the world, and more industrialization is touted as the solution to agricultural problems in the developed world, as well. My perspective contrasts with this view that technical change

in U.S. agriculture has represented efficiency, and the dislocation suffered by farmers and rural communities the necessary price to pay for progress. From a Marxian perspective, the development of exploitative class structures thus enabled signals a crime wave of social theft, and is hardly something to be celebrated as "progress." The expansion of the food supply necessary to sustain the population might have been accomplished without inflicting such trauma on that same population, and could still. Moreover, the overdeterminist view of technical change means there can be no necessity or inevitability attached to any set of technical innovations or agricultural institutions associated with them. The idea that the particular circumstances that produced this "success" in the U.S. will prevail elsewhere, as some sort of formula for agricultural development is also called into question.

In the struggle over the future course of global agricultural development, I add my voice to those who advocate a turn toward an alternative model of the agrifood system. My work highlights the social and personal costs associated with the intensification of exploitation in the transition to industrial agriculture in the U.S. In addition, my work implicates the beloved family farm in this social theft. This analysis presents a family farm that is quite different from the mythical ideal. Rather than preserving the sanctity of the traditional and celebrated rural family, the family farmer instead participates in hastening its demise. Rather than embodying the spirit of neighborliness and local community, the family farmer instead participates in hastening his neighbors' demise. And finally, rather than being the self-reliant, independent, rugged individual producer, he is instead among the nation's longest-lived and least recognized "welfare queens."

Ironically, the same family farm is often held up as the political, economic, and cultural bedrock of American life. Its exalted status as an example of democracy, independence, self-sufficiency, and morality is enabled among other things by the absence of class awareness in U.S. society. Indeed, the family farm may well be an example, albeit of something quite different than its celebrants generally understand, for in what other industry could the labor of men, women, and children be so fully exploited and the exploitation thereby of others so successfully enabled? When viewed through the lens of class, the hallowed family farm is an example of one of the most exploitative institutions in the U.S. economy. The myth of its superiority takes on a new significance as one of the important non-economic processes helping to overdetermine the family farm's long survival, while participating in foreclosing truly radical transformations of these institutions to non-exploitative alternatives. By bringing the class perspective to light, my research highlights the pitfalls of this nostalgia for the family farm of the past, and helps point the way toward a truly democratic food system for the future.

APPENDIX A

THE HUNT FOR SUPERPROFITS

The Hunt for Superprofits without State Price Supports

Step 1: Before Innovation

Consider three ancient farm enterprises alike as to value flows. Each ancient uses $4 worth of C, pays himself $2 of V and self-appropriates $2 of S. The total corn produced is 3 bushels, divided equally among the three ancient producers. I assume that one abstract hour = 1 dollar so that each ancient works for 4 hours and thus the technical productivity of each is UV/LL = ¼ where UV = use value(s) and LL = living labor

	C	V	S	W	r	occ	ac
1.	4	2	2	8	1/3	2/3	6
2.	4	2	2	8	1/3	2/3	6
3.	4	2	2	8	1/3	2/3	6

Where:

C = constant capital

V = variable capital

S = surplus

W = value

r = value profit rate (S/(C+V))

occ = organic composition of capital (C/(C+V)

ac = average cost ((C+V)/UV)

The unit value (W/UV) in the corn industry is the social average or 24/3 = $8. This represents in labor hours the socially necessary abstract labor time of 8 hours to produce a bushel of corn.

Step 2: After Innovation

Suppose Ancient #2 purchases a tractor that raises the technical productivity on his farm. He can apply less LL and produce the same number of UV, or the same LL and produce more UV. Assume he is able to expand land under corn cultivation so that his LL is still 4 hours. I will assume that $4 more of C is purchased, and that it enables another unit of corn to be produced with the same LL. Ancient #2 therefore raises the productivity on his farm enterprise from ¼ to 2/4. The new value flows are as follows:

	C	V	S	W	r	occ	ac
1.	4	2	2	8	2/6	2/3	6
2.	8	2	2	12	2/10	4/5	5
3.	4	2	2	8	2/6	2/3	6

The new social unit value, the weighted average across the three ancient producers, to produce a bushel of corn is 28/4 = $7. Farmer #2 now has a private value of 12/2 = $6.

Assuming that each producer must sell at the socially determined price equal to unit value, new revenues (R), costs, and profits for each become the following:

	R	C+V	Market Profit	Market Profit Rate
1.	7	6	1	1/6

2.	14	10	4	4/10
3.	7	6	1	1/6

Superprofits are now transferred from less to more productive farmers as follows:

$$NCR_{SP} = \big((W/UV) - (W/UV)PR\ \big) \times UV$$

Ancient farmer #2 gets a superprofit ($NCR_{SP} > 0$) which is equal to the difference between the social unit value and his lower private unit value, or (7-6)* 2 = $2. He captures that superprofit at the direct expense of ancient farmers #1 and #3. His $NCR_{SP} > 0$ is the consequence of $NCR_{SP} < 0$ for farmers #1 and #3, where $\sum NCR_{SP} = 0$. Ancient farmer #2 is now the low cost producer of corn and can earn a higher market profit rate by increasing his occ.

Step 3: Imitation and Diffusion

Farmers #1 and #3 now face the following situation in ancient corn production:

$$S(A) - NCR_{SP} < SSCP(A)$$

Farmers #1 and #3 must respond in some way, or risk death as ancient farmers. One possible strategy is to avoid losing S by copying the innovating strategy of #2. Widespread diffusion of the new technology (in this case, the tractor), alters value flows and profits as follows:

	C	V	S	W	r	occ	ac
1.	8	2	2	12	1/5	4/5	5
2.	8	2	2	12	1/5	4/5	5
3.	8	2	2	12	1/5	4/5	5

The new social average unit value is 36/6 = $6. The new amount of corn produced has increased from 3 to 6 bushels. Each producer has raised productivity to 1/2, lowered average costs to $5, and raised the occ. Now, however, each producer earns a lower value (and market) profit rate or 1/5 instead of 1/3 or 2/5 due to the increasing occ. The innovator's lead has been erased as he is no longer siphoning surplus from his less productive competitors. Each ancient farmer's private innovating action has contradictory consequences for them all and for the industry. Intense competition has been shaped by technical change and vice versa, which produces a crisis in corn farming of a falling value rate of profit.

As discussed in the Chapter 3, there are also countervailing tendencies contributing to a rising profit rate. Ancient farmers may pursue other strategies as well. Both imitation and these other strategies will impact the family farm's other class structures, impacting the flows of value between them.

The Hunt for Superprofits with State Price Supports

Step 1: Innovation

Same as above

Step 2: After Innovation

If state intervention supports the price farmers receive for corn at the initial (before innovation) social unit value of $8, the initial innovation (the purchase of a tractor) would

have the following impact on revenues and market profits (assume the impact on value flows is as presented in Step 2 above):

	R	C+V	Market Profit	Market Profit Rate
1.	8	6	2	1/3
2.	16	10	6	3/5
3.	8	6	2	1/3

Farmer #2 gets the NCR_{SP} = (7-6)*2 = $2 as before from Farmers #1 and #3.

In addition, all farmers receive a transfer from the state,

$$NCR_{FMV} = \left(P_{FMV} - (W/UV)\right) \times UV$$

NCR_{FMV} = (8-7)*UV = $1*UV. Farmer #2 therefore receives a larger share of state payments ($2) based on his larger production (2 bushels). Farmers #1 and #3 each receive $1 from the state, which exactly offsets what each is losing to Farmer #2. This is because the private unit value for Farmers #1 and #3 is the same as the social unit value before the innovation. Since we assumed that initially prices and values were equal, the government-set price, $P_{FMV} = (W/UV)_{PR}$ for farmers who did not innovate. Farmers #1 and #3 are back where they started at Step 1, while Farmer #2 has captured $2+$2=$4 in additional surplus. He is now in a superior position to grow his enterprise or otherwise expand his conditions of existence. Whatever strategy he pursues will further impact Farmers #1 and #3, hence they still have an incentive to imitate his initial innovation to level the playing field.

State expenditures on supporting the price at $8 are $4, and as noted, the larger farmer (in terms of production), gets a larger share of those expenditures. Instead of the previous $6, there is now $10 available for farmers to distribute toward securing their conditions of existence.

Step 3: Imitation

Widespread imitation and diffusion in the context of price supports produces the same value flows as Step 3 above. However, in this case, revenues and market profits are as follows:

	R	C+V	Market Profit	Market Profit Rate
1.	16	10	6	3/5
2.	16	10	6	3/5
3.	16	10	6	3/5

As above, the social unit value has fallen to $6, but the price farmers receive is $8. There are no transfers of superprofits anymore, as they all have the same productivity and private unit value. However, there are dramatically increased transfers from the state to support the price of the increased output, which is now even farther above the unit value.

NCR_{FMV} = (8-6) * 2 = $4 for each farmer, not just for the innovator. The entire $4 is the result of a transfer from the state. State expenditures to support the price at $8 are now $12.

State expenditures have ballooned, as has the revenue available for farmers to distribute to secure their conditions of existence. Instead of $6, there is now $18 available. **The state has financed an increasing occ along with an increase in the mass and rate of profit in corn farming.**

APPENDIX B

THE STORY OF HYBRID CORN

The second major agricultural development of the early twentieth century was the invention and rapid adoption of hybrid corn. Hybrids are the result of cross-breeding different varieties of inbred, or self-pollinated, lines of corn. The first generation of hybrid plants exhibits what is called heterosis, or "hybrid vigor" – producing yields greater than the parent plants. But the seeds of the first generation hybrids don't "come true." That is, yields decline dramatically with the second generation, making the seeds of the first generation plants virtually worthless. This characteristic is referred to as a "genetically closed pedigree." Instead of farmers being able to select and save their own seed from the previous year's crop, as they commonly did, they had to return to the seed company every year to purchase the new hybrid seeds and the increased yields they offered.

In the early twentieth century, corn was the dominant field crop in the United States and a major focus of plant breeding research efforts. Farmers had cultivated and improved it for millennia using selective breeding, or choosing individual ears of corn on the basis of appearance and saving the seeds for the following year's crop. Corn was open-pollinated, meaning farmers relied on natural cross-pollination between plants. Accidental hybridization occurred, as did deliberate cross-variety breeding. Reid's Yellow Dent, the most popular open-pollinated variety of the time was one of these "varietal hybrids," but none of these was a "true" hybrid of inbred lines.

Working separately with single-crossed inbred lines, both George Shull and Edward East demonstrated hybrid vigor - the hybrid offspring produced higher yields

than the inbred parent plants. Their results were published in 1908. Donald F. Jones was the first to demonstrate the commercial viability of hybridization in 1918 with the invention of the "double-cross inbred hybrid corn," the type of hybrid that launched the industry. All of these early efforts occurred through publicly funded breeding programs. Throughout the 1920s and early 1930s, however, hybridization remained only one of many ideas about how to improve corn, and was in many ways the least promising. Early hybrids were temperamental, required extremely fertile soil, and thrived in limited geographic areas (Fitzgerald 1993). Massive government intervention, aggressive marketing campaigns, and an accident of weather helped tip the balance by reducing the costs of development and adoption (Sutch 2008).

In 1921, Henry C. Wallace became Secretary of Agriculture, and at the urging of his son, Henry A. Wallace, an avid corn breeder, phased out the USDA's traditional corn breeding program and established a new Bureau of Plant Industry to research hybrids. [39] While Henry A. used *Wallace's Farmer* to "educate" farmers about the benefits of the new hybrids, he continued to work on developing his own variety. After several failed attempts to outperform open pollinated varieties with hybrids in the Iowa Corn Yield Tests, his "Copper Cross" won in 1924. Wallace produced "Copper Cross" from two parental lines developed by public breeding programs. One was from the Connecticut Experiment Station, and the other from the federal corn breeding program his father had

[39] The Wallace family of Iowa produced three generations of prominent national agricultural leaders, all named Henry. Henry A.'s grandfather served as the head of the Country Life Commission and founded the national weekly *Wallace's Farmer*. Henry A.'s father, Henry C. Wallace edited the paper until Warren G. Harding appointed him Secretary of Agriculture in 1921 in the midst of the postwar farm depression. Henry A. took over the editorship of the paper at that time. He later served as Secretary of Agriculture, then Vice President under FDR. He narrowly lost the nomination for vice president to Harry Truman in 1944, and ran as the Progressive Party presidential candidate in 1948 (Meller 2005).

established. In 1926, Wallace founded Pioneer Hi-Bred, the first commercial hybrid seed corn company. "Copper Cross" sold for a whopping $52 a bushel, to "convince farmers they were buying something special" (Sutch 2008). Funk Brothers, a leading seed company at the time, introduced its first double cross hybrid in 1928. Several new companies began production within a few years. In 1929, J. Sidney Cates declared in the pages of *Country Gentleman* that "the day of super-corn has come." "This work, in short, comes nearer to making evolution stand on its hind legs and bark like a dog than anything yet accomplished with an economic plant" (March, p. 20). Buried on the last page of the article was the part about how hybrids could not be saved for replanting and maintain their superior performance. Instead, they had to be purchased anew each year from the seed company. Cates's enthusiasm (and his attempt to bury the bad news) notwithstanding, farmers remained unconvinced. Not only was the new crop expensive to adopt, but risky as well. Potential crop failure was devastating, and unlike their open-pollinate cousins which came in a wide variety of shapes, sizes, and colors, the new seeds offered no outward visual signs to indicate their performance in a particular farmer's field. Companies like Pioneer offered substantial discounts, but these were offered only to a select few farmers in each locale. For most farmers, the yield gains simply were not enough to make the new hybrid worthwhile.

By 1933, hybrid corn cultivation remained at less than one percent of planted acreage. Then came the drought of 1934, and devastating crop failures throughout the Corn Belt. One of Pioneer's experimental hybrid varieties, number 307, remained standing. This accidental discovery became a goldmine when the second drought hit in 1936, the same year Hybrid 307 was introduced commercially. Even though hybrids

were not clearly superior under normal growing conditions, in demonstrating an undeniable edge at averting complete crop failure, hybrids finally overcame farmers' resistance. Wallace demonstrated his unwavering commitment to promoting the new, scientific agriculture by devoting the 1936 *Yearbook of Agriculture,* the annual report of the Department's activities distributed widely to Congress and the public, to "a single subject – the creative development of new forms of life through plant and animal breeding" (Sutch 2008, 18). By around 1940, seed companies had stopped selling open-pollinated varieties, and by 1945, 90 percent of corn acreage was planted with hybrid corn (Fitzgerald 1993, 340).

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