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BOUNDARIES AND BREACHES: COMPLEXITIES AND STRATEGIES DOWN ON THE FARM

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ABSTRACT OF DISSERTATION

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A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy
in the College of Arts and Sciences
at the University of Kentucky

By
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Lexington, Kentucky

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Employing a wide range of theoretical and methodological tools, practitioners within an array of disciplines have attempted to gain new understanding about the structural changes in the agricultural system in the United States and around the world. From Agricultural Economists to Sociologists, quantitative and qualitative research has attempted to shed light on structural change in agriculture and its implications for the real lives of farmers, their families, and consumers of their goods. The current research adopts a comparative-historical approach to examining the particular affects of structural change in six counties in central Nebraska. The general theoretical frame on which this project is based is Human Ecology, as developed by Robert E. Park. It examines the importance of four environmental orders, the natural-biological, the economic, the political, and the moral-cultural. In order to ameliorate some perceived problems with Park's stance, including a level of rigidity, his model is modified through the use of the Marxian concept of "overdetermination," which recognizes the complex relations among a range of social processes. Overdetermination is defined in terms of the recognition of the mutually constitutive nature of all social processes, with the character of each process determined by its relationships with all other social processes.

Results suggest a very complex reality in which farmers and their families live in the 21st century. Relations were found among factors and processes both within and between Park's environmental orders. Farm families have developed and deployed a wide range of strategies in response to structural change within each of the environmental orders. For example, some farmers invest in technology as a means to remain more competitive. Others choose production types that are more labor-intensive and less technologically based. Some farm family members seek off-farm employment or become involved in local political processes while others are involved in civic or religious organizations as a means of coping with the changes they have experienced. Social and geographic isolation impact the strategies adopted, as do natural conditions and processes, such as dominant soil type. Ultimately, this project, while it reveals a wealth of information, also raises many questions that can only be answered by the farm families themselves.

KEYWORDS: Human Ecology, Environment, Overdetermination, Structure of Agriculture, Nebraska Agriculture

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This work is dedicated to the many farm families in the Untied States attempting to make their way through the complexity and uncertainty of the global food system in a new millennium. Their hard work and dedication make it possible for all of us to have the necessary access in a very complex food system. As just one link in an increasingly complex chain of production, processing, distribution, and consumption, the real lives of these families have been dramatically impacted by processes and factors well beyond their control. Many families persist, acting as perhaps the most direct negotiators with the natural environment on which we all depend for our survival. These dedicated families deserve the recognition of their vital importance to our society and a greater understanding of the realities in which they live their everyday lives.

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While this dissertation is an individual work, it has benefitted from the expertise and insights of several others. The Chair of my Dissertation Committee, Dr. Loraine Garkovich, is the person most instrumental in encouraging me to follow through with a new and fresh examination of the very topics on which I have invested years of research. Her suggestions, along with those of the other members of my Committee, Dr. Rosalind Harris, Dr. Dwight Billings, and Dr. Steven Issaacs, made designing and conducting this research a profound learning experience for me. The insights of each member helped to greatly improve the overall quality of the finished product, encouraging me to think of new ways to approach a very old set of questions.

While my Dissertation Committee provided invaluable input and encouragement, the project could not have been completed without the assistance and support of family and friends as well. Both my sister, Jamie Hajney, and my mother, Barbara Henzl provided a wealth of personal experience from the perspective of farm family members, encouraging an interest in a wide variety of processes and variables. The continuing support of my family, including my mother and my daughter, Alysha Border, and my life partner, Anthony Konkler has been critical to the successful completion of this project. Finally, the central Nebraska farm families who participated as informants in my earlier research projects have been instrumental in providing insights into the realities of farm life today.

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Chapter One: Prologue

It had become an irritating but pretty regular habit with her, the third night in the last week that she was awake by about 2:30, her mind too cluttered to even consider going back to sleep. Listening to nearby frogs and coyotes howling off in the distance, she thought she caught just a trace of the scent of skunk on the light westerly breeze, maybe from down near the old, abandoned hen house. Jane thought about the coming day and the giddy excitement of the girls about spending a couple of days in town with Granny and Gramps for the Old Settlers celebration. Ann and Elena had helped her bake her famous German chocolate cake last night to help raise funds to maintain the community building, chattering excitedly about their plans to meet their friends for the parade, town picnic, cake walk and street dance. Jane was not thrilled about her own day. It was time to haul pipe and get it set up for the irrigation season. Other than butchering chickens and hauling anhydrous tanks from town out to the fields, laying pipe was her least favorite farm job.

Jane and Jim had sat down with his parents, Richard and Mary, after harvest last year. They talked about investing some of their profits in a new center pivot for that quarter, but decided they did not want to carry that much more debt right away. They were still paying on the combine and head they had purchased last summer, and they still had the annual payment to Richard and Mary each fall. Like every year since they had taken over the farm, she had gone with Jim to the bank in McCook last month, to take out another operating loan to buy the seed and chemicals they would need this season. They hoped that the livestock market would do a little better this year. They had lost just one calf this spring and one of the cows had had twins so they had 37 calves to fatten and sell.

She must have dozed for a time because she next awoke to the old rooster crowing and the first fingers of soft light streaking the eastern horizon. Jim would be

awake soon so she slid out of bed and went down to start the coffee. Wishing she had grabbed her slippers on the way downstairs, she drifted across the cool tiles to the light switch. As her eyes adjusted, she felt a flood of pride at the beautiful rose-colored kitchen. Last year was a good one for the crops, with plenty of rain and pretty good prices. It was not so good for the cattle, but they had finally made enough to do the work on the kitchen that they had been talking about since they took over the home place. The twins had come, and then the drought, so they had been struggling financially for most of those twelve years. The winter months had been taken up with feeding cows, planning for the spring, re-texturing the ceiling, painting, and sewing up the pretty curtains for her new kitchen.

They had finished up that work by early spring, giving her lots of time to plan her garden and take care of the vegetable plants she had started in the late winter. Her garden plot was an acre and a half of corn, tomatoes, onions, carrots, and radishes, with beans growing up along the south fence. Hills of cucumbers and squash filled the western side of the lot. The tender asparagus shoots were nearly two inches tall now and she was looking forward to the first harvest. Several of the apple and pear trees, in the small orchard north of the garden, already had small fruits. The strawberry patch, curving around the back side of the house, had lots of pretty white blooms mixed with plump berries, some ripe red and ready for picking. To her, summer was all about fresh fruits and veggies. Even though the garden and the canning were a lot of work, she could honestly say that they were worth every minute, every pulled muscle, and every worry invested, especially when the freezer and the pantry were filled for the winter.

She was always more careful now with the sunscreen and a hat. For years, she had tended the garden and helped Jim in the fields without bothering with sunscreen, her skin becoming that deep golden hue that she had always wanted, and she had loved it until the cancer scare last fall. Doctor Raymond had said that it was benign, but the

odd spot on her left shoulder blade had taught her a valuable lesson. They had picked a good day to get started on laying pipe. The fog was thick as Jane hopped out and opened the gate, startling the small group they always called “our deer”. There were three fawns in the herd this year bringing the total to ten. As the fog lifted a bit, a gray, cloudy and relatively cool morning began. It was in the mid-fifties when they got to the field, warming only slowly until the sun burned off the clouds by around 9:00.

Jane did not mind the work itself. She loved the idea of being able to see that they had accomplished something at the end of the day. She had never minded a good day’s labor, but laying pipe was a real pain in the butt. With lengths of twenty feet, the pipe wasn’t all that heavy but it was bulky and difficult to work with as they fit the pieces along the edge of the field. If your hands got too sweaty, it was easy to lose your grip on the pieces and maybe the worst part was it was incredibly boring. Loading it, hauling it to the field, and unloading the pipe were where the bulk of the work came in. By around 10:00 or so, streams of relatively clean skin appeared, sweat flowing and washing the mud away in rivulets. As always, a brisk wind tossed around clouds of loose dust from the bank where they were laying out the pipe. Deerflies, sweat bees, horseflies, and black flies harassed them all day. Jane actually began to appreciate the breeze blowing dust up in her eyes as it evaporated their sweat and seemed to distract the bugs.

At about 12:30, they sat under the old Cottonwood at the southwest corner of the field to take a break and have a sandwich. Jane was already tired and that same muscle on the right side of her back that always bothered her when she did much lifting was starting to feel tight. The birdsong and the music of the little nearby creek, bubbling over rocks and winding dramatically as it snaked along the western edge of this quarter acre, always helped provide her with a sense of peace, no matter how she was feeling. Her favorite spot on the whole 900 acres of ground was just about half mile from here, along the same creek, huge Cottonwoods, a small tributary running into the creek, and a

natural stone “bench” under a large Ash tree. They washed their filthy hands and faces with the gallon of tap water she had brought, and sat on the still colorful old quilt for lunch. She had roasted a couple of chickens while she was baking the cake with the girls last night. They had eaten one for supper, with a stuffing thick with onions, peppers, fresh sage, and almonds. She had packed their lunch of chicken sandwiches with fresh leaf lettuce from the garden, and Kitty Clover chips, Jim’s favorite, all washed down with raspberry iced tea. She was now impressed with Jim’s ability to take a very short nap after lunch, never more than about half an hour, and then feel refreshed and ready to go back to work. He called it his siesta, and at one time, it irritated the hell out of her. She had mellowed with their relationship and knew to bring her book along that morning. She was reading *The Hobbit* again, enjoying being forced to use her imagination. Although she could never dream of taking that short a nap and have it make her feel anything but bitchy herself, she was glad to have those few minutes to relax and read.

The remaining few high, thin clouds had dissipated by the time they went back to work, and they were both soaked with sweat within a few minutes of exertion. The afternoon was pretty much a repeat of the morning, with sweat and bugs and dirt, so when they needed to go get another load of pipe at around 4:00, Jim suggested they load up the trailer and quit for the day, getting an early start tomorrow. Jane, tired and stiff was certainly not going to argue with that logic. Six hours later, she was still awake and even more irritated with herself than she had been early that morning. She was totally exhausted but the pain in her back would not allow her to sleep right away. Jim had gone to bed as soon as he had had his shower and a fat hoagie sandwich, snoring within minutes of his head hitting the pillow. As she finally began to doze off around midnight, she heard coyotes, a little closer tonight, and caught a brief whiff of the scent of some sweet blossom, blowing in from the west.

Chapter Two: Introduction, Theory, and Methods

A CENTURY OF CHANGE IN THE UNITED STATES STRUCTURE OF AGRICULTURE: THE FARMER AS A SINGLE LINK IN AN INCREASINGLY COMPLEX CHAIN

Various theoretical and methodological tools have been employed in an effort to examine the many changes in the US agricultural system in recent decades. From macrosociological assessments, using functionalist, human ecology or Marxian frames, to microsociological examinations of the on-the-ground impacts on the real lives of farm families in the country, various disciplines, from agricultural economics to sociology and anthropology, have attempted to provide insight into the dynamic nature of the agricultural system. The purpose of this current research is to develop and deploy a theoretical frame, considering both the macrosociological factors impacting these changes and the microsociological implications for real people attempting to make a living on the farm today. Beginning with a review of the changes in the system, this chapter will provide a basic framework from which this work will examine the changes and their impacts.

The structure of the agricultural system in the United States has changed dramatically over the last century. Where once the primary inputs for the production process were sweat, seed, and a few simple implements, and agricultural markets were largely local, with the farmers themselves marketing their crops and livestock, today's farms are just one link in an increasingly complex chain of input, production, processing, and distribution of agricultural goods. In the beginning of the twentieth century, nearly half of the working population of the United States was engaged in farming. Family farming of the period required the hard physical labor of all able family members from an early age. Technological advances over the century, along with economic, political, and social developments, have provided for very different demands and conditions for

producers in the early twenty-first century.

Less than 1.5 percent of the labor force in the U.S. is today engaged in agricultural production. From a high of nearly 6.5 million farms in the US in 1920, to just over two million in 2007, many factors have impacted the overall structure of the agricultural system over the last century, including the number of farms. The average farm in the country in 1920 was just 149 acres, while today it is over 400 (US Historical Census Data, 1900; USDA Census of Agriculture, 2007). The labor demands to successfully operate a farm of that size in 1920 necessitated full-time dedication to the process, and many tasks required the labor of all family members to successfully complete. While once the primary demands in agricultural production were largely physical, today, the demands have moved dramatically toward the cerebral. Today's successful farmer must have knowledge around a wide range of topics, including soil condition and biology, meteorology and climatology, irrigation, chemical use, the operation and maintenance of complex machinery and equipment, seed biology, government programs and regulations, contract production, negotiation of leases and loans, and very complex global agricultural markets.

A wide variety of technologies have been developed over the twentieth century, dramatically increasing the efficiency and productivity of agriculture. The hours required to accomplish the tasks of the farm have been reduced significantly with the development of these assorted technologies such as tractors and irrigation systems. In order to remain competitive in the market, farms must adopt new technologies quickly, dramatically increasing the cost of production in our complex system. By 2007, the average cost of production on American farms was over 109,000 dollars, more than doubling since 1987 (USDA Census of Agriculture, 1987, 2007). As with farming itself, input markets have become more concentrated over time, reducing the choices farm operators have available to them to acquire what is needed to produce their crops and

livestock and often producing economies of scale that advantage the largest farms demanding the greatest inputs (King 2001). Of the farms operating in the US in 2007, over half posted losses that year, averaging nearly 16,000 dollars. Over half of all US farms paid interest on loans in 2007, many operators depending on continuing cycles of debt and repayment in order to continue to produce crops and livestock every year, taking out operating loans in the spring and hoping to make enough money when they sell their crops in the fall to pay them back.

At the same time, these new technologies have been instrumental in freeing many operators to seek outside employment as a means of supplementing farm income for the family. By 2007, the principle operators of nearly 65 percent of all farms worked at least part-time off the farm, and close to 40% worked 200 or more days that year (USDA Census of Agriculture 2007). Approximately 46 percent of all farm families were dual earner families, with one spouse working off the farm and the other engaged in farming, with or without additional off-farm income (USDA ERS: Structure and Finances of US Farms, Family Farm Report 2007). While positive farm income has been a problem for many farm families, overall wealth, primarily in land and buildings and machinery and equipment, has risen dramatically over the years, up nearly 40 percent between 1987 and 2007, to an average of approximately 880,000 dollars by 2007 (USDA Census of Agriculture 1987, 2007).

Although in shear numbers, small family farms continue to dominate American agriculture, the concentration of land ownership and/or control and of production have shifted wealth and power into the hands of the few in this important industry. For instance, considering Census of Agriculture data, fewer than 470 farms accounted for 10% of all agricultural sales in the US in 2007, with fewer than 400 in 2002 (USDA Census of Agriculture , 2002, and 2007). Concerning land ownership, in 2007, approximately 69 percent of all farms in the US were operated by their full owners, but

those farms accounted for just over 47 percent of all acres farmed. The 2007 statistics on the largest farms, over 2000 acres, reveal that these farms are significantly less likely to be owned outright than average for all farms, with just 23 percent of the largest farms operated by their full owners. Interestingly, however, the share of total land that is owned by the operator is very similar between the two, with 62 percent of the land owned for farms overall and 60% for the largest farms (US Census of Agriculture 2007)

In 2007, over 86 percent of operators of those largest farms identified farming as their primary occupation, versus just 45.1 percent for all farm operators. Family and individual organizations do still dominate the numbers of farms in this country, making up between 86 percent and 90 percent of farms since 1992, but controlling only 62 percent to 66 percent of all agricultural land. The share of farms organized as family corporations has remained relatively stable since 1992 as well, at between three percent and four percent, controlling between 10.5 percent and twelve percent of the farm land. Non-family corporate organizations account for less than one percent of all operations in the US, controlling just over one percent of farm land. Farms with market values of agricultural products of one million dollars or more were significantly more likely than farms as a whole to be organized as non-family organizations, at 3.3 percent of the total versus less than one-half of one percent overall (USDA Census of Agriculture 2007).

Ultimately, the structure of the agricultural system in the United States is dramatically different at the dawn of the twenty-first century than it was at the turn of the twentieth. Fewer and larger farms, different demands, including inputs and knowledge, dramatic increases in the cost of production, increasing involvement in off-farm paid employment as a means to supplement family and often, farm income, and increasing complexity of the entire system and its relationships with global markets characterize the system of agriculture in the US today.

DEVELOPING A THEORETICAL FRAME FROM WHICH TO EXAMINE THESE CHANGES: HUMAN ECOLOGY AND MARXIAN INFLUENCE

The topic of the changing structure of agriculture in this country has drawn the interest of practitioners in a variety of fields, from agricultural economics to sociology. What follows is a discussion of human ecology theory, as developed by Robert E. Park, as a potential tool for understanding these changes, along with some of the most significant pitfalls of such an approach. The Marxian concept of overdetermination will be introduced as a means to deal with some of the perceived problems in Park's model.

While a case can obviously be made for the vital importance of the natural environment in determining the well-being of families attempting to sustain themselves on the farm, a review of the dramatic changes in the structure of agriculture and the implications of those changes reveals the importance of several other aspects of environment on the lives of real people as well. A human ecology frame encourages us to look further than the natural environment, at the social environment. Human ecology is a multidisciplinary orientation to human relations with their environment, natural and social. At the heart of this stance is the recognition that the relations among human beings and their environment are interactive. In other words, the lives of human beings and their communities are influenced by the natural physical environment in which they are operating while human beings and their activities have an impact on the physical ecological environment. This theoretical frame, while the particulars vary depending on the individual thinker, tends to hold some important similarities among the various theoretical models developed. For each, there tends to be a recognition of both the spatial and temporal factors in human relations with their environments. Of particular interest to this research is the work of Robert Park.

Robert E. Park: A Human Ecology Pioneer

When searching for a general theoretical frame from which to examine the

changing structure of US agriculture, I became reacquainted with the work of Robert Park. Park had begun his career as a journalist, a newspaper reporter in Minneapolis, Detroit, Denver, New York, and Chicago (University of Chicago Website, Retrieved 2010). At age forty, after studying in Heidelberg with Georg Simmel, Park received his PhD. A decade later, he joined the faculty of the Department of Sociology and Anthropology at the University of Chicago. During his nineteen years at the University, Park, in witnessing the dynamic nature of Chicago's society, applied the concept of environment to human society for the first time (University of Chicago Website).

Park concerned himself with human relations with both the natural and social environment. While, as with all other animals, human beings are dependent on the natural ecological environment for their physical survival, human relationships with the natural are mediated by their unique capacities. Park and Burgess (1921) specify four separate environmental orders. These include the natural-ecological order and the social realms, the economic, the political, and what he calls the moral. Important social processes occur within each of these realms, determining their character and the relations between individuals participating in each.

According to Park and Burgess (1921), the important focus of sociological research is process, and the four primary social processes are competition, conflict, accommodation, and assimilation, each occurring within specific environmental orders (Park and Burgess 1921). Examining each of the environmental orders and the processes occurring within them, the following is a brief review of Park's theoretical frame. This is followed by an analysis of its applicability to examining changes in the structure of US agriculture, a discussion of potential problems with the frame, and suggestions of some of the possible means to deal with the problems.

The natural-ecological order is characterized by the biological, geological, geographic, hydrological, and climatic conditions of the particular place, and human

methods of extracting what they need for their survival from the natural environment. Like all living creatures, human beings are dependent on their natural environment to provide all of the necessities for their continued survival. Capacities, unique to human beings, however, do allow them to mediate their relationship with nature, and ultimately, to reshape natural ecology itself in the process. While still dependent on nature as the provider, many humans no longer directly interact with the natural environment on a regular basis. Their biological necessities are provided by others, with farmers working as direct liaisons between nature and much of society in the post-modern world.

According to Park (1936b), the primary social process occurring in the ecological realm of environment is competition. As the most fundamental of all social processes, it is competition that largely determines both a population's size and its spatial distribution. It is a universal process, found to some degree in all human and in all plant and animal communities. Competition is the struggle for advantageous positioning at the macrosociological level. According to this theoretical frame, under conditions of disequilibrium in either human or plant-animal communities, it is the process of competition that brings about restored communal equilibrium. The product of the competitive process is ultimately a division of labor and a system of dominance that takes on a spatial character, and shows itself in the economic order, as the struggle for strategic location comes to define the general ecological and economic patterns of the community.

While the social processes of both conflict and accommodation also exist in the economic order, competition is the primary social process to be found here as well, influencing the economic conditions in which different groups of people find themselves. In a true laissez faire capitalist economic system, macrosociological competitive interests are central to determining the character of markets and the positions buyers and sellers occupy in the system (Park and Burgess 1921). The economic order,

however, demonstrates that ours is not a laissez faire system. Competition does require indirect interaction, but it is largely an impersonal and relatively constant process versus the other important social processes.

When considering the process of competition in the structure of agriculture, several factors must be examined. For instance, the process of competition can be observed when examining the settlement patterns and the patterns of the establishment of farms across the US. Land use and the changes we have seen in that land use are important factors to concern ourselves with when seeking to understand competition for the scarce resources of arable ground and water necessary for farming. These patterns are a focus of the following chapter on Nebraska's agricultural history, designed to establish historical context for the remaining chapters (Park 1936b).

The competitive process in the economic realm in agriculture has gone more and more global in recent decades. Where once individual farmers in the US were largely competing with their neighbors or possibly other farmers within their own county or state, today's agricultural producers are enmeshed in a complex network of global competition with farmers all over the world. The prices US farmers receive for their products are influenced by natural, economic, political, and moral-cultural processes in countries around the globe, at times contributing to a level of communal disequilibrium for agricultural communities in our own society.

Park and Burgess (1921) also consider conflict a form of social struggle, based on distinctive human capacities. Unique to human communities are culture and communication, along with the many technologies developed within culture made possible through communication. Communication allows for the mediation of conflicting interests through consensus building, resulting in some form of accommodation or mutually beneficial agreement. It is communicative ability that allows human beings as a whole to have a somewhat less rigid dependence on the physical environment than is

true for plant and animal communities. It is communication and a degree of consensus that enables us to modify the natural environment itself through applying technologies. Communication also allows us to develop each of the social environmental orders. It is the vital ingredient in each of the other social processes, conflict, accommodation, and assimilation. Characteristic of the overall capitalist economic system is both competition, as a macrosociological process and the microsociological processes of conflict of interests and accommodation through communication and consensus.

While competition is a constant, impersonal, and largely unconscious process found primarily in the natural and economic orders of environment, conflict occurs when particular competitors become consciously aware of one another in their struggle for advantage. Rather than the constant and impersonal in competition, this process of conflict is very personal and is intermittent. The process of conflict requires that individuals recognize particular others as holding interests that conflict with their own. It requires direct interaction between the parties with the process of accommodation taking hold as a result of that direct interaction. Accommodation is the end-product of negotiation, of communication and consensus building in dealing with conflict, allowing for some relatively stable equilibrium to develop to be renegotiated and passed from generation to generation (Park and Burgess 1921)

. Conflict, however, always remains a latent and potential force in society, and some change in any of the environmental orders may bring conflict to the surface, ultimately signaling new negotiations and a new accommodation, and again, a relatively stable equilibrium. While both conflict and accommodation do exist in the economic order, the primary realm in which they operate is the political. By Park's definition of the political, the primary function of the political system is to provide the means through which communication and consensus building may result in some form of accommodation of the interests of all parties involved.

In applying Park's ideas about conflict and accommodation to the changes in the structure of US agriculture, we must recognize that, unlike many economic relations in a capitalist economic system, farmers possess little negotiating power to influence the prices they will receive for their goods. They also have little power in determining the prices they will pay for the necessary inputs to produce those goods. While some accommodation is ultimately met or the farmer would not be purchasing inputs or selling crops and livestock, his or her lack of power in negotiations can and does have devastating implications for many small producers. Looking at the data from the 2007 Census of Agriculture (United States Department of Agriculture), nearly 55 percent of farmers in the US reported that the money that they received for the products did not cover their expenses that year, up from just under 45 percent just fifteen years earlier.

In order to examine the influence of political conditions on the structure of the agricultural system and on the well-being of small farms, we must be conscious of the influence of government programs and policies on the lives and livelihoods of farm families. The following chapter will consider the influence of both federal and state farm-related programs, as well as more localized tax policies, on Nebraska's farms and farm families.

The final environmental order of concern for Park (Park and Burgess 1921) is what he calls the moral order. According to his framework, while conflict and accommodation also take place here, the primary social process occurring within this realm is assimilation. Whereas conflict and accommodation are most typically short-term processes, assimilation is instead a result of long-term contact resulting in shared culture, tradition, and group homogeneity (Park and Burgess 1921). The overall character of the moral realm is determined by the social processes of conflict, accommodation, and assimilation. The assimilation process impacts the lives of both the offspring of current members of the society and new members coming into the

community from the outside. It is the socialization process, whereby long-lasting intellectual results include members of the group becoming more and more alike in character and thoughts. Human beings tend to feel a primary sense of comfort in the presence of others they see as similar to themselves in some significant ways and discomfort to some degree in their absence (Park 1936b).

Human solidarity and a sense of community are based on shared sentiment and habit, on like-mindedness rather than biological homogeneity. Individuals participate in common activities that imply shared definitions of situations and shared orientations toward many aspects of life. None of this is possible without the assimilation process. Education and socialization, both formal and informal, encourage us to share definitions of situations with others within our communities, as those definitions come to change to varying degrees as the consequence of varying life experiences over time (Park 1936b).

Considering the importance of the assimilation process on the structure of the US agricultural system, it is quite clear that something more than pure economic interest is at play in the continued involvement of many families in farming. Some families begin to socialize their children to see themselves as the next generation on their families' farms from a very early age (Wiley, Bogg, and Ho, 2005). In some small agriculturally-based communities, the assimilation process continues within the schools and other social groups and organizations, again encouraging young people to define themselves in terms of their own relationship with the farm. Because the process of socialization is so vitally important for the way we learn to identify ourselves, it is essential to examine the communities in which children and adults are being assimilated to seek out indications of the common traditions and beliefs being formed.

In the end, it is communication, and material and non-material innovations that have provided us with the opportunity to develop the means to remake the world, rooted in our own customs and traditions. It is the web of common customs, traditions, and

mutual expectations that act to bind individuals and groups in societies into a single unit (Park 1938). The customs and traditions provide limitations to our freedom within the competitive process, with social conventions setting boundaries for our behavioral choices.

Park concludes that human societies ultimately operate at two levels: the symbiotic, based on competition, and the cultural, based on communication and consensus (Park and Burgess 1921). The two, the symbiotic and the cultural, are interdependent, with the cultural superstructure standing on the base of the biotic sub-structure. Competition, in the ecological and economic realms of environment, is the primary determinant of population size and distribution, and is the principle factor in individuation in society, while communication is the primary factor in the integration of individuals into the whole of the society. Complex human relations develop within each of the environmental orders specified by Park (Park and Burgess 1921), the ecological, the economic, the political, and the moral.

Critiques of Park's Theory

The work of Robert Park has been criticized on several fronts. Maines, Bridger, and Ulmer (1996) discuss several areas of criticism of Park's work, including charges of dichotomous thought in the conceptualization of distinct biotic and cultural factors in human relations with their environment; ecological-biological determinism, lending limited recognition of the influence of social factors on the lives of human beings in their environment; and a lack of operationalization in the concepts he develops in his theoretical frame. I must disagree with some of these critiques. For instance, Park points out that, while theoretically it is necessary to define the biotic and the cultural as separate entities, he recognizes that they are interacting realms or social orders, none free of the influence of the others. I also disagree, to some level, with the accusation of biological determinism. Park does insist that human society is organized at two levels,

the symbiotic society is based on competition, and the cultural society is based on communication and consensus, but he also tells us:

> As a matter of fact, the two societies are merely different aspects of one society, which, in the vicissitudes and changes to which they are subject remain, nevertheless, in some sort of mutual dependence upon each other. The cultural superstructure rests on the basis of the symbiotic substructure, and the emergent energies that manifest themselves on the biotic level in movements and actions reveal themselves on the higher social level in more subtle and sublimated forms (1936b p. 13).

Park (1936b) points out that human relations are much more complex than simple symbiotic relations. They are much more complex than a symbiotic/cultural dichotomy could indicate.

While I do find much that is useful for the purposes of this research in the work of Park, from his insistence that the focus of sociological research should be on "process" to his general outlook on the influence of multiple realms of action and interaction on our everyday lives, I also find some of his stance a bit rigid and problematic. Park arranges his environmental orders in a hierarchy, with the physical/ecological order as the base and the realm in which individuals experience the highest level of freedom and the least influence of other human beings. According to Park's theory, individual freedoms are increasingly sublimated to the interests of the whole, of the overall social order, within the economic and political orders, until we reach the apex of the moral order, where freedom is most restricted (Park 1936b). Because of the hierarchy in which he places these environmental realms, an argument can be made that his stance is quite essentialist in nature.

A brief examination of the general patterns of agricultural production in the United States over our history makes it quite obvious that influences outside the physical environment of the farm itself have profoundly influenced the well-being of farm families and the range of behaviors in which they participate. These outside processes, including economic processes, often affect a wide range of decisions to be made each year on the

farm, including choices that ultimately impact the physical environment of the farm itself. A further examination will reveal comparably important influences from within both the political and moral realms as Park defines them (1936b). Ultimately, a case can easily be made that the farm families of 2011 are not free to interact with their physical environments outside the influence of processes within each of the other social environmental orders Park discusses.

Another consideration is what I perceive as rigidity in examining human interactions by forcing all human social behaviors into one of four mutually exclusive categories, competition, conflict, accommodation, or assimilation. An examination of the data will show that the nature of many social processes changes over time. Although Park recognizes that conflict leads to accommodation, I find little evidence for recognition in this work of the interactive nature of these processes, with none standing alone in impacting the real lives of human beings, including farm families. Additionally, many of the processes in which farm operators engage are difficult to force into the particular categories of Park's fundamental processes. For instance, ideologies passed through the assimilation process certainly impact reactions to conflict and decisions made in the process of accommodation. Farm families today must consciously understand the realities of competition if they are to continue to sustain themselves on the farm, even when they are not conscious of specific competitors.

Ultimately, with modification, I find much of Park's theoretical model useful and applicable to my research on the lives of farm families. Considering the interacting realms of environment, not only the physical, but also the economic, political, and moral orders in which human beings operate, provides an important frame from which to consider the real lives of families attempting to adapt to conditions in which they are operating. In order to deal with what I see as some of the weaknesses in this theoretical frame, I intend to modify it by introducing the Marxian concept of overdetermination.

Resnick and Wolff: Class and Overdetermination

In order to deal with the rigidity and essentialism I do find in Park's model, I propose applying the Marxian concept of overdetermination, as developed by Resnick and Wolff (1987), Gibson-Graham (1996), and others, to the general model developed by Park. Specifically constructed to be anti-essentialist and anti-determinist, this concept is defined in terms of the mutually constituted nature of all social processes. Employing this concept of overdetermination, it is understood that the character of each process is always being determined by its particular relationships with every other process in society (Resnick and Wolff 1987). For instance, when considering the many processes in which farm families engage, the concept of overdetermination encourages us to examine the relationships between economic processes, like borrowing money for operating loans, and political processes, such as monetary policy, and cultural processes, like common ideology around seeking outside monies to keep the farm going.

Resnick and Wolff (1987) are in agreement with Park that process is the most logical and reasonable focus for sociological research. They discuss four categories of process. They are very similar to Park's environmental orders. The natural processes include movements of matter and energy commonly understood as chemical, biological, and physical. Economic processes are understood to involve the production, distribution, and consumption of goods and services in human communities. According the Resnick and Wolff's (1987) theoretical stance, the political is defined in terms of the distribution and regulation of authority in the community, and the cultural processes are the diverse ways in which human beings produce meanings for their existence

In addition, Resnick and Wolff' (1987) encourage us to closely examine the range of class and non-class processes and relationships in which individuals engage in their

productive lives. For instance, Resnick and Wolff (1987), and those who further developed their perspective, define class in terms of process, the process of producing and appropriating surplus labor. In this Marxian stance, social class is used as the theoretical entry point for social analysis, rather than the determining factor or essential nature of social reality as a whole. This perspective facilitates the recognition of a number of non-capitalist class processes in terms of the production and appropriation of surplus labor.

The fundamental capitalist class process does entail the production of both necessary and surplus labor by one group and the appropriation of that surplus by non-producers. Necessary labor is defined in terms of the minimum needed for workers to reproduce themselves and their families, the current and future work force. Surplus labor is the amount produced by the worker over and above this necessary amount. The surplus labor is then appropriated by non-producing groups and individuals, the capitalist class. The Marxian orientation developed by Resnick and Wolff (1987) facilitates the recognition of other class processes as well.

Much of the work labeled Marxian has traditionally focused primarily, if not exclusively, on the fundamental class process of the production of surplus labor by one group and the appropriation of that labor by another. The works cited here attempt to open up social theory in general and the Marxian tradition in particular to the possibility of alternative conceptions of the social totality, its component processes, and the multifaceted relationships among them. Resnick and Wolff (1987), as well as Gibson-Graham (1996), and others adopting this theoretical stance, supplement the focus on the fundamental class process with a consideration of both subsumed class and non-class processes.

Subsumed class processes entail the distribution of appropriated surplus labor to nonproducers, including managers, financiers, and landlords, for example, allowing for

the provision of the “conditions for existence” of the fundamental capitalist class process. In the case of farmers, they are re-distributing the surplus labor they have extracted from themselves in that non-exploitative process, and that of any hired employees extracted in the exploitative process. Non-class processes do not involve any “labor” by the Marxian definition of the term. This includes processes like the purchase of stock in other industrial enterprises and the extension of loans to financial or merchant capitalists or consumers, producing non-class revenues in the form of dividends and interests. For farm families, some important non-class processes may include making some of their ground available to rent to others, and while the system that provides the funds is political, for farm families themselves, participating in these programs it, at its core, economic but non-class.

Of particular interest to this research, from a volume edited by Resnick and Wolff, and Gibson-Graham (2000), is a piece written by Janet Hotch, examining and theorizing about self-employment as a process of “individual production and appropriation of surplus labor.” Hotch (2000), points out that the self-employed individual him- or herself appropriates and distributes his or her own surplus labor in the subsumed class process (Hotch 2000). Rather than this surplus being appropriated by capitalists in an exploitative fundamental class process, the self-employed worker him- or herself, in a non-exploitative process, appropriates surplus labor in the fundamental class process and distributes it to others in the subsumed process, providing for the conditions necessary to continue the operation (Hotch 2000).

Hotch (2000) discusses the point that establishing and recognizing the distinction between necessary and surplus labor is particularly difficult for the self-employed because their reproduction as individual workers is often linked to their behavior as producers and self-employers. In addition, the rate of self-appropriation of surplus labor varies over time. This recognition allows us to better understand the particular

experiences of self-employed workers. Farmers in particular, as self-employed, self-appropriating workers, experience dramatically varying seasonal labor demands, with extremely long hours and difficult physical labor at some points over the course of a given year, more intellectual demands in the form of planning and marketing at other times, and finally, periods of the year when the labor demands on the family farm are minimal.

The necessity of distributing the surplus through the subsumed class process changes over the course of the year for the farmer as well, with spring planting involving the purchase of seed and other inputs and fall harvesting signaling the potential to recoup the value of both the necessary and surplus labor invested over the course of the year. While a limited number of Nebraska farmers do employ non-family laborers through the exploitative process, many are also actively engaged in selling their own labor through the fundamental class process in off-farm paid employment to supplement any income they gain from the farm. Important examples of non-class processes in which farm families often participate include the leasing of some of their ground to other operators and participation in various government economic assistance programs. While the existence of the programs is centered in the political order, the participation in them is purely economic from the standpoint of the farm family.

Ultimately, the recognition of the real complexity in class and non-class processes in which farmers engage lent by this stance, facilitates a more multifaceted and more realistic look at the lives of Nebraska's farm families. Adapting Park's overall model to these concepts, examining the intersecting and interacting nature of the many facets of the everyday lives of farm families, will provide what I believe to be a more realistic and much more revealing glance into the many processes, natural and social, influencing the lives and livelihoods of American farmers today. The model being applied here is illustrated in Figure 1.1 on Page 29.

THE OBJECTIVES AND HYPOTHESES OF THIS RESEARCH

The primary objective of this research is to search for evidence of overdetermination in the intersecting and interacting processes of competition, conflict, accommodation, and assimilation over the twentieth century in shaping the structure of the agricultural system of the US in the early twenty-first century. Table 1.1, on page 28, provides a simple view of the questions and hypothesis for this work.

The overarching research question the proposed project is designed to examine is:

What evidence can be found to indicate the mutual constitutivity, the reciprocal relationships, through overdetermination, of processes within and between the environmental orders specified by Park?

Subcomponents of the research question are:

Considering central Nebraska farms, what is the evidence of the prominence of each of Park's primary types of social interaction, competition, conflict, accommodation, and assimilation, in influencing the characters of other social processes occurring within each the environmental orders?

How do natural processes and conditions in the ecological order, from precipitation to average temperature or dominant soil type, influence a range of behaviors and relationships of farm operators in counties of central Nebraska?

How do social processes occurring within the other environmental orders specified by Park (the economic, the political, and the moral) influence the behaviors of the same farm operators in relation to the physical environment of the farm itself?

What are the class and non-class processes in which Nebraska's farmers engage in their productive lives?

Hypotheses to be Tested:

Measurable relationships will be found among variables within each of Park's environmental orders.

Measurable relationships will be found among variables between Park's environmental orders.

Comparative Historical Case Study Methodology:

While comparative historical analyses have been conducted concerning a wide variety of topics and the particular methods used have also ranged widely, one universal is the desire to provide explanations for social realities that are based in a historical grounding (Mahoney and Rueschemeyer 2003). Theda Skocpol (1984) discusses several common characteristics of these research studies. They include asking questions about society, its structure, and processes occurring within it while considering the temporal and spatial characteristics of the particular situation. Process is always the primary focus in comparative historical work, and the overarching objective is most often to understand the interactive nature of microsociological social actions and behaviors with the larger, macrosociological social structure (Skocpol 1984). This methodology also requires us to recognize the influence of culture and tradition in influencing both the macro- and microsociological worlds.

Comparative historical case study methodology will be employed in this project in examining the agricultural, general economic and demographic history of the state of Nebraska over the twentieth century. Examinations of historical accounts along with secondary analyses of historical census and other data will be performed in an effort to gain an understanding of the overall impacts of various natural and social processes on agriculture within Nebraska's borders.

In addition, this researcher conducted earlier work that entailed approximately

one-hundred hours of interviews with farm family members over a three year period between 1997 and 2000. The first study, conducted in 1997 as an undergraduate research project, entailed interviewing 36 farm women living in three different counties in central Nebraska and the primary objects included gauging their reactions to the changes that were occurring in federal farm programs and to examine their perceptions of the future of agriculture in general and their own farms in particular. Discussions of the social support networks they had in place were also vital to this project. The second research study, designed and conducted as my Master's Thesis research, focused on the multi-generation farm family. Twelve of the women who had participated in the earlier interviews were contacted and asked, with their husbands, to participate in extensive interviews discussing their own experiences on the farm, the traditions they continued to hold from earlier generations of their families on the farm, and the varying survival strategies they had developed in response to having or not having another generation of the family who would eventually take over the farm.

Because there is a wealth of information available in these interviews and a wide variety of topics were discussed, it is quite possible that they will lend a glance at what is always missing in raw census data, an examination of the influence of "family" on the family farm. These interviews will be coded for themes related to the particular topics of interest to this project and quotes from the participants will supplement the findings of the comparative review when appropriate.

In order to investigate any differing impacts of the varying processes, an examination of the various class and non-class processes in which farmers engage will be conducted employing a series of extensive analyses comparing pairs of central Nebraska counties. The pairing of the counties is determined as follows. Comparing a variety of variables, natural, economic, political, and cultural, the first pair of counties, Red Willow in far south-central Nebraska along the Kansas border and Valley County in

the north-central part of the state, were found to be very similar in a variety of ways in 1992, including the general economic situation in the counties and the natural conditions. This analysis is designed to examine whether, as Park's model would predict, that the two similar counties experienced similar changes in social processes over a fifteen year period from 1992 and 2007. The second pair of counties shared many common characteristics as well, both economically and culturally. What distinguishes these counties is an important natural characteristic: dominant soil type. Brown County, located in far north-central Nebraska, is located in the Nebraska Sand Hills and has over 76 percent sand or sandy loam soils while the soil in Hitchcock County, in the far south-central part of the state, has nearly 80 percent silt loam soils. The purpose of this analysis is to determine whether, as Park's theory would predict, the natural conditions influence the impact of changes in the structure of agriculture in these counties.

Finally, the third paring of counties includes counties that were also very similar in several ways in 1992 but differing significantly in one important social way. One county, Furnas, is a very rural county located in the far south-central part of the state, and Dawson County, near the geographic center of the state, is designated the core county of a Micropolitan Statistical Area by the United States Census Bureau. The purpose of this comparison is to examine the importance of population density and all it implies in influencing the well-being of central Nebraska's farm families.

Each chapter will examine the natural and social histories of the comparison counties. Analyses of the climatic, geological, geographic and hydrological conditions in each of the paired counties will be followed by examinations of the economic histories, including settlement patterns, the establishment of population centers, and the first farms founded in each county. The political history of each county will also be examined, including its organization as a county. Finally, the moral-cultural roots of each of the counties will be discussed, including the establishment of schools and churches and

ancestry distribution.

Further analyses are designed to compare changes that have occurred in each county between 1992 and 2007. The agriculturally related variables to be examined are largely calculated from “structure of agriculture” data and mostly provided by the USDA’s Census of Agriculture, conducted every five years. A significant share of the variables to be used in the analyses have been calculated from data available from the USDA Census over a fifteen year period from 1992 to 2007. For instance, in order to examine the process of the loss in numbers of individual farms in the state, the percentage of total farms lost between 1992 and 1997, 1992 and 2002, 1992 and 2007, 1997 and 2002, 1997 and 2007 and between 2002 and 2007, have been calculated as important variables. Other data sources included the US Census Bureau, the Bureau of Labor Statistics, and the Nebraska Department of Economic Development.

Some examples of processes to consider within the natural environment are average annual rainfall, median annual temperatures and medians in different months throughout the year, and weather-related crop losses. It is also important to note that a large part of the state experienced drought conditions for much of a decade of the period being examined here. Within the economic realm, a wide variety of processes will be examined, including changes in poverty rates for the overall population, average household income for the locale, along with a range of structure of agriculture variables. These include variables like average value of agricultural products produced, the share of farms in the county or region posting profits or looses, and average cost of production, among others, and how they changed over those fifteen years. Within the political order will be participation in voting and other civil involvement, as well as participation in federal agricultural programs and federal expenditures per capita in each of the counties. Finally, in the moral order, as Park defines it, will be processes such as ancestry, population density, and average level of education, for example.

It will be vital, in applying the concept of overdetermination, that we consider the interactions of various processes both within and between Park's environmental orders. Intensive comparative historical analyses of both data and documentary materials, will reveal patterns of difference and commonality between the pairs of counties. The USDA's Census of Agriculture provides a wealth of information about the many class and non-class processes in which farm operators participate. For example, the census includes information about both the employment of farm labor and off-farm employment of the operators themselves, in the fundamental class process. It also provides data such as interest paid and other costs of production, which, by definition, would indicate the presence of the subsumed class process. Examples of non-class processes would be a farmer-landowner leasing some of his land to another farmer, engaging in custom work for other farmers, or participating in government agricultural programs. The data available will allow for a rich examination of the wide range of class and non-class processes in which the farmers of Nebraska, her regions, and her counties engage.

The model ultimately developed for this investigation is attached at the end of this chapter, page 26. It is designed to incorporate the general human ecology frame as developed by Park with the mediating influence of the Marxian concept of overdetermination, considering factors and processes within each of Park's environmental orders and their relations to one another.

CONCLUSION:

Ultimately, the concept of overdetermination specifies that the character of each social process is determined by its particular relationships with all other processes in society, and that none are more important than the others in determining the qualities of each process (Resnick and Wolff 1987). By studying the changes occurring within the structure of agriculture and the class and non-class processes in which farm operators are engaging in a single, farm-dependent state, the hope is to reveal patterns in the

relationships. Patterns may be revealed among and between various natural and social processes that may be influencing the real well-being of the farm families in Nebraska. This increased understanding may provide a basis for the development of more sustainable assistance programs for small farms. Although these programs would likely operate primarily within the economic realm, they would unquestionably represent political and moral implications as well.

Sustainability of the small family farm in the state of Nebraska is an important question that must be considered within each of the environmental orders specified by Park, the moral, the political, the economic, and the natural/ecological, with potential positive or negative ramifications in the behaviors of farmers in their interactions with the natural environment. A common image in American culture is that of the farm family, living a simple life on the land producing food for us all. The reality is that these families engage in an intricate network of intersecting and interacting processes, each influencing the behaviors of family members on the farm in some way. Ultimately, the primary purpose of this research is to gain a greater understanding of what some of those particular processes are, how they are related to each other, and how they may influence the behaviors of farm families in each of Park's environmental orders.

The remainder of this work is organized as follows. The next chapter provides a brief review of the natural, economic, political, and moral-cultural history of the state of Nebraska. Each of the three following chapters will examine one of the pairings of counties. Chapter Four will consider Red Willow and Valley Counties, similar naturally and socially in 1992. Chapter Five will discuss an analysis of any variance in changes between Brown County and Hitchcock County, differing significantly as far as dominant soil type. Chapter Six will consider the importance of population distribution and density in influencing the well-being of farm families in central Nebraska by pairing Dawson County, a micropolitan statistical area with Furnas County, a fully rural county. Finally,

the concluding chapter will, in light of patterns revealed in these analyses, suggest possible areas of research around this general topic and consider possible policy implications at the local, state, and federal levels.

Figure 2: A MARXIAN HUMAN ECOLOGY MODEL OF THE FAMILY FARM ENVIRONMENT

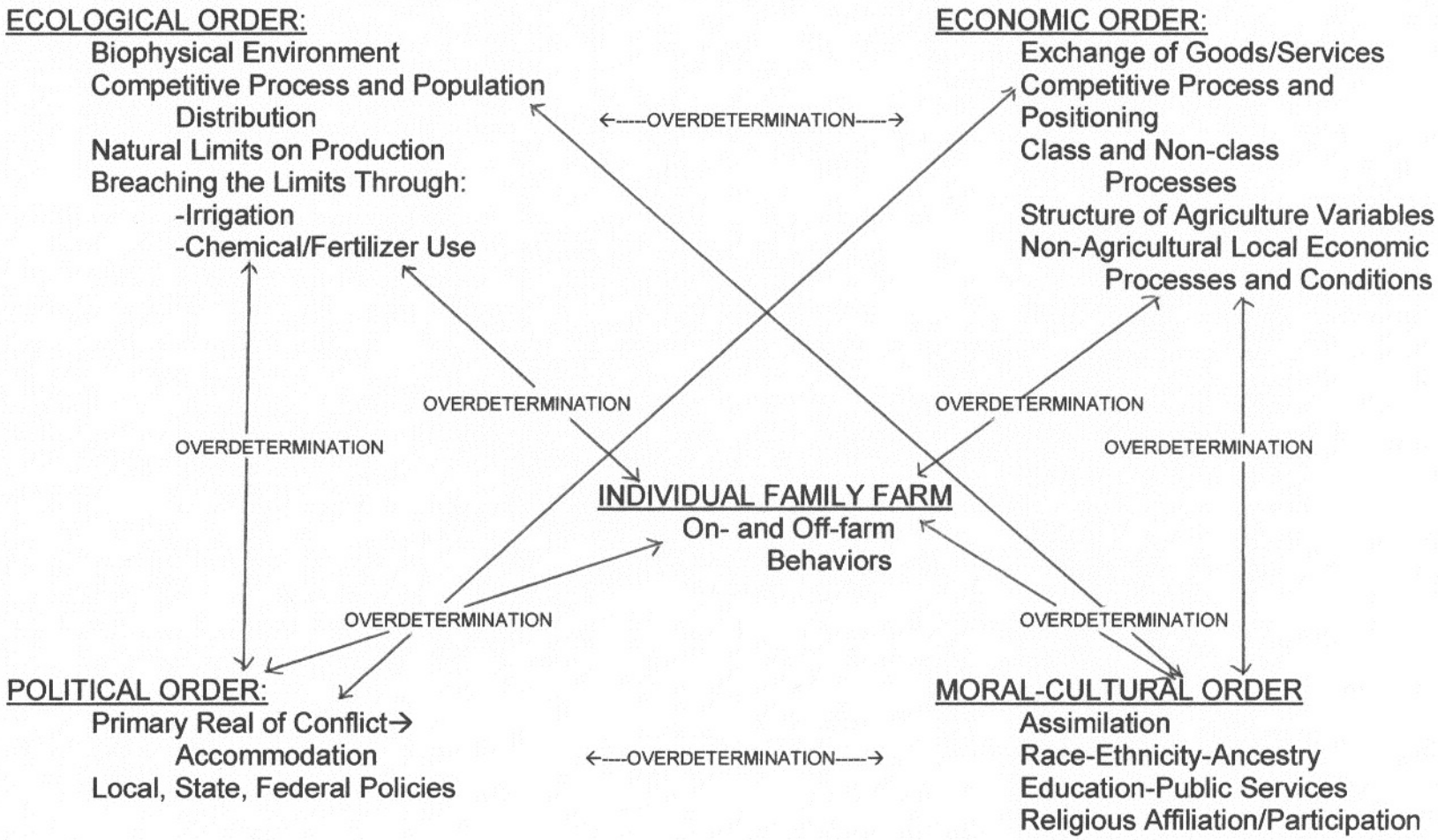

TABLE 2.1: Questions and Hypotheses:

Primary Research Question: What evidence can be found to indicate the mutual constitutivity, the reciprocal relationships, through overdetermination, of processes within and between the environmental orders specified by Park?

Subcomponents of the Research Question:

A) Considering central Nebraska farms, what is the evidence of the prominence of each of Park's primary types of social interaction, competition, conflict, accommodation, and assimilation, in influencing the characters of other social processes occurring within each the environmental orders?

B) How do natural processes and conditions in the ecological order, from precipitation to average temperature or dominant soil type, influence a range of behaviors and relationships of farm operators in counties of central Nebraska?

C) How do social processes occurring within the other environmental orders specified by Park (the economic, the political, and the moral) influence the behaviors of the same farm operators in relation to the physical environment of the farm itself?

D) What are the class and non-class processes in which Nebraska's farmers engage in their productive lives?

Hypothesis: Measurable relationships will be found among variables both within and between each of Park's environmental orders.

Chapter Three: Nebraska: Natural, Economic, Political, and Moral Cultural Processes in the History of Her Agriculture

The purpose of this chapter is to provide a brief review of agricultural history in the state of Nebraska, considering processes in nature, in the economy, in the political realm, and in the moral-cultural order and how they have influenced the real lives of families in the state attempting to establish and maintain small farms. We will begin with a discussion of the natural-ecological conditions in the state. The geological history of the region is important to consider when examining the suitability of the region for agricultural production, as is its geographical location influencing its climate and its weather. The hydrologic conditions of the region, including its network of surface streams and rivers and the vast Ogallala aquifer, are also important to consider.

Economy will be defined in this work in terms of the production and distribution of goods and services. A review of Nebraska's economic history will reveal the vital importance of agriculture, from the subsistence production of the Pawnee nearly 900 years ago to contemporary small farms as a single cog in an increasingly complex wheel of global markets. An examination of political history will consider the establishment of Nebraska, first as a part of the Louisiana Purchase, then as a territory, and finally as a state. We will also examine the influence of policies such as federal government helping to provide the means for construction of railways through land grants and low-interest loans and the implications of those policies on the settlement patterns of Nebraska. Equally important is the Homestead Act of 1862, followed by other federal, state, and county legislation.

Finally, when examining the moral-cultural history of the state, the establishment of schools and churches will be important to consider. Because settlers in the state were drawn from across Europe, most commonly from Germany, as well as from the eastern US, the cultural history of different parts of the state varies widely, as large groups of

immigrants tended to be attracted to areas where others of their ethnic heritage had already settled. It is also important to look at the demographic history of the region, focusing on population, its distribution and density.

Ultimately, this chapter will investigate the interactive nature of processes occurring in each of the realms of environment, and how processes in the natural environment have been mediated by economic, political, and cultural processes. We will examine the influences of nature, politics, and culture on the economic conditions in which small farms operate in Nebraska. It will also be important to consider the influence of local, state, and federal policies on the ways that farm families interact with the economic and cultural environments. Equally vital will be to scrutinize the influence of ideology in the moral-cultural environment on the behaviors of farm families in each of the other realms.

THE NATURAL-ECOLOGICAL HISTORY OF NEBRASKA

The natural history, over 300 million years, in the region that would become Nebraska is impressive in its diversity. From geology to climatic systems and native plants and animals, the natural conditions of what is now Nebraska have evolved through many starkly different stages. The earliest geologic and fossil records of the state, toward the end of the Paleozoic Era, show an inland saltwater tropical undersea paradise for trilobites, sharks, huge sword-fin fish, and sea lizards.(Sheldon's History and Stories of Nebraska 2010 Download). The North American continent was located much further south during this era, with Nebraska lying near the equator. The shoreline advanced and retreated multiple times, as evidenced by both the fossil records and the existence of coal deposits in the eastern part of the state, formed from the compression of the remains of trees and other plant matter. The fossils of freshwater fish, small amphibians, and varying plant life have been found in the remains of the coal swamps of eastern Nebraska (Nebraska Game and Parks Commission 1994). The inland sea made

its final retreat over millennia ending around 65 million years ago with dawn of the Cenozoic Era, the Age of Mammals (Nebraska Game and Parks Commission 1994). While earlier fossils have been found, the greatest concentration of mammal fossils in Nebraska has been dated from approximately 37 million years ago. Common animals of the era in what would become Nebraska included grazing animals such as ten different types of horse-like creatures, ranging from cat-sized to up to upwards of two tons in weight, as well as beavers, camels, rhinoceroses, and elephants. Hunters included wolf-like canines, giant bears, and saber tooth cats, all surviving in the area for millions of years leading up to the last Ice Age which began within the last two million years. The slow movements of the continents had placed Nebraska far from the equator by this era and this ice age continued until fewer than 20,000 years ago. Early in this epoch the fauna of the region was dominated by a variety of huge creatures, including mammoths, mastodon, and giant camels and bison (Nebraska Game and Parks Commission 1994).

Native plant eaters of Nebraska in more recent times, but before European settlement, included huge herds of bison, many prairie dogs with their extensive “towns,” large populations of deer, rabbits and small rodents, hunted by wolves, bears, badgers, skunks, owls, and coyotes, with all but the bison, the wolf, and the bear still found in the wild in the region. Many native species of birds, such as buzzards, pigeons, quail, and turkeys continue to make the region their home as well (Baltzenperger 1985). In addition, central Nebraska has long been a major flyway for several species of migrating birds, with large flocks of Canadian Geese, American Crows, and Sandhill Cranes traveling through the area during different times of the year.

The elevation of the state ranges from approximately 840 feet above sea level in the far south eastern part of the state to over 5,400 feet in the far southwest. The first Europeans found tall grass prairies in far eastern Nebraska and short grass prairies in the far west, with trees located only along waterways and in a few other small areas of

the state. There is considerable topographic variety to be found across the state as well, but the central part of Nebraska, where this study has been conducted, is dominated by river valleys, plains, and dissected plains, along with the Nebraska Sand Hills (Baltzenperger 1985).

Dominant soil type, so important to agricultural production, varies dramatically across the state as well. Although there continues to be widespread disagreement on the age of the sand hills formation, many aging it within the last ten of thousand years, the Nebraska Sand Hills, found throughout much of the central part of the state, accounts for nearly one quarter of the state's total land area (Dutch 2003). Evidence has been found for numerous cycles of drought in this region over the last 15,000 years that have stripped the vast dunes of vegetation, allowing for the remaking of the landscape by the common winds (Loope and Swinehart 2000). Much of the remainder of the state is characterized by rich soils, including alluvial silt loams and some clays, many high in organic materials (Baltzenperger 1985).

Underlying the surface soils of much of Nebraska, about 63,500 square miles of the 76,878 square mile total, and parts of several other states (Wyoming, Colorado, Kansas, New Mexico, Texas, and Oklahoma) is a vast aquifer, the Ogallala, or sometimes called the High Plains aquifer (United States Geological Survey Website.) The aquifer is made up of a variety of soils, including sands and silts, holding billions of gallons of water. The upper boundary of the aquifer ranges from 1,200 feet from the surface to over 6,000 feet (USGS Website).

The surface waters of the state include an intricate system of rivers and streams, totaling approximately 23,700 miles flowing throughout thirteen river basins, ultimately draining into the Missouri River, the far eastern boundary of the state today. Dominating the network of rivers and creeks is the wide and shallow Platte, its two branches originating in the Rocky Mountains and winding through Nebraska west to east. As will

be discussed later, the Platte River has been instrumental to the formation and settlement of the state of Nebraska, as well as to her economic development.

From a tropical paradise to an ice age and beyond, the climate of today's Nebraska is impacted dramatically by its geographic location, near the center of the continent. Today's Nebraska, nearly 77,000 square miles (USDA, NASS: U.S. Census of Agriculture 1997) of diverse territory, is located just north of the geographic center of the nation. The latitude of the state today runs from forty degrees to 43 degrees north and 95 degrees 25 minutes to 104 degrees west longitude. It is approximately 1,200 miles to either coast from the geographic center of Nebraska. Nebraska's location in the far interior of the continent, its continentality, has an important influence on the climatic conditions in the area.

The climate of the area is little affected by the tempering of any body of water. Cold winters, with an average January low of ten to twelve degrees Fahrenheit, and warm summers, with an average July high of 86 degrees, are both characterized by extreme temperature fluctuations. A drop of fifty degrees or more in as little as five hours is not uncommon. Seasonal extremes occur with blizzard conditions dipping down from Canada in the winter, and extreme heat moving in from the southwest in the summer. Lows as low as 22 degrees below zero have been seen in most locations in the state, and highs over 113 degrees have been recorded in several places, with daily highs greater than 104 degrees often sustained for up to two weeks (Baltzenperger 1985).

Nebraska's precipitation is affected by its continentality as well. With the largest part of the moisture migrating from the west coast deposited before reaching the center of the nation, most of the state's precipitation is pulled up from the Gulf of Mexico. While the average annual precipitation received within its borders varies widely, from approximately fifteen inches in the far west to over 35 inches in the far southeastern corner of the state, for the central part the state it hovers between 24 and 27 inches

(Nebraska Department of Economic Development Website). Most of that precipitation is received during the spring and summer months, with June usually being the wettest month of the year (High Plains Regional Climate Center Database retrieved 2010).

Perhaps more important for the purpose of this project than average annual precipitation or the distribution of rainfall throughout the year is the variability in annual precipitation year-to-year. While deep winter snows and spring flooding are not uncommon within central Nebraska, drought has been a much more prevalent condition in this area of the country. Several extended periods of drought have affected the lives of the area's farm families, in the early 1860s, the mid 1870s, much of 1890s, again in the 1930s and 1950s, and most recently throughout much of the decade of the 1990s and into the early twenty-first century, with other less severe periods of dry conditions between (Baltzenperger 1985). According to the National Oceanic and Atmospheric Administration National Climate Data Center, the period with the most prolonged period of drought in the state was a period of eleven years between the early 1930s and the early 1940s (Retrieved January 3, 2011).

The first years of very extensive settlement in what would be Nebraska, in the late 1860s and early 1870s, saw higher precipitation totals than is typical for the region, giving those early farmers a false sense of stability and reliability of rainfall. Even during those early, wetter than average years of white settlement, huge wild fires swept across the prairies nearly every year before extensive European settlement, consuming up to 100 miles of vegetation at a time. There was plentiful fuel for these prairie fires in the native grasses and there were few waterways or trees to slow their progress. They were most common in late autumn, as the flowering plants went to seed and dried. Some small fires occurred every year during the dry months. Winds, sometimes blowing up to forty or fifty miles per hour, carried burning brands ahead to start small fires in advance of the main body of the fire. The burning provided conditions for healthy grasslands, but

not for natural forestation of the lands. A few trees, primarily cottonwoods, grew along the banks of rivers and creeks, somewhat protected from the ravages of the fires.

The remainder of the state, despite some climatic and geological differences, was an endless sea of grass, grasses that thrived on the effects of the frequent blazes (Dick 1975). The fires, often large enough to be seen for several days before they swept down on a farm or settlement, meant that great pains went into the construction of firebreaks. The construction of a break entailed plowing parallel furrows about 60 to 130 feet apart and then burning all the plant materials between. The hope was that when wild fires reached this burned out area, the lack of fuel would stop them before they engulfed homes and property. Another method used to combat prairie fires was the backfire, the burning of a wide strip of grass in advance of the fires, depriving them of fuel. While these relatively simple acts did help in controlling some fires, the extreme wind, so often seen in the state, made real control nearly impossible before a significant proportion of the land had been cleared and broken for crops.

Because many of the women who participated in my 1997 study and all of the couples who acted as informants in 2000 were living on farms that had been in the families of one the spouses for at least two generations, their own experiences and their understanding of family tradition around the farm, lends a hint of what the real experiences of farm families might be. While the geographic focus of those earlier projects did not include any of the counties of interest to this current research, all are located in central Nebraska, north, central, or southern parts of the region, so may have important insights into the lives of farm families there. Numbers do tell us an important story, the voices of people actually experiencing the way of life can help fill in the missing pieces about family and tradition inherent in a more statistically based research model.

All of the multigeneration participants had either experienced the droughts and

grasshopper infestations of the 1950s or had heard stories passed through their family. Several of the families talked about the strategies their own families had developed to ensure the survival of the family on the farm in the 1950s, which saw not only drought but also invasions of grasshoppers by the millions. Interviewed in 1997, one young fourth generation farm woman in north-central Nebraska recalled stories about her parents and their efforts to stay on the farm.

> I think with my family, they started so early that they were established some when the times were real tough so they worried, but never went off the farm. They just did things different in those tough times. They had struggles too, but I don't think it was ever to the point where my Dad was going to look for another job. You just kind of hoped it got better before there was nothing left of what they had. They kept doing what they were doing. You hear stories on certain years where they were feeding cattle and there wasn't any corn to feed around here. They would drive clear to South Dakota for a load of corn just to feed their cattle. Some years you can't….you hear that story too and you don't think it could ever be that dry. I guess until you see it….there wasn't irrigation around here then. It was all dry land. It was that dry in the 50's and the 30's were even worse. And that's where progress has helped too, like irrigation. At least you know….I guess I shouldn't say that because frost or something could happen. But as long as there is some water, you're probably at least going to get some crops. It's somewhat of a peace of mind there. All that stuff seems to help.

According to Park (1936b), competition is the most fundamental social process and, in the natural realm, it largely determines population size, density, and distribution, while in the economic order, it is simply the struggle for advantageous positioning in the system. Because both land and water are limited resources, competition is an important determinant of the size and distribution of populations in the agricultural sector in the United States. Access to water and soil quality are very influential in determining the number of acres necessary for a farm family to successfully maintain a minimal standard of living, therefore helping to determine the distribution of farm populations. When examining the state of Nebraska, the overall population density is 22.3 people per square mile, ranging from 0.6 in Arthur and McPherson Counties, both in the central part of the state, to 1,400.7 people per square mile far to the east in Douglas Country, where Omaha is located.

A map, on page 76, shows the borders of the state, its counties, and the boundaries of the central Nebraska region. In the 41 counties of central Nebraska, where this research is centered, population density in Arthur and McPherson Counties, in the far western part of the region, can be compared to Hall County in the area's far east, with a population density of 98.0 persons per square mile. While there are no Metropolitan Statistical Areas in central Nebraska, ten of its counties are designated by the US Census Bureau as core counties of Micropolitan Statistical Areas. These are designated in terms of possessing at least one urban cluster of between 10,000 and 50,000 residents, along with adjacent territory with a high degree of social and economic integration with that core, measure by commuting ties. Logan and McPherson Counties, for example, are tied to Lincoln County in significant ways, with many residents of the two commuting to Lincoln County, where the city of North Platte is located, for work. Others include ties between Gosper County and Dawson County, where Lexington is located; Kearney County, tied to both Adams County, with Hastings and Buffalo County with Kearney; Howard County is tied to Hall County, where the region's largest city, Grand Island is located.

The share of the total population living on farms in Central Nebraska counties ranges from just 2.8 percent in Hall County, to 65.8 percent in McPherson County. Only eight of the counties in this region of the state have population densities in the double digits, with only four having densities of over twenty persons per square mile. Of these, in three of the four, despite the somewhat higher population density, over 95 percent of all land is in farms. Seven central Nebraska counties have population densities of fewer than one person per square mile. Five of them are located in the Nebraska Sand Hills, each of them with over 90 percent of their soils sands and sandy loams. Even though conditions are less than ideal for agricultural production in this area, in three of the seven counties, over 95 percent of total land is in farms and in two others, it is over 90 percent.

The concept of a division of labor in the ecological sense can be examined by considering the relative importance of agriculture and related industries to the overall economy in a region. More than 40,000 families do today continue to live and work their farms within the boundaries of the state and nearly 240,000 of a total of 1.8 million Nebraskans, or just over thirteen percent, depend of farming or farm-related employment to ensure their livelihoods (State of Nebraska, Department of Economic Development Website, 2010 Download).

Ultimately, while economic, political, and cultural factors are also important to consider, natural-ecological factors set the ultimate limits on what is possible in a particular locale. Specific natural parameters largely determine the particular crops produced and the methods employed in farming. We will also see that factors operating in the economic, political, and cultural worlds have impacted the particular ways in which Nebraska farmers have operated in the natural environment of the farm.

AN ECONOMIC HISTORY OF NEBRASKA: THE IMPORTANCE OF AGRICULTURE

The first permanent European settlements in the state were located along the Missouri River, the first being at Bellevue, established in 1823 (Nebraska Department of Economic Development). Trading posts along routes west were found during the early years when large numbers of migrants were following the Oregon and Mormon Trails west along the Platte River in the 1840s through the 1860s (Baltzenperger 1985). While a few isolated ranches and early farming attempts could be found in Nebraska in the years before, significant numbers of European and American settlers moved into the area only after 1870. The influx of settlers over the next three decades was unimaginable, particularly in light of the extreme challenges involved in establishing a working farm in the area.

The United States was still in large part an agricultural nation in 1870, with farmers representing about 53 percent of the total labor force and nearly 48% of the

nation's population living on one of its 2.5 million farms (USDA, ERS: *A History of American Agriculture.* 2000). Commercial farming, production for agricultural markets, was well established in the United States by this time and nearly eighty percent of the country's exports on the world market, over 450 million dollars, were agricultural products (USDA: A History of American Agriculture 2000).

Several of the first towns in central Nebraska were established to service the trains moving through on the new transcontinental line. The rail companies placed their tracks in areas as level and flat as they could find and the steam trains of the period required great amounts of water, but could only carry enough at a time in their large tanks for about seven to ten miles of travel. The rails followed the Platte River for hundreds of miles. Towns sprung up at this interval as construction of the first cross-continental railway proceeded across the state. Several of central Nebraska's important communities began this way (Kansas Collection of Books Website 2000 Download).

The railroads were vital to the settlement of the area in other ways as well. They provided the primary means of travel to and from many areas of the state, tying the local economy to that of the nation. In fact, during those early years, access to a rail line allowed for the establishment and survival of many other towns and communities acting as centers for shipping agricultural products to markets, and for distributing consumer goods to those living in the region.

The railroad companies, among others, made great efforts to encourage the settlement of the lands in the region. Between 1865 and 1900, the railroads circulated millions of pamphlets about the settlement opportunities on the Plains to potential settlers in the eastern and Midwestern United States and across Europe. The back breaking work of establishing a working farm occupied the families' first few years on their claims. The first settlers claimed lands in the river valleys for easy access to water for family and livestock use, for the rich alluvial soils, and for the only access to wood in

the region, either filing Homestead claims or purchasing lands from the railroads. By the time the bulk of the settlement occurred in the area in the 1870s and 1880s, much of the rich river valley ground had been claimed.

The limited access to capital forced many farm families settling in the upland plains and hills of central Nebraska to make do with only the natural resources available to them. This meant the construction of sod homes and fences, and the planting of hedges as a means to control livestock. There were approximately 3,000 farms in Nebraska in 1860, concentrated along rivers and creeks. By the turn of the twentieth century, farms and ranches had been established throughout the state, totaling approximately 122,000 (United States Department of Agriculture Historical Census of Agriculture Data, 2010 Download).

Over the twentieth century, the overall economy of the state changed dramatically and the structure of the state's agricultural system experienced equally dynamic changes. In 1900, there were 121,535 farms in Nebraska, averaging 245 acres. By 1997, when the final Census of Agriculture was conducted for the century, there were just over 51,000 farms in the state, with an average size of 885 acres (versus 467 acres as the national average). Over that same period, the share of the total population living on farms in Nebraska fell from well over 40 percent to just over five percent (USDA Census of Agriculture, 1900 and 1997). In 2000, one middle-aged farm woman, working with her husband on their 1,000 acre farm in the Platte River Valley in central Nebraska when I interviewed them for my earlier research, discussed the changes she has seen and the possible changes that will come in the future with their own farm.

> I have no idea what will happen in the future here on this farm. I suppose everyone has been telling you how much it has changed in the last fifty years. There are maybe a fourth as many houses out here as there used to be. There used to be a house every quarter mile at least. So, who knows? Because, if we lose this farm, whoever buys it is probably going to just level this and farm over it. If we lose this, that's what's going to happen. The house will be gone and there will be a pivot. If we make this thing work, hopefully the kids will be out here.

> The house is 100 years old now. We put a lot of work and a lot of money into it. I would hate to see it torn down.

Similarly, a young man, farming with his father and brother in north-central Nebraska, talked about the changes he has seen in the area in just his short 28 years.

> That's another thing too. It seems that there are so many less farmers. There used to be three farmers, three houses on a section. You can even still see the old farmsteads, but most of the houses are gone. Each person, you do so much, you cover so many acres any more for still just two or three people. It gets back to where stuff is so fast, you can pick a pivot of corn in a day when it used to take a week or ten days. That was all people had. That was all their acres.

Several of the couples discussed the importance of farm populations to the economic survival of small towns in central Nebraska. For instance, a couple operating a 560 acre corn and soy farm near the Kansas border told me:

> Man: I think the direction its going, it's still going to supply an exodus of people from the rural area. In our county, the population, the school sizes are going to, the total number of school children in the county is going to decrease, it's been happening and I think it'll continue to happen. Unless we can bring another business into these small communities the small towns will not be able to survive. But those other businesses, they're competitive, they go out and they say, okay, town A, what kind of enticement will you give me to set up this million dollar business in your town, and obviously a Class A sized city in Nebraska has more resources to be more competitive than a Class D. And so, I think a lot of these smaller towns once they lose their school systems… We're in the process now of unification of the school system, it will begin to deteriorate the town, where there will be less and less numbers.
> Woman: Yeah, especially take a grocery store in a small town now, it's not competitive. Well you just about have to ask, how much is their price, pick something, in the grocery store. For everyday things, boy, I'm sure glad we've got a grocery store and I'm sure glad it's open, we can pick up what we need right here, it's a convenience type thing. It's harder and harder for them, they really learned in the 1980s that when the farmer suffers, they don't have money to spend, then the business on Main Street, it may take a year or two later but it gets there and it dries up for them to.
> Man: Because the businesses in town may support anywhere from one family to fifteen families, or fifteen men or women, families, maybe drawing paychecks out of that one business and if that leaves town, that's devastating. In terms of a town of 400 people…it's not such a big deal in terms of a town of forty to 150,000. Yeah, it's a major impact.
> Woman: Well, there's a lot of empty residences around here. You know, the closest town doesn't have anything but the post office and that is about it now.
> Man: Hospitals have been starting to struggle lately, that and old people's homes, what do you call them, nursing homes. There's not…they're feeling the impact of reduced rural population, and they have expenses to make, and even when you get down to one hospital per county and even they can't staff, they

> have to have specialists come out once a week or once every two weeks from the bigger hospitals to see cases. And some of those can hardly stay open, and if you lose rural medical care, I think we're just going to become more of an outback, where transportation, fifty miles was a long trip when I was a kid, but I think we're going to get to the point where fifty miles is, we look at it as something we have to do to get to the services, to a community the size that we can....We've got some good local businessmen and they'll stay with us as long as they can.

With the employment of some technological tools, the natural environmental conditions in Nebraska are well-suited to both livestock and row-crop production. In 2007, nearly 48 percent of Nebraska's farms raised corn, approximately 35 percent produced soy, and an additional fifteen percent were engaged in wheat production. Nearly 45 percent of all Nebraska farms also had cattle and calf operations, primarily for beef. Over ninety percent of all Nebraska farms are either family/individual operations or family corporations, controlling just over 84 percent of all farm land in the state (USDA Census of Agriculture 2007). The nature of row-crop production necessitates investment in inputs that is somewhat higher than the national average. The average cost of production in Nebraska in 2007 was over 258,000 dollars, while the national average was less than 110,000 dollars that same year. Despite this, only 31 percent of Nebraska farms posted losses that year, versus over 53 percent nationally. For those farms that did post losses, however, the average losses were significantly higher for Nebraska farms than for those at the national level, at nearly 29,000 dollars versus just over 16,000 dollars (USDA Census of Agriculture 2007).

Nebraska farms were more likely than those on a national scale to pay interest on loans in 2007, as a part of their production expenses, with over 48 percent of Nebraska farmers reporting this expense versus just over 30 percent for the nation. Operators in the state were significantly more likely than for the nation to report farming as their primary occupation, at over sixty percent versus just over 45 percent, but they were nearly as likely as farmers in the nation to work over 200 days per year off the

farm, at between 38 percent and 39 percent. The concentration of the value of agricultural sales has been dramatic in Nebraska as well. In 2007, as few as 26 farms accounted for 10 percent of total sales in the state and as few as 1,415 of the state's 47,712 farms accounted for half of all sales (USDA Census of Agriculture, 2007).

Nebraska farms were significantly less likely than farms overall for the nation to be operated by their full owners that year as well, with just over half of all farms in the state operated by full owners versus nearly seventy percent for the nation. As with the national statistics, Nebraska farms of full owners tended to be significantly smaller than their sheer numbers would indicate. Full owners control just over a quarter of the total farm acres in Nebraska and just under half of all acres nationally. Like the national data, the largest farms in the state, those of over 2,000 acres, were significantly less likely than the whole to be operated by full owners, with just 19.5 percent (USDA Census of Agriculture 2007).

Nebraska farms are somewhat more likely than farms as a whole to be organized as family corporations, at just over seven percent versus under four percent but they control approximately seventeen percent of all farm land in the state versus just over twelve percent nationwide. Farms with market values of agricultural products of one million dollars or more were significantly more likely than farms as a whole to be organized as non-family organizations in Nebraska as well as nationally. Nationally 3.3 percent of the total farms with sales of one million dollars or more were organized as non-family corporations versus less than half of one percent overall. In Nebraska, with less than one half of one percent of the total farms organized in this way, slightly over one percent of farms with these large sales were organized as non-family corporations (USDA Census of Agriculture, 2007).

The average value of both land and buildings and machinery and equipment was significantly higher in Nebraska than for the nation as well. For the state, the average

value of land and buildings in 2007 was over one million dollars while for the nation it was less than 800,000 dollars. For machinery and equipment, the average value was more than 157,000 dollars for Nebraska versus just over 88,000 dollars for the entire nation.

Direct cash assistance from the federal government has also been vitally important to the economic viability of many small farms. Nationwide, 29.6 percent of farms received some direct cash assistance from one or more federal programs in 1992, with average payments at 6,412 dollars. Nebraska has historically had a somewhat higher level of participation in government programs, perhaps due to its dominance in the production of corn for grain, one of the commodities specified in support programs. Nearly 62 percent of Nebraska farmers were receiving payments from commodity programs in 1992, but the average payout to farmers than the state was slightly lower than the national average, at 6,255 dollars. By 2007, nationwide, 35 percent of all farms received direct payments, averaging just 9,523 dollars. In Nebraska that same year, over 73 percent of the state's farmers received direct assistance of some kind, with an average of 11,091 dollars. (United States Department of Agriculture, Census of Agriculture 1992, 2007).

The importance of agriculture to local economies varies widely in the state today. Overall, farm proprietor income accounted for only about 4.2 percent of all personal income in the state in 2002 but it ranged as high as well over half of all personal income in at least one county, Hayes, and at least one quarter of the total in ten other counties (State of Nebraska, Department of Economic Development Website, 2010 Download). Of the eleven counties receiving at least a quarter of all personal income from farm proprietor income, the poverty rates were higher than the average state in all but two and higher than the average for the nation in all but five. In six of Nebraska's counties

agricultural losses that year ultimately reduced total personal income by up to fifteen percent (United States Bureau of the Census, 2010 Download).

Park defines economic competition in terms of efforts exerted to “undersell a rival producer” (Park and Burgess. 1921. Pp. 549) but he makes clear that, even in his era, evolving educational and technological opportunities had changed the nature of how people might define the “rival producer”. Eight decades ago, Park and Burgess (1921) recognized that the demands that workers in our economy would experience, whether skilled or unskilled, would change dramatically in the future, and that this process would alter the competitive process. They also recognized that these changing demands would be economic and physical as well as intellectual and psychological. By definition in a capitalist system, competing interests exist in all economic relationships. Park and Burgess (1921) make this point in the following:

> Standardization of commodities, of prices, and of wages, the impersonal nature of business relations, the “cash-nexus” and the credit basis of all human relations have greatly extended the external competitive forms of interaction. Money, with its abstract standards of value, is not only a medium of exchange, but at the same time symbol par excellence of the economic nature of modern competitive society. Pp. 557.

In applying these ideas to farm families in Nebraska, it is important to note that the wide array of relationships in which these families engage today, competing interests abound. They must consider their own interests, as well as those of others, in a variety of decisions. As Resnick and Wolf (1987) discuss, while they use the class process as a theoretical entry point in their own theoretical stance, this is certainly not the only set of social processes in which human beings engage. Nebraska farmers engage in a range of economic, both class and non-class, and non-economic social processes in their everyday lives. Non-economic processes, such as voting and participation in cultural activities will be discussed later. The focus in this section will be on some of the important economic processes that impact the lives of Nebraska farm families.

The Marxian stance developed by Resnick and Wolf (1987) encourages us to examine a range of economic processes in which human beings participate. When farm families borrow money, sell their goods, or participate in federal agricultural programs, they are certainly participating in economic processes but because neither the appropriation of surplus labor nor the distribution of that labor is occurring in these cases, these are considered non-class processes. The fundamental class process requires the appropriation of surplus labor from the direct producer. In the case of the self-employed, like farmers, the fundamental class process entails self-appropriation. A significant share of Nebraska farmers, approximately 30.6 percent in 2007, also engage in the appropriation of the surplus labor of other direct producers, in this case paid employees. At the same time, over 39 percent of Nebraska farm operators worked 200 or more days that same year, having their own surplus labor appropriated by others.

While most of the farm families who participated in my earlier work did discuss the sharing and trading of labor with neighbors, and several others were paying wages to their children or the husbands or wives of their children, only six of 36 were paying unrelated workers for labor on their farms. A young second generation woman, who had worked full-time on their 1,000 acre operation in south-central Nebraska for about fourteen years told me in 1997:

> We have three part time hired men. One has a few acres, but he doesn't have machinery, so it's kind of a trade-off. He uses our equipment and makes just a few dollars and it works out pretty well for both of them. Another one runs road grader for a living, but he really likes the farm work, so he comes out at 4:30 or 5:00. My husband just hired a guy part-time who is retired military. He sat around home for a couple of years and was just about going crazy. So he wanted something to do during the day, so it's going to work out pretty good. He will work during the day and about when he is leaving then the other guy comes and works for a while. Last year I didn't have to drive the grain cart too much because my husband went together with another fellow and they were combining together. There was more man power available, but I did have to do a little bit of it.

Of the dozen farm families who participated in my 2000 research, six of the women and four of the men worked at least part-time off the farm. In an additional four

families one or the other had recently retired from off-farm full-time work. A woman from south-central Nebraska discussed the importance of the income she brings home from her part-time position as a clerk to the overall economic well-being of her family.

> You don't want to complain because I guess it looks like we're doing alright, but really, I think…. What we make during the year always goes to the bank. My working improves our lifestyle in that the farm can support itself but I buy groceries, clothes, pay the cable bill, gifts, paid for the daughter's wedding, stuff like that all come out of my account. I think that my working supports us at the level we were used to living. The farm does sustain itself, and it really almost supports this whole family, but I help lot. I try to help the kids too. I guess it is a choice that they have to make. I guess if they want to hang around and farm, it's a choice that they have to make. We're going through some lean times here and it will either work out or it won't work out. I don't think anybody knows. I think that a lot of people look at farmers and say, "They have a lot of money." The only time they have money is the day they have the sale. Although what I make can support our lifestyle a little better, I get frustrated because it is such a small amount compared to the expenses….sometimes I think it doesn't help. Like I said, I have been home the last 3 months and I found out that it does help. It doesn't help pay farm bills, but it helps in other ways that I am not willing to give up, so I am going back to work.

A couple farming an 1,120 acre operation in the central part of the region discussed the contributions that her paycheck makes to the household. She has worked as a nurse for all her adult life and it has made their lives much easier over the years.

> Man: And you've got to have somebody working for somebody on the outside, it's so good farming that you can't make a living at it, but if you have somebody that's making a living like my wife is in this case, being a nurse, it really makes all the difference in the world to make cash flow.
> Woman: And I'm fortunate that I have a job that pays really well, really well. For this area it's just almost unheard of.
> Man: I'd say she makes about 3 times as much as the average gal working here in this area.
> Woman: And probably twice as much as the average man. I've been a nurse since 1967, so...The facilities are really beginning to pay for experience, and they should.
> Man: And she has all this experience in hospitals, not in nursing homes, cause that's where her skills....
> Woman: And that's really beneficial. To bring into a nursing home, you know, they really utilize us a lot more than they could someone who's only worked in a nursing home. Yeah, they utilize your skills, where some places will hire you and then never utilize your skills, you know, never give you an opportunity.
> Man: And she's done about everything, she worked in surgery for about 6 years so that adds up too, should know what's going on and that makes her work valuable. You've got to do something besides farming today, regardless of how

> much ground you've got, you've still got to have something else just to get by and we are lucky she makes a pretty good income.

Nebraska's farm families engage in a wide range of subsumed class processes as well, which are defined by the distribution of appropriated labor in order to provide the conditions for production. As discussed in the first chapter, the overall structure of agriculture has changed dramatically in the last century, including the types of inputs, from knowledge to seed, equipment, and chemicals, necessary to successfully compete in today's global market. For example, farm families today must distribute some of their own appropriated labor value, as well as that of any paid employees, to a variety of suppliers of inputs, the cost of which continue to rise dramatically. The process of concentration in input markets, particularly in the realm of biotechnology, is a concern for many as a few very competitive "life sciences" corporations control an ever larger share of the seed availability (King 2001). While the share of farms in the state that paid for seed and plants did fall by over 6% between 1992 and 2007, for those operations that did purchase these inputs, the cost rose from and average of 5,405 dollars in 1992 to over 22,000 dollars by 2007, more than a four-fold increase in just fifteen years (UDSA Census of Agriculture, 1992, 2007).

Similar patterns can be seen in the purchase of fertilizers, lime, and soil conditioners; various agricultural chemicals; livestock and feed; and custom work, with a smaller share spending larger average totals for each of these inputs, with the average cost at least doubling for each over those fifteen years. Increasing average costs have not reduced the demand for some agricultural inputs. Even at more than double the average cost of petroleum products over that time, the share of Nebraska farmers purchasing them increased by over four percent in those fifteen years. In 2007, about 37.6 percent of all farms in the state were operated by partial owners who must distribute a portion of their appropriated labor in the form of rent for some share of the

acres they farm. An additional 12.1 percent of operators are tenant farmers, also distributing their surplus in rent. In each case, according to a Marxian perspective, operators were, through the subsumed class process, distributing surplus labor value in order to provide for the conditions of production.

When asked what they thought had become easier and more difficult about farming over recent decades, most of the participants in the earlier research projects talked about the influence of technology on reducing the labor demands on the farm but nearly all participants pointed to the increasing cost of production as what has become most difficult. In 2000, a couple in the south-central region, running a specialized cattle operation, along with raising corn and hay for feed, discussed the expense and complexity involved in farming today and possible ways to make the equipment they have purchased pay off for them.

> Man: We've just gone through purchasing a high priced piece of equipment, very high priced as a matter of fact, but the expenses on this combine, I purchased it from a dealer that I had not ever done any business with before, and priced from many dealers I'd never done business with before, but we,....
> Woman: We ended up buying a new one.
> Man: It's very near to new.
> Woman: But the fact is that if we got a new one we could have got it anywhere we wished, but rather with buying a used one we had to look for the characteristics we wanted in a combine and find it and get it where we found it.
> Man: That's still true but we would have still gone through a competitive bidding process if was brand new, and it's three years old, but in this particular model, we bought it basically 15,000 dollars less than what I could have bought other like ones like. Now which is great but that poses a question: do you put insurance for what you paid for it or do you insure it for what the replacement value of it is. You tell me? It is tough, that's really one of the major decisions now because for instance, this brand new cost 150,000 dollars, it's one of the major decisions you're going to make.
> Woman: One day we plan to, something new for us is something to help pay for that combine. We plan to do some custom harvesting. My husband has made some contacts with specific growers and to do some work for them and that will help, which is something we've never done before....
> Man: It's a branching out, it's an extension of our business without adding acres, which we don't have that much control over.

Again, natural conditions set the parameters for agricultural production as an economic venture in Nebraska, as they do anywhere, influencing the character of the

economic environment for farmers. At the same time, we will see that political developments have had profound impacts on the economy of the state as have cultural/moral factors. Similarly, economic conditions have influenced the political history of the state of Nebraska, from farmer involvement in early progressive efforts to provide stability for the system to farmer involvement in federal agricultural programs. In addition, these same economic conditions have helped to shape the cultural/moral character of farm communities as the focus has moved from one of cooperation to one of competition over time.

POLITICS AND NEBRASKA: FROM THE LOUISIANA PURCHASE TO STATEHOOD AND BEYOND

Federal Policies and their Influence on Nebraska

The land that is today Nebraska was purchased in 1803, along with a huge land area in the central North American continent, through what has been called the Louisiana Purchase. Negotiated and signed in the early nineteenth century, the Louisiana Purchase more than doubled the size of the United States (United States Department of Interior, National Park Service, 2010 Download). A little over a half century later, the northern part of this large area of land was organized into the territory of Nebraska. At that time, it covered all of what is today the state of Nebraska continuing to the Canadian border, including parts of present day Colorado, Wyoming, Montana, North Dakota, and South Dakota (Nebraska State Historical Society, 2010 Download).

The rapidly expanding global markets, as well as the existence of vast tracts of "open" western lands, led to the development of federal acts to encourage the settlement and control of those lands for the United States. Federal laws passed in the 1860s would have the most profound effects on the settlement of the area. The year 1862 was pivotal in the passage of legislation that would encourage American and Europeans immigrants to settle in the Nebraska territory. Federal legislation around the railroads and the

influence of those policies will be discussed later in this chapter. Another federal government action having a profound effect on the settlement of central Nebraska was the Homestead Act, signed into law in May of that year. Any family head over the age of 21, American citizens and those intending to gain citizenship, could claim 160 acres of land. The only requirement was that the family live on the land for five years, establishing a home and making improvements, after which the title for the ground would be transferred to the settler family. Within a few years of the passage of this legislation large numbers of settlers poured into the area and claimed their farms (Baltzenperger 1985).

In 1867, Nebraska officially became the 37th state in the Union, and federal land grants allowed for the establishment of both a state university and a state agricultural college by 1869. As will be discussed later, natural and economic factors were often the catalyst for large numbers of farmers becoming politically involved (Nebraska Department of Economic Development, 2010 Download). One result of the Great Depression was the development of a wide range of social programs designed to ensure the survival of struggling Americans during this difficult economic time. This was especially important for Great Plains farm families who had dealt with severe drought conditions in the decade leading up to the overall economic collapse. In fact, the resulting agricultural depression was instrumental in contributing to the overall economic depression in the 1930s. While the federal government had been involved in supporting the development of agricultural technologies by supporting university research, and engaged in some limited efforts to regulate agricultural markets, the first federal programs designed exclusively to assist struggling farmers were developed in the 1930s and early 1940s.

These acts attempted to mediate the economic problems rural people in general and farmers and their families in particular were experiencing as a result of both natural

and economic conditions (USDA Website 2011 Download). New Deal policies included the establishment of a variety of federal agencies assigned to assist rural populations in various ways, from rural electrification to soil conservation and market stability. Established by executive order in 1935 and placed under the control of the United States Department of Agriculture in 1939, the Rural Electrification Administration was charged with making funds available for the electrification of rural areas across the nation. The electrification of farms across rural Nebraska would have profound impacts on the everyday lives of the families living on them. The Agricultural Adjustment Act of 1933 was designed to balance supply and demand around seven crops, including corn, wheat, cotton, rice, peanuts, tobacco and milk (USDA Economic Research Service, Retrieved 2000). While the details changed often, the general orientation of government agricultural programs was altered little in the seventy years that followed. These earlier programs had attempted to control the level of production by offering farmers payments in exchange for participation in production controls like land set-asides and limited acreage production for these particular crops. More recent programs have changed direction, removing those controls.

Prolonged drought conditions in the 1920s and early 1930s had brought considerable attention to two dilemmas in American agriculture. One was the problem of soil erosion and the other was the need for access to reliable irrigation across the effected areas of the country. In 1935, the Soil Conservation and Domestic Allotment Act was passed by Congress and signed into law by President Franklin D. Roosevelt. This law established the Soil Conservation Service, designed to combat soil erosion and to preserve other natural resources, including water resources. Farmers received payment for planting legumes and grasses in order to support the soil. In order to do so, farmers were required to discontinue the production of commercial crops on the acres enrolled (Office of the Clerk, United States House of Representatives, Historical Highlights, 2011

Download) . The federal government also became involved in assisting states in developing systems that would allow farmers to have consistent access to the water they needed to produce their crop and livestock. Some of the new systems, including some in Nebraska, were surface water irrigation systems. Federal assistance allowed for projects that drew water from rivers in the state. In addition, the dams built for irrigation purposes provided electricity to residents of the state. While farmers had always used pumps, primarily windmills, to access ground water for irrigation and for livestock, it was not until this era that the full extent of the Ogallala Aquifer was realized and technological advances, often funded by the federal government through research and development grants, allowed for drilling of many more wells across the state to access this water, making it possible for farmers to irrigate much larger swaths of land.

In 1996, federal farm programs changed dramatically. Where once farmers were expected to agree to stringent limits on production, today they have relatively unlimited agency in deciding what to plant and in what amounts. This aspect of the 1996 Farm Bill was coined “freedom to farm.” Where once farmers could count on a stable and predictable ‘safety net’ of assistance from government from year to year, today’s programs, while vital to the continuing survival of many American farms, particularly the smallest farms, lean more toward unpredictable emergency assistance instead. The Production Flexibility Contact program was designed to save taxpayer money by offering farmers “fixed but declining” payments for a specific period, to end in 2002. While, as promised, spending on this program was reduced by about one billion dollars between 1997 and 1999, unforeseen market developments, triggered by overproduction, transformed a loan program into an emergency program with billions of dollars distributed to farms in an effort to support the country’s food system.

The Loan Deficiency Payment program is designed to place a lower limit to the prices farmers receive for their produce by setting loan rates for particular commodities.

When market prices fall below the set rate, the commodity loans can be repaid at a lower loan repayment. Farmers also have the alternate choice to receive market loan benefits through direct loan deficiency payments, available to farmers whether they have actually taken a commodity loan or not. Loan Deficiency Payments, or LDPs, are based on the level at which loan rates are higher than the posted county price or the price prevailing on world markets. According to the ERS (2000), the federal government paid out a total of 451.4 million dollars to corn farmers in LDPs in 1998, amounting to 46 percent of expenditures on the program.

Other programs, designed to assist farmers in times of natural or economic turmoil have also been important. As discussed earlier, concerns about soil conservation, irrigation, and water quality have produced programs that have assisted Nebraska farmers. In 1997, before significant impacts of the new ideology of farm programs had been seen, a fourth generation farm woman and former extension agent in south-central Nebraska discussed what she saw and the possible changes that the new programs would bring to the lives of farm families.

> I have some impressions of what I understand the bill will be. I think it will just be another step, another major step, in downsizing the farm program nationally. I guess I knew this was coming because when I was extension agent…extension is a part of the U.S. Department of Agriculture and it was such a small portion of the USDA budget, but yet we were targeted very often for budget cuts. We went through a lot of cuts and downsizing and I knew what was happening. Whereas the food stamp program was a big major portion of that budget, people don't think of that being under the USDA, not the general public. I knew that a lot of these programs would be…I knew we would continue to have hungry people that do not have a means of support. It does concern me. I see agriculture as continuing to grow in production, but on fewer and fewer bigger and bigger farms. I hope that we can keep pace technically with the kinds of things we need to do to survive. In order to make enough profit to survive, you have to farm more or else you have to have an outside source of income or someone investing who wants to have a tax write-off. We don't have those things right now. I guess we are in a kind of do-or-die situation and guess I knew it was coming. I'm not sure there is any way to stop it. One of the results of the program that we will be seeing is that they will be closing some of the offices that we do business with. Back in the '80s, when the farm program was more, paying out more, they talk about all the volume that they paid out. It was really obvious to me even into the early '90s that we would get the checks in for our grain ahead of time so we

could have cash flow, but for anything that we took in government program payment, we paid back in taxes. It was just like money laundering. We just circulated it through. It was never any great profit involved there, so I have mixed feeling involved there. I think that maybe we need to have a little bit of hands off, a little bit less control. I don't know exactly what's going to happen, but I have mixed feelings.

In 2000, a middle-aged couple operating a 320 acre corn and cattle farm in the central part of the state discussed the influence of farm programs on the prices that farmers receive for their products.

Man: I'm not sure, but what I can tell is just the freedom of farming, it actually just created a terrible overproduction and I was just watching on educational TV the other night where it was an interview with Mr. McDonald, who is running for senate and that's kind of what his feelings was all along. Plus with the loan deficiency payments. In fact our farm's not qualified for government programs other than those LDPs, because we were not signed up as of back in '96, so what I do, there's no government...
Woman: I think that that's why this new farm act with the loan deficiency payments and stuff has actually created a bigger drain than the old one did. Some of us who had not participated before are getting that assistance now. In the end, I really don't know, it may be some type of production control, it may have to be, I guess I really don't know.

That same year, a young couple in the north-central part of the state discussed the importance of direct payments from federal programs in their ability to sustain their lives on the farm.

Man: With farm prices the way they are, government money has been a big percentage of the income the last few years. The LDP (Loan Deficiency Payments) and stuff…you need to sign the papers and stuff. It's quite a drive for us, but now I guess you can do more by faxing and stuff, but all those things are as important as what we're doing back on the farm as far as a return on what we are getting. The last year for us, the LDP thing was all our profit, every bit of it. Then, there will be guys which you never thought about it….you just get LDP on top of your bushels. The guy that got hailed out, he didn't get any crop. The LDP, you just get that on the bushels you actually harvested, so it's unfair to them
Woman: In a way, they are helping the people who are maybe going to make out better.
Man: Especially the person who had a lot of bushels….the big farmer with 5,000 acres is the one who gets the most help. It just seems that….you just wish there would be a program that….it seems like there's always a loophole in them. It should help the small farmer more than the big farmer.
Woman: It seems that they just can't get that figured out. I mean, I wouldn't know how to do that, but it seems like, no matter what, if it helps the small farmer, it helps the big farmer more.

> Man: The money they made will be so much more for the same program than what the small farmer has. I guess that's why I think that it will tend to become a little more commercialized as time goes by, which maybe isn't all bad.

Other federal laws have also had important impacts on the lives of farm families in the state. For example, federal ethanol policy has been in place for over thirty years in the US, providing subsidies of up to 51 cents per gallon for the production of this biofuel, which is made primarily from corn here in this country (United States Department of Energy, 2007). Because this dramatically increases the demand for corn for the production of this fuel, it may be considered indirect assistance for America's corn farmers.

Nebraska's Own Political History

Nebraska, in the first year after it became the 37th state in 1867, saw the establishment of the state's capital, including its center of government and its state university and penitentiary, in Lincoln, where no town had existed up to that point. During the first years after statehood, the state also saw the rapid development of local political systems, with the organization and formation of most of her 93 counties in the 1870's and 1880's. Counties along and south of the Platte river were the first to be organized, followed by areas north (Luebke 1988). In its first decades, Nebraska's legislature was made up of two houses, as are the legislatures of all other states today. George Norris, a prominent and well-liked progressive Republican, lobbied for several years to change the nature of the state's legislature. Partisanship and gridlock encouraged a reconsideration of this system and a non-partisan single house system of legislature was developed. Still, in 1934, Nebraska citizens voted against a Unicameral system and it was not until 1937, with economic conditions necessitating the reduction of spending by government, that the people approved this change (Nebraska Legislature Website 2011 Download).

Of the 1,157,000 registered voters in the state in 2008, only 393,000 were registered as democrats. Politically, Nebraska tends to be quite conservative, voting for the democratic candidate in only three of the last 23 presidential elections (Nebraska Department of Economic Development 2010 Download). Since 1880, only eighteen democratic governors have been elected. The state legislature, the unicameral, on the other hand, was specifically designed to be non-partisan and in many cases, this seems to have worked. It has allowed the legislators to consider the continued importance of agriculture to the state without as much partisan controversy. This may have encouraged the passage of agricultural policies designed to help protect the state's farmers. Possibly the best example of this is State Initiative 300. After a decade long fight for passage, the citizens of Nebraska voted 56 percent to 44 percent for the passage of this amendment to the state constitution, designed to protect small family farms from the encroachment by corporate interests. The legislation virtually did away with non-family corporate ownership of agricultural land. It required that owners of agricultural land within the state be significantly involved in the operation of the farm. While controversy continued over the years, with frequent efforts to overturn or significantly change this law, it remained in place until the spring of 2007, when the US Supreme Court struck it down as unconstitutional (Center for Rural Affairs Website 2010 Download). The passage of this ballot initiative in the state may serve to demonstrate the importance of agriculture as a cultural process in Nebraska as well.

According to the human ecology theory developed by Park and Burgess (1921), the primary social processes occurring in the political order are conflict and accommodation. In fact, Park believes that one of the most important functions of the political system is to deal with conflict through communication and consensus in order to come to some sort of accommodation, or mutually beneficial arrangement. Initiative 300, passed by the state Unicameral in an effort to protect family farms, may be examined as

the accommodation of the interests of the society of the state as a whole. Many small communities within the state remain economically dependent on farm families. With the dramatic losses in population due to the concentration of land in ever larger farms, people in the state had raised concerns about the sustainability of these small communities as more families were forced off the farm. A widespread backlash against the concentration of power and control in the largest farms helped to shape a social movement that culminated in a petition drive and the voters of the state approving Ballot Initiative 300. Some of the farm families interviewed for the earlier studies were a bit critical of the this law. For instance, a couple, both fourth generation on central Nebraska farms, discussed, in 2000, the real on-the-ground effects of the legislation.

> Man: Now, Initiative 300 only talks about corporations. You have people like Ted Turner come in and buy large packages of land in the ranching areas and those ranchers can't compete with him, and then he's raising buffaloes and buffaloes are some risk to the cattle operations and so... We have laws on our books to stop corporate, corporations from coming in and competing with us but we can't stop the individuals. He's rich enough, he can do what he wants, I guess.
> Woman: But when you have people like that, even when the economy is bad, the value of the land doesn't go down to the same levels as what they should be, so people outside of farming, he doesn't farm a thing, this man does not farm. He just collects ground.

Another concern is often local sales and property taxes. Nebraska farmers were slightly more likely than farm operators as a whole to report property taxes as one of their costs of production, at 91.1 percent versus 90.5 percent. The average amount Nebraska farmers paid in property taxes rose by over 28 percent in just fifteen years between 1992 and 2007. Another central Nebraska couple, operating a 1,000 acre corn and cattle operation with their son, discussed the effects of local tax policies on decisions to improve their farm.

> Man: Yeah, that's what I would like to see, some new construction. Right now, and this all goes back to, this is the local government, but the more you improve a farm the more taxes you had to pay, and so the incentive is not there to do that. I'd like to see that happen to where the incentive would be to build new buildings, to keep the buildings that you have up and looking good so we would look

prosperous, and we could take more pride in what we have that way. The way it is they penalize us for doing good things.
Woman: It just doesn't seem like it's very smart in the long run.
Man: No, the incentive should be for you to keep the buildings up and improve it all the time, and it works against you. So that's what I'd like to see.

A couple in the north-central part of the state, who had nearly tripled the size of their farm in the three years between 1997 and 2000, told me that they were concerned about both state and local tax policies.

Man: Another thing our state of Nebraska did that is really rotten, is that several years ago they put on a sales tax, you know a sales tax hasn't always been in the state of Nebraska. And then when they passed that law and had the sales tax there's a law that's still on the books that says, as long as there is sales tax there will be no personal property, they put personal property on the farmer several years ago, and you pay on anything you depreciate. You put something on a depreciation schedule, you pay personal property tax on it, and that is completely wrong. And who's paying this? The young guy trying to get started farming. He's the one that's got to go buy the machinery and put it on paper, so everything that he depreciates, he's paying personal property on, it's just terrible.
Woman: We have two pieces of equipment on our personal property, which what I would say is a tractor and a disc.
Man: But the thing is, you've got to put it on there almost because you get more benefits, more tax back or has to pay less by depreciating it out than it costs you for personal property. That personal property tax is nothing but a complete rip-off that they passed in Lincoln from people down there to get this tax so nobody in the city pays it. And we're not represented.
Woman: We have two pieces of equipment and we pay 300 dollars on one, 500 dollars on the other...
Man: You know we got to depreciate them almost completely out now, it's just terrible. A new combine will cost you 500 dollars depreciation right off the bat. But you know, that's just one set of bullshit. It cost you at least 500 dollars when you put it on your depreciation.
Woman: So they're getting us, you know, we're depreciating it and it is saving on our taxes but then we end up paying a personal property tax.

Another couple in the northern region of the state, working with their son and his family in preparation for them taking control of the operation, also expressed their concern about the loss of local services.

Woman: We were talking about bills and agriculture. I worry about the schools. The property tax bill that went through. I worry that our kids aren't going to get their education here. They could close our school and the kids would get shipped somewhere. I worry about….if they all go to school somewhere else, we will lose the teachers from here and I think our community will be really hurt by it.

Man: For a lot of people, you think, well, if I have to take the kids to school in town might as well pick up some groceries while I'm there, I just as well buy my fertilizer there.
Woman: I think it will hurt our town a lot. If we lost our school, a lot of people wouldn't have a reason to stay, if they lost their jobs. I think it's a great place for kids. Me being from the city, growing up in Omaha and stuff, I just think it's good to be here. My dad went to work by the time I went to school, and I just think it is so nice that we can be here for the kids when they get home. I love to do things with them. We try to do something special with them every day, bike riding or going to the pool. Not everybody gets the chance to do that because they have to work outside the home.
Man: Things can get stressful on the farm….the money and all. You do good one year and then you will do bad. You just never know. It doesn't matter if it's dry and hot here if it's not dry and hot in other places. But there are some great advantages of living on the farm too.

NEBRASKA'S MORAL/CULTURAL HISTORY: RURAL IDEOLOGIES

Resnick and Wolf (1987) emphasize the processes whereby human beings produce shared meanings for their existence in their discussion of the cultural considerations in Marxian work. They discuss the importance of shared definitions of the process of work and social significance the individual and society attach to their work. Park's moral environmental order focuses on a single process dominating this realm: assimilation. Park's usage of the concept of assimilation is defined as the long-term process of interpenetration and fusion in which groups of people develop shared memories, ideologies, and attitudes through shared communication and experience. Both children born into a cultural group and immigrant populations must be assimilated into the group. A shared cultural tradition and a cultural life are only possible through these shared experiences and intimate communication. According to Park, all cultures are in subtle and slow flux, most often on an unconscious level for the participants (Park and Burgess 1921). The most intimate primary associations, in families, the church, or in peer groups, provide the most opportunity for the assimilation process. Ultimately, assimilation is the final product of social contact between members of a society, allowing for the development of a "community of purpose and action" (Pp 737), a form of unity.

Several cultural considerations are suggested by the work of both Resnick and Wolf (1987) and Park and Burgess (1921). Nebraska farmers were significantly more likely than all operators in the United States to identify farming as their primary occupation in 2007, at 60.5 percent versus just 45.1 percent. This represents a drop of 13.4 percent in the fifteen years leading up to that time. Weak markets, reduced labor demands, and off-farm employment opportunities may be related to the increasing number of Nebraska farmers who are working 200 or more days per year for wages, rising from 22.5 percent in 1992 to 39.3 percent in 2007. The growth has been less dramatic at the national level, with 34.6 percent of the nation's farm operators working 200 or more days in 1992 and 39.7 percent in 2007. One likely conclusion is that the processes of the decline in the number of operators identifying farming as their primary occupation is related to the fact that significantly more of them are working full-time off the farm, changing their status if not their definition of work.

Park's usage of the concept of assimilation encourages us to examine several variables in the moral-cultural realm. For instance, while over 95 percent of Nebraska's total population was born within the United States, nearly thirty percent were born in some other state in the country. Sonya Salamon (1992), in her book, *Prairie Patrimony: Family, Farming, and Community in the Midwest,* makes a case for the importance of ethnic heritage in helping to shape the common ideologies and farming patterns in agricultural areas of Illinois. She discusses the stability and willingness to self-sacrifice in what she calls "yeoman" farm families versus "entrepreneurial" farmers. She found that cultural beliefs and practices carried from earlier generations encouraged the yeoman families to view the land as more than simply a means to an end of production. They also tended to be family-based, smaller than average, and prefer ownership of the land to involving themselves in tenancy.

The most common ancestry group contributing to this group of yeoman famers in Illinois was German. Railroad companies and other organizations distributed pamphlets all across the eastern United States and throughout Europe to encourage people to migrate to the Plains, often in order to sell the parcels of land they had been granted by the federal government. The pamphlets, often filled with partial truths and misrepresentations, were printed in German, French, Swedish, and Czechoslovakian, as well as in English (Baltzenperger 1985). Potential settlers were led to believe that the natural conditions to be found across the newly opened lands would provide for an abundance and prosperity unrivaled throughout the Midwest. Believing the information distributed by the railroads, land companies, town companies, and state and local governments, many families moved into central Nebraska expecting to find a temperate climate with short, pleasant, mild winters, followed by plentiful spring rains falling on incredibly fertile soils.

First and second generation foreign-born settlers made up 41 percent to 47 percent of the total population of the state during the settlement years of 1870 through 1900 (Baltzenperger 1985). For many European families, the opportunity to own rich farm ground was a powerful draw. Generations of Europeans had worked the land but not owned it, working for shares or for wages. Willing to invest time and energy, most with very limited access to cash, the attraction of “free” land in the United States brought tens of thousands first and second generation European immigrants to central Nebraska to establish the legacy that would have been impossible for them in their native countries.

German was, by far, the most commonly reported ancestry in the state on the 2000 Census, accounting for 38.5 percent of all residents in the state, followed by Irish ancestry, at 13.4 percent. The largest ancestry in each central Nebraska county is also German. The second largest ancestries were: American in fourteen of the 41 counties,

English in twelve, Irish in ten, Polish in two, and one each being Czech, Danish, and Swedish. Several of the participant couples in the earlier research discussed the cultural backgrounds that dominated their own communities. For example, a first generation farm woman in the central part of the state talked about the community connections that have flowed out of the common heritage of many residents in the nearby small town.

> Seems like everyone here is related to about everyone else one way or another. To me, that makes for a strong community. We work together to make things better for all of us. We celebrate together and we help each other when disaster strikes. Most of the people here in the area have been here for generations, and most of their families came here from Germany a century ago. I guess that should not matter anymore now but it does seem to help people pull together when they need to.

Another important idea in Park's work is the assimilation of children born into the society. Virtually every participant family discussed the importance of community connections to their wellbeing as they struggle to survive on the farm. A woman, working and living on the largest of any of the farms involved in that research, at 3,220 acres of corn, and pasture-land for several hundred head of cattle, with her husband, daughter, and son-in-law, talked about the importance of social support networks in their community.

> I have a few really, really close friends, about six or eight ladies who I feel like I could say anything to and it would be confidential. I am really blessed with good people who love me. My husband and kids are the people I count on the most, but even at that, you have to be satisfied inside. You can't always count on other people to build you up inside. After you get to be almost fifty, you arrive at a place where you say, "This is who I am and where I'm at and that is good." You don't always need so many strokes I guess. But in a little town, you are involved in just about everything to do with the school, from soup to nuts. We have been involved in a whole variety of the things that accompany little towns, from the summer parades to the pancake feeds, the whole gamut of little town activities. The kids all went out for sports and music and speech and drama, so we just had a little flavor of everything over the years. It's been fun. I am on the school board right now, so I guess that's one community activity that I am personally involved in. I have been involved from time to time with music type activities that we have done with the church or with other groups in town. Odds and ends of things over the years. Most everything in our little town is associated with either church or school. The activities are important. There is definitely an element of learning in pretty much all the activities, and an important social

aspect. I think primarily, things are initiated in the community as a social thing, a way to bring people together.

A first generation farm woman, along with her fourth generation husband, in the south-central part of the state, talked about differing family backgrounds and community understanding of agriculture.

> Woman: People in town only really understand what we are dealing with if they come from a farm background themselves, and a lot of them have. If they moved out here from a city to work in some of these areas I really don't think they have a clue, any more than the big city people do.
> Man: Those that are in business if they've never been a farmer, those that come into a small community to do business they see the trickle down effect. In other words, if the farm economy is poor then the farmers are not in there buying those extra things that they are selling, and of course they understand it that way, if it gets into their pocket they understand that. Otherwise, for some of them, it is pretty abstract.

Virtually every family who participated in that earlier work discussed what they saw as the advantages in raising children on the farm versus in town. In 2000, one couple with a 320 acre farm in the Loup River Valley talked about their own experiences with growing up on farms and with raising their children on the farm.

> Woman: I don't know at what age, probably five or six, but my mom always helped my dad in the fields and so my sister and I, we had chores to do, whatever it was, milking or taking care of the cows or whatever, and basically do the housework and keep that up and really until I was a senior in high school, that was still my job. They quit milking after I left, so that was nice, that was always a frustrating point, I went through all that misery. Basically our summers were always filled, I mean we had time to do whatever we wanted to, but we had to do the chores first, and do the cooking and do the laundry and do the ironing, you know, basically run the household.
> Man: Our own kids had responsibilities while they were here to. I mean, they, we had a lot more younger type livestock, you know, when they were growing up that they had to help with and so, yeah, I'm sure it gave them a sense of responsibility and I know our daughter when she was going for interviews, that they kind of looked for people from the Midwest because of the work habits.
> Woman: And they always, also comment that, a child I think growing up on the farm you have to have a lot of ingenuity, I mean you gain ingenuity and to be able to figure things out. I think that also helps in your growth and your development because if you never have to have responsibility and you don't know how. Using it makes your brain good, you know, smart, with some knowledge and common sense.

A young woman who had grown up on a farm just a few miles from where her and her husband now farm in the northern part of the region recalled her own experiences with growing up on the farm.

> As far as raising kids, my choice would be to raise kids on the farm. It would be my first choice because I feel that you are forced into having an imagination, and doing things for yourself, and having some responsibilities, doing some chores. I have five sisters and we all had our responsibilities as we were growing up. When you have to do the work, I think it instills a lot of value. Not that being in town is not good, but from my own experience growing up on the farm, I couldn't run down the street and play with somebody. I had to decide to do something on my own, make up pretend friends, and be forced to like my family because they were the only ones I had to play with. One thing about being in a smaller town and on the farm, I feel that it's a really good place for kids to grow up. Of course, there are drawbacks too, but in my mind, the good of living in a smaller town outweighs the bad. There's not near as much to do. People say you need things to keep kids busy, so they won't get in trouble, and I agree with that. With a little imagination, there is always something to do on the farm.

A couple on a small farm in the Platte River Valley talked about the importance of children making connections with nature and the many opportunities farm life provides for exactly that.

> Woman: Our kids very much see themselves as farm kids, country kids. I guess I have never really made that transition myself, to see myself as purely a country person. So that always amuses me when they don't see another part of themselves, not attached to the farm. They are all looking for careers in other areas besides farming, so they will have that part of their life. That identity coming out of other experiences. I think it's great to identify with coming out of the farm. It is a way of life and you have to learn so much about nature and the way people are connected to it. It's not an occupation or something you do. It's your whole life.
> Man: Yeah, the kids saw plants growing and livestock being born. They saw a lot of life but they also saw some death and having that experience as kids seems like it helps them as adults. Even though none of them are farming themselves, they still appreciate nature and still respect the cycles of life and death. Without growing up on the farm, I think they would have less understanding of all that.

A couple, both third generation farmers, operating a 1,000 acre cattle and hog operation in the central part of the state talked about their own experiences with growing up on the farm and the importance of that experience to the way they see the world today.

Man: It is funny too look back at it now. I hated the work so much at the time but now those are really fond memories, even like shoveling manure. I would load manure by hand for hours just to go drive the tractor. I helped irrigate a lot. We had a lot of hay then and I drove a tractor and they loaded the small square bales and I'd help unload them. I started loading them when I was big enough to throw them on. There was a lot of community, neighbors helping neighbors back then, a lot more so than they are now.
Woman: Pretty amazing how much that's changed. The technology has made it so that farmers don't really need to help each other as much and most jobs, you don't even need the help of the kids. There is a lot less cooperating between farms and even on the same farm than there was then.
Man: When our kids were young, we used to spend days on harvesting hay and moving those small square bales and now you can go out in hour in the pasture and pick the whole crop, what we used to spend days doing. We still did pipe irrigation then on all our fields, so it took the whole family to lay pipe and then pick it up.
Woman: But the best thing is that you don't have someone leaving home to go to work every day. You still see each other on and off all day long. Some times of the year, your kids won't see their dad at all. He is out in the field before they get up for school and he is back home after they go to bed at night, but most of the year, we get to spend a lot of time as a family and I think that is what is missing for a lot of people today.

For many small communities across the country, local public libraries and public schools serve functions well beyond the academic. According to the Education Bug Website (Undated), there are currently 275 central and sixteen branch libraries across the state of Nebraska. There are also a total of 540 school districts, with nearly 1,300 public schools serving over 285,500 students. For each of the comparison counties, discussions will be included about the different functions both libraries and schools serve for populations in the communities and counties.

Many of the farm families interviewed for the earlier research discussed the Importance of local schools in helping to form the community. A couple in the southern part of the state discussed their concern about the future of their local area in light of the reductions in services, particularly in the consolidation of schools, they had already seen.

Man: They have been shutting down schools around here for years. Kids have to go further to get to school every day and other services are being cut too.
Woman: What they're doing with the school system is only going to make that worse. They're not working for the family farm with that. Pretty soon all the

> schools are going to be along the interstate, I think that's what they're after. And then all the land out here is going to be owned by two or three guys, and then they're going to control the costs and that's when the government is going to pay attention because the public is really going to start screaming because they're going to have to start paying. And then they're going to all be going, you know, how'd we get into this rut?

According to the Glenmary Research Center (Undated), approximately 58.8% of all Nebraskans are adherents to some religion, ranking it eleventh among all states in the US. Religious activities have also often been very important aspects of culture in rural areas of central Nebraska. According to research conducted in 2000 by the Glenmary Research Center (Undated), a Catholic society of priests, the share of the total populations in central Nebraska counties who are religious adherents varied widely in 2000, from just 30.2 percent in McPherson County to nearly 100 percent in Greeley County.

Women were more likely to discuss the importance of religion in their families lives than were the men who participated in the 2000 research, with only two of the twelve men and seven of the women talking about the topic. For example, a couple planning their retirement from their small operation in the central part of the state talked about their own involvement in their local church.

> Woman: We have been especially involved in the church and all the groups that go with that. We have drawn from then emotionally and spiritually. We're learning. We are just really getting into that right now.
> Man: We drove 35 miles to church in a larger town, so it has been kind of hard to get as involved as we would like because of the trip involved.
> Woman: In the last few months, though, we have had a group meeting here in our little town, so we don't have to be on the road all the time. Basically, it has been a foundation for us. Life is not always pleasant and great things don't always happen to you. Basically whatever we have we've been blessed with and are thankful for. I think it's given our family stability and it's just been good for us.

BOUNDARIES AND BREACHES: OVERDETERMINATION IN THE ENVIRONMENTAL REALMS

When examining the settlement patterns within the state of Nebraska, it is important to recognize that in a region like Nebraska, receiving limited precipitation each

year, access to water was a vital consideration for not only those early settlers on the Plains, but also for those planning for the first continental rail system. The same year that the Homestead Act was passed, in 1862, the government began subsidizing the construction of a transcontinental railroad. The steam trains of the era required large amounts of easily accessible water. Logic dictated that laying the tracks along the most extensive waterway, with a wide, level valley on either side, in the region would be the only sensible choice. Those tracks paralleled the Platte River across most of the state. Later tracks also often paralleled rivers and creeks, including the Republican in the far southern part of the state and the Loup, flowing from the north-central part of the region into the Platte near Columbus in the east-central part of the state.

Federal subsidization of the transcontinental railway was in the form of land grants, giving the Union Pacific title to alternate sections of the lands abutting the tracks in ten-mile strips. Ultimately, nearly one sixth of the total land area of the state would be granted to the Union Pacific or one of the smaller companies building branch lines from Kansas City and Sioux City (Morton 1907). The legislation that provided for the land grants to the rail companies also provided operating funds in the form of huge low-interest loans made to the companies by the federal government (Neth 1995). While the earliest permanent settlements tended to be along rivers and creeks, such as the Missouri and Platte Rivers, one of the reasons for this was the accessibility of lands through the railroad companies. The flexibility of private land transactions did appeal to many settlers who found the requirements for filing a homestead claim problematic. Many of the small towns found along the Platte River today have their roots in the decisions of the rail companies over a century ago, as many were established as freight stations and access ports for water for the steam trains. Even today, most of the rails in Nebraska parallel rivers or creeks.

But as more and more families emigrated from the eastern United States and Europe, the demand for land increased. For the first decade and a half or so after the first extensive settlement in the state, higher than average precipitation rates were seen. This encouraged families to establish dry land operations, without easy access to surface water for irrigation. By 1890, conditions had changed dramatically. Relatively wet and productive weather gave way to a prolonged drought, sending agricultural markets into a tailspin (Steinberg 2002). Many families made the decision to give up their farms and move on. After nearly two decades of rapid expansion and distribution of her populations, Nebraska saw an increase of only about 7,000 the decade between 1890 and 1900 when the drought was at its worst (Nebraska State Historical Society Website, 2011 Download). Many families who had begun the homestead process gave up their land during this period, never receiving the final title to the ground.

While some farm families were using water drawn from the Ogallala Aquifer, primarily using windmills to provide water for their livestock, as early as 1910, widespread irrigation with that water did not exist before the widespread application of center pivot irrigation systems in Nebraska. The drought that producers had experienced leading up to the Great Depression had made the need for reliable sources of water for irrigation undeniable. Works Projects Administration irrigation projects, as part of the New Deal legislation, sprung up all over the Great Plains, including in Nebraska. The Nebraska projects were designed not to tap into the aquifer but to re-direct the surface waters of the Platte River to where they were needed. The WPA approved Kingsley Dam project in 1935, in part to provide for irrigation but also as a means to produce electricity. An extensive network of irrigation canals allowed for millions of gallons of water to be re-directed from the Platte into fields across Nebraska. Civilian Conservation Corps projects were also important to the wellbeing of farm families in the state, building roads, bridges, and windbreaks across the state.

By the end of the twentieth century, over 36 percent of Nebraska farms used irrigation methods in order to provide a more reliable source of water for their crops, irrigating over sixteen percent of all farm acres in the state (USDA Census of Agriculture 2002). In 2010, according to the State of Nebraska Department of Natural Resources (2010 Download), there were over 94,000 registered irrigation wells across the state, over 36,000 of them in the central region. Nebraska's farmers have successfully breached the natural boundaries of production by employing irrigation technologies.

Various government programs, in Park's political order, over the last century have been designed to help farmers adapt to natural conditions, including soil conservation and extensive irrigation projects. When considering the moral/cultural realm, it is important to consider that many populations who migrated to the Great Plains in Nebraska's early settlement were seeking natural conditions similar to what they had left in their homelands. This may have been a factor in the concentration of particular ancestry groups in particular areas across the state. The geographic isolation of many farms has likely also helped to shape the cultural environment in many communities in the state.

Both state and federal policies have had significant influences on the economic conditions in which farm families operate. Land grants to railroads and the Homestead Act both helped to shape the economic development of Nebraska. While irrigation projects, soil conservation efforts, and federally funded agricultural research and development have allowed farm operators to significantly increase their yields, full participation in technological advances has dramatically increased the cost of inputs. Federal agricultural programs have traditionally attempted to control overproduction of particular commodities, including corn. While more recent federal farm programs continue to be vitally important to many small farms in their survival, the Loan Deficiency Payment program, based on bushels produced, has concentrated direct government

payments in the largest farms producing the eligible commodities. While the process of few farms representing an ever larger share of the total production has been occurring for over a century, federal policies have had important impacts on the structure we see today in our agricultural system.

The cultural order in the state of Nebraska has been influenced by a wide variety of natural, economic, and political processes. Perceptions of the natural environment influenced settlement patterns, as did the routes of railroads, also based on the natural environment. Rural schools, within the political order by Park's usage, are also very important cultural institutions. An overall conservative orientation is reflected in the state's tendency to vote republican in both general elections and state elections as well.

Ultimately, overdetermination appears to be a powerful force in this complex of intersecting and interacting environmental orders in Nebraska. It can be demonstrated that economic, political, and cultural processes have helped to shape the relationships that farm families have with nature, and the degree to which they may breach the boundaries that nature has set for production on the Great Plains. Economic conditions and processes have also been instrumental in shaping the political climate in Nebraska, as well the cultural order found in the state. The concept of overdetermination postulates that the character of all social processes is determined by the relationships of that process with all other social processes. I believe a case can also be made for an equally mutually dependent influence of processes in nature. The remainder of this work will consider paired sets of counties in central Nebraska, seeking further evidence for the overdetermined nature of processes within each of the Park's environmental realms.

FIGURE 3: NEBRASKA MAP WITH COUNTIES AND CENTRAL NEBRASKA BORDERS

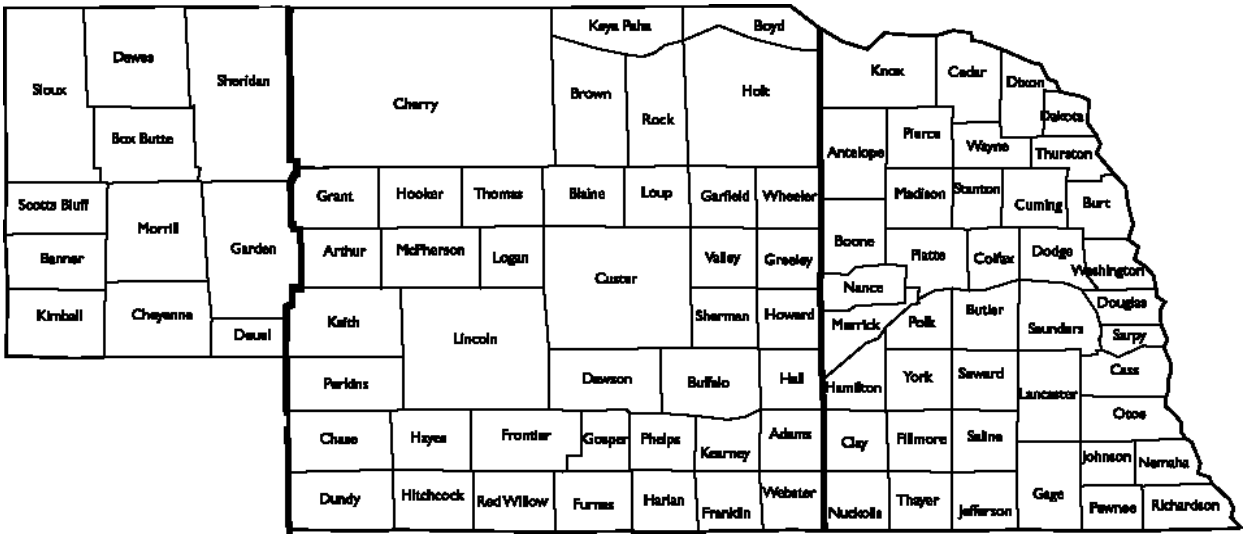

TABLE 3.1: Questions and Hypothesis:

Primary Research Question: What evidence can be found to indicate the mutual constitutivity, the reciprocal relationships, through overdetermination, of processes within and between the environmental orders specified by Park?

Subcomponents of the Research Question:

A) Considering central Nebraska farms, what is the evidence of the prominence of each of Park's primary types of social interaction, competition, conflict, accommodation, and assimilation, in influencing the characters of other social processes occurring within each the environmental orders?

B) How do natural processes and conditions in the ecological order, from precipitation to average temperature or dominant soil type, influence a range of behaviors and relationships of farm operators in counties of central Nebraska?

C) How do social processes occurring within the other environmental orders specified by Park (the economic, the political, and the moral) influence the behaviors of the same farm operators in relation to the physical environment of the farm itself?

D) What are the class and non-class processes in which Nebraska's farmers engage in their productive lives?

Hypothesis: Measurable relationships will be found among variables both within and between each of Park's environmental orders.

TABLE 3.2: RESEARCH QUESTIONS AND PAIRED COMPARISONS

Each of the paired comparisons may shed some light on the question of prominence of the basic social processes in the lives of farm families.

A) Chapter 4, comparing Brown County, in the Nebraska Sandhills, and Hitchcock County, dominated by rich silt and silt loam soils, will help to clarify the influence of the natural environment on the behaviors of farm families in central Nebraska

B) While each of the comparisons will consider a range of natural, economic, political, and moral-cultural processes and their influence on the behaviors of farm families, Chapter 5, comparing Furnas County, a fully rural county, with Dawson County, the core of a Micropolitan Statistical Area, will be most well suited to revealing patterns of intersection and interaction among these variables.

D) Each of the paired comparisons will evaluate the same set of variables, including particular participation in fundamental and subsumed class and non-class economic processes.

PART 2: PAIRED COMPARISONS: CENTRAL NEBRASKA COUNTIES

The following chapters will discuss comparisons among pairs of central Nebraska counties. It should be noted that many variables of interest to this research, from county-level poverty rates to county-level weather-related farm losses, are difficult to access going back more than a few decades. In addition, it has been necessary to operationalize some concepts imperfectly. For instance, the measures of civic involvement will come from documentary evidence and voting statistics, as well as the use of other community services. While none of these are perfect measures of this type of involvement, local area information about community-level civic organizations is also difficult to locate. Ultimately, however, the wealth of information that is available for each of the counties of interest will provide a rich glimpse into the many processes local farm families participate in and experience.

The region of central Nebraska, stretching from the eastern edge of the panhandle to the eastern edges of Boyd, Holt, Wheeler, Greeley, Howard, Hall, Adams, and Webster counties, includes 41 counties from which to choose potential counties for comparisons. Chapter Four considers Red Willow County, in the far southern part of the region, along the border with Kansas, and Valley County, in the east-central part, chosen because of their natural, economic, political, and cultural similarities in 1992. The primary purpose of this chapter is to examine similarities and differences in natural and social processes over fifteen years of data in the late twentieth century. These counties were chosen for this analysis because a wide variety of natural, economic, political, and cultural conditions were common to the two in 1992, the year the analysis begins. There are two primary purposes of this chapter. The first is to more closely examine a wide array of variables within each of the environmental orders for evidence of

overdetermination among processes. The second major function of this analysis is to provide a sort of base-line for the other paired comparisons.

Chapter Five compares Hitchcock County, in the south-western area of the region and Brown County in north-central Nebraska. The two were chosen because, while they were very similar economically, politically, and culturally in 1992, they were significantly different due to one important natural variable: dominant soil type. While nearly eighty percent of Hitchcock County's soils are silts and silt loams, approximately the same share of soils in Brown County are sands and sandy loams. The purpose of this comparison is to analyze the influence of this natural variable on processes within each of the other realms of environment.

Finally, Chapter Six will compare Furnas County, in south-central Nebraska, in the Republican River Valley, to Dawson County, along the Platte River toward the center of the region. These counties were chosen because they showed some significant similarities in 1992 as well. The most important difference between the two counties was population, with nearly 20,000 residents in Dawson County and fewer than 5,600 in Furnas County in the early 1990s. While the designation did not exist in 1992, Dawson County is in what the U.S. Census Bureau today calls a Micropolitan Statistical Area. Geographically, these counties are more closely located than either of the other pairs. This analysis should provide an interesting examination of the influence of Park's conceptualization of competition as the fundamental process in both the natural-ecological and economic orders. Population density and distribution are considered ecological variables and widely varying economic structures in the counties are indicative of economic competition.

Chapter Four: Changing Conditions in Similar Central Nebraska Counties

The purposes of this chapter are twofold. The first is to seek evidence of overdetermination among a variety of social and natural processes. The second is to provide a baseline for the other paired comparisons to be conducted. Although there are some significant economic, political, and cultural differences between Red Willow and Valley Counties, they were chosen for this investigation because they were very similar in multiple ways in 1992, the beginning date of the analysis. The two were found to be similar in the following ways:

1) Median household income ranged from 19,000 dollars to 23,000 dollars, overall poverty rates ranged from twelve to fourteen percent, and unemployment rates in the counties ranged between 2.5 percent and 3.5 percent in 1992.

2) Farms numbered between 350 and 500 and average farm size was between 750 and 1100 acres.

3) Over 93 percent of the land in each county was in farms, between 85 percent and 95 percent of soils are silts or silt loams, between 25 and thirty percent of lands have nine degree or higher slopes, and between 35 percent and 45 percent of soil is eroded.

4) Mean annual temperature ranges between 49 and 52 degrees and average precipitation is between 20 and 26 inches.

5) Between seventy and eighty percent of operators reported farming as their primary occupation and average operator age was between fifty and 51 years.

6) Over half of all farms were irrigated, between 45 and sixty percent of farms produced corn, and between sixty and 75 percent raised cattle in 1992.

7) Average market value of agricultural products sold was between 350,000 dollars and 450,000 dollars that year.

The remainder of this chapter will be organized as follows. A brief discussion of the settlement patterns in Red Willow County will be followed by the histories of the communities to be found within its borders. Next will be a look at historical development since those years, focusing on the twentieth century and examining natural, economic, both general and farm-related, political, and moral/cultural processes occurring in the county leading up to 1992, when the analyses begin. This will be followed by a consideration of all of the same topics and variables for Valley County. A comparative analysis of a fifteen year span of changes in a variety of social processes will then be discussed, followed by conclusions about the ultimate applicability of both Park's theoretical frame and the concept of overdetermination to help explain similarities and differences found between the two counties.

RED WILLOW COUNTY, NEBRASKA: BACKGROUND

Figure 4, a map of Nebraska, on page 117, shows the locations of the two counties of interest here as they are defined today. Located in the southwestern region of central Nebraska, along the border with Kansas to the south, Red Willow County is dominated by the wide, fertile Republican River Valley. Its geographic location is forty degrees, two minutes north latitude and one-hundred degrees, five minutes west longitude. To the east is Furnas County, to the North, Frontier, and to the west, Hitchcock County, Nebraska. Decatur County, Kansas is to the south. According to the US Census Bureau, the total land area of the county is approximately 717 square miles of creek-lined beauty. The first white settlement in the county occurred in the early 1870s, and the area was legally organized as a county as early as 1873, but widespread inhabitance by whites did not occur until somewhat later. Census counts in 1860 and 1870 listed no inhabitants in Red Willow County. By 1880, over 3,000 people had moved into the county (Historical Census Browser, University of Virginia, retrieved 2010).

The population count more than tripled by 1900 to over 9,600 residents. The county's population reached its peak in 1930, according to the Nebraska Department of Economic Development (retrieved 2010), at nearly 14,000 residents. Over the course of the twentieth century, population losses continued, with a total population of just over 11,700 in 1990, in the years leading up to the beginning of this research (Nebraska Department of Economic Development).

Today, approximately eighty percent of the county's population lives in one of six population centers in the county, each located along a river or creek. McCook, the county seat, with a population of 7,994 in 2000, is found in the western part of the county, along the Republican River. The population density for the county was sixteen people per square mile that year and only 5.3 percent of the total population lived on farms in 1990. Also located along the river to the east of McCook are Indianola, with a population of 642 in 2000, and Bartley, with 355 residents that same year. Danbury, with a 2000 population of 127, and Lebanon, with 70 residents, are situated along Beaver Creek, in the far southern part of the county (University of Nebraska, Virtual Nebraska: Our Towns Website, Retrieved 2010). Further discussion of Red Willow County will begin by examining the ecological conditions in the county, followed by a review of the economic, political, and cultural history of the county.

Red Willow County's Natural-Ecological Conditions

Along with the broad and fertile Republican River Valley, the river running west to east through the heart of the county, several other less significant tributaries and streams are also found in the county, draining into the Republican. These include Red Willow, Coon, and Dry Creeks to the north of the Republican River and Driftwood, Ash, Buffalo, Berger, School, and Silver Creeks south of the river. Only Beaver Creek, in the southeast corner of the county, does not flow into the Republican River within the county.

According to the National Oceanic and Atmospheric Administration Climatic Data Center website (retrieved 2010) the mean annual temperature in the county is 51.4 degrees Fahrenheit, ranging from a mean of 29.1 degrees in December to 71.1 in June. The average final spring freeze in the region is early to mid-May, with the average first fall frost in mid-to late September. The annual precipitation norm is 21.62 inches, with the majority of that precipitation received in the summer months. Approximately 93.5 percent of the county's soils are silts and silt loams. With over 27 percent of the land having a 9 degree or higher slope, nearly 39 percent of those soils are eroded (United States Department of Agriculture Natural Resources Conservation Service retrieved 2010). In 1992, nearly 96% of the total land area of the county was in farms (USDA Census of Agriculture, 1992). All surface area of the county lies above the Ogallala Aquifer.

Historically, Red Willow County has been impacted by weather-related disasters. The Republican River was subject to frequent flooding in the first decades after widespread settlement, the worst in the summer of 1935, in the midst of a long-term drought. South-central Nebraska was somewhat less subject to drought over the course of the twentieth century than were some other areas of the region, but Red Willow County did experience moderate to extreme drought in fifteen of the years of the twentieth century. A grasshopper invasion occurred in Red Willow County in 1874 and again, in a more limited fashion, in the 1950s. Extended cold and large amounts of winter snow, followed by spring flooding, were common over the course of the first decades of settlement, occurring in the winters of 1880-1881, 1888-1889, commonly known as the year of the "Schoolchildren's Blizzard," 1919-1920, and in1949-1950 (University of Nebraska, Virtual Nebraska: Our Towns Website, Retrieved 2010). Since 1950, Red Willow County has experienced 34 separate tornado incidents, all but one being designated F-0 or F-1, with varying levels of property damage but little crop

damage reported. The 1990 tornado to his the area was designated F-3 (Tornado History Project, retrieved 2011).

A Brief Economic History of Red Willow County: Agriculture and the Local Economy

The first permanent white settlers began establishing themselves in what would become Red Willow County in 1872, along the northern bank of the Republican River. The homestead claims were filed in the spring of that year, near where the town of Indianola is today. Indianola would be the first county seat, until 1892, when McCook would take that honor. In the summer of 1872, a sawmill was built near present-day Indianola, supplying lumber for the expected increase in demand with continued settlement (University of Nebraska, Virtual Nebraska: Our Towns). The first houses, built along the river or tributary creeks where the only ready supply of lumber could be found, were log homes. Homes built later were more commonly made of sod. For the later settler families, a lack of easy access to water was often a much bigger problem for the early settler families than was housing, requiring that families haul water for their own use and for livestock (Hamilton 1940).

Early settlers in Red Willow County relied heavily on the bison that roamed the region during that era, killing them for their meat, using their dung for fuel for their fires, and selling their hides for money income. By late 1873, the county had been organized and the first county-wide elections were held. By that time, post offices had been established at Danbury, in the far south-central part of the county on Beaver Creek, and Lebanon, to the northeast of there. Last to be established among the county's towns were Bartley and McCook. Bartley, in the northeast quadrant of the county, was established in 1886 and would be home to Mallalieu University. Bartley became important not only for the short-lived university but also for its location along the Chicago, Burlington, and Quincy railroad line. Perhaps more interesting is the early history of the establishment of McCook, which is the county's largest population center

and the county seat today. Previously called Fairview, McCook grew out of an agreement between the rail company, which had decided to place a division point at this location, and the Lincoln Land Office, which platted the town in 1882 (University of Nebraska, Virtual Nebraska, Our Towns).

Each of the communities did experience some growth for a time after settlement, but the growth was not evenly distributed. Indianola saw rapid decline after it lost its position as county seat while McCook saw dramatic population increases (University of Nebraska, Virtual Nebraska). Danbury did not see rail service until the late 1880s so saw little population growth until after that time. The most common agricultural goods produced nearby were and continue to be: corn, wheat, alfalfa, barley, potatoes, and livestock. In more recent years, grain sorghum and sugar beets have also become important crops. Lebanon became an important hub for local farmers, with three grain elevators operating into the early twentieth century. Over the early twentieth century, from 1919 until mid-century, a fixture in the community of Bartley was the livestock sale barn, serving farmers in the region and also serving as the venue for other community activities. Because most of the town was situated on high ground it felt minimal impacts of the Republican River flood of 1935 but many farms in the area were destroyed, forcing local farm families to abandon their lands. Indianola and the surrounding area were especially hard-hit by the 1935 flood, forcing many farm families to abandon their operations during that decade. McCook has been impacted by several natural disasters over its history, including a devastating tornado in 1928 as well as that Republican River flood in 1935 (University of Nebraska Virtual Nebraska: Our Towns, Retrieved 2010).

Agriculture has always been important to the local economy, with grain shipments being vital to the rail company operating in the county. With two lines running through the county, the movement of commodities to markets has helped provide opportunities for local agricultural producers, but the process of concentration and the

losses in the number of farms has been dramatic here. By the turn of the twentieth century, there were just over 9,600 people living in the county and there were over 1,200 farms. These farms accounted for slightly over ninety percent of the land. Around 65 percent of all farms in the county were operated by their full owners that year. By 1909, over 170,000 acres within the county had been planted in cereal grains, including nearly 86,000 acres in corn and over 71,000 acres in wheat and there were nearly 38,000 head of livestock in the county (USDA Census of Agriculture 1910).

Historical general economic data for counties is difficult to find for the early twentieth century. Early censuses did not seem to find variables like median income of great interest until the late 1960s. According to the U.S. Census Bureau, USA Counties data base, median family income in Red Willow County was just 6,354 dollars in 1969, rising to 13,663 dollars in 1979 and 21,811 dollars by 1989, the final year the data is available prior to the beginning date of the analysis. While agriculture continued to contribute millions of dollars to the local economy, by the late 1980s and early 1990s, manufacturing, retail and wholesale sales, and oil and gas production were also vitally important to that economy (Nebraska Department of Economic Development Website, Retrieved 2010).

In 1910, according to the US Census Bureau, 9,600 people were living in Red Willow County and there were 1,187 farms within its borders. This was fifty fewer farms than a decade earlier. Just under ninety percent of all land in the county was farm ground, and the average farm in the county was about 353 acres, which was significantly higher than the state average, at 298 or the national average at just 138 acres. Much of the land, in broken and steep bluffs, is most well suited for livestock production but most farms also produced row crops, like grains and legumes. Many did have livestock, including horses, cattle, hogs, and chickens, and a few farms were producing a wide variety of vegetables and fruits, including cabbage, cantaloupes, sweet corn, cucumbers,

horseradish, onions, tomatoes, watermelon, apples, apricots, cherries, peaches, pears, plums, grapes, gooseberries, and strawberries. Over half of the operators in Red Willow County in 1909 were the full owners of their farms, and the total value of all crops to the economy was over 1,350,000 dollars that year. Net cash return for county farmers from farming, government payments, and other farm-related sources, so important to local economies, totaled over 9,900,000 dollars in 1910. Approximately 86,000 of the county's 460,000 acres were planted in corn that year in the county and 18,500 cattle and calves were found on farms there (USDA Census of Agriculture 1910).

By 1930, with a population of nearly 14,000 and over 93 percent of all land in farms, the number of farms in the county had changed very little, at 1,189 in 1930, just two more than two decades earlier. The total value of all crops produced in the county had nearly doubled in twenty years, to over 2,600,000 dollars. Corn remained a vitally important crop in Red Willow County and nearly ninety percent of all farms had cow/calf operations (USDA Census of Agriculture 1930). In 1950, there were eighteen percent fewer farms in the county and a larger share of the total was producing wheat, sugar beats, and potatoes. Agriculture brought in nearly 5,400,000 dollars to the county that year. That year, over ¼ of all farm operators in the county were working off the farm, and over ten percent were working 100 or more days off the farm in 1949 (USDA Census of Agriculture 1950).

By 1992, when this analysis begins, the number of farms in Red Willow County was down to just 425. The 1990 Census of Population shows that the county population had fallen to approximately 11,700. Average farm size in the county increased from 322 acres in 1900 to 525 in 1950 and 1,034 in 1992 (USDA Census of Agriculture 1910, 1950, 1992). Nearly 91 percent of all land in the county was in farms in 1910. By 1950, it had increased to nearly 99 percent. In 1992, just under 96 percent of all land was in

farms in Red Willow County. For additional information about population changes, see Table 4.2 on page 119.

The dynamic nature of agriculture in Red Willow County is revealed in these and the changes that have occurred since. The first year of the in-depth analysis to come is 1992 when just 5.3 percent of the total county population was living on the farm and less than 31 percent of the total population was defined as rural (US Census Bureau 1990 Population and Housing Counts Retrieved 2010). Total agricultural sales had risen to $81 million, with a net cash return to the local economy of nearly 10 million dollars. Retail trade in the county totaled over 100 million dollars that year in Red Willow County and wholesale trade dwarfed both, at nearly 300 million dollars (Nebraska Department of Economic Development Website, Retrieved 2010).

During 1992, over 63 percent of farms in Red Willow County reported gains from agricultural sales, averaging 43,700 dollars. For the nearly forty percent of farms reporting losses that year, the average was just over 17,600 dollars. Only 39 percent of farms were operated by their full owners. In 1992, 45.6 percent of all farms were raising corn and 63.8 percent were raising wheat. Just 60.5 percent had cow/calf operations during that year. In 1992, over 218,000 acres of farm ground were irrigated in Red Willow County. Red Willow County ranked sixth among the counties in Nebraska for winter wheat production and third for sunflower production in 2007 (USDA National Agricultural Statistics Service 2008). The average per acre value of land and buildings had increased from just 45 dollars in 1930 to 469 dollars in 1992. While nearly 72 percent of all operators reported farming as their primary occupation that year, approximately 1/5 of all operators worked 200 or more days off the farm. Economically, federal farm programs were vitally important to the local economy with just over 43 percent of all farms in the county received government payments in 1992, averaging over 11,500 dollars (USDA Census of Agriculture 1992).

In 1995, the most recent data available from the Nebraska Department of Economic Development (Retrieved 2010), Red Willow County had just over five miles of urban connecting highways, just over 51 miles of rural major arterial highway, and nearly 22 miles of minor arterial highways. In 2002, two rail lines ran through the county. The Burlington Northern & Santa Fe line parallels the Republican River running east and west in the north-central part of the county and the Nebraska, Kansas, & Colorado line runs more southwest-northeast in the far southern part of the county, into Kansas (Wilber Smith Associates, Retrieved 2010).

Red Willow County's Political History

The voters of Red Willow County had approved their first bond issue as early as 1881, approving spending on a bridge over the Republican River at Indianola. Controversy over the county's seat was largely settled by late 1892, with McCook the victor over Indianola (Andrea's History, Retrieved 2010). During World War II, an Army Air Base was built just a few miles outside of McCook, and helped sustain populations in Red Willow County until 1945 when it was closed (University of Nebraska Virtual Nebraska: Our Towns, Retrieved 2010). Voters in the county most often vote republican in state and national elections. For example, in 2008, the year after the end of this research project, less than 24 percent of eligible voters in Red Willow County were registered as Democrats, versus nearly 17 percent registered as nonpartisan and not participating in primary elections, while approximately 58 percent were registered as republicans (Nebraska Secretary of State, 2008). Over seventy percent of all registered voters in the county participated in the 1992 general election and over 67 percent voted in 2008.

A small regional public airport is located in McCook (University of Nebraska, Virtual Nebraska: Our Towns Website, Retrieved 2010). Nebraska state law mandates that all power distributors in the state be publicly owned and Red Willow County is

situated primarily in the McCook Public Power District with some county territory serviced by the Twin Valleys Public Power District in the far eastern end of the county and the Southwest Public Power District in the farm southwestern part of the county (Nebraska Power Association, Retrieved 2011).

The Unicameral approved the development of a network of Natural Resources Districts in 1969, the purpose of which is to ensure that local voices be heard in state and national legislation related to the natural environment and to encourage local participation in resource development programs. The districts were formed around the naturally formed river basins in the state. Red Willow County is in the Middle Republican Natural Resources District, which also includes Hitchcock County, to the west, Hayes County, northwest, Frontier County, straight north of Red Willow County, and Lincoln County, north of that. The District is actively involved in a range of activities for the region, including tree planting, ground water level and quality observation and study, irrigation well inspections, river restoration and other wildlife habitat projects, and the control and maintenance of flood control structures (Nebraska Natural Resource Districts Website, Retrieved 2011). These vital services remain important to the agricultural operators in Red Willow County.

Red Willow County residents paid property taxes on property valued at 427 million dollars in 1996 (Nebraska Department of Economic Development, Retrieved 2010). There are five school districts in Red Willow County, serving over 1,900 students (Education Bug, Retrieved 2011). Additional local public services impacting farm families in Red Willow County include: both county and regional health departments, three public libraries, an active county extension office, a noxious week superintendent, and a livestock friendly zoning board (Red Willow County Government Website, Retrieved 2011).

Red Willow County's Cultural Environment

The first school in Red Willow County was taught in the courthouse at Indianola in 1873 (Andrea's History, 1882). Today, a total of 1,641 students are enrolled in one of Red Willow County's schools, 149 in a Catholic Elementary school and all others in one of its public schools (Education Bug, Retrieved 2011). In 1990, approximately 82.2 percent of the adult county population had high school diplomas and 14.9 percent had bachelor's degrees or higher. There are three public libraries in the county as well, with one each in Bartley, Indianola, and in McCook (Education Bug Website Retrieved 2011). The first Red Willow County Newspaper, beginning in 1872 and called *The Red Willow Gazette,* was actually published hundreds of miles away, in Nebraska City. This paper was largely advertizing for settlers to the region and was widely distributed in the eastern US (Andrea's History, Retrieved 2010). Today, two newspapers are published in the county, *The Indianola News,* with a circulation of just over 450 and *McCook Daily Gazette,* which has a circulation of 5,900, ranking it at number 21 for state newspaper circulation (Nebraska Press Association, Retrieved 2011).

Approximately 97 percent of the population of Red Willow County is white and ethnic Hispanics make up around 3.6 percent of the population. Only 1.6 percent of the total population of the county was born outside the United States. The largest reported ancestry in the county is German, representing approximately 42.6 percent of the county population, followed by Irish at nearly sixteen percent, and English at nearly fifteen percent (US Census Bureau American Community Survey 2005-2009). In 2000, the Glenmary Research Center (Retrieved 2010) reported that 63.2 percent of the people of Red Willow County were adherents of one of 27 religious congregations. According to the CDC, Catholicism is the most commonly practiced religion in the county, followed by Methodist, Lutheran, and Church of Christ religions (Centers for Disease Control SNAPS

Retrieved 2011). For additional information on religious adherence, see Table 4.1 on Page 118.

VALLEY COUNTY, NEBRASKA: BACKGROUND

The territory occupied by Valley County is dominated by two river valleys, the North Loup to the north and the Middle Loup in the far southern part of the county. A stark beauty, with relatively few trees but in deep gulches along creeks, characterizes this 568 square mile area. The counties surrounding it are: Custer to the west, Sherman to the south, Greeley to the east, and Garfield north of Valley County.

Valley County had approximately 80 miles of public highways in 1995, nearly all of it considered major arterial highway (Nebraska Department of Economic Development Database Retrieved 2010). In 2002, the Nebraska Central Railroad ran into Valley County along the Middle Loup River to Ord (Wilbur Smith Associates Retrieved 2010). The remaining discussion of Valley County will begin by examining the ecological conditions in the county, followed by a review of the economic, political, and cultural history of the county.

Natural-Ecological Conditions in Valley County

Figure 4.1, on page 118 is a map showing the location of Valley County in relation to Red Willow. Valley County's geographic location is forty-one degrees, six minutes north latitude and ninety-nine degrees west longitude. Along with the North and Middle Loup Rivers, more than fifteen small streams run through the county. NOAA (National Oceanic and Atmospheric Administration Climatic Data Center website; retrieved 2010) data shows that the mean annual temperature in the county is slightly lower than that of Red Willow County, at 49.4 degrees Fahrenheit, ranging from a average of seventy degrees in June to 25.3 degrees in December. Similar to Red Willow County, the average final spring freeze in the region is early to mid-May, with the average first fall frost in mid-to late September. Average annual precipitation in Valley

County is more than an inch lower than that of Red Willow, at 25.1 inches. Around 85.3 percent of the soils of the county are silts and silt loams and with slightly over a quarter of all land having a nine degree or higher slope, nearly 43 percent of the soils have been eroded (United States Department of Agriculture Natural Resources Conservation Service retrieved 2010). By 1992, at the beginning of the research period of this study, approximately 93.5 percent of all land in the county was in farms. (USDA Census of Agriculture, 1992). All surface area of the county lies above the Ogallala Aquifer.

Occasional flooding along both the legs of the Loup River, and along some of the smaller creeks has occurred, but a more common weather-related problem in the area over the history of Valley County has been drought. Although the county was lined with rivers and streams, extensive irrigation was not developed in the county until well into the twentieth century, making early farming a very uncertain venture. The first period of extensive drought conditions after initial settlement occurred in the early and mid-1870. When grasshoppers invaded the county in 1874, farm families had already been struggling for several years of low precipitation and low yields. Tornados have also been a problem in the county. Over the second half of the twentieth century, eighteen separate tornados have caused damage in Valley County, 2 were F0, 2 were F1, 6 were F2, 4 were F3, and in June of 1953, an F4 tornado hit the county. Ten members of a family at a reunion were killed on that day (Tornado History Project, retrieved 2011). Valley County was especially hard hit by the 1888 blizzard that swept across the state, killing a total of between forty and one-hundred Nebraskans. Mira Freeman was a schoolteacher in the county during this terrible storm, lasting over twelve hours with winds plunging temperatures to well below zero. She tied her thirteen students together and led them to a nearby farmhouse (Nebraska State Historical Society Retrieved 2011).

A Brief Review of Valley County's Economic History

Like Red Willow County, the first permanent white settlers arrived in what would be Valley County arrived in the early 1870s, near the area currently occupied by the town of North Loup. Also like Red Willow County, they chose lands that ran along rivers and creeks. The first homes in the county were sod, some with a wooden frame but most hollowed into hillsides. The first years of settlement in the area were very difficult, with hot and dry weather making the crops very small for much of the first decade. It was not until the late 1870s precipitation rebounded and farmers were able to produce relatively large crops. The first permanent village in Valley County was established at North Loup, in the southeastern area of the county by a group of Seventh Day Baptists in 1872. While a small settlement existed for over twenty years, it was not officially considered a town until 1894. The city of Ord, near the geographic center of the county and also along the North Loup River, was platted and settled in 1874, and has served as the county seat since then. The other communities in the county, Arcadia, on the Middle Loup in the far southwest, and Elyria, near the North Loup in the far north-central part of the county, were not established until 1885 and 1888 respectively. Also like Red Willow County, Valley County was legally organized in 1873, with Ord chosen as the county seat (University of Nebraska-Our Towns Retrieved 2010). Census counts in 1880 showed over 2,300 residents of the county, nearly 43 percent of them being female. By that year, nearly 15,600 acres of farm ground had been improved, and the average farm was 182 acres. Agriculture added 86,600 dollars to the local economy by that year (US Census Bureau, 1910, retrieved 2010).

The wide fertile river and creek valleys of Valley County provide good conditions for the production of grain crops and several businesses established in the early years of settlement in the county were important to the farm economy. For instance, by 1881, a grist and flour mill had been built in Ord, providing a means for local farmers to process

some of their crops. Two rail lines through the county in 1880 provided local farmers with the means to move their crops. Dairy farms were common in the early years of settlement and some of the most common crops produced in the county in those years of settlement were corn, mostly fed to local livestock, barley, potatoes, and rye. By the turn of the twentieth century, over 7,300 people called Valley County home, with over 1,500 families residing there. Agriculture brought nearly $850,000 into the local economy by 1900, with nearly 1,100 farms being established within her borders by that year. By the 1930s, popcorn had become an important local crop (University of Nebraska-Our Towns Retrieved 2010). By 1930, farmers in Valley County were producing nearly 109,000 acres of corn on nearly 1,250 farms. Other important crops included oats, hay, and alfalfa by that year and popcorn remained an important local crop. Over 50,000 swine were found on farms that year, outnumbering cattle by nearly 20,000 (US Census of Agriculture 1930). By 1930, over 9,500 people were living in the county, nearly 6,000 on farms. The number of farms in the county had increased only slightly in 30 years, to approximately 1,300, with just over 38 percent of them operated by their full owners.

Just two decades later, in 1950, the number of farms operating in the county had fallen to fewer than 1,050, producing nearly 7,000,000 dollars in crops alone. According to the US Census Bureau, the population of the county had fallen to 4,647 by 2000, and in 2002, there were just 419 farms operating in Valley County. By 2000, about 65 percent of the 4,647 residents of the county lived in one of its four towns. Ord had a population of nearly 2,270 that year and other towns in Valley County include Arcadia, with 359 residents, North Loup, with 339, and Elyria, with 54. The population density for the Valley County was just 8.2 persons per square mile that year, down from 12.8 just half a century earlier (Nebraska Department of Economic Development Database Retrieved 2010). Approximately 18.6 percent of the total population of Valley County

was living on farms in that census year (US Census 2000). For additional information about population changes, see table 4.2 on Page 119.

Median family income for Valley County overall in both 1969 and 1979 was slightly lower than it was for Red Willow County the same years, at 6,220 dollars in 1969 versus 6,354 dollars and 13,648 dollars versus 13,663 dollars in 1979. By 1989, however, the median was significantly higher in Valley County, at 23,945 dollars versus 21,810 dollars. In 1992, which is the first year of the in-depth analysis here, there were 488 farms in Valley County, nearly half operated by their full owners. Average farm size had grown to nearly 700 acres and over 57 percent of all farms in the county were producing corn. Less than ten percent of the county's farms were involved in wheat production and slightly more than half of all farms produced soybeans.

Nearly ¾ of farms raised cattle and just over 63 percent reported gains that year, with an average of approximately 51,000 dollars. For those farms reporting losses that year, the average was 139,000 dollars. While the share of all personal income in the county from farming has been reduced over time, in 2008, over twenty percent continued to come from farm proprietors' income (Nebraska Department of Economic Development Website, Retrieved 2010). A few dozen retailers, a single wholesaler, and a handful of manufacturing companies now supplement the income brought into the county by agriculture.

Over 223,000 acres of land in Valley County was irrigated by 1992. The county was not represented in the top ten of Nebraska counties for any of the most important crops in the state or for cattle production in 2007, according to a USDA National Agricultural Statistics Service Agri-Facts Report (2008). The average value of land and buildings in the county rose from 61 dollars in 1930 to 538 dollars in 1992 (USDA Census of Agriculture 1930, 1992). Over 76 percent of all operators in Valley County reported farming as their primary occupation in 1992, while 41 percent of operators

reported losses that year, averaging nearly 14,000 dollars. Approximately 62.4 percent of all operators in the county received government payments in 1992, averaging 8,045 dollars and bringing additional funds into the local economy (USDA Census of Agriculture 1992).

Political Environment in Valley County

Valley County did avoid some of the controversy around the choice of the county seat that the people of Red Willow County experienced. The site for the county's center of government was purchased from the Burlington and Missouri River Railroad Company and laid out a full year before significant numbers of people had located there and the town had been named Ord. The construction of the nearby military compound, Ft. Hartsuff, in 1874, provided work opportunities for farmers who had lost their crops and livelihoods to grasshoppers that summer (University of Nebraska Virtual Nebraska: Our Towns, Retrieved 2010). By the following year, a post office, a school, and a courthouse could be found in Ord and local voters had approved a bond that would build a bridge over the North Loup River (Andrea's History of the State of Nebraska, 1882). Valley County voters do tend to vote republican as do those in Red Willow, with 59 percent of all voters registered as republicans in 2008, but the remaining voters were more likely to register as democrat in Valley, at nearly 31 percent (Nebraska Secretary of State, 2008). Voter turnout for general elections since 1992 have ranged from as low as less than fifty percent in 2010 to as high as 77.3 percent in 1992 and 75.6 percent in 2008 (Nebraska Department of Economic Development, Retrieved 2010).

A single runway small regional airport is located in Ord and the county is serviced by the Loup Valleys Rural Public Power District, headquartered in Ord and also serving much of Garfield and Sherman Counties and part of Greeley and Wheeler Counties. Along with ten nearby counties, Valley County is in the Lower Loup Natural Resources District, managing over 500 miles of rivers and groundwater irrigation, planting millions

of trees in the district, and studying natural conditions in the area (Nebraska Natural Resources District). Because irrigation and controlling soil erosion are so important to successful production in the region, the work of the natural resources district impacts the lives of farm families in very real ways. Valley County residents paid taxes on property valued at approximately 232.5 million dollars in 1996. Property taxes helped to fund the seven school districts in Valley County, with a total of 923 students (Education Bug, Retrieved 2011).

Cultural Background of Valley County

Valley County's first one-room log school building was constructed at North Loup in 1873 (Andrea's History, 1882). Today, in addition to the over 900 students in Valley County's public schools, there is a Catholic elementary school in Ord has an additional 76 students (Education Bug, Retrieved 2011). In 1990, the share of adults in the county with a high school diploma was 6.5 points lower than it was in Red Willow County, at 75.7 percent. The share with at least a bachelor's degree was also unbalanced, at 11.6% in Valley County and 14.9 percent in Red Willow. Like Red Willow County, the county has three public libraries, one each in Arcadia, North Loup, and Ord (Public Libraries.Com, Retrieved 2011). Valley County's first newspaper, the *Valley County Herald,* was published in 1875. Today, a small circulation local paper is produced in Ord, called the *Ord Quiz* (Retrieved February 11, 2011).

Over 99 percent of the population of Valley County was white in 1990, and Hispanics of any race made up only about two percent. About 1.5 percent of the people in the county had been born is some country other than the US. Like Red Willow County, the largest ancestry group in Valley County is German, accounting for 30.7 percent of the people of the county, followed by Czech at 11.5 percent, Polish, making up about 7.4 percent of the population, and English at approximately 7.2 percent (US Census Bureau American Community Survey 2005-2009).

The first church built in Valley County was organized and constructed by the colony of Seventh Day Baptists who had migrated from Wisconsin in the early 1870s (Andrea's History of Nebraska, 1882) According to the Glenmary Research Center (Retrieved 2010) religious adherence is somewhat higher in Valley County than it is in Red Willow, with 70.3% of the population percent on belonging to one of fourteen churches. CDC reports show that, like Red Willow County, Catholicism was the most common religion practiced in Valley County, with over 1,400 adherents, followed by Methodists, Lutheran, and Church of Christ religions (Centers for Disease Control SNAPS Retrieved 2011). For additional information on religious adherence, see Table 4.2 on Page 119.

AN ANALYSIS OF THE OVERDETERMINED NATURE OF ENVIRONMENTAL REALMS IN RED WILLOW AND VALLEY COUNTIES

As discussed in the first chapter, the Marxian concept of overdetermination is very applicable to any study of the structure of agriculture in the US. It is defined as the mutually constituted nature of all social processes. Employing this concept of overdetermination, it is understood that the character of each process is always being determined by its particular relationships with every other process in society (Resnick and Wolff 1987). The overall purpose of this analysis is to seek out evidence for this overdetermination in a range of processes in the natural environment of the farm the other environmental realms, the economic, the political, and the cultural. This will be followed by analyses of relationships of processes both within and between the social realms.

The Natural Realm and its Relations with the Social Orders in Red Willow and Valley Counties

As discussed in the parts of this chapter on historical settlement patterns in the two counties, the earliest settlers tended to pick spots with easy access to water and

access to the few trees that would supply the wood needed to establish a working farm. Competition for these scarce resources was central to the distribution of early settlers and continues to influence population density and distribution even today. Those areas of both counties farthest afield from rivers and creeks tended to be the last to be claimed. In comparing the natural-ecological environments of Red Willow and Valley Counties, geographic location, Valley to the north-east of Red Willow, does have some limited impact on some natural variables. The land area of Red Willow County is approximately 150 square miles larger than Valley County. The mean annual temperature is two degrees higher in Red Willow County than in Valley County, with slightly lower June norms but significantly lower December norms.

Both counties are dominated by rich silt and silt-loam soils. In both, a significant share of the land is sloped, at nine degrees or higher, with over 27 percent of the land in Red Willow County and over 25 percent in Valley County sloped to at least this degree. Erosion of the soils is evident in both counties as well, at 38.8 percent of all surface soils in Red Willow County and 42.8 percent in Valley County showing erosion. Geographic location is also a vitally important factor in access to transportation, including rail and highway access. About 55.4 percent of all grain transported in Nebraska is moved by truck, averaging just 77 miles per shipment. Farm products are, however, vitally important to the railroad companies serving the state as they account for approximately 38.8% of all commodities hauled on the rails Nebraska, more than coal or all other commodities combined (Wilber Smith Associates, 2003). Grain elevators dot the countryside throughout Nebraska, along various railroad lines, totaling well over 400 in the state (Farm Net Services, Retrieved 2011). A grain elevator is considered a major elevator if it holds 100 rail cars or more in grain. Of course, smaller elevators are important to communities all across the state and the larger elevators act as collecting points for smaller facilities in the region.

There are three grain elevators in Red Willow County, two in McCook and one in Bartley (Farm Net Services, Retrieved 2011). None are considered major grain elevators. There are two elevators in Valley County (Farm Net Services, Retrieved 2011), both in Ord and on the Nebraska Central rail line, and one of which is a major grain elevator. The existence of this large-scale business is likely linked in various ways to the relative isolation of the region and the lack of easy access to major highways for hauling agricultural goods. Similarly, while there are no farm equipment dealers in Red Willow County and there is only one listed seed, fertilizer, and chemicals dealer, there is an equipment dealer in Ord, and seed dealers in both Ord and Arcadia. The relative isolation of Valley County, with significant distances to larger population centers, likely contributes to the existence of these businesses in the county as well.

Natural factors have been important to the wellbeing of farm families in other ways as well. As discussed earlier, farm families in both counties have experienced dramatic weather-related problems and losses over their histories. In 2007, statewide, approximately 89 percent of all corn producers, 87 percent of all wheat producers, and 88% of all soy producers had taken advantage of the Federal Crop Insurance program and has insured their cropland against losses. That year, nearly 72 percent of all cropland in Valley County was insured through the federal crop insurance program but just 38 percent of Red Willow County cropland was. Actual crop loss data is difficult to locate, particularly at the county level. According to the National Climatic Data Center (Retrieved 2011), two “billion dollar weather disasters” have occurred in Nebraska since 1980, both dramatic and costly drought events. The first occurred just three years prior to the opening date of this analysis, in 1989, and cost the farmers of the state 1.7 billion dollars. The second, in 2006, was even more extreme, with losses of 6.2 billion dollars. Smaller scale losses, from hail and winds have also caused crop losses over the period of this analysis.

The unpredictability of nature has encouraged farm families across the state to invest time, energy, and money in attempting to gain some control of natural processes. Here too the process of competition comes into play as the earliest innovators have the competitive advantage when it comes to production and yields. While both counties are well watered with surface rivers and streams, as shown in Table 3.1 on page 113, the normal annual precipitation in Red Willow County is 3.5 inches higher than in Valley County. This is likely a significant factor in the larger share of farms employing irrigation and the greater number of acres irrigated in Valley County over Red Willow. Irrigation, while varying across the two counties, is an important strategy farmers in both counties use in an attempt to have some measure of control of one aspect of nature, precipitation. According to a 2003 study by Charles Lamphear for the Nebraska Policy Institute, the average yield for irrigated corn in the state was approximately 186 bushels per acre versus just 82 bushels in dry land production that year. Similarly, winter wheat, hay, and soy yields are significantly higher in irrigated fields than in dry land fields (Lamphear, 2003). While direct economic impact on producers is obvious in increasing yields, indirect economic impacts are important as well. According to Lamphear (2003), indirect impacts, such as employment and value-added activities involving irrigated crops, were valued at more than twice that of dry land production in 2003.

In 1992, just 37.9 percent of Red Willow farms and just 9.6 percent of farm acres were irrigated. For Valley County, it was 18.7 percent of acres irrigated on 50.2 percent of all farms that same year. Over the period of the analysis, between 1992 and 2007, that gap increased. As the share of farms irrigating land decreased in Red Willow County, with a loss of 7.3 percent from 37.9 percent to 30.6 percent in those fifteen years, the share in Valley County increased by 5.3 percent, from 50.2 percent to 55.5 percent (USDA Census of Agriculture, 1992, 2007). In 2010, the number of registered irrigation wells in Red Willow County was 1,023, with 577 in Valley County (State of

Nebraska Department of Natural Resources, Retrieved 2011). Irrigation continues to be an important strategy farmers employ in the two counties, but it is not the only tool farmers use in their efforts to adapt to natural conditions and processes.

The application of fertilizers and chemicals is a process designed specifically for that purpose. Table 4.1, on page 118, illustrates that the share of farms in both counties applying lime and soil conditioners fell over the years of the analysis. In Red Willow County, it fell by 13.5 percent and in Valley County, by 7.1 percent. At the same time, the farms that did apply these fertilizers were paying significantly more on average for them by the end of the period. As a share of total farm production expenses, lime and soil conditioners increased by 9.8 percent to 14.3 percent in Red Willow County and by five percent to 12.1 percent in Valley County between 1992 and 2007 (USDA Census of Agriculture, 1992, 2007). The change in the share of farms applying chemicals was even more dramatic over the study period. In 1992, 68.5 percent of Red Willow County farms were using chemicals, falling to just 50.8 percent in 2007 and Valley County's 73.2 percent fell to 61.4 percent over the same period. The changes in the cost of chemicals as a share of total farm production expenses was not as dramatic as it was for fertilizers, with an increase of 3.5 percent in Red Willow County and just 0.6 percent in Valley County.

As discussed earlier in this work, actions by both state and federal government, within Park's political realm, have often been designed to deal with factors in nature. The state has long fought legal battles for its farmers for access to water for irrigation with surrounding states. Battles with Wyoming over Platte River and Niobrara River water and those with Kansas over Republican River water have engaged Nebraska officials in legal battles, with mixed results. The processes of conflict and accommodation building are ongoing in this and other nature-related situations. A significantly larger share of Nebraska's total territory lies above the Ogallala Aquifer than is the case in any other

state. As a result, approximately 46 percent of all water drawn from the aquifer for irrigation is drawn in Nebraska and the most common system for the use of that water is the center pivot. With a higher share of land irrigated with sprinkler systems, like center pivots, in Nebraska than any other state, the long-term impact of drawing water from the aquifer is a concern for many. While, overall water levels of the aquifer in the state remain relatively unchanged, the levels have fallen in some areas. As far as Red Willow County, there were no significant changes between the first use of aquifer water for irrigation and 1999, and the levels have actually increased, by up to ten to twenty feet in some parts of Valley County (USGS, Retrieved 2011).

The state of Nebraska has also been involved with the lives of farm families in adapting to natural-ecological processes through its Natural Resources Districts and its County Weed Boards, as well as a wide variety of programs by the state Department of Agriculture to deal with pests and plant diseases, all the while attempting to accommodate the needs of the largest number of people. While Nebraska farmers are more likely than farmers in other state to use sprinkler irrigation, center pivot systems in particular, there are still hundreds of miles of irrigation canals in use in the state, many of them originating in Civilian Conservation Corps and Works Progress Administration projects during the New Deal Era. Today, there are nine canals still operating in Red Willow County, along with 28 diversion or irrigation dams and reservoirs. In Valley County, we see five canals, eight dams, and seven reservoirs (US Places.com, Retrieved 2011). The USDA Natural Resources Conservation Service also provides vital information and assistance to farmers in the state. As seen in Table 3.10 on Page 117, overall, twelve percent of Red Willow County farms and nearly seventeen percent of Valley County farms participated in and received payments from the federal Conservation Reserve and Wetlands Reserve Programs, averaging 3,527 dollars in Red Willow and 4,052 dollars in Valley County (USDA Census of Agriculture 1992). Natural

conditions impact the cultural lives of farm families as well. Perhaps again related to the comparative geographic isolation of Valley County, use of the public libraries tends to be somewhat more common in Valley County than in Red Willow. This will be discussed further in the section on culture and on complex overdetermination below.

Park believed that the primary social process occurring in the natural-ecological order was competition, that constant, impersonal, and largely unconscious process that according to his theory, is the primary determinant of population density and distribution. Population density varies significantly between Red Willow and Valley Counties and, while both have lost population over the last half century, the process has been much more pronounced in Valley County than in Red Willow. Between 1950 and 2000, population density fell by approximately fourteen percent in Red Willow County but by about 36 percent in Valley. In just the years between 1990 and 2000, Red Willow County's population density fell by approximately .3 persons, while it fell by .9 persons in Valley County (Nebraska Department of Economic Development, Retrieved 2010). Over a similar period, between 1992 and 2002, the number of farms in Red Willow County fell by 10.6 percent but the number fell by 14.1 percent in Valley County (US Census Bureau, Small Area Income and Poverty Estimates, retrieved 2010). There does appear to be a relationship between these variables, so some evidence of the effects of the process of competition is playing itself out in this environmental realm.

The Economic Order: Overall Economic Conditions and the Structure of Agriculture in Red Willow and Valley Counties

Changes in overall economic conditions

The purpose of this section is to seek out evidence of intersecting and interacting, overdetermined, processes within the economic realm. It is important to keep in mind the process of competition, as we examine the evolving economic situations in these two counties. Park stressed competition as the prominent process in the economic

order, and by examining general economic trends in the tw0 counties, as well as a variety of changing structure of agriculture variables, patterns of relations among the competitive process and other social processes, conflict, accommodation, and assimilation, may be detected. As seen in Table 4.3 on page 120, median family income has consistently been lower for both Nebraska and each of the counties of concern here than the national median. Median household income increased by 65.2 percent in Red Willow County, 60.8 percent in Valley County, 86.4 m percent for the state of Nebraska, and 41.0 percent at the national level over the period of this analysis from 1992 to 2007. With the exception of Valley County in 1997, poverty rates for all ages have consistently been lower in the counties and in the state of Nebraska than at the national level. With the exception of Valley County in 2002 and in 2007, child poverty rates have also been lower than the national rates for the state and the counties. Unemployment rates for Nebraska, Red Willow County, and Valley County have been significantly below the national rate for each of the years analyzed here.

The same table shows a reduced number of jobs in every sector of the economy but the service sector in both of the counties, the state of Nebraska, and the nation. It also demonstrates the relative importance of agriculture to the economy of Valley County as compared to Red Willow. If we were to assume that every farm in the county had a single operator in 2007, the 391 operators exceeds the number of paid employees in all but the service sector in Valley County, meaning more citizens of the county are engaged in farming than are involved in retail sales, wholesale sales, and manufacturing together. For Red Willow County, both the service sector and the retail sector report larger numbers of paid employees than there are farm operators in the county. Historically low unemployment rates and limited employment opportunities characterize both of the counties of concern to this analysis.

Comparing the agricultural sectors in Red Willow and Valley Counties

As seen in Table 4.4 on Page 121, as the number of total farms in the United States increased between 1992 and 2007, by approximately 14.5 percent, the number in Nebraska and in both Red Willow and Valley Counties fell, by about 9.8 percent for the state, 9.2 percent in Red Willow County, and 19.9 percent in Valley County. As mentioned earlier, natural conditions in Nebraska and the resulting dominance of row crop production has necessitated that the average farm size for the state has long been significantly larger than the national average. This trend continued into the analysis period for this work, with the gap increasing over time as the average farm size actually decreased by nearly fifteen percent at the national level between 1992 and 2007 as the number of farms increased. Average farm size in Nebraska increased by about 13.6 percent, as it did by 11.9 percent in Red Willow County, and 31.1 percent in Valley County over the period.

Also shown in Table 4.4, the share of total land area in farms continues to be significantly greater for the state of Nebraska than for the nation as a whole, at 92.4 percent and just 40.8 percent respectively. For the counties examined here, the percentages were significantly higher, with 97.3 percent of all land in Red Willow County in farms and 98 percent of the land in Valley County in farms. In considering the average net return on agricultural production, Table 4.4 also shows that farmers in Nebraska and both Red Willow and Valley Counties reported a considerably higher net return than farmers for the country as a whole and they were somewhat less likely then farmers at the national level to report losses. However, for those who did report losses, those losses were significantly higher in these three locales than they were for the nation's farmers overall.

At the national level, up to 69 percent of all farms were operated by their full owners in 2007. Nebraska farms and those in the two counties were significantly less

likely to be operated by their full owners. See Table 4.5 on page 122 for additional information on farm tenure. Nebraska farm operators, and those in both counties, were consistently more likely than those at the national level to claim farming as their primary occupation, and with the exception of Red Willow County in 2007, were less likely to work 200 or more days in a year away from the farm. As seen in Table 4.6 on page 123, the share of farms organized as individual or family operations was comparable for the 4 locales, averaging between 81.1 percent and 89.7 percent over the years of the analysis. Concerning the share of total farm acres controlled by individual/family organizations, the share tends to be somewhat higher for Nebraska and both Red Willow and Valley Counties than it is as the national level. Nebraska farms and those in the two counties are more likely than those at the national level to be organized as family corporations. Non-family corporations and other organizational types represent less than 1% of farms throughout the state and the two counties.

Table 4.7 on page 124 reveals that Nebraska farms are significantly more likely than farms in the nation as a whole to be involved in producing corn and wheat for grain and soy for beans. They are also somewhat more likely to have a cattle and calf operation on the farm. In comparing the two counties, we see that a larger share of farms and of farm acres are invested in producing corn for grain and soy for beans in Valley County than in Red Willow County. One possible influence on this difference is the existence of three cattle feed lots in Valley County, with the capacity to feed 27,550 head of cattle at any given time and requiring continuing stocks of corn and hay, primarily alfalfa, often contracting with local farmers to produce for their demands. However, cattle-calf production is more common on farms in Valley County as well. In Red Willow County, according to the Nebraska Department of Agriculture (Retrieved 2010), there are two feedlots, with a combined capacity of 21,000 head of cattle, providing a potential outlet for a range of agricultural products for farmers here as well.

Yet another potential outlet for the farmers in the Valley County area is the Great Plains Renewable Energy ethanol plant in Ord, producing ethanol from corn for our cars and trucks. Red Willow County farms were much more likely than those in Valley County to produce wheat for grain. As illustrated in Table 4.8 on page 125, a significant number of farmers, nationwide, in Nebraska, and in Red Willow and Valley Counties, participated in the fundamental class process over the fifteen years of this analysis. While farmers in the state and in the counties were somewhat less likely to work 200 or more days off the farm over the period and were somewhat more likely to identify farming as their primary occupation than operators at the national level, they were also significantly more likely to employ paid labor on their operations over most of the period (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

Farm operators in the counties participated in a wide range of subsumed class processes over the time period of this analysis, ensuring the conditions for production on their farms. Table 4.9 on page 126 demonstrates some of the various strategies farm families employ to ensure that all factors are in place for successful production and marketing. By definition, transactions in the marketplace must accommodate the conflicting interests of all parties involved. A case could be made that, in many cases, farm operators have little power to negotiate their positions or interests, producing an accommodation that is complex and fragile, often difficult to sustain. As discussed earlier, Nebraska farmers and those in the two counties are more likely than the national average to operate part-owner farms. Over the study period, they were also consistently more likely to be tenant farmers. Land is one of the most basic inputs in agricultural production and many are willing to lease pastures and fields not their own to provide for that most important condition of production. Between the two, full tenancy and part-ownership accounted for between fifty and sixty percent of all Red Willow County farms over the entire period. The two were not quite as prominent in Valley County, in which

just 43 to 53 percent of farms were in these two categories. Even Valley County, with the lowest share of these types among the state and the comparison county, finds these more dominant than at the national level. The table also reveals patterns of participation in other subsumed class processes, including purchases of seed, livestock, feed, repairs, petroleum products, interest on loans, property taxes, and rent on land an buildings. Results show that farmers in one or more of the counties and/or in the state were more likely than the national average to: purchase seeds and/or plants, purchase maintenance, purchase livestock, purchase feed, pay interest, and pay rent for land and buildings. Valley County farmers were more likely than those in Red Willow County to purchase livestock and feed, and as overall trends, the two counties were quite similar when considering many subsumed class processes (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

Ultimately, processes within the economic realm, including competition, conflict, and accommodation, impact all aspects of the lives of Nebraska's farm families, including macrosociological processes in global agricultural markets and smaller-scale, mesosociological, state-level, and more microsociological, county-level and family-level conditions and processes. Economic realities influence the behaviors of farm operators in relation to the natural, ecological environment, those realities playing themselves out in the process of competition. Over time, economics has been central to much of the policy and legislation involving agriculture, from federal farm bills to state policies. Policies and legislation, by Park's definition, are products of the processes of conflict and accommodation within the society, most often with an important economic element. Economic processes also have important impacts on the cultural-moral environment, as out-migration continues from the counties and the state, impacting this important order of assimilation.

The Political and Cultural Realms: Difference, Similarity, and Interacting Processes Within and Between Them and the Other Orders

Table 4.10, on page 127 illustrates several variables related to the political realm. Throughout this chapter, several points of discussion have been concerned with the influence of the political on the behaviors of farmers involving the natural environment, including public irrigation projects, Nebraska's Natural Resources Districts, County Weed Boards, participation in federal Conservation Reserve programs, and the evolution of other federal farm programs. Nebraska farmers and those in the two counties are more likely than the national average to participate in both commodity and reserve programs. The importance of public highways and public services, including education, libraries, and other public venues to the cultural realm in the counties has also been a topic of discussion. The relations here too can be traced back to efforts at accommodating the needs of all constituents in the various political venues.

When considering voter participation, as illustrated on Table 4.10, citizens of Nebraska and both of the counties of concern here were more likely than voters at the national level to participate in general elections. At the same time, if we consider the variable of adherence to organized religions, Nebraskans as a whole are somewhat more likely than the national average to report that they do practice a religion, but the adherence rate is significantly higher yet in both of the counties. There are 29 churches in Red Willow County, which is one per 395 people in the county. In relatively isolated Valley County, there are 16 churches for a population of 4,647, which averages one per 290 people in the county (Glenmary Research Center, retrieved 2010). Overall, in voting patterns and in religious participation, a generally conservative ideology is demonstrated here.

Again, citizens in isolated regions of the country, public services are vital. For the population of the overall services areas of the largest libraries in the two

counties, an average of five visits per year and fourteen annual circulation transactions at Ord's central library must be compared with an average of just over two visits per person in the service area and just under seven circulation transactions at the McCook central library. For the smaller libraries in the counties, the tendency is for visits per person to exceed circulation transactions per person, in some cases dramatically (Education Bug Website, retrieved 2011). Small libraries, particularly in small, geographically isolated communities often serve multiple functions and that appears to be the case in Red Willow and Valley Counties. Churches too often serve various social functions in small towns. Assimilation in the process of socialization of new members of communities occurs in a wide range of venues over and above the home alone. Schools and churches are some of the most important of these outside the family.

CONCLUSIONS

Perhaps the strongest way to conclude this discussion is to trace the influences of various processes in the natural, economic, political, and cultural realms on a single behavioral process in which farm operators engage, irrigation. Table 4.1 (page 118) reveals that, while average annual precipitation in Valley County is nearly 3 ½ inches more than it is in Red Willow, farms and farm acres are significantly more likely to be irrigated in Valley County. In fact, Red Willow County farms in 2007 were only about 55 percent as likely to be irrigated as those in Valley County and farm acres in Valley County were more than twice as likely to be irrigated as those in Red Willow. Logic would suggest that natural conditions alone do not determine participation in this particular behavior. It may be important to consider influences outside the natural order, in the economic, political, and cultural orders on the process of irrigation.

The depth to the water table of the Ogallala Aquifer varies significantly across the state, but tends to be relatively similar between Red Willow County and Valley County, so ease of access to irrigation waters should not be a significant factor. Charles

Lamphear, in his 2003 study of the economic importance of irrigation for the Nebraska Policy Center, found that average yields were dramatically affected by the application of irrigation technologies. For instance, he found that yields for winter wheat were increased by some 44 percent when crops were irrigated, similarly, irrigated soybean yields were over thirty percent higher than were dry land beans. Irrigation most dramatically impacts the yield of corn for grain, more than doubling the average yield.

A brief examination of Table 4.7 on page 124 reveals that farmers in more heavily irrigated Valley County are more likely than are those in Red Willow to raise water-demanding corn for grain. On the other hand, farmers in Red Willow County were much more likely than those in Valley County to raise winter wheat, with its more limited need for water. Approximately 72 percent of all irrigated land in Nebraska is watered by sprinkler systems, primarily center pivot systems, the highest share of any state in the nation. For the two counties of concern here, there were 1,023 registered irrigation wells in Red Willow County in 2007, irrigating an average of 53.8 acres per well. In Valley County, the number of registered wells was just 577, watering an average of over 172 acres per well. The average for Nebraska overall was between the two, at approximately 90.7 acres per registered well (Nebraska Department of Economic Development Website, retrieved 2010).

Even though Valley County farms and acres are more commonly irrigated than are those in Red Willow County, research has shown that groundwater levels in Red Willow have declined since the development of groundwater irrigation in the region throughout much of the county, as much as twenty to twenty-nine feet in a small area of northwestern Red Willow County. At the same time, since predevelopment, groundwater levels have actually risen in much of Valley County, by as much as thirty to thirty-nine feet in the central part of the county (University of Nebraska-Lincoln, Retrieved 2011). While it may well be that farmers in the two areas are not conscious of these realities, for

those who do understand the processes of recharge and decline, perhaps circumstances encourage Valley county farmers to engage in irrigation practices while they discourage those in Red Willow County. The Natural Resources Districts in which the 2 counties are located are actively involved in attempting to improve groundwater level and quality. In the Middle Republican NRD, where Red Willow County is located and where groundwater levels have fallen since development, the drilling of new wells that pump over fifty gallons per minute has been indefinitely suspended and in the Lower Loup NRD, where Valley County is situated, while permits for those wells are required, permits are available on a limited basis (Lower Loup and Republican Natural Resources Districts Websites, retrieved 2010). These policies and regulations alone may help to explain the unbalanced application of irrigation technologies in the two counties.

Perhaps a consideration of the relative prominence of farming to other forms of employment in the two counties is in order. Again, examining Table 4.3 on page 120 reveals that, as an occupation, farming accounts for a significantly larger share of the overall working population in Valley County than it does in Red Willow. It may be reasonably assumed that farmers and their families, where they account for a larger share of the total population, will also play a larger role in shaping the overall cultural/moral order of the community. In these circumstances, the interests of farm families and the interests of the community may be seen as more well-aligned. This may be even more likely in counties like Valley, where the potentially detrimental long-term impacts of intensive irrigation have not been seen.

Irrigation is but one of a myriad of processes in which farm families in central Nebraska engage. Patterns of application of irrigation technologies are overdetermined by a wide range of processes in each environmental realm. Irrigation is a single example, examined in Red Willow and Valley Counties. The next chapter will examine similarities and differences in Brown County, in north-central Nebraska in the Sandhills

region, and Hitchcock County, neighboring Red Willow County in the far south-western part of the region. The final focus in this chapter will be on the process of the production of particular crops and the prominence of livestock production. Chapter Six focuses on counties geographically situated more closely than either of the other pairs. Dawson County, designated the core of a Micropolitan Statistical Area, lies along the Platte River Valley toward the center of the region and fully rural Furnas County is a county away, in the far south central area of the region. The pinpoint focus in this chapter will be on the processes influencing the behaviors of farm operators in the two counties around working off the farm.

FIGURE 4: SIMILAR COUNTIES FOR COMPARISON- RED WILLOW AND VALLEY COUNTIES

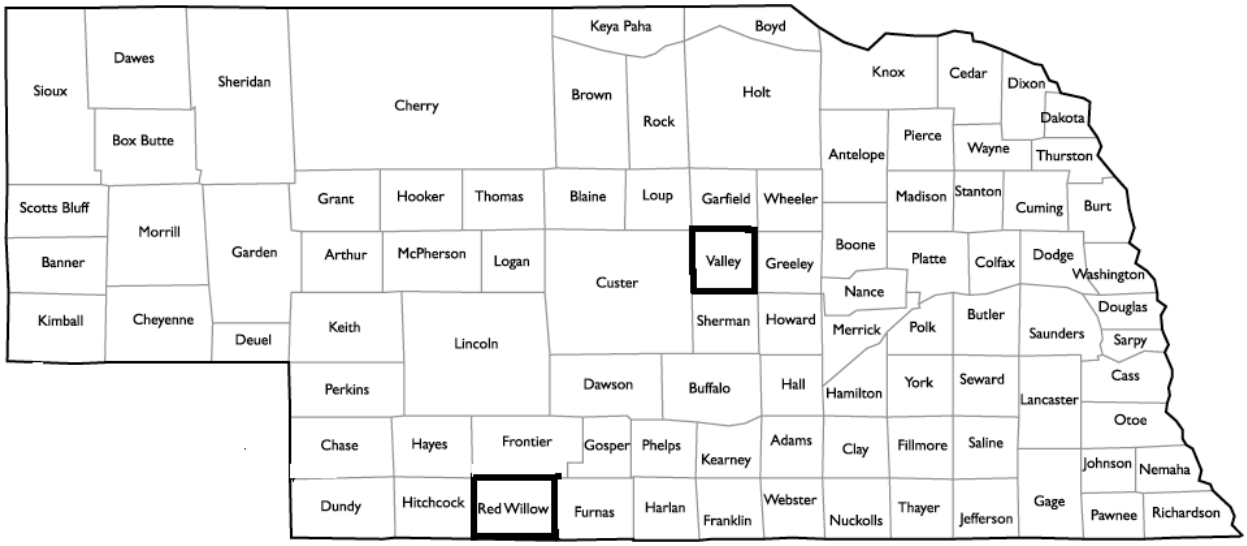

TABLE 4.1: NATURAL-ECOLOGICAL REALM: NATURAL CONDITIONS AND OPERATOR ADAPTATION STRATEGIES-Red Willow and Valley Counties

	Red Willow County	Valley County
Geographic Location	40.2 North/100.5 West	41.6 North/99.0 West
Size-Square Miles	717	568
Dominant Soil Type	93.5% Silt/Silt Loam	85.2% Silt/Silt Loam
% Land 9%+ Slopes	27.2%	25.4%
% Land Eroded	38.8%	42.8%
% Total Land in Farms-2007	97.3%	98.0%
Mean Annual Temperature	51.4 Degrees Fahrenheit	49.4 Degrees Fahrenheit
Average Annual Precipitation	21.62 Inches	25.10 Inches
% Farms Irrigated-2007	30.6%	55.5%
% Farm Acres Irrigated-2007	12.3%	27.9%
% Farms Applying Fertilizers-2007	62.7%	65.0%
% Farms Applying Chemicals-2007	50.8%	61.4%

Sources: Soil Data: USDA Natural Resources Conservation Service Soil Data Mart
All Other Data from USDA Census of Agriculture

TABLE 4.2: DEMOGRAPHIC/CULTURAL INFORMATION-Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
Year-First White Settlement	1872	1872		
Year-County Organization	1873	1873		
Population				
1880	3,044	2,324		
1890	8,837	7,092		
1900	9,604	7,339		
1910	11,056	9,480		
1920	11,434	9,823		
1930	13,859	9,533		
1940	11,951	8,163		
1950	12,977	7,252		
1960	12,940	6,590		
1970	12,191	5,783		
1980	12,615	5,633		
1990	11,705	5,169		
2000	11,391	4,647		
Current Towns (2000 Population)				
* Indicates County Seat	Bartley (355) Danbury (127) Indianola (642) Lebanon (70) McCook * (7,944)	Arcadia (359) Elyria (54) North Loup (339) Ord * (2,269)		
Ancestry in Order of Reports	German-35.5% English-10.0% Irish-8.1% American-6.0%	German-30.7% Czech-11.5% Polish-7.4% English-7.2%	German-38.6% Irish-13.4% English-9.6% Swedish-4.9%	German-42.8% Irish-30.5% African-American-24.9% English-24.5%
% Population Religious Adherents	63.3%	70.3%	58.8%	50.2%
Relgions by Adherents	Catholic-1,751 United Methodist-1,507 Lutheran-1,170	Catholic-1,417 United Methodist-783 Lutheran-247	Catholic-372,791 Lutheran-128,570 United Methodist-117,277	Catholic-50,873,000 Baptist-33,964,000 United Methodist-14,174,000
# Public Schools	15	9		
# Public Libraries	3	3		
Educational Attainment 2000				
% High School +	88%	85%	87%	87%
% Bachelor's +	15%	16%	24%	30%

Sources:
Population Data-Nebraska Department of Economic Development
Ancestry-US Census: USA Counties
Religious Adherents-Glenmary Research Center
Religions by Adherents-CDC Snaps
Public Schools/Libraries-Education Bug
Educational Attainment-US Census: 2000 Census

TABLE 4.3: THE ECONOMIC REALM: GENERAL ECONOMIC TRENDS: 1989-2007-

	Red Willow and Valley Counties			
	Red Willow County	Valley County	Nebraska	USA
Median Household Income				
1989	$23,577	$21,542	$25,258	$28,906
1993	$27,894	$25,303	$29,038	$31,241
1997	$31,965	$28,202	$35,337	$37,005
2002	$33,230	$29,241	$41,130	$42,409
2007	$38,960	$34,631	$47,072	$50,740
Poverty Rate: All Ages				
1989	11.6%	13.9%	11.1%	12.8%
1993	12.6%	12.8%	10.7%	15.1%
1997	13.0%	12.4%	9.6%	13.3%
2002	11.4%	13.4%	10.0%	12.1%
2007	11.3%	13.8%	11.1%	13.0%
Poverty Rate: Under 18				
1989	15.8%	18.2%	15.6%	19.6%
1993	15.9%	12.8%	13.9%	22.7%
1997	17.5%	16.4%	12.6%	19.9%
2002	13.8%	16.9%	12.3%	16.7%
2007	15.6%	21.1%	14.7%	18.0%
Annual Unemployment Rate				
1992	2.7%	2.2%	2.9%	7.5%
1997	2.3%	2.0%	2.4%	4.9%
2002	3.0%	2.9%	3.7%	5.8%
2007	2.5%	2.4%	2.9%	4.6%
# Manufacturing Establishments (# Jobs)				
1992	21 (500)	5 (100)	2,027 (100,100)	370,934 (16,967,400)
1997	0	0	1,960 (106,690)	363,753 (16,888,016)
2002	*	*	1,976 (103,029)	350,828 (14,699,536)
2007	*	*	1,984 (99,547)	332,536 (13,395,670)
# Retail Establishments (# Jobs)				
1992	115 (1,215)	54 (308)	11,375 (132,157)	1,526,215 (18,407,453)
1997	109 (1,124)	38 (226)	8,295 (102,684)	1,118,447 (13,991,103)
2002	93 (931)	40 (324)	8,157 (105,634)	1,114,637 (14,647,675)
2007	88 (789)	36 (316)	7,888 (108,209)	1,128,112 (15,515,396)
# Wholesale Establishments (# Jobs)				
1992	40 (526)	16 (223)	4,035 (47,053)	495,457 (5,971,401)
1997	20 (250-499)	17 (223)	3,157 (41,002)	453, 470 (5,796,557)
2002	19 (216)	18 (223)	2,907 (36,805)	435,521 (5,878,405)
2007	None Listed	19 (223)	3,093 (38,752)	434,983 (6,227,389)
# Service Establishments (# Jobs)				
1992	108 (475)	40 (167)	11,284 (120,26)	1,825,435 (19,290,352)
1997	132 (1081)	56 (258)	16,343 (187,056)	2,077,666 (25,278,399)
2002	165 (1,610)	65 (634)	20,084 (289,175)	3,138,520 (49,518,005)
2007	154 (809)	63 (524)	21,526 (321,988)	3,439,375 (55,258,707)
# Farms				
1992	425	488	52,932	1,925,300
1997	471	464	51,454	1,911,859
2002	308	419	49,355	2,128,982
2007	386	391	47,712	2,204,792

* Indicates Numbers too Small for Publication

Sources:
Median Household Income, Poverty Rate: All Ages, Poverty Rate: Under 18-
United States Census Bureau: Small Area Income and Poverty Estimates.
Annual Unemployment Rate: United States Department of Labor,
Bureau of Labor Statistics
Manufacturing, Retail, Wholesale, and Service Establishments + Jobs
US Census Bureau Economic Census
Farms: United States Department of Agriculture, Census of Agriculture

TABLE 4.4: THE ECONOMIC REALM: FARMS, AVERAGE FARM SIZE, RETURN ON AGRICULTURE-Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
# Farms				
1992	425	488	52,923	1,925,300
1997	471	464	51,454	1,911,859
2002	380	419	49,355	2,128,982
2007	386	391	47,712	2,204,792
Average Farm Size-Acres				
1992	1,034	695	839	491
1997	996	747	885	487
2002	1,129	751	930	441
2007	1,157	911	953	418
% Land in Farms				
1992	95.8%	93.5%	90.2%	41.8%
1997	95.1%	91.5%	92.5%	41.2%
2002	93.6%	86.5%	93.3%	41.5%
2007	97.3%	98.0%	92.4%	40.8%
Average Value Agricultural Products				
1992	$23,328	$24,133	$155,125	$84,459
1997	$199,590	$195,902	$191,074	$102,970
2002	$251,374	$168,541	$196,609	$94,245
2007	$430,069	$353,363	$324,992	$134,807
Average Cost of Production				
1992	$167,460	$122,748	$126,824	$67,928
1997	$161,869	$171,461	$147,628	$78,771
2002	$244,796	$151,799	$183,362	$81,362
2007	$308,873	$284,457	$258,328	$109,359
Average Net Return on Agriculture				
1992	$23,328	$24,133	$27,638	$15,801
1997	$36,781	$23,913	$40,717	$22,260
2002	$21,197	$25,519	$24,820	$19,032
2007	$142,747	$86,983	$83,142	$33,827
% All Farms Reporting Gains				
1992	59.5%	58.8%	68.9%	55.6%
1997	66.5%	61.6%	67.1%	51.6%
2002	64.7%	62.5%	62.0%	46.7%
2007	69.2%	67.5%	69.0%	46.5%
Average Gains for Farms with Gains				
1992	$45,865	$50,779	$46,039	$34,142
1997	$63,632	$53,241	$69,147	$51,296
2002	$54,226	$52,378	$56,201	$56,679
2007	$215,467	$142,819	$118,796	$81,061
% All Farms Reporting Losses				
1992	40.5%	41.2%	31.1%	44.4%
1997	27.0%	34.1%	32.9%	48.4%
2002	35.0%	37.7%	38.0%	53.3%
2007	30.8%	32.5%	31.0%	53.5%
Average Losses for Farms with Losses				
1992	$9,822	$13,914	$13,100	$7,135
1997	$29,395	$29,175	$17,201	$8,645
2002	$39,893	$19,020	$26,285	$13,937
2007	$20,416	$29,083	$28,988	$16,075
Source:	All Data from USDA Census of Agriculture			

TABLE 4.5: THE ECOOMIC REALM: TENURE & OPERATOR CHARACTERISTICS-Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
# Farms				
1992	425	488	52,923	1,925,300
1997	471	464	51,454	1,911,859
2002	380	419	49,355	2,128,982
2007	386	391	47,712	2,204,792
% Farms Full Owners				
1992	39.0%	49.8%	40.6%	57.7%
1997	40.1%	48.5%	43.9%	60.0%
2002	49.2%	55.6%	49.0%	67.1%
2007	47.2%	47.6%	50.3%	69.0%
% Acres Full Owners				
1992	25.2%	33.8%	22.0%	32.1%
1997	27.5%	39.1%	26.3%	33.9%
2002	37.2%	35.4%	30.0%	38.0%
2007	22.2%	25.7%	25.3%	47.2%
% Farms Part Owners				
1992	42.6%	31.6%	39.7%	31.0%
1997	37.8%	33.2%	38.5%	30.0%
2002	37.4%	32.7%	37.8%	25.9%
2007	41.5%	40.2%	37.6%	24.6%
% Acres Part Owned Farms				
1992	58.2%	54.3%	63.1%	55.7%
1997	57.7%	46.1%	60.5%	54.5%
2002	55.2%	55.2%	63.8%	52.8%
2007	70.0%	63.0%	65.1%	53.8%
% Farms Tenant				
1992	16.6%	11.9%	19.7%	11.3%
1997	14.8%	14.8%	17.6%	10.1%
2002	13.4%	11.2%	13.2%	7.0%
2007	11.4%	12.3%	12.1%	6.4%
% Acres Tenant				
1992	16.6%	11.9%	14.9%	13.0%
1997	14.8%	14.8%	13.3%	11.6%
2002	7.6%	9.5%	10.5%	9.2%
2007	7.1%	11.3%	9.6%	8.9%
% Operators Farming Primary Occupation				
1992	74.4%	76.2%	73.9%	54.7%
1997	64.3%	73.3%	69.5%	50.3%
2002	72.6%	77.3%	73.0%	57.5%
2007	56.2%	71.6%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	20.2%	22.5%	22.5%	34.6%
1997	24.6%	22.0%	25.5%	37.1%
2002	36.6%	29.8%	32.0%	39.1%
2007	42.2%	34.3%	39.3%	39.7%

Source: All Data from USDA Census of Agriculture

TABLE 4.6: THE ECONOMIC REALM: FARM ORGANIZATION-Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
% Farms Family/Individual Organization				
1992	82.8%	86.1%	84.2%	85.9%
1997	83.9%	82.3%	82.2%	86.0%
2002	89.5%	88.3%	86.8%	89.7%
2007	85.8%	81.1%	83.5%	86.5%
% Acres Family/Individual Organization				
1992	71.6%	80.6%	68.4%	63.9%
1997	74.6%	73.9%	67.0%	62.8%
2002	83.0%	78.0%	70.3%	66.3%
2007	72.0%	69.8%	67.0%	62.3%
% Farms Partnerships				
1992	7.3%	5.1%	8.7%	9.7%
1997	6.4%	7.8%	8.8%	8.9%
2002	4.7%	5.3%	6.2%	6.1%
2007	6.2%	8.2%	7.6%	7.9%
% Acres Partnerships				
1992	14.2%	4.0%	12.4%	16.2%
1997	Data Unavailable	8.8%	12.7%	16.0%
2002	Data Unavailable	8.4%	12.8%	15.6%
2007	11.9%	10.9%	13.6%	17.5%
% Farms Family Corporation				
1992	8.9%	7.8%	6.0%	3.4%
1997	9.1%	8.4%	7.9%	4.0%
2002	5.3%	5.3%	6.0%	3.1%
2007	7.0%	9.7%	7.1%	3.9%
% Acres Family Corporation				
1992	13.8%	13.8%	16.8%	11.7%
1997	15.2%	14.0%	18.4%	12.8%
2002	8.8%	12.8%	15.1%	10.6%
2007	15.9%	18.8%	17.1%	12.4%

All Other Organization Types < 2% for Nebraska and Both Counties

Source: All Data from USDA Census of Agriculture

TABLE 4.7: THE ECONOMIC REALM: CROP AND CATTLE PRODUCTION-
Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
% Farms-				
Corn for Grain				
1992	45.6%	57.4%	56.1%	26.2%
1997	45.9%	64.2%	56.7%	22.5%
2002	32.4%	49.4%	48.4%	16.4%
2007	39.4%	57.3%	47.8%	15.8%
% Farm Acres				
Corn for Grain				
1992	11.8%	16.1%	16.5%	7.3%
1997	18.4%	21.0%	18.2%	7.5%
2002	8.7%	17.4%	16.0%	7.3%
2007	18.4%	24.4%	20.2%	9.4%
% Farms-				
Wheat for Grain				
1992	63.8%	9.0%	23.9%	15.2%
1997	59.0%	4.7%	19.1%	12.7%
2002	50.0%	45.9%	13.5%	8.0%
2007	6.2%	14.1%	16.8%	7.3%
% Farm Acres				
Wheat for Grain				
1992	15.1%	0.0%	4.1%	0.1%
1997	17.8%	0.0%	3.9%	6.3%
2002	15.5%	0.0%	3.3%	4.9%
2007	14.9%	1.1%	4.3%	5.5%
% Farms-				
Soy for Beans				
1992	13.2%	25.8%	39.1%	19.8%
1997	11.5%	32.1%	41.0%	18.6%
2002	12.6%	29.8%	40.7%	14.9%
2007	10.0%	32.2%	34.8%	12.7%
% Farm Acres				
Soy for Beans				
1992	0.1%	2.9%	5.1%	6.0%
1997	1.3%	5.9%	7.4%	7.1%
2002	1.6%	5.8%	10.0%	7.7%
2007	1.8%	5.2%	8.4%	4.0%
% Farms-				
Cattle/Calves				
1992	60.5%	73.6%	57.5%	55.8%
1997	52.9%	67.2%	56.9%	54.8%
2002	58.7%	66.6%	50.8%	40.0%
2007	57.8%	66.0%	44.9%	43.7%

Source: All Data from USDA Census of Agriculture

TABLE 4.8: THE ECONOMIC REALM: FUNDAMENTAL CLASS VARIABLES-
Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
% Operators Farming Primary Occupation				
1992	74.4%	76.2%	73.9%	54.7%
1997	64.3%	73.3%	69.5%	50.3%
2002	72.6%	77.3%	73.0%	57.5%
2007	56.2%	71.6%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	20.2%	22.5%	22.5%	34.6%
1997	24.6%	22.0%	25.5%	37.1%
2002	36.6%	29.8%	32.0%	39.1%
2007	42.2%	34.3%	39.3%	39.7%
% Farms-Hired Labor				
1992	36.9%	30.7%	37.6%	36.0%
1997	43.5%	40.5%	41.7%	34.0%
2002	30.8%	46.3%	35.4%	26.0%
2007	29.5%	33.2%	30.6%	21.9%

Source: All Data from USDA Census of Agriculture

TABLE 4.9: THE ECONOMIC REALM: SUBSUMED CLASS PROCESSES-
Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
% Farms Part-Owner & Tenants				
1992	59.2%	43.5%	57.3%	42.3%
1997	52.6%	48.0%	55.5%	40.0%
2002	50.8%	43.9%	51.0%	32.9%
2007	52.9%	52.5%	49.7%	31.0%
% Farms Purchasing Seeds/Plants				
1992	77.4%	75.8%	74.0%	52.2%
1997	69.2%	69.2%	69.9%	46.9%
2002	69.2%	58.5%	62.7%	41.1%
2007	56.2%	60.6%	56.3%	35.2%
% Farms Purchasing Petroleum Products				
1992	93.6%	95.1%	95.8%	94.4%
1997	91.9%	96.3%	93.7%	92.1%
2002	98.4%	93.3%	93.9%	95.1%
2007	98.4%	99.2%	98.2%	97.5%
% Farms Purchasing Repairs/ Maintenance				
1992	91.3%	88.1%	89.5%	83.3%
1997	77.9%	91.2%	85.7%	80.4%
2002	95.0%	97.9%	89.5%	89.2%
2007	90.2%	93.4%	91.5%	90.4%
% Farms Purchasing Livestock				
1992	37.2%	52.3%	41.7%	32.7%
1997	29.9%	45.9%	38.6%	29.1%
2002	35.5%	54.6%	32.6%	26.0%
2007	30.6%	45.3%	27.8%	22.3%

	Red Willow County	Valley County	Nebraska	USA
% Farms Purchasing Feed for Livestock				
1992	56.0%	70.7%	60.2%	57.4%
1997	50.5%	69.6%	54.9%	53.4%
2002	62.9%	73.7%	53.4%	58.3%
2007	50.0%	63.9%	44.7%	51.5%
% Farms Paying Interest				
1992	66.6%	57.8%	63.1%	45.3%
1997	49.9%	58.2%	61.4%	42.4%
2002	66.1%	52.5%	58.2%	35.6%
2007	47.9%	58.3%	48.4%	30.3%
% Farms Paying Rent Land/Buildings				
1992	32.7%	38.5%	36.4%	27.3%
1997	33.5%	26.1%	36.4%	25.4%
2002	25.0%	43.2%	41.0%	23.4%
2007	42.2%	52.2%	42.0%	22.2%
% Farms Paying Property Taxes				
1992	92.9%	89.1%	89.7%	91.5%
1997	87.5%	87.7%	91.2%	92.7%
2002	95.3%	93.1%	92.7%	92.2%
2007	90.4%	92.8%	91.1%	90.5%

Source: All Data from USDA Census of Agriculture

TABLE 4.10: THE POLITICAL REALM: Red Willow and Valley Counties

	Red Willow County	Valley County	Nebraska	USA
% Registed Voters Voting in General Elections 1992	70.5%	77.3%	66.1%	61.3%
1996	66.9%	68.9%	61.0%	54.2%
2000	64.3%	67.4%	58.9%	54.7%
2004	63.9%	63.0%	61.3%	58.3%
2008	67.1%	75.6%	64.5%	58.2%
Party Affiliation Registered Voters 2008				
% Republican	58.5%	59.4%	48.3%	
% Democrat	23.9%	30.9%	34.0%	
% Nonpartisan	16.6%	9.2%	16.9%	
% All Other	0.1%	0.1%	0.1%	
Per Capita Federal Expenditures 2009	$8,712	$12,183	$8,760	$9,096
Per Capita Federal Expenditures Retirement/Disability 2009	$3,778	$2,824	Data Unavailable	Data Unavailable
Per Capita Federal Expenditures Direct Payments 2009			$5,198	$4,723
Per Capita Federal Expenditures Grants 2009	$993	$3,123	$2,078	$1,872
Per Capita Federal Expenditures Salaries/Wages 2009	$485	$474	812	$827
% Farms Participating in Government Ag Programs 1992	61.1%	80.4%	61.6%	29.6%
1997	63.3%	85.0%	68.7%	35.8%
2002	55.3%	81.6%	64.9%	33.2%
2007	60.4%	85.5%	73.2%	38.0%
% Farms Participating in Government Conservation Programs 1992	12.0%	16.9%	14.1%	7.8%
1997	10.6%	14.7%	18.3%	11.8%
2002	10.5%	14.1%	21.1%	12.6%
2007	20.2%	16.6%	26.2%	15.7%

Sources:
Voting Data-Nebraska: Nebraska Department of Economic Development
National-US Census Bureau
Party Registration Data-Nebraska: Nebraska Secretary of State Website
Federal Expenditures per Capita: US Census Bureau
Farm Program Participation Data-USDA Census of Agriculture

Chapter Five: Nature with a Capital “N”: Soil Type and Agriculture n Central Nebraska

The purpose of this chapter is to examine the influence of an important natural-ecological difference, soil type, on processes occurring throughout each of the environmental realms. Although there have been and are some important differences in the economic, political, and moral-cultural orders between Brown and Hitchcock Counties, they were selected for this analysis because they shared many factors in common in 1992, the beginning date of the analysis. The two were found to be similar in the following ways:

1) Median household income ranged between 17,000 and 20,000, dollars overall poverty rates ranged from twelve to fifteen percent, and unemployment rates in the counties ranged between two and three percent in 1992.

2) Farms numbered between 300 and 400 and average farm size was between 1,000 and 2,000 acres.

3) Between 85 and ninety percent of the land in each county ws in farms.

4) Mean annual temperature ranges between 49 and 51 degrees and normal precipitation is between 21 and 23 inches.

5) Between seventy and eighty percent of operators reported farming as their primary occupation and average operator age was between 51 and 52 years.

6) Between 33 and 35 percent of all farms were irrigated, between 35 and 42 percent of farms produced corn, and between 65 and seventy percent raised cattle in 1992.

The primary necessary difference between the two counties to be analyzed for this chapter is dominant soil type and slope. Hitchcock county soils are approximately eighty percent silts and silt loams while the soils of Brown County are nearly 77 percent

sands and sandy loams. Concerning slope, over 46.5 percent of soils in Hitchcock County were sloped nine degrees or more while only 4.5 percent of those in Brown county were.

As with the previous chapter, the remainder of this chapter will be organized as follows. A brief discussion of the settlement patterns in Brown County will be followed by the histories of the communities to be found within its borders. Next will be a look at historical development since those years, focusing on the twentieth century and examining natural, economic, political, and moral/cultural processes occurring in the county leading up to 1992, when the analyses begin. This will be followed by a consideration of all of the same topics and variables for Hitchcock County. Comparative analysis of a fifteen year span of changes in a variety of social processes will then be discussed, followed by conclusions about the ultimate applicability of both Park's theoretical frame and the concept of overdetermination to help explain similarities and differences found in the two counties.

BROWN COUNTY, NEBRASKA: BACKGROUND

As shown on the map on page 163, Brown County is found in the north-central part of the state, with only Keya Paha County separating it from South Dakota to the north. The Niobrara River snakes along the border between the two and the Calamus River runs from the west-central part of the county to the far southeastern corner. The geographic location of Brown County is 42 degrees, five minutes north latitude and 99 degrees, nine minutes west longitude. Besides Keya Paha County to the north, Brown County is surrounded by Cherry County to the west, Blaine County to the south, and Rock County to the east. Total land area is approximately 1,220 square miles, all of which is considered a part of the Sand Hills region.

The first agricultural ventures in Brown County were cattle ranches, raising longhorn cattle driven up from Texas along the Chisholm Trail in the late 1870s. Most of the ranches were situated along the Niobrara River. Widespread settlement did not occur in what would be Brown County until into the 1880s. By 1890, 4,359 people called Brown County home. The population actually fell by more than twenty percent by 1900, but rebounded in the following decades, with the population peak for the county in 1920, at nearly 6,750 residents that year. In the decades since, Brown County has seen dramatic population losses (Historical Census Browser, University of Virginia, Retrieved 2010).

In 1990, there were fewer than 3,700 people living within its borders (Nebraska Department of Economic Development, Retrieved 2010), approximately 65 percent of them in one of the county's three towns, Ainsworth, Long Pine, and Johnstown, all in the northern area of the county. The population density in the county was just three persons per square mile that year, down from 4.3 just four decades earlier (Nebraska Department of Economic Development, Retrieved 2010). From here, brief discussions of Brown County's natural, economic, political, and moral-cultural histories will be followed by a consideration of the same factors and variables in Hitchcock County and then the in-depth fifteen year comparison of the two.

The Natural-Ecological Environment of Brown County

The territory included in Brown County is dominated by the Nebraska Sand Hills formation. Along the northern border of the county runs the Niobrara River, running from eastern Wyoming through north-western and north-central Nebraska to form the border between Nebraska and South Dakota for well over 100 miles before it spills into the Missouri River. Approximately thirty miles of that forms the border between Brown and Keya Paha Counties. In addition to the Niobrara to the north, the Calamus River runs

from the west-central part of Brown County to its far southeastern corner. Several smaller creeks are also found in the county, including Bone, Blum, Long Pine, Goose, and Garden Creeks. While much of the county is rolling sand dunes, covered in short grasses, rough and deep cuts are found at several of the rivers and creeks in the county.

NOAA data shows that the mean annual temperature in Brown County is 49.3 degrees Fahrenheit, ranging from a mean of just 26.3 degrees in December to 69.1 degrees in June. The average date of the final freeze for the season is in early May with the first fall freeze averaging in early October. Average annual precipitation is just under 23 inches, with the greatest amount falling as rain in the spring and summer months (NOAA Website, Retrieved 2010), but winter snowfall totals of forty inches are not uncommon. All surface area of the county lies above the Ogallala Aquifer.

Approximately 83 percent of the land in the county was in farms in 1992 (USDA Census of Agriculture, 1992). Because the county is in the Nebraska Sand Hills region, its soils are dominated by sands and sandy loams, at approximately 77 percent. Only about 4.5 percent of the land is sloped at nine degrees or higher, primarily along rivers and creeks, and erosion effects less than one percent of the soil (United States Department of Agriculture Natural Resources Conservation Service retrieved 2010).

Weather-related disasters have been common in Brown County. Although the county has experienced over twenty tornadoes since the mid-twentieth century, these events have resulted in only one injury and no fatalities. Although there have been a handful of floods along rivers and creeks in the county, including in 2010, drought has been a much more frequent problem here as well. Of particular interest was the prolonged period of drought throughout the 1890s and into the early part of the twentieth century, discouraging many of the new settlers and directly leading to many families abandoning their early farms in the region. Perhaps the most dramatic weather-related

disasters to hit Brown County were the severe blizzards that occurred in the early years of settlement, the first in the winter of 1880 to 1881. Thousands of cattle, unable to dig through immense snow drifts down to the grasses to feed, with ranchers unable to get to them to provide feed, were lost in the storms. Many of the original ranches were abandoned, freeing up significant acreage for new settlers to come in and establish farms. The 1888 “Schoolchildren’s Blizzard” was the second catastrophic snowstorm impacting the county, with many local children caught in one-room schoolhouses for up to several days (University of Nebraska, Virtual Nebraska: Our Towns, Retrieved 2010).

Economy in Brown County: Into the Twentieth Century and Beyond

The first true settlement of the county began in 1876, named Long Pine and located in the far east-central part of the county. Perhaps one of the most important early settlers in the Long Pine are of Brown County was Nannie Osborne, who filed an early homestead claim in the county and platted out the town that would become Long Pine in the early 1880s, designating land for building of some of the first churches in the county and a block specified for a courthouse. Long Pine would become the headquarters of Berry Brothers Stage and Freight Lines. The Sioux City and Pacific Railroad completed lines through the town in 1881 and the rail company established a division point there, with a roundhouse, depot and telegraph station. The stockyards and the access to rails for shipping various crops to market further attracted homesteaders to the region. The county was organized in 1883 and Long Pine was named the first county seat largely as the result of this one woman’s efforts. The county originally encompassed all of what are now Rock and Keya Paha Counties as well (University of Nebraska, Virtual Nebraska: Our Towns, Retrieved 2010).

Ainsworth, which would eventually take Long Pine’s place as the county seat, like McCook in Red Willow County, has its roots as a railroad town. By 1882, the Sioux City

and Pacific had pushed west and a new town was platted and named after J.E. Ainsworth, who was in charge of the construction of the rail line. In late 1883, less than a year after Long Pine had gained the distinction of county seat, Ainsworth took its place in a county-wide election. A year later, the area north of the Niobrara was separated from Brown County, naming it Keya Paha County and five years later, nearly half of the territory remaining was split into what is now Rock County to the east of today's Brown County. Renting space for several years, a permanent courthouse was not constructed until 1889, and remained the county center of government for nearly seven decades before it was destroyed by fire. As the railroad pushed west, another community was established in 1882. The rail company established a new station at John Berry's homestead, near the western border of the county and the resulting community was called Johnstown. Early settlers here were instrumental in the fight for the organization of the county. While frame houses became common with accessibility to materials through the rail companies, because few trees were found after the first years of settlement, a significant share of the early constructions in the county, were "soddies" (Brown County NEGenWeb Project, Retrieved 2011).

The early settlers in Brown County were dependent on abundant supplies of meat from the huge herds of bison that roamed the sand hills in those years, along with plentiful deer, pronghorn, rabbits, prairie chickens, grouse, ducks, and geese (Access Genealogy, Retrieved 2011). Post offices were established across the county in the early years, the first on Bone Creek in 1879, followed by the establishment of the second in Johnstown in 1881, a third at Long Pine in 1882, and finally at Ainsworth in 1883 (University of Nebraska, Virtual Nebraska, Our Towns). Only three exist today, one in each of the remaining towns.

While each had seen population losses related to the prolonged drought, all three towns saw significant growth for the early twentieth century. The population of Ainsworth, for example, more than doubled between 1900 and 1910, with cycles of population gains and losses posted throughout the twentieth century. Johnstown has experienced consistent losses since its population peak in 1920, at 290 residents. In 1990, only 48 called the village their home. Long Pine's population peak occurred in 1920, with 1,200 but it fell to just 396 by 1990 (Nebraska Department of Economic Development, Retrieved 2010). Perhaps one of the most important factors in the significant loss of population in this little town was the decision by the rail company to remove its roundhouse, stockyards, and shop from Long Pine in the 1950s.

Agriculture continues to be an important factor in Brown County, as it has been since its first years of settlement. By 1900, about 65 percent of all land in the county had been incorporated into one of the 513 farms within its borders producing approximately 624,000 dollars in agricultural products that year. Nearly a quarter of all farms were operated by their full owners. In 1930, the total value of agricultural products in Brown County was over one-million dollars, produced on slightly more than 700 farms averaging over 850 acres and occupying 76 percent of the land. Over 31 percent of all farms were operated by their full owners that year. Even into the late twentieth century, nearly thirteen percent of the population lived on farms in 1990. By 1992, over 83 percent of the land of the county was in farms and farmers in the county were producing over 80 million dollars in agricultural goods, distributed among just 332 farms (USDA Census of Agriculture, 1910, 1930, 1992).

Considering net return from agriculture, government, and other agriculture-related sources, over seven million dollars came into the local economy in 1992. Over 587,500 acres were in farms in the county and the share of farms operated by their full

owners had risen to 37 percent (USDA Census of Agriculture, 1910, 1930, 1992). Approximately 35 percent of all farms were producing corn for grain, 62 percent produced hay, and about 69 percent of all farms had cow/calf operations, totaling over 84,000 cattle on farms in the county. Although small in number, at just 45, farms in the county also had nearly 15,000 hogs. In 1992, 36.7 percent of all Brown County farms posted losses, averaging over 17,600 dollars, and nearly a quarter of all operators were working 200 or more days off the farm. For the 63.3 percent of all farms in the county posting gains in 1992, the average amount of gain was $43,700. Even with a significant share of all farms losing money that year, and approximately 43 percent of all farms depending on government assistance averaging over 11,500 dollars, nearly 72 percent of all operators reported farming as their primary occupation (USDA Census of Agriculture, 1992). In 2007, Brown County did not rank among the top 10 producing counties for any of the selected commodities (USDA-Nebraska Agri-Facts Special Edition, 2008). Over the course of the twentieth century, between 1910 and 1992, the average per acre value of land and buildings increased from just under thirteen dollars to 292 dollars (USDA Census of Agriculture, 1910, 1992).

Even as agriculture continued to contribute millions of dollars to the economy of Brown County, by 2008, according to the Nebraska Department of Economic Development (Retrieved 2010), farm proprietor's income accounted for only about one percent of the total personal income for residents of the county, significantly lower than the share in wages and salaries, other labor income, dividends and interest, and transfer payments. As a share of total personal income, farm proprietors' income made up just a fraction of that of nonfarm proprietors' income (Nebraska Department of Economic Development, Retrieved 2010).

Census Bureau data shows that median family income in Brown County more than doubled in the decade between 1969 and 1979, from just over 5,800 dollars to over 13,000 dollars, increasing again, by approximately 8,200 dollars, to more than 21,250 dollars in the following decade, leading up to the beginning of the study period for this analysis (US Census Bureau, USA Counties, Retrieved 2010). Small manufacturing facilities, small wholesale distributors, and small retail outlets accounted for nearly fifty-million dollars in county personal income. Other than wage and salary income the largest single source of personal income in Brown County in 2008 was from transfer payments, totaling over 23 million dollars (Nebraska Department of Economic Development, Retrieved 2010).

Politics in an Isolated Rural County

There does not seem to have been a prolonged period of conflict involved in choosing a permanent county seat in Brown County after its formation as a county in 1883. In the first county-wide special election, held in 1884, the people of the county made the decision to place the county seat in Ainsworth, centrally located between Long Pine to the east and Johnstown to the west. By that year, the county had it first permanent, two-story brick schoolhouse, located in Ainsworth. It was not until after 1888, when Rock and Keya Paha Counties had been separated from Brown, that a permanent site for a courthouse was chosen. After several years of conflict concerning rightful ownership of county resources among the three, now separate counties, disputes were finally settled in 1890. Although several years were invested in leasing space for county offices, the voters approved a ballot measure in 1886, selecting a location on Main Street in Ainsworth where the permanent courthouse would be built and approving 10,000 dollars in bonds to finance building the structure (Nebraska Genealogy Website, Retrieved 2010).

Voters in Brown County were even more likely than those in either Red Willow or Valley Counties to be registered as republicans in 2008, with only 17.3 percent registered as democrats and 9.2 percent as nonpartisans (State of Nebraska, Office of Secretary of State Website, Retrieved 2010). Nearly 79 percent of all registered voters registered in the county participated in the 1992 general elections and over 66.4 percent participated in 2008 (Nebraska Department of Economic Development, Undated). A small regional airport, located in Ainsworth, serves the needs of county residents in this isolated region. In addition, according to the Nebraska Department of Economic Development, (Retrieved 2010), there were nearly 74 miles of rural highways within its borders, 27 miles are considered major arterials and 46 miles are minor arterials.

Brown County, along with Keya Paha, Rock, and much of Cherry County and a slice of Loup County, is served by the KBR Rural Public Power District, which distributes electricity produced by Nebraska Public Power District out of Columbus (KBR Rural Public Power District website, Retrieved 2011). The northern part of the county is included in the Middle Niobrara Natural Resources District, along with a small area of Keya Paha and much of Cherry County, and the southern region in the Upper Loup NRD, which also includes Blaine, Grant, Hooker, Thomas, and parts of Logan, McPherson, and Cherry Counties. There are unique environmental concerns involved with the sandy soils of the region, and the NRDs have involved themselves in programs and policies designed to deal with the increased concerns about groundwater levels and contamination. In addition, tree planting efforts have been extensive as have efforts to help landowners establish wildlife habitat on their farms (Nebraska Natural Resources Districts: Find Your NRD, Retrieved 2010).

In 1996, Brown County residents paid taxes on property valued at over 189 million dollars (Nebraska Department of Economic Development, Retrieved 2010). There

are six school districts in the county operating nine public schools, seven elementary, one middle, and one high school. A total of 583 students attend the public schools in the county and only one of the seven elementary schools has more than fifteen students (Education Bug Website, Retrieved 2011). While there is no local health department, Brown County is served by the North Central District Health Department, headquartered in O'Neill in Holt County over fifty miles from the border of Brown County. Other county services that are available in Brown County include: a local public hospital and a social services office, along with an extension office and district courts (Brown County Government Website, Retrieved 2011).

Brown County and its Moral-Cultural Environment

By 1884, Brown County had its first schools and its first churches. Schools were established at Long Pine, in a pre-existing building on Main Street, and at Ainsworth, just north of the village in a small log structure (Nebraska Genealogy Website, retrieved 2010). Even today, the several very small schools in the county make it quite likely that schools play important roles in the surrounding community, and that will be discussed as a part of the analysis to come. While there are nine public schools in the county, there are no private schools (Education Bug Website, retrieved 2011). In 1990, 79.8 percent of the adult population had a high school or equivalent degree and 1.3 percent had bachelor's degrees or higher (Nebraska Department of Economic Development, retrieved 2010). There is a single public library in the county, on the north end of Main Street in Ainsworth (Education Bug Website, retrieved 2011). By 1884, the county's first newspaper, *The Western News,* was published in Ainsworth, followed a year later by *The Journal,* also published in Ainsworth (Nebraska Genealogy Website, retrieved 2010). Today, *The Ainsworth Star-Journal,* with a circulation of nearly 1,900, is the county's only newspaper today and is associated with newspapers out of Valentine,

Nebraska and Gregory, South Dakota providing both local and regional content (Nebraska Press Association, retrieved 2011).

Approximately 98.3 percent of the county population is white, and 98.9 percent were born in the US. There are no citizens of Hispanic decent in Brown County. The largest reported ancestry in Brown County, like the others we have discussed so far, is German, accounting for about 38.6 percent of those reporting, followed by English, at thirteen percent, Irish at eleven percent, and Swedish, at 4.2 percent (US Census Bureau, American Community Survey, retrieved 2010). The first church in the county, the Congregational Church, was built in 1884 (Nebraska Genealogy Website, retrieved 2010). Today, according to the Centers for Disease Control Website (Retrieved 2011), unlike Red Willow and Valley Counties, the United Methodist church is the largest in Brown County, followed by the Lutheran and Catholic Religions.

HITCHCOCK COUNTY, NEBRASKA: CONTEXT

The map on page 163 shows us that Hitchcock County is located along the southern border of Nebraska, just to the west of Red Willow County. The Republican River enters the county in the west-southwestern part of the county, flowing into what is today Swanson Reservoir, and on to Red Willow County. It is joined near the Hitchcock-Red Willow County border by Frenchman Creek, entering in the north-northwestern section. The geographic location of Hitchcock County is forty degrees north latitude and one-hundred degrees west longitude. With Rawlins County in the state of Kansas on its southern border and Red Willow County on the east, Hitchcock County's other neighbors include Hayes County to the north and Dundy to the west. Land area of the county is approximately 710 square miles.

The area that would be Hitchcock County had long been hunting grounds for nomadic Sioux hunting parties following the immense herds of bison, and few whites

ventured into the territory before the late 1860s. The defeat of the Sioux in 1869 brought herds of thousands of cattle driven from Texas. By 1872, the cattlemen were joined by the first of the homesteaders, primarily Norwegian immigrants, recognizing the richness of the river and creek bottom soils. The first true settlement began at Culbertson, by late 1873, with a post office in early 1874. Because it was the only town within the territory when the county was organized in 1873, it was made the county seat, a title it would keep for only two decades. Settlement of the county would spread quickly, and by the late-1870s, much of the land adjacent to rivers and streams had already been claimed. By 1890, there were 5,800 residents of Hitchcock County, falling to just 4,400 a decade later. The population rebounded in the following decades, peaking at 7,270 in 1930 (Historical Census Browser, University of Virginia, retrieved 2010) and falling since, to just 3,111 in 2000 (Nebraska Department of Economic Development, retrieved 2010), 61 percent of them living in one of four towns in the county, Culbertson, Palisade, Stratton, and Trenton. Only Palisade is not located along the Republican River. It is located on the banks of Frenchman Creek. In 1990, with just 3,750 people living in Hitchcock County, the population density was 5.3 persons per square mile, down from 8.2 in 1950 (Nebraska Department of Economic Development, retrieved 2010).

The Natural-Ecological Environment of Hitchcock County

Like Red Willow County, Hitchcock County is dominated by the wide and fertile Republican River Valley, running west to east in the central part of the county. The valleys of Frenchman Creek and smaller streams, including Blackwood, Elm, Bush, and Bobtail Creek in the northern part of the county and Driftwood Creek and its tributaries to the south, also provide rich soils and easy access to water. The vast expanse of the county is relatively flat prairie lands with a rising table-lands distant from the river valleys and a few deep ravines and cuts along some of the creeks and tributaries. According the

National Oceanic and Atmospheric Administration, the annual mean temperature in Hitchcock County is 50.5 degrees Fahrenheit, ranging from a mean of 28 degrees in December to 70.3 degrees in June. The average date of the final freeze for the season is mid- to late-May, and the first fall freeze is in mid- to late-October. Average annual precipitation is approximately 21.5 inches, with much of it falling in the summer months (NOAA Website, Retrieved 2010).

Approximately 88.8 percent of the total land area of the county was in farms in 1992 (USDA Census of Agriculture, 1992). About 79.6 percent of the soils are rich silts and silt loams, but 36.6 percent of the land is sloped at nine degrees or higher. As a result, nearly fourteen percent of its soils are eroded (United States Department of Agriculture Natural Resources Conservation Service, retrieved 2010). Hitchcock County has been subject to various natural disasters over its history. As well-watered as Hitchcock County is, it comes as no surprise that flooding has been a problem in the past. In the first years of settlement in the northern part of the county in 1873 along Frenchman Creek, a flash flood forced settlers to flee or to cling to trees. Although there was no loss of life among the settlers, the destruction was extensive in the area and six soldiers, encamped further up the creek, were killed, along with about twenty head of horses. Three residents were killed in Republican River floods of 1935. The summer of 1874, following the Frenchman Creek flood, saw drought conditions and near the end of that summer, hoards of grasshoppers destroyed what was left of fields and many settler families moved on, seeking better fortunes. Similar circumstances, with droughts accompanied by grasshopper invasions, also occurred in the 1890s, the 1930s, and the 1950s in Hitchcock County (US Genealogy Network Website, retrieved 2011). Since 1950, the county has seen over twenty tornados, most of them F-0 and F-1 in strength,

although an F-4 in 1990 injured one resident (Tornado History Project Website, retrieved 2011).

Hitchcock County's Economic Environment Through the Twentieth Century

While Culbertson, near where Frenchman Creek spills into the Republican River in the eastern part of the county, was the first and only settlement in Hitchcock County for several years, others would soon follow. By the late 1870s and the first years of the 1880s, settlements had been established at Palisade, in the far northern part of the county along Frenchman Creek, and at Stratton, far to the west, along the Republican. Like the other counties discussed to this point, the railroads were very influential in the establishment and organization of Hitchcock County. The Burlington & Missouri River line was completed through the county by about 1883, influencing the development of Culbertson, Trenton, and Stratton, along the Republican River and its route. After years of planning and very limited progress on the building of the Burlington branch through Palisade, the tracks were finally completed in the early 1890s, with important consequences for the people of the area (University of Nebraska, Virtual Nebraska: Our Towns, retrieved 2011).

Palisade was another small town whose ultimate location was determined by the route of the rail through the county when it finally did come. The long contemplation of the railroad coming had encouraged some local entrepreneurs, in the early 1880s, to invest in land and encourage the growth of the settlement, with new homes and stores, at the point where it was assumed the rail would follow. Once the bed was actually laid out for the rail, it was a half mile from the town. Within a year, all of the new homes and stores had been de-constructed and re-constructed on the new site along the tracks. It was not until the following year that it was confirmed that Palisade had been platted so

that it was in both Hitchcock and Hayes counties (University of Nebraska, Virtual Nebraska: Our Towns, retrieved 2011).

The town of Stratton, in the far western part of the county, saw the arrival of the Chicago, Burlington, & Quincy railroad in 1882, providing the necessary water to the steam trains of the era. For several years, there was little more than the station and a small general merchandise store in the area. By the end of that decade, however, many settlers had entered the region seeking land to farm and displacing the free-ranging cattle that had been so dominant around the Stratton area in previous years. As we have seen with the county seats in the other counties we have examined so far, the town that would ultimately become the seat of Hitchcock County had its origins in the rail companies.

Originally no more than a rural post office and small store called Trail City, in the mid-1880s, the location that would become the town of Trenton was chosen by the Burlington & Missouri River Rail Company for a station. The original location, at “Trail City” with a post office, a store, a saloon, a newspaper, a school, and a small population, was quickly abandoned and moved just a quarter mile to a new location because it was seen as too hilly to be appropriate for a depot and would be impractical for a town of any size. Rail was laid to Trenton by 1882, and by 1886, Trenton was on its way to being an important economic hub for the county (University of Nebraska, Virtual Nebraska: Our Towns, retrieved 2011).

The bison herds had largely been displaced by cattle in the region by the time extensive settlement occurred but the early residents of the county did find smaller herds of bison and abundant deer and rabbits. These were especially important for the few settlers in the late 1970s and again in the 1890s, when drought and grasshoppers completely wiped out many crops (Nebraska Association of County Officials, retrieved

2011). The first school, post office, church, and courthouse were all established in Culbertson by the late 1870s. Over time, post offices have been located in twelve different locations throughout Hitchcock County but today, only four remain, in each of the towns in the county.

Each of the towns in Hitchcock County did grow despite the droughts that were occurring in the early years. Culbertson, with just 108 residents in 1880, grew to a population of 820 in 1930 before it lost a significant share of its citizenry. By 2000, it had fallen to just 594. The population of Palisade increased five-fold between 1890 and 1920, peaking at nearly 800 in 1950. In 1990, just 380 people called it home. Stratton too saw dramatic increases in population in the first years, with a population of over 650 in 1930. In 2000, there were fewer than 400 living in the village. Trenton reached its peak population in 1950 as well, with over 1,200 residents. By 2000, it was well under half that, with just over 500 population (Nebraska Department of Economic Development website, retrieved 2010).

While the towns have been significant factors in the overall economic character of Hitchcock County, the countryside and its farmers have also been vital to the local economy. One of the largest irrigation projects in the state to that point began in the early 1890s, to provide a reliable source of water to the Frenchman Valley. It also provided job opportunities for the many farmers who had lost their crops to drought and grasshoppers in the years before. By the turn of the twentieth century, there were 757 farms in Hitchcock County and nearly seventy percent of the county's land was in farms. Those farms were producing over 870,000 dollars in agricultural goods, including over 680,000 bushels of corn, 37,000 tons of hay, and smaller amounts of oats, vegetables, and fruits. There were around 13,000 head of cattle in Hitchcock County that year, over 250 of them dairy cows. Over 69 percent of all farms in the county were operated by

their full owners in 1900. Just three decades later, the 1930 Census of Agriculture tells us that 942 farms occupied nearly 95 percent of the land in Hitchcock County and produced 2.8 million dollars in crops and nearly two-million dollars in livestock. Nearly 2 million bushels of corn were produced in the county that year and nearly one-million bushels of wheat came out of the county as well that year. By 1950, the number of farms had fallen to just over 700, but those farms were producing nearly 4.5 million dollars in products. The share of total land in farms had fallen to 92.4 percent by that year (USDA Census of Agriculture, 1910, 1930, 1950).

The number of farms continued to slide over the course of the twentieth century as the average size of farms in Hitchcock County continued to increase. By 1992, when this analysis begins, there were fewer than 400 farms in the county, averaging over 1,050 acres. Just 83.1 percent of land in the county was in farms by that time but local famers were producing over 30.5 million dollars in agricultural goods. County net return on agriculture, direct government payments, and related products totaled over 6,400,000 dollars for the local economy. Approximately 41.4 percent of all farms in Hitchcock County were operated by their full owners that year (USDA Census of Agriculture, 1992). Just under half of all farms produced corn for grain that year, nearly half produced hay, and about 87 percent produced wheat. Cattle and calves, numbering close to 32,000, were produced on 79 percent of all farms in the county. Although farms were slightly more likely in Hitchcock than in Brown County to report losses in 1992, at 38 percent versus 36.7 percent, the average losses for farms reporting losses was significantly lower in Hitchcock County, at 10,560 dollars versus 17,610 dolalrs in Brown County. For the 62 percent of farms reporting gains, the average gain was 33,840 dollars in Hitchcock County, significantly lower than the average gain of 43,700 dollars for farms with gains in Brown County. Just 36 percent of Hitchcock County farmers were working

any days off the farm in 1992 and only 18.5 percent of them worked 200 or more days that year. Nearly eighty percent of all operators in the county identified farming as their primary occupation.

The operators of Hitchcock County farms were much more likely than those of Brown County farms to receive government payments, at 78 percent in Hitchcock versus just 43 percent in Brown County. The average amount received by Brown County farms was just over 11,500 dollars for farms receiving the assistance, while in Hitchcock County, the average was almost 1,000 dollars lower, at 10,574 dollars (USDA Census of Agriculture, 1992). In 2007, among all of Nebraska's agriculturally important counties, Hitchcock ranked in the top ten in the production of winter wheat, sorghum for grain, and sunflowers (USDA-Nebraska Agri-Facts Special Edition, 2008). From a value of less than four dollars per acre for the land at the turn of the twentieth century to approximately 330 dollars per acre value in land and buildings in 1992 (USDA Census of Agriculture, 1992), dramatic changes have come to Hitchcock County.

Farming and farmers continue to be important to the economy of Hitchcock County, with farm proprietor's income accounting for over ten percent of all personal income for the county in 2008. This is more than twice the amount from non-farm proprietor's income for the county that year (Nebraska Department of Economic Development, retrieved 2010). By 1994, there were well over 100 active wells producing petroleum products in the county, producing well over one-million barrels that year (Nebraska Department of Economic Development, retrieved 2010). Overall, median family income in Hitchcock County increased more than four-fold between 1969 and 1999, from 6,197 dollars to 34,490 dollars in just those three decades (USA Counties, retrieved 2010). The Nebraska Department of Economic Development shows no manufacturing facilities in Hitchcock County between 1992 and 1997, and a dozen

wholesale distributors trading over 25 million dollars in goods total in 1992. A total of 43 establishments were engaged in a little over 21 million dollars in retail sales in 1992 as well (Nebraska Department of Economic Development, retrieved 2010).

A Political History of Hitchcock County, Nebraska

As discussed earlier, the first seat of government in Hitchcock County was at Culbertson, from the time of organization in the early 1870s until 1894. By the mid-1870s, Culbertson had both a post office and a school and its population continued to grow. It was not incorporated as a village until 1885, just a few years before it would lose the distinction of county seat to Trenton. Trenton, formerly called “Trail City”, had been in existence in some form since the late 1860s, several years before the area was organized as a county. In the first years, the county stretched from near its eastern border today to the Colorado border, encompassing all of the present day Hitchcock County, and the whole of Dundy County as well. Stratton, which is today the county’s third largest community, was incorporated in 1887.

Trenton was incorporated as a village in 1887 as well, and this was the beginning of the controversy about moving the county seat there from Culbertson. After three votes, county residents agreed to move the seat in 1894, just before extreme drought hit the region. For the first decade after the move to Trenton, the county courthouse was a small frame building that was replaced by a large brick structure in 1906 that would serve as the center of county government for more than sixty years (University of Nebraska, Virtual Nebraska: Our Towns, retrieved 2011).

By 1893, there was discussion in the county about building a waterworks project for the area that would provide a reliable water source for local communities, for irrigation for farmers, and for the production of electricity. The timing of this project was fortunate for many who had been so profoundly impacted by the drought and

grasshopper invasion. Even though county population did fall over the 1890s, the out migration tide was stemmed to some degree by this project and some workers, particularly German-Russian workers, who came into the area to work on this project stayed and settled in Hitchcock County after the project was completed. Overall, the project was a boon for the area but it did prove problematic for Trenton, as the town remained in debt for many years as a result of the bonds approved for this purpose. World War II would be a period when the political realm would influence the economic realm in the region in major ways. An Air Army Base was built at McCook, attracting workers from the surrounding counties, including both Hitchcock County to the west and Furnas County to the east of Red Willow. Furnas County is one of the counties for comparison in the next chapter. In addition to the base, a prisoner of war camp was established near Palisade and operated throughout the war, primarily housing German prisoners of war who were actively involved in helping with corn harvest in the region during their time in the camp. In 1945, as the Air Army Base was closing, the Southwest Public Power District was organizing to be headquartered in Palisade and provided some employment opportunities as well as electric power to consumers throughout the area. Another project, very important to the county and surrounding area, was the damming of the Republican River to form Swanson Reservoir. This public project was designed to control flooding on the river, ensure access to water for the region, and provide both electricity and recreation for residents in the area (Southwest Nebraska Resource Conservation and Development Website, retrieved 2011).

Hitchcock County's Cultural Roots

Residents of the county were quick to establish local schools for their children. The first school held in Hitchcock County was in 1876 in Culbertson. At that time, the Culbertson school district covered all of the northern half of this huge county. Several

years later, additional school districts were formed and additional schools built. Today, there are two school districts in the county and five public schools, three elementary schools and two high schools, with a total of approximately 450 students (Education Bug, retrieved 2011). There are no private schools in the county. Adult education levels in Hitchcock County, as compared to those in Brown County, are very similar as far as the share of adult population with a high school diploma or higher, at 85.6 percent versus 83.3 percent in Brown County. Hitchcock County residents were somewhat less likely than those in Brown to have a bachelor's degree or higher level of education (Nebraska Department of Economic Development website, retrieved 2010). There are four public libraries in the county, one in each of the communities within Hitchcock County's borders (Education Bug, retrieved 2011).

The first newspaper in Hitchcock County was published in Culbertson in 1879. Printed for less than a year, that paper was soon dissolved and those most directly involved in its publishing began competing newspapers in 1880. Today, one paper, the *Hitchcock County News*, is published in Trenton and has a circulation of 1,142 (Nebraska Press Association, Retrieved 2011). With 98.5 percent of the total population being white and just over two percent reporting being Hispanic, very little racial/ethnic diversity is to be found in Hitchcock County. As far as ancestry, as with all other counties of concern to this research, the most commonly reported first ancestry was German, at 33.7 percent, followed by English, at 9.8 percent, American, at 7.9 percent, and finally, Irish at 6.4 percent. Religious adherence is slightly higher in Hitchcock County than it is in Brown County, at approximately 64.6 percent of the population versus 58.5 percent respectively (Glenmary Research Center, Retrieved 2011). The United Methodist Church in both counties has the highest number of members but the Catholic Church is

more prominent as a second religion in Hitchcock County than it is in Brown County (CDC Snaps, Retrieved 2011).

OVERDETERMINED PROCESSES IN BROWN AND HITCHCOCK COUNTIE'S NATURAL AND SOCIAL ORDERS

Relations Between the Natural Order and the Social Realms

Like the counties of consideration in the previous chapter, the first settlers in both Brown and Hitchcock Counties claimed land near surface water resources in rivers and creeks for easy access for family use and for watering livestock. Later homesteaders and other settlers were forced to claim land without that easy access. As shown in Table 5.1 on page 164, the geographic locations of Brown and Hitchcock Counties, with Brown County approximately two degrees north of Hitchcock, have few real impacts on climatic differences between the two counties. Mean annual temperatures are within 1 ¼ degrees of each other and average precipitation is within about an inch and a half of one another. Park points us to population density as a possible means of measuring the impacts of the natural environment and the process of competition in this realm. The population density has fallen significantly in both Brown and Hitchcock County over the last half century or so. For Brown County, population density fell by just over thirty percent between 1950 and 2000, from 4.3 to just three people per square mile. The drop has been even more significant in Hitchcock County, falling from 8.2 persons per square mile in 1950 to 4.4 persons in 2000, a drop of over 46 percent (Nebraska Department of Economic Development website, retrieved 2010).

The most significant factor in the natural environment that differentiates the two counties is the soil, including soil type, the share of the land that is sloped more than nine degrees, and the share of soil that is eroded. Hitchcock County, along the southern border of the state, is dominated by rich silts and silt loams. In all, approximately 79.6

percent of the soils in the county are of these types. On the other hand, the territory of Brown County is in the Nebraska Sandhills. Overall, the county's soils are around 76.6 percent sands and sandy loams (United States Department of Agriculture, Natural Resources Conservation Service, retrieved July 23, 2010). One point of significance in this is in the ability of the soils to retain moisture. Sandy soils allow moisture to drain away quickly, limiting the real access plants have to that moisture. In addition, while sandy loam soils, by definition, have organic materials incorporated into them, they tend to dry quickly and may not be appropriate for certain types of agricultural production.

As might be expected in these circumstances, Brown County farms, with sands and sandy loams as the dominant soil types, are somewhat more likely than those in Hitchcock County to be irrigated and while the share of farm acres irrigated in both counties remains small, at under ten percent, farm acres in Brown County are more likely to be irrigated than those in Hitchcock. Depth to the Ogallala Aquifer from the surface has changed little in either of these counties since it was developed as a water source for agriculture and human consumption. In 2010, there were 452 registered groundwater irrigation wells in Brown County, each watering approximately 180 acres of the nearly 52,000 irrigated acres in the county. In Hitchcock County, there were 569 registered wells, each irrigating approximately 35 acres of its near 19,000 irrigated acres (Nebraska Department of Economic Development website, retrieved 2010). Perhaps most interesting and dramatic has been the change in the share of farms in the two counties engaged in irrigation strategies over the years of this analysis.

As the share of all farms in Brown County irrigating the land increased by nearly six percent between 1992 and 2007, it fell in Hitchcock County, by approximately 11.5 percent. While the 2006 drought was widespread, hitting all of the state of Nebraska, the impact was particularly severe in southwestern Nebraska, including in Hitchcock County,

where precipitation rates were more than four inches below normal for 2006. In the years since 2006, precipitation for both of the counties of concern here was at normal or slightly higher than normal level (NOAA Climatic Data Center, retrieved 2010). Other nature-related survival strategies include the use of fertilizers and chemicals on the soil. Hitchcock county farm operators were significantly more likely to use these tools on their land than were farmers in Brown County.

As with the counties in the earlier analysis, natural conditions have impacted settlement patterns in other ways as well. Rail lines tend to parallel rivers and creeks in these two counties as well. In Hitchcock County, Nebraska, Kansas, & Colorado rail lines are found alongside the Republican River, generally toward the southwest, branching at Frenchman Creek, with a line following the creek toward the northwest. In Valley County, while the railroad, in this case the Sioux City & Pacific line, was vital to the early settlement of the county, rail service is no longer available today.

In the case of these two counties, neither Brown nor Hitchcock County has easy access to the major arterial of US Interstate 80, which parallels the Platte River through central Nebraska. Both, however do have important major US highways running through them. US34 runs through Hitchcock County, through Culbertson, Trenton, and Stratton. This highway, over 1,100 miles long, runs from just outside Chicago through Illinois, Iowa, Nebraska, and eastern Colorado before entering Estes and Rocky Mountain National Parks, where it becomes Trail Ridge Road and eventually ends at Granby, Colorado. This highway, while not considered a major interstate highway, does traverse the state of Nebraska, through McCook, Hastings, Grand Island, and Lincoln before leaving the state. It does parallel the Republican River through Hitchcock County and southwest Nebraska, as do the rails, providing transportation access to the farmers in the area.

The major highway running through Brown County, US20, runs coast to coast, from Boston to Newport, Oregon. It too provides access to a myriad of other, more prominent highways. It runs along the edge of the sandhills in Brown County, through all three of the towns in the county. While there are no major grain elevators in either county, each of the counties have a total of three elevators. There are three distributors of seed, fertilizer, and chemicals in Hitchcock County and two in Brown. There is an equipment/ implement dealer in Ainsworth, in Brown County but there are none in Hitchcock County (Nebraska Department of Economic Development, retrieved 2010). This is likely influenced by the relative isolation of the population of Brown County as compared to Hitchcock, and therefore the need for access to the necessary inputs at the local level.

Economic Realities: Class and Non-class Processes in Overdetermined Environments

As in Chapter Four, the following section of this chapter will briefly examine the economic conditions of the two counties, including general economic data and agriculture-specific factors, and discuss the relationships among this myriad of processes and with processes in the other environmental orders. In looking at the economic data for the overall counties, demonstrated in Table 5.3 on page 166, we see that median household income was very similar for Brown and Hitchcock Counties for the period of this analysis, generally within about 2,000 dollars of each other and both significantly below both the state and national median for the entire time. While the poverty rate for all ages and that for children under eighteen were somewhat higher, up to 4.5 percent higher, in Brown County than in Hitchcock County in 1989, 1993, and 1997, for the last decade of this research, the opposite was true with the rate falling in Brown County as it was rising in Hitchcock. By 2007, overall poverty rates were 1.8 points higher and child poverty rates were 3.8 points higher in Hitchcock County than

they were in Brown County (US Census Bureau, Small Area Poverty and Income Data, retrieved 2011).

As a share of the total number of persons engaged in the different economic sectors, Table 5.3 also shows us that the farming profession is more important to the overall labor force in Hitchcock County than it is in Brown County. Again, assuming that a single farmer is claiming each farm as his own occupational venue, farm operators account for less than thirty percent of all workers in Brown County but nearly 72 percent in Hitchcock County. As Table 4.4 on page 161 shows, average farm size was significantly smaller in Hitchcock County than in Brown for the entire period of this analysis, just 56 percent of the Brown County average in 2007. While that average did increase in both counties between 1992 and 2007, it did so more rapidly in Hitchcock County, rising just over twenty percent there versus 15.8 percent in Brown County. The share of total land in farms has been somewhat lower in Hitchcock County than in Brown for those years as well, with the largest gap in 2007. That year, while just 76.6 percent of the land in Hitchcock County was in farms, 84.4 percent of Brown County was. This represents a loss of about twelve percent of the farm land in Hitchcock County and a gain of about 1.5 percent in Brown county between 1992 and 2007 (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

Shown in Table 5.4 on page 167, with the exception of 2002, average net return on agriculture was higher than the national average in both of the counties of concern here. On the other hand, the average has consistently been lower than the state average for both. The average value of agricultural products in Hitchcock County in 2007 was just 38.2 percent of that in Brown County that year, but because the difference in the average cost of production was even more dramatic, at just 29 percent in Hitchcock as compared to Brown, average net return was significantly higher for Hitchcock County

farmers than for those operating in Brown County. Only in 1992 were the shares of all farms reporting gains and losses in the two counties comparable. By 1997, Hitchcock County farms were much more likely to report gains than were those in Brown County, a trend that has continued since. In 2002, up to 55 percent of Brown County operators reported losing money on their farms, versus just 38.5 percent in Hitchcock County (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

Although farms and acres in both counties, and in the state, were less likely than those at the national level to be operated by their full owners and were somewhat more likely to be operated by tenants, differences between the two counties in tenancy are most evident in the share of farms and acres operated by tenants. In 2007, for example, approximately 19.5 percent of all farms and 9.3 percent of all farm acres were operated by tenants in Brown County. In Hitchcock County, this was the case with just 10.3 percent of farms and 6.3 percent of farm acres. While the share of farms organized as individual or family operations was comparable in the two counties over the fifteen years of the analysis at between 79 percent and 86 percent in both, those organizations control a larger share of farm acres in Hitchcock County than they do in Brown. Brown County farms, although they continue to be dominated by individual-family organizations, are more likely than those in Hitchcock County to be organized as partnerships, controlling a larger share of the land than their share of farms (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

All of the farm-related economic conditions and complexities with which farm families must deal make developing a range of survival strategies an important part of the process of staying on the farm. In considering the fundamental class processes in which farm operators in the two counties engage, Table 5.7, found on page 170, reveals that Hitchcock County operators were more likely than those in Brown County to identify

farming as their primary occupation at each time-point in the analysis. As might logically be expected, Brown County farm operators were somewhat more likely to report working 200 or more days off the farm that year. In 1992, the share of Brown County farms paying non-family labor was about fourteen percentage points higher than the share in Hitchcock County, a condition that did not continue for the remainder of the study period (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

The subsumed class processes, the topic of Table 5.9 on page 172, in which farm operators engage varies between the two counties. For instance, Brown County farmers were somewhat more likely than those in Hitchcock County to rent land for their operations and purchase livestock and feed. On the other hand, Hitchcock County farmers were more likely than Brown County farmers to purchase seeds and plants and pay property taxes. Like the counties in the first comparison, direct payments to farmers have had important impacts on local economies in Brown and Hitchcock Counties. Hitchcock County farms, however, participated in government commodity and conservation programs at much higher rates than have Brown County operations between 1992 and 2007. Between 77 percent and 79 percent of farms in Hitchcock County received direct payments during those years, versus just forty to fifty percent of Brown County farms. Between the two counties, direct government payments to famers brought in over 19 million dollars between 1992 and 2007, well over sixty percent of it to Hitchcock County farms. Overall per capita federal expenditures have been significantly higher in Hitchcock County than in Brown County for the period of this research as well, particularly where retirement and disability and grant expenditures are concerned (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

The Political and Cultural Orders

Table 5.10, on page 173, provides some basic data about general participation in the political realm in the two counties and in Nebraska and the US. Like Red Willow and Valley Counties, voters in Brown and Hitchcock Counties were consistently more likely to participate in general elections than were voters at the national level or for the state as a whole (Nebraska Office of Secretary of State, retrieved 2010). While voters in both counties are more likely to be registered as republicans than democrats, and were more likely to be registered as republicans than the electorate of the state overall, the distribution of party affiliation is significantly more skewed in Brown County than it is in Hitchcock County. A total of 73.1 percent of all registered voters in Brown County are registered as republican versus just 58.8 percent of Hitchcock County voters and 48.4 percent of all voters in the state (Nebraska Department of Economic Development, retrieved 2010).

Considering the processes of conflict and accommodation, various government policies and programs have evolved out of processes attempting to accommodate the needs of farmers as well as those of the society as a whole. Federal crop insurance can be vital to farm families in their struggles to deal with phenomena in nature. In 2007, approximately 63.8 percent of the cropland in Brown County was insured while just 59.9 percent was insured in Hitchcock County (USDA Census of Agriculture, 2007). While Hitchcock County farms were also slightly more likely than those in Brown County to have cattle-calf operations on their farms, data on participation rates in the Federal Livestock Risk Protection Insurance Program is unavailable.

On the regional level, Nebraska's Natural Resources Districts strive to accommodate the needs of the population at large with those of farm operators. Like Red Willow County, Hitchcock County is served by the Middle Republican Natural

Resources District, where the licensing of new wells has been halted. Brown County is served by two Natural Resources Districts, the Middle Niobrara NRD in the northern part of the county and the Upper Loup NRD in the south. Like Valley County, groundwater levels are higher today in much of Brown County than they were when irrigation water was first pumped from the aquifer and both NRDs serving Brown County are heavily involved in programs like tree planting and the establishment of wildlife habitats in the region over and above dealing with water levels and quality. Because the sandy soils would much more quickly allow for contaminants to infiltrate water resources, the two NRDs are also engaged in extensive groundwater testing programs.

In considering the impacts of the more isolated nature of much of Brown County versus Hitchcock, a consideration of public facilities, like the public library may be important in examining the interactive character of nature, in level of isolation, with both the political, in the public nature of the facilities, and the cultural realm, which libraries, to some degree, enhance for their patrons. The assimilation process, in the socialization of children and other new community members, is at work here. There is a single public library in Brown County, located in Ainsworth, the county seat and largest community in the county. In this county, the average number of annual library visits for the population of the service area is over twelve and the average number of circulation transactions per person is 12.3. There are four public libraries in Hitchcock County, one in each of the communities in the county. Usage in this county is significantly lower than it is for Brown County, with as few as two visits per person at the Trenton Public Library. With a total of approximately 7,864 visits per year for all of the libraries in the county, serving 1,883 people in their service areas, the average is just 4 visits per year throughout the county and just 6.3 circulation transactions (Education Bug website, retrieved 2011).

For many families across the United States, church membership and involvement is an important part of the assimilation process as well. Perhaps, in part, related to the relative isolation of much of Brown County, religious adherence there is somewhat lower than that in Hitchcock County. The many isolated farms and ranches likely make the weekly trip to church difficult for families during some times of the year, particularly since so many rural roads remain unpaved. From the most isolated farms in the southern part of the county to any of the three population centers could be as far as thirty miles.

Ultimately, natural factors impact a range of relationships into which the farm families in both of these counties are involved. Natural conditions influence economic behaviors just as behaviors related to the natural environment help to determine the economic wellbeing of the farm and family. Many political processes have concerned themselves with nature, directly, through programs designed to enable operators to engage in behaviors like irrigation, but also indirectly, through programs designed to regulate the use of irrigation, fertilizers, and chemicals. The natural environment has also influenced the cultural environments of the two counties, with Brown County's relative isolation being an important factor in the distribution of the population and influencing the dependence the population has on public services.

In conclusion, a wide range of factors, external to the natural environment of the region and the farm itself, intersect and interact to influence the wellbeing of farmers and their families in Brown and Hitchcock Counties. While dominant soil type does impact a range of behaviors on farms in the two counties, including crop and livestock production, which is the focus of the intensive analysis at the end of this chapter, it is just one of many factors impacting the daily lives of families on Brown and Hitchcock County farms.

CONCLUSIONS

For the purpose of this in-depth analysis, the focus will be on the process of actually producing crops and livestock, considering the influences on the particular mix the farmers in the two counties tend to produce. Table 5.7, page 170, illustrates the share of farms in Brown County, Hitchcock County, the state of Nebraska, and the United States producing specified crops. The table shows that the share of farms producing corn, and the share of farm acres invested in doing so, was somewhat higher for Hitchcock County than for Brown County for the entire period of the analysis. Very few farms in Brown County engaged in winter wheat production over the fifteen years while as many as 79 percent of Hitchcock County farms did so in 1997, still standing in 2007 at 54 percent. While soybean production was limited in both counties, Hitchcock County farmers were also somewhat more likely to produce soy as well (USDA Census of Agriculture, 1992, 1997, 2002, and 2007).

Interestingly, while the share of farms with cattle-calf operations was consistently somewhat higher for Brown County than it was for Hitchcock, the percentages are not far from each other, at a maximum of 11.5 percent difference between the two in 2007. All of this begs the question: if Brown County farms are less likely to produce corn and soybeans than those in Hitchcock County, are much less likely to produce wheat, and are only minimally more likely to raise cattle and calves, where are Brown County farmers investing an average of over 543 thousand dollars in their quest to construct a viable way to make a living and a life on the farm? While the share of farms engaging in cattle production is fairly comparable between the two counties, this is where the similarities end. Farm lands in Brown County are much more likely to be used as pasture land than those in Hitchcock. Approximately eighty percent of all farm ground in Brown County is used for pasturing livestock, versus just 43.6 percent of the land in Hitchcock

County. In addition, in 2007, about 39.4 percent of Brown County farms listed the purchase of livestock as one of their costs of production, versus just 24.6 percent of Hitchcock County farms. For those who did purchase livestock in the two counties, farmers in Brown County invested more than five times as much in this expense as did Hitchcock County farms. That same year, with 169 of Brown County's 282 farms engaged in raising cattle, the average farm with cattle had a herd of nearly 620, versus the average of just 210 in Hitchcock County (USDA Census of Agriculture, 2007).

The dominance of cattle production in Brown County may also help to explain some other significant differences in the two counties, including the dominance of irrigation in Hitchcock County and the share of farms reporting losses. Because Brown County farmers invest several times as much in the production process as do their counterparts in Hitchcock County, they are taking considerably higher economic risks as well. The rewards for the 55.3 percent of Brown County farms reporting gains were substantial. In 2007, for those farms reporting gains, the average was 118,800 dollars in Brown County, just 5,600 dollars less than the average gain in Hitchcock County. That year, for the 48.2 percent of Brown County farms reporting losses, the average loss was substantially higher there than for the 29.4 percent of Hitchcock County farms losing money, at over 52,200 dollars in Brown and nearly 35,500 dollars in Hitchcock County (USDA Census of Agriculture, 2007). .

Natural conditions alone, with a dominant soil type that is more suited to grazing than to row crop production, would logically predict cattle-calf operations as a dominant type of production in Brown County, but a deeper look reveals the power of other important natural and social processes on the particular types of production farmers practice in the two counties. According to the US Department of Agriculture, average corn yields for those farms producing corn, were actually significantly higher in Brown

County than they were in Hitchcock County in 2009. Perhaps some measure of influence on the dominant types of production is cultural, in the form of tradition. From the beginning of settlement in Brown County, cattle have occupied the land in this starkly beautiful county, cattle ranchers being the first to develop permanent homes in the region. By 1910, the number of cattle in Brown County outnumbered the human population nearly four to one and represented a total value of over 500,000 dollars to the farmers who owned them. Even as early as this period, Hitchcock County farmers held a small number of cattle as compared with Brown County farms, with just 14,445 cattle worth about 290,000 dollars at that time, despite the fact that settlement began approximately seven years earlier in Hitchcock County than it did in Brown (USDA Census of Agriculture, 2007). That long cultural tradition of raising cattle may be at play in the continued dominance of cattle production in the area.

Ultimately, even when the natural environments of two counties differ significantly on an important natural factor, such as dominant soil type, a range of other processes and factors are also involved in the actual behaviors of farmers and their families in their everyday lives. Relative isolation, necessary investments in inputs for production, and cultural traditions all influence the behaviors of farm operators and their families in their real day-to-day overdetermined environments as they attempt to survive on the farm.

The next chapter is the final analysis chapter, considering the influence of farming in a fully rural area versus operating in a Micropolitan Statistical Area as defined by the United States Department of Agriculture. The final focus in this chapter will be on the varying off-farm employment behaviors of operators in the two counties.

FIGURE 5: COUNTIES WITH VARYING DOMINANT SOIL TYPES FOR COMPARISON-BROWN AND HITCHCOCK COUNTIES

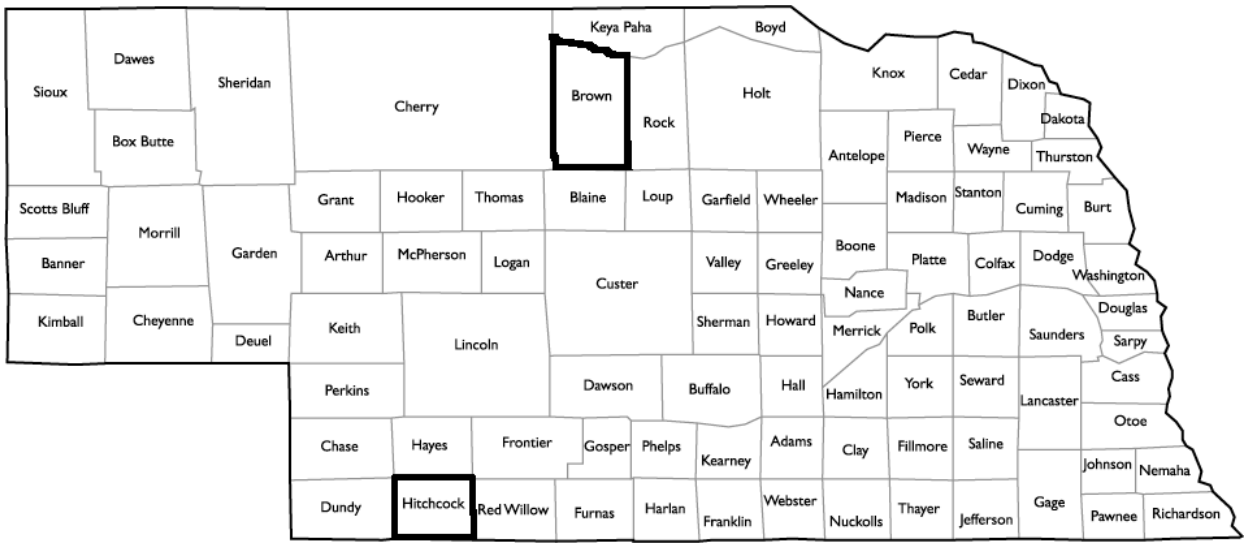

TABLE 5.1: NATURAL-ECOLOGICAL REALM: NATURAL CONDITIONS AND OPERATOR STRATEGIES TO ADAPT-Brown and Hitchcock Counties

	Brown County	Hitchcock County
Geographic Location	42.5 North/99.9 West	40.4 North/100.0 West
Size-Square Miles	1,221	710
Dominant Soil Type	76.6% Sands/Sand Loams	79.6% Silt/Silt Loams
% Land 9%+ Slopes	4.5%	36.6%
% Land Eroded	0.9%	13.9%
% Total Land in Farms-2007	83.1%	116%*
Mean Annual Temperature	49.3 Degrees Fahrenheit	50.5 Degrees Fahrenheit
Average Annual Precipitation	22.99 Inches	21.48 Inches
% Farms Irrigated-2007	42.2%	29.8%
% Farm Acres Irrigated-2007	7.8%	5.5%
% Farms Applying Fertilizers-2007	44.2%	62.1%
% Farms Applying Chemicals-2007	42.1%	57.7%

* Includes land in adjacent counties incorporated into farms primarily in Hitchcock County

Sources: Soil Data: USDA Natural Resources Conservation Service Soil Data Mart
All Other Data from USDA Census of Agriculture

TABLE 5.2: DEMOGRAPHIC/CULTURAL INFORMATION-Brown and Hitchcock Counties

	Brown County	Hitchcock County
Year-First White Settlement	1876	1869
Year-County Organization	1883	1873
Population		
1880	0	1,012
1890	4,359	5,799
1900	3,470	4,409
1910	6,083	5,415
1920	6,749	6,045
1930	5,772	7,269
1940	5,962	6,404
1950	5,164	5,867
1960	4,436	4,829
1970	4,021	4,051
1980	4,377	4,079
1990	3,657	3,750
2000	3,525	3,111
Current Towns (2000 Population)	Ainsworth * (1,862) Johnstown (53) Long Pine (341)	Culbertson (594) Palisade ** (386) Stratton (396) Trenton *(507)
Ancestry in Order of Reports	German 30.8% American 8.4% English 8.3% Irish 5.9%	German 33.7% English 9.8% American 7.9% Irish 6.4%
% Population Religious Adherents	58.5%	64.6%
Relgions by Adherents	United Methodist Church-570 Lutheran Church-Missouri Synod-527 Catholic Church-453 Evangelical Free Church-155	United Methodist Church-878 Catholic Church-587 Lutheran Church-Missouri Synod-338 Christian/Missionary Alliance-74
# Public Schools	9	5
# Public Libraries	1	4
Educational Attainment 2000		
% High School +	83.3%	85.6%
% Bachelor's +	17.2%	13.8%
	* Indicates County Seat	** Indicates Town Partially in Hitchcock County
Sources:	Population Data-Nebraska Department of Economic Development Ancestry-US Census: USA Counties Religious Adherents-Glenmary Research Center Religions by Adherents-CDC Snaps Public Schools/Libraries-Education Bug Educational Attainment-US Census: 2000 Census	

TABLE 5.3: THE ECONOMIC REALM: GENERAL ECONOMIC TRENDS:
1989-2007 Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
Median Household Income				
1989	$20,178	$22,074	$25,258	$28,906
1993	$22,973	$24,597	$29,038	$31,241
1997	$25,684	$26,894	$35,337	$37,005
2002	$29,562	$27,413	$41,130	$42,409
2007	$34,337	$33,548	$47,072	$50,740
Poverty Rate: All Ages				
1989	15.2%	11.9%	11.1%	12.8%
1993	13.5%	11.5%	10.7%	15.1%
1997	15.1%	12.8%	9.6%	13.3%
2002	13.7%	14.4%	10.0%	12.1%
2007	12.7%	14.5%	11.1%	13.0%
Poverty Rate: Under 18				
1989	19.3%	16.9%	15.6%	19.6%
1993	16.9%	14.0%	13.9%	22.7%
1997	20.4%	15.9%	12.6%	19.9%
2002	17.2%	20.5%	12.3%	16.7%
2007	19.4%	23.2%	14.7%	18.0%
Annual Unemployment Rate				
1992	3.1%	2.3%	2.9%	7.5%
1997	2.7%	2.7%	2.4%	4.9%
2002	3.5%	3.2%	3.7%	5.8%
2007	2.6%	2.7%	2.9%	4.6%
# Manufacturing Establishments (# Jobs)				
1992	4 *	1*	2,027 (100,100)	370,934
1997	0	0	1,960 (106,690)	363,753
2002	0	0	1,976 (103,029)	350,828
2007	0	3 (60)	1,984 (99,547)	332,536
# Retail Establishments (# Jobs)				
1992	43 (244)	14 (74)	11,375 (132,157)	1,526,215
1997	30 (191)	14 (93)	8,295 (102,684)	1,118,447
2002	30 (234)	12 (20)	8,157 (105,634)	1,114,637
2007	29 (226)	10 (20)	7,888 (108,209)	1,128,112
# Wholesale Establishments (# Jobs)				
1992	10 (68)	12 (57)	4,035 (47,053)	495,457
1997	9*	7 (20)	3,157 (41,002)	453, 470
2002	4 (10)	8 (20)	2,907 (36,805)	435,521
2007	4 (50)	4 (50)	3,093 (38,752)	434,983
# Service Establishments (# Jobs)				
1992	26 (125)	8 (14)	11,284 (120,26)	1,825,435
1997	34 (216)	10 (15)	16,343 (187,056)	2,077,666
2002	51 (356)	16 (33)	20,084 (289,175)	3,138,520
2007	58 (425)	14 (36+) *	21,526 (321,988)	3,439,375
# Farms				
1992	332	379	52,932	1,925,300
1997	368	357	51,454	1,911,859
2002	311	288	49,355	2,128,982
2007	282	272	47,712	2,204,792

* Indicates number too small for publication on some segments in this sector

Sources:
Median Household Income, Poverty Rate: All Ages, Poverty Rate: Under 18- United States Census Bureau: Small Area Income and Poverty Estimates.
Annual Unemployment Rate: United States Department of Labor, Bureau of Labor Statistics
Manufacturing, Retail, Wholesale, and Service Establishments + Jobs US Census Bureau Economic Census
Farms: United States Department of Agriculture, Census of Agriculture

TABLE 5.4: THE ECONOMIC REALM: FARMS, AVERAGE FARM SIZE, RETURN ON AGRICULTURE-Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
# Farms				
1992	332	379	52,923	1,925,300
1997	368	357	51,454	1,911,859
2002	311	288	49,355	2,128,982
2007	282	272	47,712	2,204,792
Average Farm Size-Acres				
1992	1,957	1,065	839	491
1997	2,008	1,198	885	487
2002	2,207	1,450	930	441
2007	2,266	1,279	953	418
% Land in Farms				
1992	83.1%	88.8%	90.2%	41.8%
1997	89.7%	89.4%	92.5%	41.2%
2002	87.8%	95.4%	93.3%	41.5%
2007	84.6%	76.6%	92.4%	40.8%
Average Value Agricultural Products				
1992	$242,273	$16,970	$155,125	$84,459
1997	$238,116	$97,278	$191,074	$102,970
2002	$300,055	$108,645	$196,609	$94,245
2007	$565,057	$216,017	$324,992	$134,807
Average Cost of Production				
1992	$224,981	$66,116	$126,824	$67,928
1997	$214,469	$80,926	$147,628	$78,771
2002	$309,528	$105,525	$183,362	$81,362
2007	$543,649	$157,649	$258,328	$109,359
Average Net Return on Agriculture				
1992	$21,169	$16,970	$27,638	$15,801
1997	$34,425	$25,866	$40,717	$22,260
2002	$3,133	$13,327	$24,820	$19,032
2007	$39,142	$77,407	$83,142	$33,827
% All Farms Reporting Gains				
1992	63.3%	62.0%	68.9%	55.6%
1997	47.8%	65.8%	67.1%	51.6%
2002	44.7%	64.9%	62.0%	46.7%
2007	55.3%	70.6%	69.0%	46.5%

	Brown County	Hitchcock County	Nebraska	USA
Average Gains for Farms with Gains				
1992	$43,700	$33,840	$46,039	$34,142
1997	$80,952	$41,712	$69,147	$51,296
2002	$67,389	$39,961	$56,201	$56,679
2007	$118,802	$124,441	$118,796	$81,061
% All Farms Reporting Losses				
1992	36.7%	38.0%	31.1%	44.4%
1997	46.7%	29.1%	32.9%	48.4%
2002	55.0%	38.5%	38.0%	53.3%
2007	48.2%	29.4%	31.0%	53.5%
Average Losses for Farms with Losses				
1992	$17,613	$10,561	$13,100	$7,135
1997	$13,184	$9,940	$17,201	$8,645
2002	$49,099	$31,542	$26,285	$13,937
2007	$52,232	$35,475	$28,988	$16,075

Source: All Data from USDA Census of Agriculture

TABLE 5.5: THE ECONOMIC REALM: TENURE & OPERATOR CHARACTERISTICS-Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
# Farms				
1992	332	379	52,923	1,925,300
1997	368	357	51,454	1,911,859
2002	311	288	49,355	2,128,982
2007	282	272	47,712	2,204,792
% Farms Full Owners				
1992	37.0%	41.4%	40.6%	57.7%
1997	37.2%	41.7%	43.9%	60.0%
2002	42.4%	48.3%	49.0%	67.1%
2007	46.5%	50.7%	50.3%	69.0%
% Acres Full Owners				
1992	17.1%	21.1%	22.0%	32.1%
1997	24.9%	26.1%	26.3%	33.9%
2002	23.9%	30.0%	30.0%	38.0%
2007	32.1%	19.4%	25.3%	47.2%
% Farms Part Owners				
1992	40.1%	42.0%	39.7%	31.0%
1997	39.1%	37.3%	38.5%	30.0%
2002	38.3%	42.7%	37.8%	25.9%
2007	37.6%	39.0%	37.6%	24.6%
% Acres Part Owned Farms				
1992	64.9%	66.1%	63.1%	55.7%
1997	60.3%	59.4%	60.5%	54.5%
2002	61.9%	58.1%	63.8%	52.8%
2007	58.6%	74.3%	65.1%	53.8%
% Farms Tenant				
1992	18.3%	12.8%	19.7%	11.3%
1997	14.8%	14.5%	17.6%	10.1%
2002	19.3%	12.9%	13.2%	7.0%
2007	19.5%	10.3%	12.1%	6.4%
% Acres Tenant				
1992	18.3%	12.8%	14.9%	13.0%
1997	14.8%	14.5%	13.3%	11.6%
2002	14.2%	6.9%	10.5%	9.2%
2007	9.3%	6.3%	9.6%	8.9%
% Operators Farming Primary Occupation				
1992	71.7%	79.7%	73.9%	54.7%
1997	60.6%	73.0%	69.5%	50.3%
2002	74.2%	84.4%	73.0%	57.5%
2007	57.1%	58.5%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	23.8%	18.5%	22.5%	34.6%
1997	22.6%	16.2%	25.5%	37.1%
2002	35.1%	26.4%	32.0%	39.1%
2007	37.6%	34.6%	39.3%	39.7%

Source: All Data from USDA Census of Agriculture

TABLE 5.6: THE ECONOMIC REALM: FARM ORGANIZATION-

Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
% Farms Family/Individual Organization				
1992	81.6%	82.3%	84.2%	85.9%
1997	79.3%	82.9%	82.2%	86.0%
2002	86.8%	85.1%	86.8%	89.7%
2007	83.7%	83.8%	83.5%	86.5%
% Acres Family/Individual Organization				
1992	66.2%	76.2%	68.4%	63.9%
1997	65.4%	74.0%	67.0%	62.8%
2002	81.5%	85.1%	70.3%	66.3%
2007	59.5%	76.6%	67.0%	62.3%
% Farms Partnerships				
1992	11.7%	9.0%	8.7%	9.7%
1997	12.5%	8.7%	8.8%	8.9%
2002	6.8%	7.6%	6.2%	6.1%
2007	9.9%	8.5%	7.6%	7.9%
% Acres Partnerships				
1992	21.8%	Data Unavailable	12.4%	16.2%
1997	23.7%	13.3%	12.7%	16.0%
2002	15.1%	12.7%	12.8%	15.6%
2007	18.0%	10.2%	13.6%	17.5%
% Farms Family Corporation				
1992	3.6%	8.4%	6.0%	3.4%
1997	6.3%	8.4%	7.9%	4.0%
2002	5.1%	10.8%	6.0%	3.1%
2007	6.7%	5.9%	7.1%	3.9%
% Acres Family Corporation				
1992	9.3%	13.2%	16.8%	11.7%
1997	9.9%	12.7%	18.4%	12.8%
2002	10.2%	16.1%	15.1%	10.6%
2007	15.8%	12.7%	17.1%	12.4%

All Other Organization Types < 2% for Nebraska and Both Counties

Source: All Data from USDA Census of Agriculture

TABLE 5.7: THE ECONOMIC REALM: CROP AND CATTLE PRODUCTION-
Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
% Farms-Corn for Grain				
1992	34.6%	40.6%	56.1%	26.2%
1997	31.0%	46.8%	56.7%	22.5%
2002	26.4%	32.3%	48.4%	16.4%
2007	34.8%	38.2%	47.8%	15.8%
% Farm Acres Corn for Grain				
1992	5.8%	7.5%	16.5%	7.3%
1997	6.4%	11.0%	18.2%	7.5%
2002	5.4%	6.0%	16.0%	7.3%
2007	6.4%	13.7%	20.2%	9.4%
% Farms-Wheat for Grain				
1992	0.0%	72.0%	23.9%	15.2%
1997	0.0%	79.0%	19.1%	12.7%
2002	0.0%	73.3%	13.5%	8.0%
2007	1.1%	54.0%	16.8%	7.3%
% Farm Acres Wheat for Grain				
1992	Data Unavailable	17.2%	4.1%	0.1%
1997	0.0%	22.5%	3.9%	6.3%
2002	0.0%	18.0%	3.3%	4.9%
2007	Data Unavailable	17.2%	4.3%	5.5%
% Farms-Soy for Beans				
1992	3.9%	9.0%	39.1%	19.8%
1997	6.3%	8.4%	41.0%	18.6%
2002	13.2%	8.7%	40.7%	14.9%
2007	8.5%	5.5%	34.8%	12.7%
% Farm Acres Soy for Beans				
1992	0.0%	0.0%	5.1%	6.0%
1997	Data Unavailable	0.0%	7.4%	7.1%
2002	1.3%	0.1%	10.0%	7.7%
2007	0.0%	0.0%	8.4%	4.0%
% Farms-Cattle/Calves				
1992	69.0%	65.4%	57.5%	55.8%
1997	72.8%	62.2%	56.9%	54.8%
2002	68.5%	62.5%	50.8%	40.0%
2007	60.0%	48.5%	44.9%	43.7%

Source: All Data from USDA Census of Agriculture

TABLE 5.8: THE ECONOMIC REALM: FUNDAMENTAL CLASS VARIABLES-
Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
% Operators Farming Primary Occupation				
1992	71.7%	79.7%	73.9%	54.7%
1997	60.6%	73.0%	69.5%	50.3%
2002	74.2%	84.4%	73.0%	57.5%
2007	57.1%	58.5%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	23.8%	18.5%	22.5%	34.6%
1997	22.6%	16.2%	25.5%	37.1%
2002	35.1%	26.4%	32.0%	39.1%
2007	37.6%	34.6%	39.3%	39.7%
% Farms-Hired Labor				
1992	49.1%	35.1%	37.6%	36.0%
1997	36.4%	40.6%	41.7%	34.0%
2002	34.7%	36.8%	35.4%	26.0%
2007	33.0%	26.5%	30.6%	21.9%

Source: All Data from USDA Census of Agriculture

TABLE 5.9: ECONOMIC REALM: SUBSUMED CLASS PROCESSES- Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
% Farms Part-Owner & Tenants				
1992	58.4%	54.8%	57.3%	42.3%
1997	53.9%	51.8%	55.5%	40.0%
2002	57.6%	55.6%	51.0%	32.9%
2007	59.1%	49.3%	49.7%	31.0%
% Farms Purchasing Seeds/Plants				
1992	43.7%	85.8%	74.0%	52.2%
1997	41.8%	76.5%	69.9%	46.9%
2002	38.3%	81.9%	62.7%	41.1%
2007	38.4%	58.1%	56.3%	35.2%
% Farms Purchasing Petroleum Products				
1992	95.2%	94.5%	95.8%	94.4%
1997	94.6%	100.3%	93.7%	92.1%
2002	91.0%	100.7%	93.9%	95.1%
2007	96.9%	97.8%	98.2%	97.5%
% Farms Purchasing Repairs/ Maintenance				
1992	95.5%	97.9%	89.5%	83.3%
1997	89.4%	92.4%	85.7%	80.4%
2002	87.5%	93.1%	89.5%	89.2%
2007	89.0%	91.9%	91.5%	90.4%
% Farms Purchasing Livestock				
1992	59.3%	38.5%	41.7%	32.7%
1997	45.4%	50.7%	38.6%	29.1%
2002	38.9%	25.7%	32.6%	26.0%
2007	39.4%	24.6%	27.8%	22.3%

	Brown County	Hitchcock County	Nebraska	USA
% Farms Purchasing Feed for Livestock				
1992	76.5%	51.5%	60.2%	57.4%
1997	59.8%	67.5%	54.9%	53.4%
2002	70.1%	51.0%	53.4%	58.3%
2007	53.1%	43.4%	44.7%	51.5%
% Farms Paying Interest				
1992	61.1%	64.9%	63.1%	45.3%
1997	49.5%	54.9%	61.4%	42.4%
2002	78.8%	62.5%	58.2%	35.6%
2007	49.3%	48.5%	48.4%	30.3%
% Farms Paying Rent Land/Buildings				
1992	42.8%	20.1%	36.4%	27.3%
1997	39.9%	26.1%	36.4%	25.4%
2002	52.4%	52.8%	41.0%	23.4%
2007	51.7%	33.8%	42.0%	22.2%
% Farms Paying Property Taxes				
1992	78.9%	86.5%	89.7%	91.5%
1997	89.4%	85.2%	91.2%	92.7%
2002	96.1%	89.9%	92.7%	92.2%
2007	85.6%	90.1%	91.1%	90.5%

For Information About Purchases of Fertilizers and Chemicals, see Table 4.1 Page 158

Source: All Data from USDA Census of Agriculture

TABLE 5.10: THE POLITICAL REALM: Brown and Hitchcock Counties

	Brown County	Hitchcock County	Nebraska	USA
% Registed Voters Voting in General Elections 1992	78.3%	78.6%	66.1%	61.3%
1996	73.2%	72.1%	61.0%	54.2%
2000	70.5%	71.1%	58.9%	54.7%
2004	67.7%	72.1%	61.3%	58.3%
2008	66.4%	70.5%	64.5%	58.2%
Party Affiliation Registered Voters 2008				
% Republican	73.1%	58.8%	48.3%	
% Democrat	17.3%	42.4%	34.0%	
% Nonpartisan	9.2%	13.1%	16.9%	
% All Other	<0.1%	<0.1%	0.1%	
Per Capita Federal Expenditures Total 2009	$11,020	$12,398	$8,760	$9,096
Per Capita Federal Expenditures Retirement/Disability 2009	$2,071	$4,116	Data Unavailable	Data Unavailable
Per Capita Federal Expenditures Direct Payments 2009			$5,198	$4,723
Per Capita Federal Expenditures Grants 2009	$1,351	$2,381	$2,078	$1,872
Per Capita Federal Expenditures Salaries/Wages 2009	$208	$413	812	$827
% Farms Participating in Government Ag Programs 1992	43.1%	78.1%	61.6%	29.6%
1997	40.5%	78.7%	68.7%	35.8%
2002	46.3%	77.4%	64.9%	33.2%
2007	49.3%	79.0%	73.2%	38.0%
% Farms Participating in Government Conservation Programs 1992	10.5%	16.9%	14.1%	7.8%
1997	12.0%	21.3%	18.3%	11.8%
2002	8.4%	17.4%	21.1%	12.6%
2007	11.7%	34.2%	26.2%	15.7%

Sources:

Voting Data-Nebraska: Nebraska Department of Economic Development
National-US Census Bureau
Party Registration Data-Nebraska: Nebraska Secretary of State Website
Federal Expenditures per Capita: US Census Bureau
Farm Program Participation Data-USDA Census of Agriculture

Chapter Six: Population and Opportunity: Central Nebraska's Rural and Micropolitan Counties

The purpose of this chapter is to compare the conditions under which farm families live in two counties that differ significantly in population density and economic development. One of the counties for comparison is fully rural and the other is considered the core county of a Micropolitan Statistical Area. The US Census defines a Micropolitan Statistical Area as an area with an urban core with a population of at least 10,000 but less than 50,000. Along with the core urbanized area are one or more additional adjacent counties with significant social and economic integration with the urban core due to residents of the adjacent counties commuting to the core for work. There are just four Micropolitan Statistical Areas in central Nebraska: North Platte, in Lincoln County is the urban core, with McPherson and Logan Counties as the adjacent, integrated counties; Lexington, in Dawson County as the core, with Gosper County as the adjacent county; Kearney in Buffalo County, along with Kearney County as the adjacent county; Hastings in Adams County, along with Clay County as the adjacent county; Grand Island, in Hall County, along with adjacent counties of Howard and Merrick. Because Merrick County is outside of the specified region of central Nebraska, the Grand Island Micropolitan Area was not under consideration, leaving just three possibilities. A brief examination of a variety of variables for central Nebraska counties in 1992, encouraged the choice of Furnas County as the rural County and Dawson as the Micropolitan Statistical County. The two had the following commonalities in 1992.

1) Soils in both counties were dominated by silts and silt loam soils.
2) Over 90 percent of all land in both counties was in farms that year.

3) In both counties, between one-quarter and thirty percent of the land is sloped, at nine degree or higher and soil erosion has impacted a significant number of acres of land.
4) Mean annual temperature in both counties ranged between fifty and 55 degrees Fahrenheit.
5) Precipitation norms ranged from 23 to 25 inches per year.
6) There are seven or more towns within each county and the share of the population living in towns is over 75 percent.
7) Unemployment has historically been low, often well below five percent, in both counties.

Ultimately, the primary objective of this chapter is to examine the impacts of economic development in the area, and the accompanying higher population density, on the wellbeing of farms in central Nebraska. The chapter will begin with a review of the settlement and the economic, political, and cultural history of Furnas County. This will be followed by a similar review of Dawson County, and finally, a comparison of developments in the two counties between 1992 and 2007.

FURNAS COUNTY, NEBRASKA: SETTLEMENT AND EARLY HISTORY

A map, on page 223 shows the relative locations of Furnas and Dawson Counties. Furnas County is situated in far south-central Nebraska, along the Nebraska-Kansas border. It is surrounded by Red Willow County to the west, Frontier and Gosper Counties to the north, and Harlan County to the east, along with Norton County, Kansas to the south. The primary waterway in Furnas County is the Republican River, running west to east in the northern part of the county, but there are more than 10 small streams and many tributaries within its borders. The geographic location of the county is forty degrees, two minutes north latitude and ninety-nine degrees, nine minutes west

longitude. Total land area of the county is approximately 721 square miles, including the fertile valleys of the Republican and of several of the smaller streams.

Like Red Willow and Hitchcock Counties, before the first white settlers arrived here, the area that is today Furnas County had long been used by native Americans as hunting grounds during some times of the year. The area continued to be an important hunting ground for the tribes for the first years after permanent settlement by whites began in the region. The first white man to make the area his permanent home arrived alone in the summer of 1870, establishing a ranch along Deer Creek, in the northern part of the county, near a prominent bend in the Republican River. The following year, another single man settled at the confluence of Beaver and Sappa Creeks, in the far eastern part of the county. This wild country, populated for most of the year by only deer, bison, antelope, turkeys, and the wolves who hunted them, provided lonely homes for these 2 men for more than a year before others began to filter in to settle in the valleys (University of Nebraska Virtual Nebraska: Our Towns, Retrieved 2010).

The first years of settlement in the area were very difficult for families attempting to establish agricultural ventures in the area. The expectation was that all farms would require some time to establish, with the demands of breaking ground compacted by the hooves of thousands of bison for hundreds of years. The families would be forced to purchase what they needed to survive for the first years while they were establishing their farms and before getting a reasonably good yield from their crops. This was problematic for those first settlers as there were no stores in the immediate area for several years. Making their way through several streams, settlers were forced to travel as far as 100 to 150 miles for food and supplies they needed to survive (Andrea's History of Nebraska, 1882).

By late 1872, more than 150 people had settled in the region, and the towns of Arapahoe and Beaver City saw their beginnings. By 1873, much of the fertile river bottom land had been claimed along with lands along several of the creeks in the region. By the end of that year, post offices had been established at Arapahoe and Wild Turkey, which would later become Wilsonville. Over the next 15-20 years, great changes would occur in Furnas County. By 1890, 9,840 people had made their way into the county to establish homes. The population would continue to grow for the next decade, reaching its peak in 1900, and generally falling since. By 1990, in the years leading up to the period of this study, there were just over 5,500 people living in Furnas County, just 45% of the population of the county at its peak (Nebraska Department of Economic Development, Retrieved 2010).

Today, approximately 77 percent of the people in Furnas County live in one of the eight towns to be found within its borders. Oxford, Arapahoe, Holbrook, and Cambridge are all in the northern area of the county, near the Republican River. Hendley, Wilsonville, and Beaver City, the county seat, are all in the southern half of the county. The population density in Furnas County in 2000 was 7.4 persons per square mile, down from thirteen people just half a century earlier (Nebraska Department of Economic Development, Retrieved 2010). From here, brief discussions of Furnas County's economic, political, and moral-cultural histories will be followed by a consideration of the same factors and variables in Dawson County and then the in-depth fifteen year comparison of the two.

The "Nature" of Furnas County

As previously mentioned, the Republican River and no fewer than ten streams cut their way through Furnas County. They include Sappa, Dutch, and Beaver Creeks in the southern region of the county and Crum, Little Antelope, Medicine, and Little

Medicine Creeks in the northern area of the county, along with several smaller tributaries. Rough cuts and canyons are found alongside some of the streams, but relatively flat or gently rolling hills characterize much of the upland plains beyond the river valleys in Furnas County. The soils of the county are 96.1% silts and silt loams, with about 29 percent of the land sloped at least 9 degrees. Soil erosion is evident in about eighteen percent of the county's soils (USDA Natural Resources Conservation Service, Retrieved 2010). Land in farms accounted for approximately 93.8 percent of all land in Furnas County in 1992 (USDA Census of Agriculture, 1992).

NOAA data (Retrieved 2010), show that the annual mean temperature is 53 degrees Fahrenheit, ranging from a mean of 29.7 degrees in December to 72.5 degrees in June. The average final frost date in Furnas County is in early may and the average first fall frost is in early October. Average annual precipitation is 23.77 inches, the biggest share coming in the late spring and early summer months (NOAA Website, Retrieved 2010). The "wrath of nature" has made itself known in Furnas County from those first attempts at agricultural production in the valleys. After hours, days, and months breaking ground to actually put a crop in the ground, the early summer of 1874 looked promising. Later in the summer, great swarms of grasshoppers devoured every green thing north of Beaver Creek. Exactly the same happened again for the next two growing seasons (Andrea's History, 1882). Over the years, strong summer storms in the region have brought damaging wind and hail, and the flooding of the Republican River in 1935 took lives and livelihoods. Furnas County has experienced over 20 tornadoes since 1955, only two designated as strong F3 tornadoes. A single resident of Furnas County has been killed by a tornado in that time. (Tornado History Project Website, Retrieved 2011).

The Evolution of Furnas County's Economy Over the Twentieth Century

As mentioned before, the first whites to permanently settle in what would become Furnas County arrived in 1870, living in very isolated conditions for the first year or two after establishing their homes along Deer Creek and at the junction of Sappa and Beaver Creeks. The first family to settle in the county arrived in early 1871, establishing itself along the confluence of Turkey Creek and the Republican River. By the spring of that year, a party had been organized in the eastern part of the state to survey and locate a town alongside the Republican River. By late that summer, the first of many people would make their way to this newly platted town, called Arapahoe, and the following summer, 150 more came to establish homes and businesses to serve townspeople and locale farm families as well (Andrea's History of Nebraska, 1882).

By 1872, a second town had been planned, this time in the south-western area of the county. This village would be called Wild Turkey, a tribute to the many wild birds in the valley of Beaver Creek, but would later be changed to Wilsonville. Other communities would slowly spring up over the next decade or so. The early hardship of having to travel 100 or more miles for necessary goods and supplies gave way to the existence of local general stores in Wilsonville, Arapahoe, and Beaver City within a few years, with goods hauled by wagon great distances to stock these stores. It was not until 1880 that a rail line was finally built through the county, allowing for much easier access to necessities for the population of the region (Andrea's History of Nebraska, 1882). A brief review of the settlement history of each of Furnas County's communities follows.

Located between Elk and Muddy Creeks, north of the Republican River, Arapahoe was the first village developed in what is now Furnas County in 1871. It was named for the Arapahoe Indians, found throughout the larger region of Colorado, Wyoming, Kansas, and Nebraska when the first whites arrived. Contemplating the arrival

of the rail lines through the area, several businesses were launched by the late 1870s, including a bank and a newspaper. With the arrival of the rail lines in 1880, business expansion increased for some time (Andrea's History of Nebraska, 1882), bringing the town's population to over 700 by the turn of the twentieth century (Nebraska Department of Economic Development, Retrieved 2010).

The distinction of being the second town established in Furnas County goes to Beaver City, which is today the county seat. Located in the far south of the county, near the Kansas border, this location was chosen by a party scouting to plat a town in 1872. By the end of that year, a small store was located there and a post office was established. By the following year, a grist mill had been developed just to the west of town. By 1900 (University of Nebraska: Our Towns, Retrieved 2010), the population of Beaver City was over 900 (Nebraska Department of Economic Development, Retrieved 2010).

A permanent settlement was established by late 1872, also along the Republican River, at what is today Holbrook. Called Burton's Bend for several years for the dramatic bend in the river near there, it was largely just a trading post at that time, marketing bison meat, sugar, hay, flour, corn, guns, and ammunition. The establishment of a post office helped to start the processes of bringing in additional settlers. When the rails were completed through the area in the late 1870s, a true town began to spring up around the old post office and trading post. The name was changed to Holbrook in 1881. By 1895, there were more than twenty businesses in the little community and by 1910, the first year with a population count, there were 414 people living in Holbrook.

The first settlers to enter and establish a home in the area that is today Wilsonville arrived in 1872, a young Civil War veteran and his sister. By the following year, a post office had been established there and by 1874, the first general

merchandise store had been developed in a sod dugout. The growth of the population necessitated that the store expand within the first three years of its existence and a larger frame-building was constructed to house the merchandise. By the turn of the twentieth century, a local newspaper had been established, trains were rolling through Wilsonville, where a large livestock rail shipping point was developed (Andrea's History of Nebraska, 1882), and the population of the village had grown to nearly 300 residents (Nebraska Department of Economic Development, Retrieved 2010).

While the first home established in what is present-day Cambridge predated those in Beaver City and Wilsonville, a single family occupied the area for much of the 1870s. The area population did not expand significantly until after 1878, when that family sold out and a town was laid out on the spot. That year was pivotal in the development of the town as the first store and hotel were established and the construction of a nearby grist mill began. With the arrival of the rails in 1880, Wilsonville and its business community grew quickly (Andrea's History of Nebraska, 1882). By 1890, there were nearly 60 businesses within the town and at the turn of the twentieth century, 840 residents called it home (Nebraska Department of Economic Development, Retrieved 2010).

For about fifteen years, a small village had existed toward the center of Furnas County called Lynden. When the railroad came through in 1887, the station was named Hendley after a railroad conductor and the townspeople agreed to change the name. The railroads were vitally important to the people of the area and would be instrumental in the development of viable enterprises in the little town. Within a few years after the arrival of the first trains, eight stores, a livery stable, a grain and stock market, a hotel, two banks, a drug store, and several churches were to be found in Hendley. The village

was not officially incorporated until 1906, 34 years after the first settlers arrived in the area (University of Nebraska: Our Towns, Retrieved 2010).

The last towns in Furnas County were not developed until around 1880. They were Edison, in the northeast part of the county and Oxford, even farther to the east, just along the border with Harlan County. Both are near the Republican River. By 1880, a small community had been established toward the eastern part of the county, along the river. Named after the son of one of the owners of the first store in the town, Edison had its own post office by early 1880. The census counted no residents before 1910 and found 334 living there that year. The village was not incorporated until 1907. Just south of Edison is the smallest schoolhouse in the state. Still standing today, the little building, just 14 feet by 16 feet, served local children for nearly 40 years, graduating its last class in 1935 (University of Nebraska: Our Towns, Retrieved 2010).

The year 1880 was also an eventful year for the small community that would become known as Oxford. The first permanent settlers came into the area that year as did the first trains. The first store opened in the spring of 1880, a post office was established there, and the first sermon was preached. By the following year, the town boasted a school, a local newspaper, and several businesses (Andrea's History of Nebraska, 1882). By the turn of the twentieth century, 428 people lived in Oxford.

As the small towns in Furnas County were developing, so was her agriculture. With the first agricultural ventures in the county just occurring 15 years or so before, in 1900, there were 1,754 farms within the borders of the county. By 1910, there were over 20,000 head of cattle on those farms and over 30,000 hogs. Farmers were producing crops such as corn, oats, wheat and hay. A small number of farms were also raising fruits, nuts, and vegetables. In total, crops were valued at nearly 1.75 dollars million that year (United States Census Bureau, 1910). Approximately 67.7 percent of all farms in

Furnas County were operated by their full owners in 1910. The number of farms in the county had fallen to 1,549 by 1930, and to only 1,103 in 1950 (USDA Census of Agriculture, 1930, 1950).

In 1992, the beginning date of the analysis included here, there were just 459 farms still operating within Furnas County. The average farm was over 930 acres and approximately 93.8 percent of all county land was in farms. The average operation received a net return of just under 33,000 dollars that year after expenses that averaged over 139,000 dollars. About 39 percent of the farmers in the county were producing corn, 72.5 percent where producing wheat, and 23.3 percent were growing soy. In addition, around 69.3 percent of farms had cattle-calf operations, with over 46,000 head in total in the county. By this time, farmers in the county were much more likely to be raising poultry than they were to be raising hogs (USDA Census of Agriculture, 1992).

In 2007, Furnas County ranked number 5 among the counties in winter wheat production and number three in the production of sorghum for grain. Over the course of the twentieth century, between 1910 and 1992, the average per acre value of land and buildings increased from just under ten and one-half dollars to 978 dollars (USDA Census of Agriculture, 1910, 1992). While the largest share of the population in Furnas County lives off the farm, truly rural residents do make up over twenty percent of the population in Furnas County and agriculture continues to be an important part of the local economy. Between farmers' net return on agricultural production and the direct cash assistance they collect from various government programs, Furnas County farmers brought in more than 4.5 million dollars to the local economy in 2007 alone (USDA Census of Agriculture, 2007).

Examining Table 5.3 on page 218, even as agricultural activities brought millions of dollars into the local economy, its prominence in the overall economic wellbeing of the

county has fallen over time. Assuming a single operator on each farm in the county, farming accounted for more than half of all work in the county in 1992, but by 2007, it had fallen to just over forty percent. Considering farm proprietors' income as a share of all personal income in the county, just over twenty percent of the total in 2008 was accounted for by farm proprietors' income. In addition, one of Nebraska's 24 active ethanol plants is located in Cambridge, providing jobs and a market for locally grown corn (Nebraska Ethanol Board, 2010).

Overall median household income in Furnas County was just under $39,700 in 2007, significantly below the medians for either the state or the nation. Since the turn of the twenty-first century, poverty rates, both for all ages and for children, have been significantly higher in the county than they have been at the state or national level. Between 1969 and 1999, median family income in Furnas County jumped from 6,354 dollars to 37,000 dollars. A shrinking number of retail establishments and a growing number of service establishments help to round out the occupational structure in the county (US Census Bureau, USA Counties, Retrieved 2010).

A Political History of Furnas County

Controversy erupted in the county with the first county-wide elections to choose representatives and the county seat in 1873. Just two communities existed in the county at that point, one at Arapahoe and the other at Beaver City. In April of that year, the first elections were held in Furnas County with two specified polling places, one at each of these locations. The elections were held as scheduled and the Arapahoe returns were sent on to the Secretary of State, also as scheduled. Returns from Beaver City, in the southern part of the county were delayed due to a heavy spring snow. By the date scheduled for the canvassing, those Beaver City returns had not yet been delivered to Lincoln. The Arapahoe votes, designating Arapahoe as the county seat, were confirmed.

By the time the returns from Beaver City had been delivered, it was too late as Arapahoe had already been named the seat. The Beaver City returns were not immediately counted. The Secretary of State was forced to issue an order compelling canvassers to count the votes that would make Beaver City the county seat. Controversy between the northern and southern parts of the county have occurred often since that first confrontation about the county seat (University of Nebraska: Our Towns, Retrieved 2010).

Overall, Furnas County voters have been significantly more likely to participate in general elections than are those at either the state of federal level (Nebraska Department of Economic Development, Retrieved 2010). They are also significantly more likely to be registered as republican than voters as a whole in Nebraska. Approximately 63.3 percent of all registered voters in Furnas County are registered as republicans, versus just 48.3 percent for the state. Only about 27.8 percent of Furnas County voters are registered as democrats, compared to 34 percent at the state level (State of Nebraska, Office of Secretary of State, Retrieved 2010).

Small regional public airports are located in Arapahoe and Cambridge and the county has approximately 118 miles in public highways, all rural. Just thirty miles are considered main arterials while 22 are major collector highways and 65.5 miles are minor arterial highways. Furnas County is served by the Twin Valleys Public Power District, which buys its energy wholesale from the Nebraska Public Power District (Nebraska Power Association, Retrieved 2011). It is located in the Lower Republican Natural Resources District, which also includes Harlan and Franklin Counties and parts of Webster and Nuckols Counties, all to the east of Furnas. This NRD is actively involved in a range of activities, from monitoring groundwater levels and quality to planting trees to control soil erosion. It is also involved in a plan with other NRDs to

restore the Republican River (Nebraska Natural Resources District Website, Retrieved 2010).

Furnas County residents paid taxes on property valued at nearly $253 million in 1996 (Nebraska Department of Economic Development, Retrieved 2010). There are two school districts in the county, one in Arapahoe and the other in Cambridge. Between the two, they manage and operate nine public schools with a total of 666 students in grades K through 12. There are no private schools in Furnas County. Additional government services available in the county include: five public libraries, several public senior citizen centers, a public hospital, and several volunteer fire departments.

Furnas County's Cultural Environment

As mentioned previously, there are no private schools in Furnas County so all of the children in the county attend one of the county's five public elementary schools or its four middle-high schools (Education Bug, Retrieved 2011). Of the adults in Furnas County, approximately 84.2 percent have a high diploma or higher and about 16.1 percent have a bachelor's or higher degree. Today, there are five public libraries in the county, 1 each in Arapahoe, Beaver City, Cambridge, Oxford, and Wilsonville (Education Bug, Retrieved 2011). The county's first newspaper was published in Arapahoe in 1879. The *Arapahoe Pioneer* was publish until 1911, when it was bought out by the competing weekly paper, the *Arapahoe Public Mirror*. The *Public Mirror,* with a circulation of 1,034 is still published today and is now one of four newspaper printed in Furnas County, the others being the *Cambridge Clarion* with a circulation of 1,035 (Cambridge Clarion Online, Retrieved 2011), the *Oxford Standard,* whose circulation is 800, and *Beaver City Times-Tribune*, with a circulation of 854 (Manta, Retrieved 2011).

According to the Centers for Disease Control (Retrieved 2011), approximately 98 percent of all people living in Furnas County in 2003 where white and only about 33 of

5.324 residents of the county were of Hispanic ancestry. Only 0.1 percent of the population of Furnas County was born outside the United States. As shown in table 5.2 on page 210, nearly half of all people living in Furnas County reported being of German ancestry, significantly higher than any of the other counties considered for this investigation. The second most common ancestry is English, at 16.6 percent, followed by Irish at 14.1 percent and Swedish at 6.2 m percent (CDC Snaps, Retrieved 2011). Some degree of religious diversity is more evident than is racial or ethnic diversity in the county. The Glenmary Research Center (Retrieved 2010) reported that in 2000, approximately 82.3 percent of Furnas County's population reported that they were adherents of some religion. The United Methodist Church had the largest number of members, followed by the Lutheran Church-Missouri Synod, the Catholic Church, and the American Baptist Church, each with more than 400 members (CDC Snaps, Retrieved 2011).

DAWSON COUNTY, NEBRASKA: BACKGROUND AND GENERAL HISTORY

As shown in the map on page 215, Dawson County is located along the Platte River, a bit to the east and south of the center of the center of the state. The counties surrounding it include: Phelps, Gosper, and Frontier to the south, Lincoln to the west, Custer to the north, and Buffalo to the east. The county's land area is 1,019 square miles, a large share of which is in the Platte River Valley. Still one of the most prominent of rail lines in the country, the Union Pacific line runs east-west through Dawson County, as do Interstate Highway 80, US Highways 30, running parallel to the interstate and 283 and state Highway 21, running north-south.

The Nature of Dawson County

As shown in Table 5.1 on page 216, Dawson County's geographic location is 40 degrees, 9 minutes north latitude and 99 degrees, 8 minutes west longitude. While the

county is dominated by the Platte River Valley, several smaller rivers and streams also run through. Wood River cuts across the northeastern corner of the county, through the communities of Eddyville and Sumner. Also on the north side of the Platte are Buffalo, Crooked, and French Creeks. Only Crum and Plum Creeks flow into the Platte from the south. NOAA (National Oceanic and Atmospheric Administration Climatic Data Center website Retrieved 2010) data shows that the mean annual temperature in the county is several degrees lower than in Furnas County, at right at 50 degrees Fahrenheit, with a range from a mean of 26.9 degrees in December to 70.2 degrees in June. The average annual precipitation within Dawson County is 23.8 inches, also slightly lower than the average in Furnas. Approximately 80.5 percent of the soils in Dawson County are silts and silt loams and about 26.5 percent of the soils are sloped at nine degrees or higher, resulting in erosion of around 28.3 percent of the soils (United States Department of Agriculture Natural Resources Conservation Service retrieved 2010).

When the first of the settlers arrived in Dawson County, they found large herds of deer and “antelope” (technically Pronghorn) but only a few bison. They found very few trees with which to heat their homes and cook their food, let alone build substantial structures for homes and businesses. For the first years of settlement here, many of the homes would be dugouts or sod frame houses for those who could afford to have the necessary lumber shipped into the area. By 1992, the beginning date of this analysis, the USDA Census of Agriculture showed that 101.3 percent of all land in the county was in farms, meaning that some Dawson County farms overlapped other counties in the area. Over and above being well-watered by the Platte and other waterways, all of Dawson County sits above the Ogallala Aquifer. Weather-related damages to crops have been common in Dawson County as well, the most recent round in the summer of

2010, in which strong storms caused extensive damage that made producers in the area eligible for federal aid (Gothenburg Times Online, Retrieved 2011).

Like the other counties discussed here, earlier settlers in Dawson County were forced to deal with a variety of nature-related problems over their first years attempting to establish farms in the area. Because the settlement of this area was quite early by comparison with much of the state, the people who settled here early were forced to deal with wildfires sweeping out of the west to consume all in their paths. Flooding, drought and grasshopper invasions occurred here as well, the first going back as far as the early 1870s. Just since the mid-twentieth century, 50 tornadoes have occurred within Dawson County, 5 of them F3, 5 F2, and the rest less dangerous F0 and F1 storms (Tornado History Project, Retrieved 2011).

A Review of the Economic Development of Dawson County

By far, the most significant natural feature to influence the economic development of Dawson County has been the Platte River. While the first migrants to make their way along the Platte through the region had done so by 1836, it was not until the early ‘40s that great numbers of people would make their way across Nebraska, south of and parallel to the river, along the Oregon Trail. Within a few years, a second important trail, known as the Mormon Trail, this one on the north side of the river, saw thousands pushing hand-carts toward Salt Lake City, Utah. For over 25 years, great numbers of people followed the Platte to the west, but few of them stayed in central Nebraska until the early 1860s, just a few years before the railroads brought a close to the long and dangerous trip across country by wagon.

Among the first communities to develop along the Oregon Trail in the central part of the state was Plum Creek. Scattered ranches had been established along the Platte in the region in the years before but when a telegraph line was constructed through the

region in 1861, and a stage station was established along the trail around the same period, a small village began to develop. Plum Creek would be a strategic point for the migrants, as it was the only significant town, with available supplies, between Fort Kearny and Fort McPherson along the trail. It would also be at the center of problems with Cheyenne warriors who attacked a group of travelers in what is today known as the "Plum Creek Massacre". While relations with the tribes had been relatively civil for many years, the building of the telegraph line through the territory brought fear and retaliation to the area. In 1864, taking advantage of an area in which bluffs backed up nearly to the river, a party of Cheyenne warriors attacked and killed all 11 members of a single group, spreading fear throughout the Platte River Valley and encouraging many to seek the safety of Fort Kearny 40 miles to the east. This would put new settlement in the county on hold for more than a year but people had begun to filter back into the region by 1866 (Andrea's History of Nebraska, 1882).

Union Pacific would complete the leg of the first transcontinental railroad through Dawson County in 1866, largely putting an end to significant trail traffic and overland freight hauling at that time. By the early 1870s, although scattered ranches and farms could be found along the Platte and other streams, the majority of the county's population resided in the village of Plum Creek. While stock raising was the first agricultural venture to be attempted in the Platte River Valley in Dawson County, farm families who had migrated to the area began to break the sod and plant a few crops, like "sod corn" as early as the spring and summer of 1872. The following summer, with many acres broken and planted, crops did very well over most of the season in the area, to be largely wiped out that fall when hoards of grasshoppers came through. While the devastation was not as extreme here as it had been in some other parts of the state, the damage caused light yields and endangered the families who were attempting to

establish their homesteads with limited means. A similar situation the following year saw some of the early settlers abandon their claims (University of Nebraska, Virtual Nebraska, Retrieved 2010).

Even after the many problems those first inhabitants experienced in the area, the population of Plum Creek, the name changed to Lexington by popular vote in 1889, increased dramatically by the turn of the twentieth century. That year, the population of the town topped 2,050 and small businesses, many of them designed to serve the needs of local farmers, had been established. Throughout the century, the population of Lexington continued to grow, as did its economic diversity. In 2000, the population of the town was over 10,000, making it the core of a Micropolitan Statistical Area.

While Plum Creek was the first significant settlement in Dawson County, others would soon follow. Drawn by the extensive propaganda distributed by the Union Pacific Railroad Company as they built the rail ever farther west across Nebraska, John J. Cozad, from Vinton County, Ohio, took the train as far west as the rails would carry him in 1872, to the 100th meridian. There he found flat, fertile, and beautiful land, and the Platte River widening to several miles. He negotiated with the railroad to purchase 40,000 acres that they had received in land grants from the federal government. Cozad's dream was to start his own colony on this spot and he invested much time, energy, and money in that project.

The first permanent settlers arrived there in the following year and although there were numerous setbacks over the early years of settlement, from weather-related disasters to conflicts with the cattlemen whose cattle ranged freely on the plains, (University of Nebraska: Our Towns, Retrieved 2010) Cozad would remain largely an agricultural community for the next 140 years. Nearly 1,100 people lived in Cozad at the turn of the twentieth century. While farming remained vital to the overall economy of the

area, its level of indirect influence on the local economy is vitally important today. The population of Cozad was just 739 at the turn of the twentieth century, but rose to 1,293 by 1930. Like some other small towns in Dawson County, the construction of alfalfa dehydrating plants helped to change the local economy in several ways. Built in the 1940s, these plants encouraged local farmers to produce alfalfa and provided jobs for locals as well. In just two decades, the population of Cozad added more than 1,000 and by 2000, over 4,150 called this small town home (Nebraska Department of Economic Development, Retrieved 2010).

The small community of Overton, in the far south-eastern part of the county, like so many others in central Nebraska, has its roots in the location of a railroad siding site in the 1860s. For more than a decade, the siding, and a boxcar housing a ticket office and living quarters were all that was to be found in this location. In 1873, with just a post office, a station house, and a handful of houses, the town of Overton was laid out. Many of the early settlers in the region found employment with the railroad as they attempted to establish their farms in those first difficult years. The population of Overton has fluctuated dramatically since its beginnings, although it has remained largely within the 400-600 resident range. After rapid growth and a population of around 575 in 1900, it fell to under 500 by 1940. By 2000, the population had reached 646, partially boosted by employment opportunities in processing alfalfa and in other local industries (Nebraska Department of Economic Development, Retrieved 2010). .

Willow Island, toward the western border of Dawson County, was established as a station on the Union Pacific line that same year but never did develop into a real community (University of Nebraska: Our Towns, Retrieved 2010). A full 22 years before the village of Gothenburg was organized, the spot was of significance to many for its location as an important Pony Express Station. For a year and a half, riders depended

on this station to provide fresh mounts and resting places between their rides. When the Civil War broke out, the Pony Express, and its stations, were abandoned. In 1882, 2 settlers, one Swedish and the other German, would found a community at that very spot. Bergstrom, from Sweden, would make several trips back to his home country to encourage his fellow country-men to follow him back to Nebraska. Another early settler in this community, Ehmen, did the same with his German countrymen, between the two, providing the base for the population of Gothenburg. The town itself was not laid out until nearly two years later, planned and platted parallel to the tracks by the Union Pacific (University of Nebraska: Our Towns, Retrieved 2010). While agriculture does continue to be important to the economic wellbeing of this small town, other interests have provided a more diverse set of opportunities for people living near Gothenburg. By 1900, population had grown to 1,730 and the town boasted many small businesses and some manufacturing plants producing everything from barbed wire to lead pipe and bathtubs. Over the century, while much of that manufacturing has left the area, one important industry, the dehydration of alfalfa, has become central to the economy of the Gothenburg area since WWII. The population here too has continued to grow. In 2000, there were over 3,600 living in this small town (Nebraska Department of Economic Development, Retrieved 2010).

At around the same time that Gothenburg was being platted, the first settlers, from Pennsylvania, arrived in the far southwestern part of the county to establish a town they would call Keystone. When the Burlington & Missouri River Railroad line came through in 1886, a new town, they would call Farnam, was platted less than three miles from Keystone. Within a year, homes, businesses, and the post office had all been moved from Keystone to this new location (University of Nebraska: Our Towns, Retrieved 2010). With just 218 residents in 1900, Farnam's population reached its peak

in 1910, with slightly more than 400 people calling it home. Its population fell to just 223 by 2000 (Nebraska Department of Economic Development, Retrieved 2010).

In 1890, two more small communities were developing within the county. While a small number of people had moved into the area prior to that, servicing the needs of travelers moving through, Eddyville and Sumner were not officially developed until that year. They are both located in the far northeastern corner of Dawson County, along Wood River. Both of these communities were platted by the railroad and provided for a variety of services for the local population. Post offices and railroad depots were established at both villages by the following year as they became economic hubs for the area. Both served as stations for the shipment of agricultural products, with farming continuing to be the center of the local economies in these tiny towns through the present day (University of Nebraska: Our Towns, Retrieved 2010). Today, Eddyville has a population of less than 100 and Sumner boasts nearly 240 residents (Nebraska Department of Economic Development, Retrieved 2010).

As the many small towns were beginning to develop in Dawson County, so was its agriculture. As mentioned earlier, the first agricultural ventures in this region are ranching operations, with free-ranging cattle roaming the rich river bottom lands. When settlers laid claim to the lands, intending to farm the rich soils, conflict arose and violence was not uncommon. Free-ranging cattle destroyed crops and gardens, further endangering the wellbeing of the families attempting to establish themselves on the land. Because so many of the families were in economically marginal positions to begin with, roaming cattle were no more welcome in their fields than were grasshoppers. By the time large numbers of farms had been developed, the conflicts were largely put to rest with the invention and widespread use of barbed wire (University of Nebraska: Our Towns, Retrieved 2010). The importance of agriculture to the area would grow over time

throughout much of the county, while Lexington in particular would see the development of a more diverse economy (Nebraska Department of Economic Development, Retrieved 2010).

As Tables 5.2 on page 217 and 5.4 on page 218 reveal, with a total population of over 13,000 in Dawson County by 1900, 1,728 farms had been established by that year within her borders. Over 91% of all land in the county was in farms at that time, and the value of all property in farms in the county totaled nearly 34 million dollars. Approximately 65 percent of the farms operating at that time were operated by their full owners and over 42,000 cattle and 67,000 hogs were to be found on the farms of the county. The primary crops produced included corn, wheat, oats, and hay. A few farms were also producing fruits and vegetables. The value of crops produced in Dawson County that year was over 2.8 million dollars (US Census, 1910).

By 1930, the number of farms had grown to 2,086, averaging approximately 285 acres. Around 94.2 percent of all land was in the county's farms by that time and just 31.4 percent of farms were operated by their full owners. There were over 48,000 cattle on Dawson County farms by that year along with 76,000 hogs. Over 200,000 acres of corn were produced in 1930 along with nearly 44,000 acres of wheat, and 52,000 acres of hay. The economic and natural conditions of the '20s and '30s and into the 1940s would have an impact on the agricultural structure of the county. By 1950, the number of farms had fallen to 1,714. Nearly 58 percent of all land in farms was controlled by the full owner of the land at that point and the average size farm had grown to 358 acres. About 57 percent of all farms in Dawson County were irrigated by that year and farmers in the county produced a total nearly 64,000 cattle in the county, valued at nearly 8 million dollars. The value of crops produced that year was over 12.1 million dollars and while corn and wheat remained dominant, hay, particularly alfalfa, was even more important to

the local farm economy than it had been in the past (USDA Census of Agriculture, 1930, 1950).

Table 5.4 (page 218) shows that the first year of the analysis included here, 1992, saw only 728 farms in the county, a loss of 65 percent in the number of farms from the maximum. The average acreage was over 750 that year, and with acreage that ran over into other counties, over 100 percent of the land in the county was in farms by 1992. As shown in Table 5.5 on page 213, the share of farms operated by their full owners had fallen to 37 percent and the share of acres they controlled had dropped to just 14.6 percent. Table 5.4 (page 219) shows that farmers in the county produced over 299 million dollars in agricultural products that year and the average farm produced over 368,000 dollars in goods. The average cost of production, however, was also high for farmers in Dawson County, at nearly 339,000 dollars, leaving an average net return of just 30,500 dollars. At 62.1 percent of farms reporting gains in 1992, Dawson County operations were less likely than those in either Furnas County or the state to report gains, but were more likely than farms overall in the nation. For those farms reporting gains in that year, the average gains of Dawson County farms were more than twice the national average and were at least thirty percent higher than those in Furnas County or the state of Nebraska. Table 5.7, found on page 222, reveals that corn was still a vitally important crop by that year but soy had become much more commonly produced than was wheat by 1992. Hay continued to be an important crop and cattle still roamed over 55% of all farms (USDA Census of Agriculture 1992). In 2007, Dawson County ranked among Nebraska's top ten counties in the production of corn, cattle and calves, and beef cows (USDA Natural Resources Conservation Service, 2008). Over the course of the twentieth century, the value of an acre of farm land in Dawson County rose from just

over eleven dollars per acre in 1900 to 868 dollars per acre in 1992 (USDA Census of Agriculture, 1992).

Table 5.5, on page 220, also shows that farmers were more likely than those at the state or federal level but less likely than those in Furnas County to report farming as their primary occupation, and they were significantly less likely than those at the state or national level to have worked 200 or more days off the farm in 1992. They were, however, slightly more likely to do so than famers in Furnas County. While farm proprietors' income accounted for only about 8.2 percent of all personal income in Dawson County in 2008 (Nebraska Department of Economic Development, Retrieved 2010), agriculture and agriculturally-related industries continue to dominate the economy in Dawson County. In 1992, for example, farm families brought more than 26.5 million dollars into the economy as their net return for agriculture. An additional 6.4 million dollars came from direct government payments to farmers (USDA Census of Agriculture, 1992).

Some of important employers in the area are in agriculture-related industries, like processing alfalfa or producing other types of livestock feed. The largest employer in Dawson County, by far, is a beef processing facility, now owned by Tyson Foods, employing 2,450 in 2005. Another local industry of growing importance and significant impacts on the farm economy is ethanol production. All of these agriculturally-related industries depend on local farmers to provide the necessary inputs for their products as farmers depend on them for reliable markets for their goods. In all, assuming each farm in the county has a single operator employed in producing a crop, between Dawson County residents engaged in that pursuit and in all of the farm-related industrial plants, agriculture occupies at least 3,500 of the county's workers. Yet another plant in the

county, employing 115 more, produces farm implements for use in the US and abroad (Nebraska Public Power District, Retrieved 2011).

Like the other counties considered in this research, Table 5.2 on page 217 shows that Dawson County has historically had a significantly lower unemployment rate than the nation as a whole, but it tends to be slightly higher than that of either Furnas County or the state all together. In 1989, median household income in Dawson County was significantly higher than that of either Furnas County or Nebraska and was even comparable to the national median. As we will discuss later, the median has not increased as significantly in Dawson County as it has at the state or national level. Over most of the period of this analysis, poverty rates, both for the population as a whole and for children, were lower in Dawson County than they were in Furnas County or at the national level.

The Political Environment of Dawson County

While its borders would eventually be changed, Dawson County, dominated by the wide, fertile Platte River Valley, was originally created before its first permanent settlers arrived. It was created by proclamation of the territorial legislature in 1860 (7 years before Nebraska would become a state). While it was not actually organized until eleven years later, the first settlers did begin to take up residence within a year of that original proclamation (Andrea, 1882). Unlike some of the other counties discussed in this project, there was relatively little controversy over where the county seat would be placed in Dawson County. While John Cozad would have like to have seen his colony made the county seat, there simply were not enough residents interested in voting that way when it came up and the people voted for Plum Creek as their county seat . One of the first acts of the county government was to poll the people about issuing a bond to aid

immigration into the county. The 2,000 dollar bond was approved 11 to 10 in 1872 (Nebraska Genealogy Website, Retrieved 2010).

The first post office in the county was established at Plum Creek in 1872 and the first school in the county was formed there that same year. Early actions by the county government included participation in building bridges over creeks and even over the Platte River, increasing the viability of the area for settlement and improved access for people settling beyond the Platte River corridor. The bridge near Plum Creek was, for quite some time, the only bridge over the Platte west of Columbus, Nebraska, some 130 miles east.

As a general rule, Dawson County voters have been more likely than those at the state or national level to participate in general elections, although that trend has changed significantly in recent decades (State of Nebraska, Secretary of State, Retrieved 2010). As shown in Table 5.10, page 225, voters in the county are somewhat more likely than those in the state overall to be registered as republican and are somewhat less likely to be registered as democrats or non-partisans. The scale here does not tip quite as far as it does in Furnas County however, in the dominance of registered republicans. Two small public airports are found in Dawson County, one in Lexington and the other in Gothenburg. With a total of nearly 180 miles of highways, approximately 47 miles of Interstate 80 runs through Dawson County, along with about 112 miles of minor arterial roads and 13.5 miles of major collector highways (Nebraska Department of Economic Development Database Retrieved 2010).

Dawson County's Cultural History

The first school district in Dawson County was organized in 1871 and serviced the entire county. The first teaching occurred in a pioneer's home but a building was constructed by 1873, serving not only as the school but also for a variety of other social

functions for the area, from religious services to funerals. Other districts would be organized and schools erected as the population of the county swelled (Nebraska Genealogy Website, Retrieved 2010). Today, there are 16 school districts in the county, operating 29 public schools. Of those, two are public pre-schools, twenty are elementary schools, two are middle schools, two are combination middle and high schools, and three are high schools. As few as one to six students are found in some of the small schools, while the high school in Lexington has as many as 759 students. In addition to the public schools, a private Christian elementary-middle school has approximately 21 students (Education Bug Website, Retrieved 2011).

In 2000, approximately 73.6 percent of the adult population had a high school education or higher while about 14.4 percent had a bachelor's degree or higher, which, in both cases, was significantly lower than the share at the state level or for Furnas County (Nebraska Department of Economic Development, Retrieved 2010). Five public libraries can be found in Dawson County, 1 each in Cozad, Lexington, Farnam, Overton, and Gothenburg (Education Bug Website, Retrieved 2011). The first newspaper to be published in the county was published as early as 1872 in Plum Creek. Called the *Dawson County Pioneer*, this paper was started by two of the early settlers in the area who had worked tirelessly to increase settlement in the region. The paper was distributed throughout the eastern US listing various social and business information about Dawson County. Today, three newspapers are published in Dawson County, one each in Cozad, Gothenburg, and Lexington. While circulation data is unavailable for the *Gothenburg Times,* between the *Tri-City Tribune* published in Cozad, and the *Lexington Clipper-Herald,* approximately 8,500 regularly read the two papers. Of all the papers published in all the counties of concern to this research project, only the Lexington paper

has a circulation listed in the top 25 for the state (Mondo Newspapers Online, Retrieved 2011).

While whites do make up about 73 percent of the population of Dawson County, the populace here is much more racially and ethnically diverse than any of the other counties discussed in this work. Nearly 100 African-Americans call the county home, at least some share of them descended from a small colony of free blacks and escaping slaves who established homes near Overton before and during the Civil War (University of Nebraska: Our Towns, Retrieved 2010). In addition, over 150 Native Americans and 120 Asian-Americans live within Dawson County. Attracted by the work opportunities, primarily in the meat packing industry, approximately 31.6 percent of the population of the county is of Hispanic ancestry, according to the Centers for Disease Control (Retrieved 2011). A much larger share, by comparison with the other counties, of the population was born outside the US, at just over seventeen percent, most commonly born in Mexico, Guatemala, El Salvador, and Vietnam (CDC Snaps, Retrieved 2011).

Concerning religious affiliation and participation, the Glenmary Research Center's 2000 data shows that about 89.1 percent of all people in Dawson County were adherents to some religion, belonging to 1 of the county's 52 religious institutions. As might be expected with such a large Hispanic population, the church with, by far, the largest membership in Dawson County, is the Catholic Church, with nearly 10,300 members according to the CDC (Retrieved 2011). For additional information on religious adherence, see Table 5.1 on page 216.

AN ANALYSIS OF THE OVERDETERMINED NATURE OF ENVIRONMENTAL REALMS IN DAWSON AND FURNAS COUNTIES

The primary purpose of this project is to seek out evidence for the overdeterminaiton of various processes in which central Nebraska farm families engage.

The following is a consideration of the evidence that factors in the natural, economic, political, and cultural realms of environment are intersecting and interacting to influence the conditions in which farm families in Furnas and Dawson Counties are living.

Overdetermination of Natural and Social Processes in Furnas and Dawson Counties

"Unnatural"influences?

By far, the natural feature most influential on the settlement and subsequent economic development of Dawson County is the Platte River. As a part of the primary east-west route across the continent, nearly a half million had traveled through the area before great numbers would settle here. While the Republican River played an important role in the development of Furnas County, it is difficult to compare its significance with that of the Platte in Dawson County in helping to shape the eventual conditions of the county. As has been consistent throughout the counties discussed in this project, the first lands to be claimed in both of these counties ran parallel to the rivers and streams in the counties. By the time great numbers of settlers established themselves along the Platte in Dawson County, few trees remained standing as they had been harvested by the huge numbers of migrants traveling through in the years before. Still, the attraction of easy access to water for use by the family and the farm, encouraged the first people to establish their homes and settlements along the Platte River and her tributaries.

Located as they are, relatively near each other by comparison with the other pairings, the climatic conditions in Furnas and Dawson Counties are quite similar, as shown in Table 5.1 on page 216. The mean annual temperature in Furnas County is about 3 degrees Fahrenheit higher than that of Dawson County, with higher means in Furnas County for every season. Precipitation averages for the two are very similar, with a difference of less than ½ inch. Soils in both counties are dominated by rich silts and silt loams, at over eighty percent in Dawson County and over 96% in Furnas. Sloping and

soil erosion are evident in both counties to similar degrees. Approximately thirty percent of all land in Furnas County has a nine degree or higher slope and nearly eighteen percent of the soil is eroded. Similarly, slightly more than ¼ of the land in Dawson County has 9% or greater slopes and about 28 percent of the soil is eroded.

Dawson County is in the Central Platte Natural Resources District, along with parts of Buffalo, Hall, Hamilton, Merrick, Polk Counties, among others. Along with the typical work of the NRD, the Central Platte NRD is actively involved in maintaining over 30 flood control structures in the district and assisting with controlled burns with farmers in the area. Furnas County is located in the Lower Republican Natural Resources District, along with Harlan and Franklin Counties and areas of Webster and Nuckolls County. As we have seen with the others in the southern tier of counties in Nebraska, restrictions have been put in place against the development of any additional land for irrigation. Farmers in Dawson and Furnas Counties participate in federal conservation programs as well, although they were much more likely to do so in Furnas County than in Dawson. Approximately 32.9 percent of Furnas County farms received direct payments related to their participation in these programs, versus just 6.1 percent in Dawson County. By 2007, the final year of this analysis, the level of participation did increase in both counties, but Dawson still lagged behind over 32 percent.

The decisions about exactly where rail lines would be placed was most often based on two primary necessities. The first is a relatively flat and even space in which to place the tracks and the second, in the early years of train traffic, was access to water for the steam trains. While the Burlington Northern & Santa Fe Railroad, which runs parallel to the Republican River through Furnas County, controls and operates significantly more miles of rail within the state of Nebraska today than does the Union Pacific, at 1,657 versus 995, Union Pacific, running through the Platte River Valley, is

the largest rail company in the US, with over 33,000 miles of track in total, serving 23 states (Wilbur Smith Associates, 2003). Again, it is the placement of those tracks, along previously established trails parallel with the Platte River, that has helped to shape the character of Dawson County from the very early years of settlement there.

Over the history of these two central Nebraska counties, natural processes have forced many to leave the homes they had attempted to establish in the years previous. In both counties, dramatic losses, several years in a row, to grasshoppers, forced many families, in marginal economic conditions to begin with, to return to the eastern US, in the mid-1870s. Similarly, some share of the farm families in both counties made the decision to leave the area after prolonged periods of drought, in the 1880s, the 1930s, the 1950s, and again to some degree early in the last decade.

Farmers in the two counties have participated in a wide range of activities in an attempt to deal with unpredictable natural conditions in the region. As shown on Table 5.1 on page 216, both the share of farms and the share of farm land irrigated is significantly higher in Dawson County than it is in Furnas. Over half of all farms in Dawson County are irrigated versus fewer than 37 percent in Furnas. Over forty percent of all farm acres in Dawson County are irrigated versus less than twelve percent in Furnas. Over the period of this analysis, between 1992 and 2007, the share of both farms and acres irrigated fell slightly in Furnas County while it rose slightly in Dawson County. In 2010, according to the State of Nebraska Department of Natural Resources (Retrieved 2011), there were 3,678 registered irrigation wells in Dawson County but just 921 in Furnas County. On the other hand, livestock wells differed little between the two, with 257 registered in Dawson County and 242 in Furnas. As we saw earlier in comparing the level of irrigation in Red Willow and Valley Counties, irrigation behaviors are likely influenced by a wide range of factors outside average annual precipitation

rates and that appears to be the case here as well. While, according to Central Nebraska Public Power District, approximately 72 percent of all irrigation in the state employs sprinkler methods, most often with center pivots, significant numbers of Nebraska farmers are still using the labor-intensive drip irrigation systems. While data specific to the particular methods used is unavailable at the county level, it is likely that some significant share of irrigated land is watered using these methods. Groundwater levels have changed little in either county since the development of agriculture in the region, according to the Central Nebraska Public Power District (2000). Because the difference in precipitation is minimal, the differences in the share of farms and ground irrigated in the two counties cannot be explained by natural differences alone.

Operators in Furnas County have consistently been more likely to use fertilizer and chemicals than those in Dawson County are. Between 69 percent and 71 percent of farms in Furnas County apply fertilizer and/or chemicals to their fields versus just 60% to 66% in Dawson County. These percentages in 2007 represent a significant drop in the use of fertilizers in Furnas County during the fifteen years of this analysis, from over 92 percent of farms applying fertilizers in 1992 to just over sixty percent in 2007, a drop of over thirty percent. For those operations that were using fertilizers in 2007, the average dollar amount spent on those fertilizers increased more than 4-fold in just those 15 short years. As a share of overall production costs on Furnas County farms, fertilizer purchases rose from accounting for just thirteen percent of the total in 1992 to nearly 22 m percent in 2007. Chemical use also changed in Furnas County over the period of the analysis, although the speed and direction of the changes were not as consistent. Chemical use fell between 1992 and 1997 but then increased by nearly 15% between 1997 and 2002, only to fall again, by fifteen percent between 2002 and 2007. For those farms still using chemicals in 2007, the amounts spent on the process had increased by

a factor of nearly eight and as a share of the overall cost of production, it rose from around five percent to nearly sixteen percent for the entire period of the study. Changes in the use of both fertilizers and chemicals were minimal over the period in Dawson County.

The Central Nebraska Public Power District manages and operates an extensive network of irrigation canals throughout the region, including through Dawson County. The Frenchman-Cambridge Public Irrigation District operates miles of irrigation canals as well, largely paralleling the Republican River through Furnas County. Water rights issues have been important to farmers in both Dawson and Furnas Counties. Within the political sphere, representatives have been attempting to fight for the irrigation rights of Nebraska farmers on multiple fronts. Lawsuits with Kansas over flows in the Republican River and with Wyoming over the flows in the Platte have kept Nebraska representatives busy attempting to work out some compromise or accommodation in these conflicts. Conflicts are ongoing but several agreements have been signed in recent years in an attempt to accommodate the interests of all impacted by water levels.

Economic Structure and Opportunity in Dawson and Furnas Counties

Of Furnas County's two grain elevators, the one located on the Burlington line in Oxford near the Harlan County line, is considered a major elevator. All four of the elevators located in Dawson County are considered major elevators and all are located along the rails through the county, providing an easy means for farm families to market and ship their goods (Wilbur Smith Associates, 2003). While the demands are somewhat more flexible than they are for an open pasture cattle-calf operation, cattle feedlots and corn ethanol plants must be placed somewhere and the locations most often offer easy access to transportation routes to ship the products. The historical importance of both the Republican and Platte Rivers in shaping the lives of families in these two counties is

undeniable. Ultimately, so much of the social environment has been carved out of the natural environment, with place being vitally important in so many ways. The concluding section of this chapter will consider the overdetermined influences among natural, economic, political, and cultural processes in relation to off-farm employment of primary farm operators in the two counties.

Input dealers, like seed, equipment and chemicals, are fewer in Dawson than in Furnas County, perhaps due to the relative isolation of the county compared to Dawson. While there are no implement dealers in either county, there are three seed, fertilizer and chemical dealers in Furnas County and only one in Dawson (Farm Net Services, Retrieved 2011). On the other hand, while there are no ethanol plants in Furnas County, there is one located just on the other side of its northern border, in Gosper County. Dawson County does have its own ethanol plant as well, providing an alternative means of marketing corn. While there is a single feedlot in Furnas County, with a capacity of 800 head of cattle, the presence of the meatpacking industry in Lexington has helped to develop the feeding industry in the county in a dramatic way. Today, there are thriteen feed lots in Dawson County, each with a capacity of at least several hundred. In total, the capacity for cattle fed is well over 100,000 at any given time in this county. The demand for feed for these cattle likely does have an impact on the wellbeing of many of the farm families in the county.

Park's theory would lead us to believe that population density is an important indicator in examining the competitive process in the natural-ecological order, and by extension, that same process in the economic realm. According to the Nebraska Department of Economic Development (2010), as population density has risen somewhat in Dawson County over the last half century, from 19.9 persons per square mile in 1950 to 24.1 persons in 2000, it has fallen in Furnas County, from 13 persons to

7.4 over that same period. While the number of farms fell in both counties during the period of this analysis, they fell by a significantly larger percentage in Furnas County than they did in Dawson. A logical assumption might be that the loss of population density in Furnas County is, to some degree, related to the loss of farms. On the other hand, because the labor market is much more diverse and extensive in Dawson County than it is in Furnas, the loss of farms has not had as large an impact on population density in the county.

Competition in the economic order has influenced the concentration of farm ownership and the concentration of the control of land, one of the most basic inputs for any agricultural venture. Competition, however, is not the only process operating in the economic realm. As discussed previously, competition in a global market is difficult to examine, if for no other reason, because the complexity makes it virtually impossible to examine all of the contributing factors. By Park's definitions, the processes of conflict, accommodation, and assimilation are all smaller-scale processes, more microsociological than the process of competition. Examining Table 5.3 on page 218, at the county level, we can see that the overall economic conditions in the 2 counties differ, with median household income consistently several thousand dollars higher in Dawson County than it is in Furnas for the entire period of the analysis. Over the years between 1989 and 2007, median household income grew in Dawson County by slightly more than 52 percent. In Furnas County, it increased by 80% but the median here was still more than 5,700 dollars lower than that of Dawson County. Related to this are poverty numbers. With the exception of 1993, the poverty rates, both for the population of all ages and for the population of children, has been higher in Furnas County than in Dawson County since 1989. Interestingly, unemployment rates have tended to be somewhat lower in Furnas County than in Dawson.

While Table 5.3 does show employment in all but the service sector falling in Dawson County over the period of the analysis, it also shows dramatic increases in the number of service establishments in the county and the number of employees they have hired, with the number of employees more than doubling in just the ten years between 1992 and 2002, and an additional 492 jobs added in the next five years. While increases in this sector are evident in Furnas County as well, increases here have been somewhat more broad-based. For instance, the number of jobs in the wholesale sector has increased at impressive rates over the period as well. Ultimately, it is quite obvious that farming as an occupation engages a much larger share of the population of Furnas County than it does in Dawson. If we assume a single operator for each farm in the two counties, farming was the occupation of just 11.7 percent of Dawson County workers but about 42 percent of all workers in Furnas County. Among the sectors examined, farming accounts for s significantly higher share of the overall workforce than any other sector in Furnas County. In Dawson County, it is one of the smaller sectors of employment. Only the wholesale trade employs fewer Dawson County laborers, while manufacturing, retail trade, and service establishments all employ more.

Varying Agricultural Structures in Furnas and Dawson Counties: Implications of and for he Other Environmental Realms

Table 5.4 on page 219 demonstrates some of the differing conditions in which farm families operate in the country, the state, and the two counties. As discussed earlier, as the number of farms decreases in the two, farms in both of the counties of concern here have been significantly larger on average than the average for the nation, at 880 acres in Dawson County and 1,221 acres in Furnas versus a national average of just 418 acres in 2007. This means that Dawson County's average farm size is about 75 acres smaller than the state average while the average for Furnas was 268 acres larger

than the average for Nebraska as a whole. In considering the share of total land area in farms, in both counties, the share of land in farms is significantly higher than it is at the national level and is at least three percentage points higher than the state as a whole as well. In considering the average net return on agriculture, the same table shows us that both of these counties reported significantly lower totals at every time point in the analysis than the average net at the state level. The same is true of the national level with the exception of the 2007 figures, when Dawson County's average net was several thousand dollars higher than the average net return at the national level.

The share of farms reporting gains over the course of the study period was significantly higher for both counties than for the nation as a whole but was somewhat lower than for the farms throughout the state for the entire fifteen year period. For those farms that did report gains, average gains for the two counties tended to be significantly higher than those for farms at the national level and for most of the period, higher than at the state level as well. On the other hand, for the farms that reported losses during the period of this analysis, those in the two counties also tended to be significantly higher than those at the national level, and were higher than the average for the state for much of the period.

As shown in Table 5.5 on page 220, both farms and farm acres were significantly less likely in the two counties than at the national level to be operated by their full owners. When compared to the state level, while the likelihood is not quite as skewed, farms and acres are also somewhat less likely to be operated by their full owners in the two counties. Also illustrated in Table 5.5, operators in both of the counties have been more likely than those at either the state or national level to report farming as their primary occupation and they were less likely to work 200 or more days off the farm. A

somewhat higher share of Dawson County operators versus Furnas County farmers were engaged in this off-farm employment over the study period.

Table 5.6 on page 221 shows that, while the share of Furnas County farms organized as family-individual operations is comparable to both the state and national statistics, Dawson County farms are significantly less likely to be organized in this way. Farms in this county are much more likely than farms in Furnas County, the state, or the nation to be organized as family corporations and those family corporations control a significant share of agricultural land in Dawson County. By 2007, nearly 32 percent of farm acres in Dawson County were controlled by family corporations versus just 13.2 percent in Furnas County, 17.1 percent in the state, and 12.4 percent of the nation's farms.

There are some significant differences between the two counties concerning the particular agricultural ventures to be found within their borders. Table 5.7, on page 222, shows that, while operators in Dawson County have traditionally been more likely to raise a significant number of acres of corn than those in Furnas County, Furnas County farmers have been much more likely to engage in wheat production than Dawson County farmers. While operators in Dawson County were somewhat less likely than those in Furnas County to have cattle-calf operations on their farms, Furnas County herds tended to be significantly smaller than those of Dawson County farmers, at an average of 258 on Furnas County farms but 610 on Dawson County farms. The share of total farm land invested in pasturing cattle and other livestock is much higher in Dawson County than it is in Furnas, at 48.5 percent versus 36.1 percent. Again, one of the primary reasons this is the case is likely to be the beef processing industry in the county, which also influences the number of non-farm cattle feedlots. With a capacity of 108,000 head of cattle at the feed lots in Dawson County and approximately another 160,000 on

the county's farms, the raising of beef is a vitally important economic activity in this county. Not only does it directly impact the local economy in the form of jobs both in production and processing, but it indirectly impacts the economy by greatly increasing the demand for various feed crops like corn and hay.

Table 5.8, on page 223, examines the fundamental class processes in which farm operators in the two counties engage. It shows that farm operators in Dawson County were slightly less likely than those in Furnas County to identify farming as their primary occupation. Traditionally, they have been just slightly more likely to be working 200 or more days per year off the farm. Between 1992 and 2007, though, as the share of primary operators working off the farm increased by more than twenty percent in Dawson County, the share increased only about 1ten percent in Furnas County. By 2007, over 38 percent of Dawson County farm operators were working 200 or more days off-farm versus just over 27 percent in Furnas County. Farmers in both of the counties have been somewhat less likely than operators at either the state or national level to be working off-farm for so many days, making that off-farm work nearly full-time in hours. Over most of the period of this analysis, Dawson County operations were more likely than those in Furnas County, the state, or the nation to have non-family hired labor working on the farm. This may be, at least in part, connected to the level of labor demands inherent in caring for large numbers of livestock.

Farmers in both counties engage in a wide range of subsumed class processes, supporting the continued existence of the conditions of production for their operations. As Table 5.9 (page 224) shows, Furnas County farms are somewhat more likely than those in Dawson County, the state, or the nation to be operated by part-owners or full tenants. Farms in Furnas County are somewhat more likely than the others over most of the study period to purchase seeds and plants and feed for livestock. They are also

more likely to be paying interest on loans than farms in Dawson County, the state, or the nation. By comparison with the nation's farmers, operators in both of the counties and in the state of Nebraska are more likely to be engaged in the following subsumed class processes: renting land/buildings, purchasing plants and seeds, and livestock feeds. They are also more likely to be paying interest as a cost of production.

The Political and Cultural Realms in Furnas and Dawson Counties

Table 5.10 on page 225 provides some basic data about some political variables of interest here. As with the other counties that have been examined in this research, voters in both Dawson and Furnas Counties have consistently been more likely than voters in the country as a whole to vote in general elections. The same was true when compared to Nebraska voters as a whole in 1992, 1996, and 2000. Furnas County voters were also more likely to vote in 2004 and 2008 but the same was no longer true in Dawson County. In fact, in both of these elections, Dawson County voters were actually somewhat less likely to vote than those in the state as a whole. As we have seen in all of the other counties that have been examined in this project, voters in both Furnas and Dawson Counties are much more likely to be registered as republicans than as democrats. In both cases, the distribution is more skewed toward republican registration in the counties than at the state level.

This same table demonstrates just how much more dependent the Furnas County economy is on federal monies than is Dawson County. In 2007, overall federal expenditures per capita in Dawson County were just about 54 percent what they were in Furnas County and per capita federal spending on retirement and disability, grants, and wages, as well as all other direct payments to individuals are significantly higher in Furnas County. As discussed earlier in this chapter, direct government payments to farmers have been important to local economies in both counties, although farms in

Furnas County were significantly more likely than those in Dawson County to participate in both federal commodity programs and federal conservation programs. While Public Power Districts and Natural Resources Districts are state-level entities very important to the wellbeing of farms and farmers in Nebraska, another program, at the federal level, has also been vitally important in the risky business of agricultural production in the state. That is federal crop insurance. In 2007, approximately 75.7 percent of all cropland in Furnas County was covered by crop insurance while just 70.9 percent is covered in Dawson County (USDA Census of Agriculture, 2007).

According to the Glenmary Research Center (Retrieved 2010), there are a total of 53 churches in Dawson County, which is one church for every 460 residents of the county. This is particularly impressive in light of the fact that such a large share of the population in the county is of the Catholic religion. With just 26 churches but a significantly smaller population, the average in Furnas County would be 1 church for every 205 residents of the county. Table 5.2, on page 217, shows us that religious adherence is high in both Dawson and Furnas Counties by comparison with national adherence. It is especially high in Dawson County, where over 89 percent of the population claims membership in one of the major religions in the county. Approximately forty percent of the population of the county is Catholic, followed by about twelve percent Methodist, ten percent Lutheran, and finally, nearly five percent Evangelical Free Church members. Both the level of religious adherence and the dominance of Catholicism may be explained, in part, by the presence of a large Hispanic population. Religious adherence in Furnas County is much higher than at the state or national level but is somewhat lower than it is in Dawson County and the distribution among the churches is quite different. The church with the highest membership in Furnas County is the United Methodist Church, whose membership includes about 24 percent of all residents in the

county. This is followed by the Lutheran religion with approximately 17 percent, the Catholic Church with just over ten percent and the American Baptist Church accounting for approximately eight percent. As we have seen in several of the other counties in this examination, both high levels of religious adherence and the dominance of republican voter registration in the two counties may point to an overall conservative orientation.

As we saw in examining the use of the public libraries in the other pairs of counties, the public libraries in the more isolated Furnas County tend to be more well used than those in Dawson County. With 5 public libraries in the county, the average number of library visits per person in the service area in Dawson County is just 5.1 and the average number of circulation transactions is just 8.5. In Furnas County, also with five public libraries, the average number of visits is 8.5 and the average number of circulation transactions is an impressive 18.6 per person in the service area. While the difference in the average number of visits between the two counties may be related to the multiple functions small libraries often serve, this cannot explain the differences in the average number of circulations between the two counties. While the presence of a large non-English speaking population in Dawson County may help explain this, further research would have to be conducted to try to explain this very significant difference.

Ultimately, the process of assimilation occurs in a wide variety of venues including the home, the schools, the churches, and even in libraries. Public services are often vital to the wellbeing of people in small communities, particularly where poverty rates are high, as they are in Furnas County. Private services, such as those provided by many churches, may be equally important in many small communities.

CONCLUSIONS

As discussed earlier, the share of farm operators in these two counties who are engaged in full-time off-farm work was comparable for much of the period of this analysis, with the percentage being just slightly higher in Dawson County than it is in Furnas County until 2007, the final point of comparison between the two counties. This has been true even though the total number of jobs in Dawson County is nearly twice that found in Furnas County. By 2007 the difference in the level of off-term employment was more significant than it had been in the years before, with about 38.7 percent of Dawson County operators and just 27.1 percent of Furnas County farmers working 200 or more days off the farm in the year before. The purpose of the following is to examine the factors that may have been at work in the off-farm employment behaviors of operators in the two counties. Agriculture continues to be a vitally important aspect of the economies in both of these counties. In direct terms, farmers in the two counties contribute millions of dollars to local economies in spending monies gained from agricultural production and from direct payments from government. Indirectly, farming is also vitally important, particularly in Dawson County, where a large share of manufacturing jobs are in the processing of locally produced agricultural goods.

The following analysis will consider a range of variables that may influence operator behaviors around holding off-farm employment. Beginning with a discussion of the overall economic conditions in each of the counties, this analysis will also examine the possible influence of operator characteristics, characteristics of the farms themselves, and finally, characteristics of local agricultural economics in attempting to provide some insight into these off-farm employment behaviors of farm operators in Dawson and Furnas Counties.

County Economies: Labor Markets and Employment Distribution

The US Census Bureau defines a Micropolitan Statistical Area in terms of the existence of a core location to which significant numbers of people living outside the core commute for work. In Dawson County, the core community is Lexington, which is also the county seat. According to Nebraska Public Power Districts Community facts on Lexington (Retrieved 2011), the bulk of manufacturing jobs in the county are concentrated there, although several hundred of these positions are found in Cozad, 19 miles west of Lexington and Gothenburg 29 miles west. By comparison, manufacturing is a very small sector in Furnas County, with only five facilities in the county in 2007 and numbers of employees too small to report without revealing identifying information about the individual companies. As a share of all employment in the two counties, manufacturing ranks first among industries for employment in Dawson County but last in Furnas County. Approximately 37.6 percent of non-farm workers in Dawson County work in the manufacturing sector, with about 32.6 percent in the service sector, 23.7 percent in retail, and 6.1 percent in wholesale. In Furnas County, with so little manufacturing, non-farm employment is distributed very differently. Approximately 49.8% of employment here is in the service sector, followed by 35.7 percent in retail, and 14.5 percent in wholesale.

Interestingly, as a share of the total workforce in Dawson County, out-of-county commuters make up a significantly smaller share of the total than they do in Furnas County, at just 18.5 percent versus over 55 percent. Even Gosper County, the county considered an adjacent county to Dawson County's micropolitan statistical area, provides less than five percent of the workers in Dawson County. It appears that the greatest bulk of the workers commuting to jobs in Lexington are commuting from the outlying areas of Dawson County itself. In Furnas County, slightly over 19 percent of

workers commute from Red Willow County, west of Furnas, and 18.2 percent come from Harlan County to the east. Despite these numbers, unemployment rates have historically been very low in Furnas County, at as low as 1.6 percent in 1992. For most of the period of this research, unemployment rates in Dawson County have been somewhat higher than those in Furnas County and the state of Nebraska but have been consistently lower than the national rate (Nebraska Department of Economic Development, Retrieved 2010).

While unemployment rates have generally been lower in Furnas County, so has median household income. Poverty rates have been somewhat higher in Furnas County than in Dawson County, for people of all ages and for children under eighteen. The average age of residents in Furnas County is more than 9 years older than it is in Dawson County and the average level of education is significantly lower in Dawson County, with less than ¾ of the adult population having a high school diploma or higher. Ultimately, when considering these county-level variables, other than the somewhat higher unemployment rates in Dawson County, it is difficult to explain the share of operators working off the farm in the two counties by looking at these data alone.

Operator Characteristics and Off-Farm Employment

There are several important operator characteristics to consider as well. For instance, it may be important to examine the share of operators identifying their primary occupation as farming versus other occupations. Over the period of this analysis, Dawson County farm operators were significantly more likely than operators at the national level to report farming as their primary occupation and they were also slightly more likely than farmers at the state level. They were, however, slightly less likely to report that occupation than were operators in Furnas County.

In closely examining patterns of off-farm employment of principle operators, we

see somewhat different patterns emerging for operators working any days off the farm and those working 200 or more days per year off the farm. While in the early years of this analysis, 1992 and 1997, Furnas County operators were significantly more likely than Dawson County farmers to be working off the farm for any number of days, Dawson County farm operators were slightly more likely than those in Furnas County to be working 200 or more days. In the later years, 2002 and 2007, Dawson County operators were somewhat more likely than Furnas County farmers to be working any days or 200 or more days in 2002, but were significantly more likely to be doing so in 2007.

As with age data for the overall populations of the counties, the median age of Furnas County operators has consistently been somewhat older than the median in Dawson County and the farmers in Furnas County reported being on their farms for a somewhat longer period than did Dawson County operators. By 2007, the median age of farm operators in Furnas County was more than three and one-half years older than in Dawson County and, on average, Furnas County operators had been on their farms for about 5.3 years longer than the average Dawson County farmer. While this data was only available in 2002 and 2007, over that period, Dawson County farms were more likely than were Furnas County farms to be managed by two or more operators. Again, while these data are interesting, and reveal some patterns of behavior of farm operators in Dawson and Furnas County, they provide little real insight into the work-related behaviors of operators in the two counties.

While it is likely that some factors in the general economy do influence the behaviors of farm operators in Furnas and Dawson County around working off the farm and it is also very likely that characteristics of the operators themselves impact those behaviors, particular variables around the farm itself and the production processes on

the farm may be vital in helping to explain the differences in off-farm employment in the two counties.

Farm-Related Variables and Off-Farm Employment

In 2007, average farm size in Furnas County was 341 acres larger than the average in Dawson County. Average farm size in Dawson County had increased by seventeen percent in the fifteen years leading up to that census but it had increased by thirty percent in Furnas County. Land use varied that year between the counties as well. Approximately 62 percent of farm land in Furnas County was cropland and just 36.1 percent was pastureland that year, while 51.5 percent of Dawson County farm land was in crops and 48.5 percent of the land was used as pastureland. Less than one percent of Dawson County farm ground was enrolled in Conservation Reserve programs while approximately 4.1 percent of Furnas County farm land was. As discussed earlier, farms in Dawson County were more likely than those in Furnas County to include cattle-calf operations, which tend to be somewhat more labor intensive than is crop production over the course of the year. In addition, for those farms that did have cattle operations in Dawson County, average herd size was 611 head in 2007, versus just 258 head for farms with cattle in Furnas County. For farms that claimed the purchase of livestock as a production expense in the 2007 Census of Agriculture, that expense averaged nearly $250,000 in Furnas County but 1.1 million dollars in Dawson County. When an operator has invested so much money in the livestock themselves and an additional 325,000 dollars in feed, along with veterinary care and the like, the outlay of labor is a necessary part of caring for that investment.

Dawson County farms have consistently been significantly more likely than those in Furnas County to be irrigated. The share of total farm acres irrigated is more than 3 times higher in Dawson County than it is in Furnas County. Even center pivot irrigation

systems demand some investment in labor in checking and maintaining them, while drip irrigation systems require significant investment of both time and labor. Dawson County farms were significantly more likely than were Furnas County farms to produce corn for grain throughout most of the study period. As discussed earlier in this work, the impact of irrigation on yields is much greater for corn than it is for wheat. A significantly larger share of acres has been planted in corn in Dawson County than in Furnas County. In fact, in 2007, the combination of pastureland and land planted in corn accounted for nearly 83m percent of land in Dawson County farms. In Furnas County, the two accounted for only about 56 percent of the total land in farms. Of course, wheat production is much more prevalent in Furnas County than it is in Dawson, with approximately 62.5 percent of all Furnas County farms in the county producing it in 2007 on 18.4 m percent of all farm ground. While there are certainly many farms irrigating wheat in Furnas County, a lack of irrigation is not as significant a problem for a wheat crop as it is for corn.

Labor demands in livestock production and irrigated agriculture may be an important influence on both off-farm labor for the operator and the employment of non-family farm labor. Through much of the study period, operators in Dawson County were more likely than those in Furnas County to employ outside labor. Ultimately, through this complexity, it is possible to see overdetermination at work here. The level and intensity of off-farm employment of farm operators in the two counties is influenced by a wide variety of factors beyond the local labor market and the opportunities available. In the general economy, factors such as the distribution of jobs among the sectors, unemployment rates, and median income for the county may influence these behaviors. Characteristics of individual farm operators, including median age and the share of farm operators claiming farming as their primary occupation may also be important to

consider. Finally, factors on individual farms and in the farm economy are likely also very influential in determining the share of farm operators who are working off the farm.

FIGURE 6: COUNTIES FOR COMPARISON-FULLY RURAL VERSUS MORE URBANIZED AREAS-DAWSON VERSUS FURNAS COUNTY

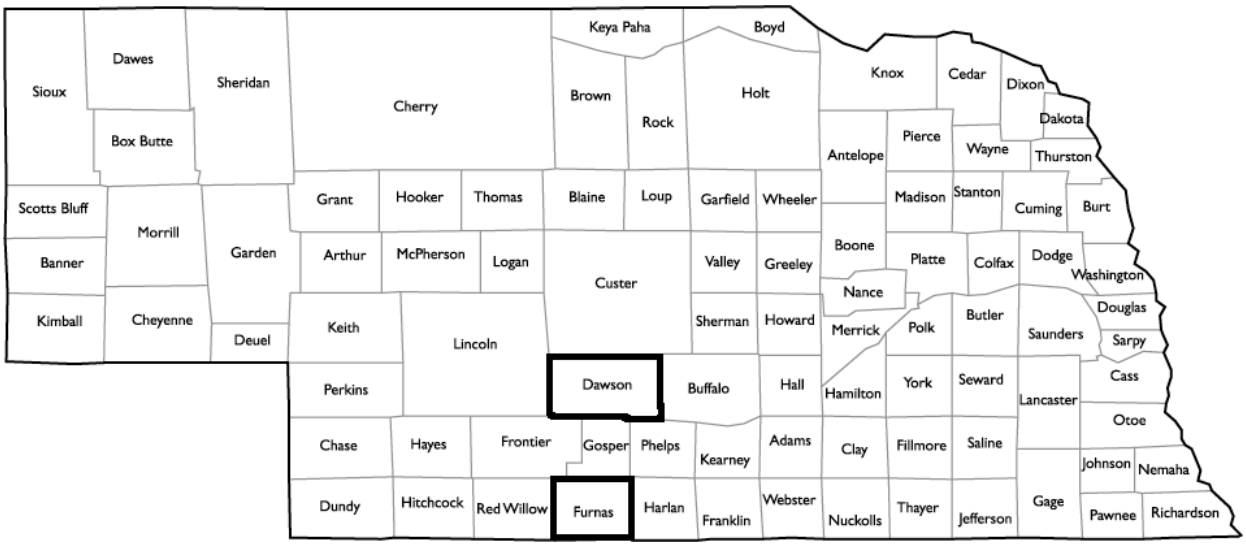

TABLE 6.1: NATURAL-ECOLOGICAL REALM: NATURAL CONDITIONS AND OPERATOR STRATEGIES TO ADAPT-Dawson and Furnas Counties

	Dawson County	Furnas County
Geographic Location	40.9 North/99.8 West	40.2 North/101.0 West
Size-Square Miles	1,019	721
Dominant Soil Type	85.5% Silts/Silt Loams	96.1% Silts/Silt Loams
% Land 9%+ Slopes	26.5%	29.0%
% Land Eroded	28.3%	17.9%
% Total Land in Farms-2007	101.3%*	93.8%
Mean Annual Temperature	50.0 Degrees Fahrenheit	53.0 Degrees Fahrenheit
Average Annual Precipitation	24.18	23.77
% Farms Irrigated-2007	53.8%	36.7%
% Farm Acres Irrigated-2007	41.2%	11.6%
% Farms Applying Fertilizers-2007	60.2%	71.2%
% Farms Applying Chemicals-2007	65.6%	69.7%

* Includes land in adjacent counties incorporated into farms primarily in Dawson County

Sources: Soil Data: USDA Natural Resources Conservation Service Soil Data Mart
All Other Data from USDA Census of Agriculture

TABLE 6.2: DEMOGRAPHIC/CULTURAL INFORMATION-Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
Year-First White Settlement	1861	1870		
Year-County Organization	1860 by declaration; Actually Organized 1871	1873		
Population				
1860	16	0		
1870	103	0		
1880	2,909	6,407		
1890	10,129	9,840		
1900	12,214	12,373		
1910	15,961	12,083		
1920	16,004	11,657		
1930	17,875	12,140		
1940	17,890	10,098		
1950	19,393	9,385		
1960	19,405	7,711		
1970	19,771	6,897		
1980	22,304	6,486		
1990	19,940	5,553		
2000	24,365	5,324		
Current Towns (2000 Population)	Cozad (4,163) Eddyville (96) Farnam (223) Gothenburg (3,619 Lexington * (10,011) Overton (646) Sumner (237)	Arapahoe (1,028) Beaver City * (641) Cambridge (1,041 Edison (154) Hendley (38) Holbrook (225) Oxford ** (876) Wilsonville (118)		
Ancestry in Order of Reports	German 32.2% English 8.8% Irish 8.4% Swiss 5.6%	German 49.9% English 16.6% Irish 14.1% Swedish 6.2%	German-38.6% Irish-13.4% English-9.6% Swedish-4.9%	German-42.8% Irish-30.5% African-American-24.9% English-24.5%
% Population Religious Adherents	89.1%	82.3%	58.8%	50.2%
Relgions by Adherents	Catholic Church 10,282 United Methodist Church 2,860 Evangelical Lutheran Church-2,483 Evangelical Free Church 1,159	United Methodist Church-1,298 Lutheran Church-Missouri Synod-906 Catholic Church 547 American Baptist Church 432	Catholic 372,791 Lutheran 128,570 United Methodist 117,277	Catholic 50,873,000 Baptist 33,964,000 United Methodist 14,174,000
# Public Schools	29	9		
# Public Libraries	5	5		
Educational Attainment 2000				
% High School +	73.6%	84.2%		
% Bachelor's +	14.4%	16.1%		
	* Indicates County Seat	** Indicates Town Partially in Harlan County		
Sources:	Population Data-Nebraska Department of Economic Development Ancestry-US Census: USA Counties Religious Adherents-Glenmary Research Center Religions by Adherents-CDC Snaps Public Schools/Libraries-Education Bug Educational Attainment-US Census: 2000 Census			

TABLE 6.3: THE ECONOMIC REALM: GENERAL ECONOMIC TRENDS:
1989-2007-Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
Median Household Income				
1989	$27,245	$19,829	$25,258	$28,906
1993	$28,523	$23,881	$29,038	$31,241
1997	$32,285	$21,410	$35,337	$37,005
2002	$35,418	$29,897	$41,130	$42,409
2007	$41,447	$35,696	$47,072	$50,740
Poverty Rate: All Ages				
1989	11.6%	14.0%	11.1%	12.8%
1993	11.9%	10.4%	10.7%	15.1%
1997	10.6%	12.0%	9.6%	13.3%
2002	11.4%	14.5%	10.0%	12.1%
2007	11.6%	14.5%	11.1%	13.0%
Poverty Rate: Under 18				
1989	15.5%	16.1%	15.6%	19.6%
1993	14.5%	11.7%	13.9%	22.7%
1997	15.1%	15.5%	12.6%	19.9%
2002	14.2%	21.5%	12.3%	16.7%
2007	16.0%	21.5%	14.7%	18.0%
Annual Unemployment Rate				
1992	3.5%	1.6%	2.9%	7.5%
1997	2.6%	2.0%	2.4%	4.9%
2002	4.0%	3.3%	3.7%	5.8%
2007	3.0%	2.9%	2.9%	4.6%
# Manufacturing Establishments (# Jobs)				
1992	32*	8*	2,027 (100,100)	370,934
1997	26 (3,899)	0	1,960 (106,690)	363,753
2002	28 (2,500)	0	1,976 (103,029)	350,828
2007	31 (2,500)	5*	1,984 (99,547)	332,536
# Retail Establishments (# Jobs)				
1992	181 (1817)	60 (324)	11,375 (132,157)	1,526,215
1997	149 (1,401)	41 (285)	8,295 (102,684)	1,118,447
2002	132 (1,515)	41 (294)	8,157 (105,634)	1,114,637
2007	123 (1,576)	35 (224)	7,888 (108,209)	1,128,112
# Wholesale Establishments (# Jobs)				
1992	77 (603)	16*	4,035 (47,053)	495,457
1997	46 (504)	11 (20)	3,157 (41,002)	453, 470
2002	37 (250)	12 (20)	2,907 (36,805)	435,521
2007	32 (403)	12 (91)	3,093 (38,752)	434,983
# Service Establishments (# Jobs)				
1992	150 (827)	30 (112)	11,284 (120,26)	1,825,435
1997	208 (1,538)	52 (249)	16,343 (187,056)	2,077,666
2002	262 (1,672)	66 (422)	20,084 (289,175)	3,138,520
2007	276 (2,164)	60 (313)*	21,526 (321,988)	3,439,375
# Farms				
1992	876	459	52,932	1,925,300
1997	903	452	51,454	1,911,859
2002	718	412	49,355	2,128,982
2007	728	365	47,712	2,204,792

* Indicates #s too small for publication on some segments in this sector

Sources:
Median Household Income, Poverty Rate: All Ages, Poverty Rate: Under 18- United States Census Bureau: Small Area Income and Poverty Estimates.
Annual Unemployment Rate: United States Department of Labor, Bureau of Labor Statistics
Manufacturing, Retail, Wholesale, and Service Establishments + Jobs US Census Bureau Economic Census
Farms: United States Department of Agriculture, Census of Agriculture

TABLE 6.4: THE ECONOMIC REALM: FARMS, AVERAGE FARM SIZE, RETURN ON AGRICULTURE-Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
# Farms				
1992	876	459	52,923	1,925,300
1997	903	452	51,454	1,911,859
2002	718	412	49,355	2,128,982
2007	728	365	47,712	2,204,792
Average Farm Size-Acres				
1992	752	939	839	491
1997	757	1,042	885	487
2002	867	1,070	930	441
2007	880	1,221	953	418
% Land in Farms				
1992	101.6%*	93.8%	90.2%	41.8%
1997	100.2%*	98.0%	92.5%	41.2%
2002	96.1%	95.9%	93.3%	41.5%
2007	98.8%	97.0%	92.4%	40.8%
Average Value Agricultural Products				
1992	$368,300	$172,182	$155,125	$84,459
1997	$445,585	$174,429	$191,074	$102,970
2002	$517,176	$203,872	$196,609	$94,245
2007	$808,444	$388,895	$324,992	$134,807
Average Cost of Production				
1992	$338,717	$139,112	$126,824	$67,928
1997	$340,913	$144,612	$147,628	$78,771
2002	$490,312	$216,067	$183,362	$81,362
2007	$702,119	$308,305	$258,328	$109,359
Average Net Return on Agriculture				
1992	$30,447	$32,908	$126,824	$67,928
1997	$103,750	$27,766	$147,628	$78,771
2002	$40,959	$10,735	$183,362	$81,362
2007	$128,693	$108,762	$258,328	$109,359

	Dawson Coun	Furnas Count	Nebraska	USA
% All Farms Reporting Gains				
1992	62.1%	65.8%	68.9%	55.6%
1997	61.1%	57.1%	67.1%	51.6%
2002	60.6%	46.1%	62.0%	46.7%
2007	67.4%	79.2%	69.0%	46.5%
Average Gains for Farms with Gains				
1992	$80,857	$56,486	$46,039	$34,142
1997	$173,360	$61,370	$69,147	$51,296
2002	$87,721	$63,267	$56,201	$56,679
2007	$220,547	$146,584	$118,796	$81,061
% All Farms Reporting Losses				
1992	30.4%	34.2%	31.1%	44.4%
1997	33.7%	38.9%	32.9%	48.4%
2002	39.1%	53.6%	38.0%	53.3%
2007	32.6%	20.8%	31.0%	53.5%
Average Losses for Farms with Losses				
1992	$8,478	$12,446	$13,100	$7,135
1997	$22,646	$21,497	$17,201	$8,645
2002	$31,430	$34,428	$26,285	$13,937
2007	$61,604	$23,654	$28,988	$16,075

* Indicates that includes land from surrounding county when farm is primarily in Dawson County

Source: All Data from USDA Census of Agriculture

TABLE 6.5: THE ECONOMIC REALM: TENURE & OPERATOR CHARACTERISTICS-Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
# Farms				
1992	876	459	52,923	1,925,300
1997	903	452	51,454	1,911,859
2002	718	412	49,355	2,128,982
2007	728	365	47,712	2,204,792
% Farms Full Owners				
1992	37.0%	32.9%	40.6%	57.7%
1997	40.8%	39.4%	43.9%	60.0%
2002	43.2%	42.2%	49.0%	67.1%
2007	44.4%	46.0%	50.3%	69.0%
% Acres Full Owners				
1992	14.6%	14.6%	22.0%	32.1%
1997	23.0%	20.4%	26.3%	33.9%
2002	20.5%	23.7%	30.0%	38.0%
2007	14.3%	15.9%	25.3%	47.2%
% Farms Part Owners				
1992	41.1%	50.5%	39.7%	31.0%
1997	36.3%	44.9%	38.5%	30.0%
2002	42.1%	43.9%	37.8%	25.9%
2007	38.6%	46.0%	37.6%	24.6%
% Acres Part Owned Farms				
1992	67.4%	72.3%	63.1%	55.7%
1997	62.0%	67.4%	60.5%	54.5%
2002	67.2%	63.6%	63.8%	52.8%
2007	73.2%	76.3%	65.1%	53.8%
% Farms Tenant				
1992	18.0%	13.1%	19.7%	11.3%
1997	14.9%	12.2%	17.6%	10.1%
2002	14.8%	13.8%	13.2%	7.0%
2007	17.0%	7.9%	12.1%	6.4%
% Acres Tenant				
1992	18.0%	13.1%	14.9%	13.0%
1997	14.9%	12.2%	13.3%	11.6%
2002	12.3%	12.7%	10.5%	9.2%
2007	12.5%	7.8%	9.6%	8.9%
% Operators Farming Primary Occupation				
1992	75.3%	76.3%	73.9%	54.7%
1997	70.1%	71.5%	69.5%	50.3%
2002	74.2%	78.9%	73.0%	57.5%
2007	63.5%	67.7%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	18.0%	17.0%	22.5%	34.6%
1997	21.3%	20.4%	25.5%	37.1%
2002	30.8%	28.6%	32.0%	39.1%
2007	38.7%	27.1%	39.3%	39.7%

Source: All Data from USDA Census of Agriculture

TABLE 6.6: THE ECONOMIC REALM: FARM ORGANIZATION-
Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
% Farms Family/Individual Organization				
1992	73.1%	86.7%	84.2%	85.9%
1997	73.0%	78.1%	82.2%	86.0%
2002	76.7%	88.4%	86.8%	89.7%
2007	72.3%	83.3%	83.5%	86.5%
% Acres Family/Individual Organization				
1992	64.1%	75.7%	68.4%	63.9%
1997	64.3%	70.6%	67.0%	62.8%
2002	Data Unavailable	78.5%	70.3%	66.3%
2007	52.0%	74.7%	67.0%	62.3%
% Farms Partnerships				
1992	8.7%	6.8%	8.7%	9.7%
1997	8.4%	10.2%	8.8%	8.9%
2002	6.4%	5.8%	6.2%	6.1%
2007	8.2%	8.5%	7.6%	7.9%
% Acres Partnerships				
1992	7.1%	10.4%	12.4%	16.2%
1997	6.2%	9.4%	12.7%	16.0%
2002	8.6%	9.0%	12.8%	15.6%
2007	11.2%	12.0%	13.6%	17.5%
% Farms Family Corporation				
1992	16.0%	5.7%	6.0%	3.4%
1997	17.2%	10.2%	7.9%	4.0%
2002	15.9%	5.8%	6.0%	3.1%
2007	17.3%	6.6%	7.1%	3.9%
% Acres Family Corporation				
1992	27.8%	Data Unavailable	16.8%	11.7%
1997	28.6%	15.7%	18.4%	12.8%
2002	26.8%	12.5%	15.1%	10.6%
2007	31.7%	13.2%	17.1%	12.4%

All Other Organization Types < 2% for Nebraska and Both Counties

Source: All Data from USDA Census of Agriculture

TABLE 6.7: THE ECONOMIC REALM: CROP AND CATTLE PRODUCTION-
Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
% Farms-Corn for Grain				
1992	63.7%	49.0%	56.1%	26.2%
1997	60.2%	56.4%	56.7%	22.5%
2002	52.2%	41.5%	48.4%	16.4%
2007	50.1%	53.4%	47.8%	15.8%
% Farm Acres Corn for Grain				
1992	25.8%	11.8%	16.5%	7.3%
1997	32.2%	18.8%	18.2%	7.5%
2002	28.1%	11.9%	16.0%	7.3%
2007	34.4%	19.7%	20.2%	9.4%
% Farms-Wheat for Grain				
1992	9.1%	72.5%	23.9%	15.2%
1997	8.2%	64.6%	19.1%	12.7%
2002	5.1%	57.3%	13.5%	8.0%
2007	8.9%	62.5%	16.8%	7.3%
% Farm Acres Wheat for Grain				
1992	0.1%	14.4%	4.1%	0.1%
1997	0.1%	15.0%	3.9%	6.3%
2002	0.1%	14.9%	3.3%	4.9%
2007	1.2%	18.4%	4.3%	5.5%
% Farms-Soy for Beans				
1992	23.7%	23.3%	39.1%	19.8%
1997	21.6%	29.0%	41.0%	18.6%
2002	28.3%	30.1%	40.7%	14.9%
2007	23.9%	22.5%	34.8%	12.7%
% Farm Acres Soy for Beans				
1992	2.0%	1.8%	5.1%	6.0%
1997	2.3%	3.4%	7.4%	7.1%
2002	4.8%	5.7%	10.0%	7.7%
2007	4.5%	3.3%	8.4%	4.0%
% Farms-Cattle/Calves				
1992	55.6%	69.3%	57.5%	55.8%
1997	57.6%	62.6%	56.9%	54.8%
2002	56.8%	51.5%	50.8%	40.0%
2007	50.5%	49.0%	44.9%	43.7%

Source: All Data from USDA Census of Agriculture

TABLE 6.8: THE ECONOMIC REALM: FUNDAMENTAL CLASS VARIABLES-Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
% Operators Farming Primary Occupation				
1992	75.3%	76.3%	73.9%	54.7%
1997	70.1%	71.5%	69.5%	50.3%
2002	74.2%	78.9%	73.0%	57.5%
2007	63.5%	67.7%	60.5%	45.1%
% Operators 200+ Days Off-Farm Work				
1992	18.0%	17.0%	22.5%	34.6%
1997	21.3%	20.4%	25.5%	37.1%
2002	30.8%	28.6%	32.0%	39.1%
2007	38.7%	27.1%	39.3%	39.7%
% Farms-Hired Labor				
1992	45.1%	44.4%	37.6%	36.0%
1997	47.1%	51.1%	41.7%	34.0%
2002	47.4%	43.0%	35.4%	26.0%
2007	38.6%	33.4%	30.6%	21.9%

Source: All Data from USDA Census of Agriculture

TABLE 6.9: ECONOMIC REALM: SUBSUMED CLASS PROCESSES- Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
% Farms Part-Owner & Tenants				
1992	59.1%	63.6%	57.3%	42.3%
1997	51.2%	58.0%	55.5%	40.0%
2002	56.9%	57.6%	51.0%	32.9%
2007	55.6%	53.9%	49.7%	31.0%
% Farms Purchasing Seeds/Plants				
1992	71.6%	83.9%	74.0%	52.2%
1997	59.4%	67.7%	69.9%	46.9%
2002	57.4%	73.3%	62.7%	41.1%
2007	53.3%	64.7%	56.3%	35.2%
% Farms Purchasing Petroleum Products				
1992	89.4%	96.7%	95.8%	94.4%
1997	83.6%	94.0%	93.7%	92.1%
2002	99.4%	95.9%	93.9%	95.1%
2007	98.2%	97.8%	98.2%	97.5%
% Farms Purchasing Repairs/ Maintenance				
1992	86.6%	89.8%	89.5%	83.3%
1997	72.6%	78.1%	85.7%	80.4%
2002	93.6%	92.0%	89.5%	89.2%
2007	87.5%	89.3%	91.5%	90.4%
% Farms Purchasing Livestock				
1992	42.6%	47.7%	41.7%	32.7%
1997	35.3%	40.9%	38.6%	29.1%
2002	41.4%	33.5%	32.6%	26.0%
2007	31.2%	27.1%	27.8%	22.3%

	Dawson County	Furnas County	Nebraska	USA
% Farms Purchasing Feed for Livestock				
1992	61.0%	68.6%	60.2%	57.4%
1997	60.4%	62.2%	54.9%	53.4%
2002	64.3%	56.1%	53.4%	58.3%
2007	49.3%	40.5%	44.7%	51.5%
% Farms Paying Interest				
1992	65.3%	70.2%	63.1%	45.3%
1997	56.4%	63.3%	61.4%	42.4%
2002	58.2%	58.0%	58.2%	35.6%
2007	50.0%	52.3%	48.4%	30.3%
% Farms Paying Rent Land/Buildings				
1992	48.2%	38.3%	36.4%	27.3%
1997	47.5%	36.3%	36.4%	25.4%
2002	53.3%	46.4%	41.0%	23.4%
2007	50.4%	41.9%	42.0%	22.2%
% Farms Paying Property Taxes				
1992	89.6%	92.8%	89.7%	91.5%
1997	82.9%	86.3%	91.2%	92.7%
2002	91.2%	92.5%	92.7%	92.2%
2007	88.9%	95.1%	91.1%	90.5%

For Information About Purchases of Fertilizers and Chemicals, see Table 5.1, Pg. 216

Source: All Data from USDA Census of Agriculture

TABLE 6.10: THE POLITICAL REALM: Dawson and Furnas Counties

	Dawson County	Furnas County	Nebraska	USA
% Registed Voters Voting in General Elections				
1992	79.5%	77.8%	66.1%	61.3%
1996	73.2%	66.9%	61.0%	54.2%
2000	70.5%	62.1%	58.9%	54.7%
2004	59.0%	62.5%	61.3%	58.3%
2008	60.6%	67.1%	64.5%	58.2%
Party Affiliation Registered Voters 2008				
% Republican	55.7%	63.3%	48.3%	
% Democrat	27.8%	23.7%	34.0%	
% Nonpartisan	15.4%	12.3%	16.9%	
% All Other	1.1%	0.0%	0.1%	
Per Capita Federal Expenditures Total				
2009	$7,858	$14,078	$8,760	$9,096
Per Capita Federal Expenditures Retirement/Disability				
2009	$2,284	$4,428	Data Unavailable	Data Unavailable
Per Capita Federal Expenditures Other Direct Payments				
2009	$2,355	$6,103	$5,198	$4,723
Per Capita Federal Expenditures Grants				
2009	$1,348	$2,839	$2,078	$1,872
Per Capita Federal Expenditures Salaries/Wages				
2009	$302	$560	$812	$827
% Farms Participating in Government Ag Programs 1992	61.1%	80.4%	61.6%	29.6%
1997	63.3%	85.0%	68.7%	35.8%
2002	55.3%	81.6%	64.9%	33.2%
2007	60.4%	85.5%	73.2%	38.0%
% Farms Participating in Government Conservation Programs 1992	6.1%	32.9%	14.1%	7.8%
1997	6.1%	34.3%	18.3%	11.8%
2002	3.2%	33.5%	21.1%	12.6%
2007	9.1%	41.4%	26.2%	15.7%

Sources:

Voting Data-Nebraska: Nebraska Department of Economic Development
National-US Census Bureau
Party Registration Data-Nebraska: Nebraska Secretary of State Website
Federal Expenditures per Capita: US Census Bureau
Farm Program Participation Data-USDA Census of Agriculture

PART 3: CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The final chapter of this writing is designed to examine the applicability of the Human Ecology frame developed by Robert E. Park in the early twentieth century to the real lives of farm operators and their families in central Nebraska nearly a century later. Modified by the Marxian concept of overdetermination, a primary objective of this writing is to seek out evidence for intersections and interactions, for overdetermination, among a range of processes in the natural, economic, political, and cultural realms of environment in which farm families act. For this purpose, the focus of this chapter will be on an elemental process in survival, accessing water. A case will be made that, as Park suggests, while humans, like other living beings, depend on nature to provide us all necessities for physiological survival, our relations with nature are mediated by abilities that only we have. The single capacity, unique to human beings, that has allowed us to engage in a wide variety of complex economic, political, and cultural processes is the ability to communicate.

Park encourages us to consider the existence of closely bound and interacting symbiotic and cultural levels of society in which we operate. The symbiotic level is defined in terms of that human dependence on the natural-ecological environment, and the cultural environment evolves out of those unique human talents, communication and the ability to build consensus. He points out that, while theoretically, the two must be described individually, in their real existence, the symbiotic and the cultural "are merely different aspects of one society…" (1936b, p. 13). He continues by suggesting that culture, as the superstructure, is built on the very substructure of the symbiotic, the natural, the two always interacting in various ways. Perhaps in no human activity is this more obvious than in agricultural production. In an "advanced" technological society, the farmer often acts as mediator in the relationship between human beings and the natural

world. The farmers' direct dependence on and interactions with nature clearly make their lives distinct from the typical consumer of their goods.

But the following chapter considers a process that is an essential process in the existence of virtually any living thing, accessing water. The following is an examination of the relations between the natural process of the consumption of water, by human beings and their communities, by crops and livestock, and by industrial processes, and the social processes that both followed that necessity and helped to shape the current structures of society in general and of the agricultural system in particular in central Nebraska.

Chapter Seven: Overdetermination and its Implications for the Real Lives of Central Nebraska Farm Families

ACCESSING A LIFE NECESSITY

There is little question that one of the most basic activities in which virtually any living thing engages is accessing water. As an elemental biological need, water occupies much time and much attention in maintaining homeostasis in biological beings. Park and Burgess (1921) point to the complexity of human relationships with nature, mediated by the capacities unique to us as human beings. Consumption of water, by plants, by animals, by human beings, is always a natural process. In a technologically advanced period in history, however, the social processes, economic, political, and cultural, that make that consumption possible for us and for the crops and livestock we depend on for our own survival, provide a vast and complicated network of intersection and interaction, of overdetermination.

The beginnings of the process of water shaping the lands that would be Nebraska go back millions of years. The location of an equatorial, warm inland sea for millions of years, as the waters retreated, they left their footprint on the land, on the rocks and soils, on the river beds and river valleys. Much of the area that would be Nebraska saw the sea retreat for the last time in the Tertiary Age, between 1.8 and 65 million years ago (Nebraskaland Magazine, 1994). Between two and six million years ago, in the late Tertiary, the formation of the Ogallala Aquifer began and would have profound impacts on the lives of human beings these millions of years later.

Over much of the natural history of Nebraska, it was the surface waters, rivers and creeks, which were most instrumental in attracting animals, and later human beings. It is likely that the first human beings to depend on those waters within what is today central Nebraska were the Pawnee, who established the first agricultural ventures in the

region. When westward expansion by whites began, the Platte River Valley provided a natural corridor, where several trails, the Trapper's Trail, the Oregon Trail, the Mormon Trail, the California Road, and the Pony Express Route all converged and followed the Platte for approximately 400 miles, from Fort Kearny, in central Nebraska to Fort Laramie in eastern Wyoming (Nebraska State Historical Society, 1998). Migrants took advantage of the relatively flat terrain of the river valley and the access to the water for their own use and to keep their horses and their stock in plentiful supply. For the early years of the great migration, plentiful grasses were found near the river, providing feed for the animals as well.

When, in 1862, the US government agreed to assist the Central Pacific Rail Company in the west and the Union Pacific Rail Company in the east in establishing the first cross-continental railroad line, the importance of the Platte River was again confirmed. Again, as a natural corridor, the Platte River Valley was a logical choice for the route of this important rail, but above that was the availability of water necessary for the steam trains of the era. While individuals and families were beginning to establish homes and farms along the Platte, small population centers began to spring up along the route to service the trains, to take advantage of the means of accessing materials and marketing goods, and to act as hubs for the shipping of agricultural products. As we saw in examining 3 pairs of counties in central Nebraska, accessing and controlling water has been central to the development of both farms and towns.

In Red Willow County, we found that the earliest settlers claimed lands along the Republican River and several creeks, including Beaver Creek. The Republican River would also provide a sort of natural corridor and would become the route of the Burlington Northern & Santa Fe line, while the Nebraska, Kansas, & Colorado line would parallel Beaver Creek. Bartley, Indianola, and McCook are all on or near the banks of

the Republican and Danbury and Lebanon on Beaver Creek. In Valley County, again, the earliest claims for land in the county were along one of the two legs of the Loup River and today, all of its towns are found on either the Middle or North Loup Rivers.

A similar story is seen in Brown County, although it is complicated there by the presence of huge herds of roaming free-range cattle, their owners without legal right to the river and creek bottom lands they occupied. While none of the three towns in this county are located along either of her rivers, the Niobrara or the Calamus, they are each found along or very near a creek, Long Pine on Long Pine Creek, Johnstown on Goose Creek, and Ainsworth along Willow Creek. While the rail no longer exists today, the Calamus did at one time provide the route for the Fremont, Elkhorn, & Missouri Valley rail line through Brown County. As Red Willow County's neighbor to the west, Hitchcock County too has been dependent on the waters of the Republican River for all of its history. The rich river valley, alluvial soils and easy access to water again attracted settlers to these areas first, with early farms along the Republican, where we today find not only farms but also the communities of Culbertson, Trenton, and Stratton, or along Frenchman Creek, where Palisade is located today. The Burlington Northern & Santa Fe line, along the republican, and its northern branch along Frenchman Creek are still vital to the economy of the county.

Furnas County, to the east of Red Willow, if also dominated by the wide, fertile Republican River Valley, and today's communities of Oxford, Edison, Arapahoe, Holbrook, and Cambridge are all found on or near the river. Beaver City and Hendley are near the banks of Beaver Creek, and Wilsonville is along Turkey Creek. Again, important rails parallel both the Republican and Beaver Creek. While the locations of rivers and creeks were instrumental in helping to shape settlement patterns and the subsequent development of local cultures and economies, of the 6 counties considered in this work,

nowhere is this more obvious than in Dawson County, dominated by the fertile Platte River Valley, where Overton, Lexington, Cozad, Willow Island, and Gothenburg are found. Sumner and Eddyville are on Wood River and Farnam is near both Deer and Plum Creeks. As such an important route across the nation, the Platte River Valley, among the rivers within Nebraska, and the waters the river provides, has been most instrumental to the settlement of central Nebraska. As the route of the first cross-continental railway, the Platte River would be vital in the development of Nebraska as a whole.

Those farms established after river and creek bottom lands had already been claimed were at a distinct disadvantage in those early years, but as the realization that a huge source of water was stored underfoot, and the technology was developed that allowed for access to that water, the parameters for what is possible in the natural environment have been greatly expanded through human communication and consensus, through the cooperative development of technology. Even today, surface waters are an important source of water for irrigation and stock, particularly in some parts of the state. But, as previously discussed, groundwater irrigation is dominant today and water for livestock most often comes from groundwater wells too. In all, over 106,000 irrigation wells had been registered in Nebraska by 2009 (Nebraska Department of Natural Resources, 2010). Today, the boundaries set for what is possible in the natural environment of Nebraska have been breached, largely due to access to billions of gallons of water stored in the Ogallala Aquifer.

In Chapter 3, comparing Red Willow and Valley Counties, very similar in various ways, we saw that factors well beyond the natural environment itself are at play for farm operators in their irrigation behaviors. In Chapter 4, comparing Brown and Hitchcock Counties, the analysis revealed that factors beyond dominant soil type, including access

to waters for irrigation, influenced the behaviors of farmers around the particular crops and/or cattle production operations most common in the two counties. Finally, in Chapter 5, comparing Furnas County, fully rural, and Dawson County, with its core of a Micropolitan Statistical Area, that factors well beyond opportunity structure, including the labor demands involved in irrigation, influence the off-farm employment behaviors of farm operators.

Ultimately, using accessing water as an example of a vitally important process to the success of any living being, and certainly for any agricultural venture, we can see that this is certainly an overdetermined process in human communities. Other natural conditions and developments, from dominant soil type to climatic conditions, influence our quest to meet this need. The process of accessing water influences and is influenced by economic processes. The need for water in agricultural ventures, for human consumption, and in other industrial activities, such as the production of ethanol or beef processing, have helped to shape the character of human communities, as human beings have influenced the availability and quality of those water resources. The reciprocal relationship between the natural, in the consumption of water, and the political, in the development of regulations and policies concerning this vital natural resource has also helped to shape our relationships, both with nature and with each other. Finally, as the access to surface waters helped to shape settlement patterns in central Nebraska, it also helped to shape cultural developments.

Park suggests that the primary social process to occur in the natural-ecological order is competition and that population density and distribution are the product of this competitive process. Again, examining the settlement patterns throughout the 6 counties examined here, the early claims to lands adjacent to water resources provide evidence of that process. In each of the counties, population density, in the form of population

centers, are all concentrated along the banks of rivers and creeks. According to Park, competition is also the dominant process occurring within the economic order. In a modern technological society, water is often defined as a commodity, a resource to be purchased and traded like other commodities on the market. Political regulations and policies, however, are designed to deal with conflict and to attempt to accommodate the needs of interested parties and their demands for this precious resource. In the end, the assimilation process may hold the greatest potential to shape farm family relationships with the natural environment, with the process of accessing water for their own use, and for irrigation and stock purposes.

As human beings in general and farm operators in particular become more conscious of the potential impacts of their behaviors on the future potentials for their own farms in the natural environment, we may see evolving dominant ideologies around accessing this important natural resource. In a global economy with competitive worldwide agricultural markets, this is likely to be a very bumpy road. The quickly growing cost of production, and the dramatically increased yields with the application of irrigation, make it difficult for the farm operator to behave in a way to reduce his dependence on the network of natural, economic, political, and cultural processes intersecting and interacting, overdetermining a process as basic as accessing water.

Complexity and Assistance for American Farmers

Examining this single process of accessing water, along with its relationships with various social processes, reveals just a sliver of the complexity in which farm families are operating today. The diversity of conditions and processes we have seen in examining just 6 counties in a single region of a single state should encourage us to question the mechanistic nature of “one-size-fits-all” agricultural commodity programs, based on production control policy or based on rewarding production. The focus on a

few commodities necessarily ignores the truly complex strategies farm families must develop to ensure their survival. A more holistic orientation would allow for the recognition of that complexity and would allow for the acknowledgement that, while direct payments to farmers do allow many families to minimally sustain themselves on small farms, the concentration of assistance to the largest farms is unlikely to provide long-term sustainability to those small farms or to the small towns that depend on them for their economic support.

The widely varying economic conditions we saw in the six counties, along with the distinct levels of dependence on agricultural production and related industries within the six, should encourage us to consider some different ideology around agricultural commodity programs. At the very least, we should recognize the very different structures of the general economies and the agricultural economies in this diverse country. At a time when the budget is being slashed and all programs, including rural development organizations and those designed to help farm operators, are likely to see significant cuts in federal support, it may be more important than ever to consolidate the efforts of those programs and allow for more local, perhaps county-level, administration of agricultural assistance programs.

Consolidation of programs and administration by local people who have a greater understanding of the overall needs and conditions in their own areas, could allow for the recognition of the diversity of needs to be found in different rural areas of the United States. County-level distribution and administration of federal funds is not without precedent. For instance, the state of Kentucky distributed funds from the Tobacco Buyout to counties, both to distribute to tobacco farmers and to design and deploy local agricultural development strategies (State of Kentucky Government Website, retrieved

2011). Decisions about how to distribute the funds are made at the local level in this case.

METHODOLOGICAL WEAKNESS AND THE IMPORTANCE OF TRIANGULATION IN EXAMININGTHE REAL LIVES OF FARM FAMILIES

There are some significant problems in exclusively using large data sets like the Census of Agriculture and data from the US Census for analysis. For instance, changing definitions of variables, including a variable as basic to this research as what is considered a farm, makes comparisons across time problematic. The data available in the Census of Agriculture and others is point-in-time data, so it cannot be considered true time-series data. Because the Census of Agriculture is conducted every five years, we may get a reasonably accurate picture of what was happening in the lives of families living on the farm in 1992 and in 1997, for example, but we have no way of knowing what happened in the years between. Therefore, calculating “process” variables, inferring changes over time, as has been done for this project, may also be problematic. Additionally, because Census of Agriculture and other data is aggregated, the presence of very large farms or a number of very small farms, outliers, has the potential to skew the data significantly rather than providing an accurate view of the real lives of “average” farm families. For these reasons, the use of state-level Farm Business Analyses may be a better choice for future research in this area.

In addition, because the Census of Agriculture is self-reported, the complete accuracy of the data cannot be assured. While the operators may very well be answering all questions to the best of their recollections, they may not always be completely precise. A good example here is the fact that always somewhat under 100 percent of farm operators claim petroleum products as a cost of production. It seems quite unlikely that any farm in the United States in the twenty-first century is operating

without the use of petroleum products. In addition, because many farm families employ cash accounting in their operations and because farm accounts and family accounts may not always be perfectly separated, reporting of farm income on the Census of Agriculture may contain kernels of family expenses and may miss farm expenses drawn out of family accounts. For future research of this type, it may be advisable to examine data collected at the state level, particularly farm business analyses because they may be more accurate and they are likely to be significantly more detailed than is the Census of Agriculture.

Ultimately, the analyses of statistical data included here do tell an important story about the daily lives of farm families of central Nebraska, but it is a very incomplete story. In order to truly understand the experiences of these families, it will be necessary to actually seek out their own voices, to interview a number of families negotiating relations with the natural, economic, political, and cultural environments in which they operate. Only personal interviews would provide us then any real insight into the "family" in family farm. It is important to consider information that is simply not available in large data sets like the Census of Agriculture.

For instance, it is vital to understand the makeup and life cycle of the family and how that impacts everything from the labor distribution among members to the basic physiological necessities for the household. The perceptions of farm family members around a range of topics would provide a much more rich and nuanced glance at the lives they are living on the farm. For example, how have family perspectives about conditions within each of the environmental realms influenced the decision-making process on the farm and the subsequent behaviors in which they engage? It may be crucial to take these ideologies in consideration as they relate to the goals and objectives of the families as they live and work on the farm. The presence of or lack of

an interested heir to the farm and the business may have profound impacts on the decisions families make in their everyday lives, perhaps developing more long-term, substantive, and holistic objectives with the presence of a potential successor for the farm, but again, data from these large data sets allows us no access to these types of vital information.

Future research should also address the vast body of research considering the impact of modern farming methods on both water levels and water quality as it applies to farms in central Nebraska. Additional research should also consider the relationship between the reduction in the number of farms applying fertilizers and chemicals and the dominance of genetically modified seeds, such as those marketed by Monsanto. While this comparative analysis has revealed multiple patterns of intersection and interaction, of overdetermination, between the different environmental orders specified by Park, the more micro-sociological processes of conflict and accommodation, and the more intimate process of assimilation, would best be addressed by interviewing the people actually experiencing them, the farm families themselves.

THEORETICAL IMPLICATIONS

The model developed and analyzed here provides a significant examination of the applicability of Park's Human Ecology stance, developed in the early- and mid-twentieth century in an attempt to examine the environmental realities of city life, to agricultural economy at the turn of the twenty-first. With some modification, employing the Marxian concept of overdetermination, Park's organizational themes have proven to be valuable tools in examining the lives of farm families in central Nebraska. "Overdetermination" allows us to open up Park's model, to remove its hierarchical nature, and to make it anti-essentialist, while retaining the primary structure of his model. In the end, that old cultural vision of the simple and peaceful lifestyle of families living on

the farm is only applicable part of the time. As many advantages as there are for families living in the country and interacting most directly with nature, the many forces and processes well beyond their control and well beyond that particular locale make the lives of farm families in central Nebraska incredibly complex in 2011.

SUMMARY AND CONCLUSIONS

As discussed in the first chapter of this work, the primary objective of this research is to search for evidence of overdetermination in the intersecting and interacting processes of competition, conflict, accommodation, and assimilation over the twentieth century in shaping the structure of the agricultural system of the US in the early twenty-first century. The overarching research question has been, “What evidence can be found to indicate the mutual constitutivity, the reciprocal relationships, through overdetermination, of processes within and between the environmental orders specified by Park?” Tables 6.1 on page 254 and 6.2, on page 255 discuss the primary and secondary research questions, along with the results of this research. The primary question necessitated an examination of the data for evidence of competition, primarily in the natural-ecological and economic realms, conflict and accommodation, primarily in the political and cultural realms, and assimilation, in the cultural realm, for evidence of relations among them in the real lives of central Nebraska farm families. I further questioned the impact of natural conditions and processes on behaviors involving the other environmental orders, the economic, the political, and the moral-cultural and how economic, political and cultural factors may influence the behaviors of farm families around the physical environment of the farm itself. Finally, analyses of data concerning class processes, both fundamental and subsumed, were conducted.

Because in the twenty-first century, agriculture is a global industry with global markets, farmers in all parts of the world competing for their own best advantage, it is

difficult to examine this process using national level data. The influence of a range of conditions and processes in various parts of the world, including the economic, as with global recession, the political, with conflict and war effecting production, and the moral-cultural, with the tendency to recognize only farmers producing for commercial markets as “true” farmers, can and do influence the prices farmers in the US are paid for their crops and livestock, but the data examined here did not allow us to perform in-depth analyses of the particulars in this very complex global system.

Conflict was evident in many situations throughout this work, including controversies about how to best help struggling rural families during the Great Depression, more recent changes in farm policies, Nebraska voters’ attempt to protect small family farms, and county decisions about the location of county seats. In all cases, we saw that communication and consensus ultimately did allow for the development of some accommodation of the needs and interests of all parties. In each case, some level of continuing conflict is evident underlying the negotiated accommodation. In Park’s usage of the concepts of conflict and accommodation, the analysis of large-scale data barely touches on these processes. Again, in order to truly examine these processes as farm families experience them, it would be necessary to conduct personal interviews with a number of farm family members. Similarly, the process of assimilation is a continuous and personal process. While we did examine education, library usage, ancestry, and church membership as institutions that engage in the assimilation process, again, without the words of the families actively involved in the reciprocal socialization process, an in-depth analysis is impossible here.

When considering the second sub-component of the primary research question, “How do natural processes and conditions in the ecological order, from precipitation to average temperature or dominant soil type, influence a range of

behaviors and relationships of farm operators in counties of central Nebraska?", we saw that, while natural processes and conditions did set the ultimate boundaries for what could be accomplished in each of the counties, a range of strategies, including the application of irrigation, seed, and chemical technologies, and the choice of particular production types, human inventions, are designed primarily in an effort to breach those boundaries. In addition, several examples were revealed in which the behaviors of farmers in relation to natural conditions could not be simply explained by those conditions alone.

For example, in Chapter Three, comparing Red Willow and Valley Counties, we found that, even though Valley County received a significantly higher average annual precipitation total than the average in Red Willow County, farms were notably more likely to be irrigated in Valley County. In Chapter Four, we saw that, even though corn yields tended to be higher in Brown County than they were in Hitchcock County in 2009, but Hitchcock County farms were more likely to be engaged in corn production over the entire period of this study than were those in Brown County.

The third sub-component of the research question is, "How do social processes occurring within the other environmental orders specified by Park (the economic, the political, and the moral) influence the behaviors of the same farm operators in relation to the physical environment of the farm itself?" We found some evidence that economic processes, such as competition in the global agricultural market, do influence farmer behaviors such as those around irrigation. We also discussed the importance of political processes, such as farm legislation and the development of irrigation systems, have influenced the behaviors of farm families, as have cultural processes, such as socialization and local tradition.

The final sub-component of the research question is. "What are the class and

non-class processes in which Nebraska's farmers engage in their productive lives?" We saw that a varying share of farm operators in central Nebraska are engaged in working off the farm, engaged in the fundamental class processes. Similarly, the share of farms that employ non-family workers varies among the different counties. Engagement in subsumed class processes, including the purchase of inputs and paying rent for buildings and farm ground, were found to vary dramatically in the different counties, often related to the most common types of production.

Several tables can be found at the end of this chapter, beginning on page 256, provide data about all six of the counties compared here side-by side. Table 6.3, on page 256 provides basic data on natural, cultural, and overall economic conditions in each of the six counties. A brief examination of this data shows us that widely varying conditions are to be found in different counties in central Nebraska. For instance, average annual precipitation ranges from just under 21.5 inches to over 25 inches, 2000 population ranged from around 3,100 to over 24, 350, as few as 73.5% and as many as 88% of adults in the counties had high school diplomas in 2000, and poverty rates ranged from 11.3% in Red Willow County to 23.6% in its neighbor county of Hitchcock. Similarly, Table 6.4 on page 257 provides an interesting glance at the variety of situations in which central Nebraska farm families find themselves today. We see that the number of farms, average farm size, the share of acres operated by their full owners and that on farms organized as family/individual operations also varies significantly. In Table 6.5, page 258 reveals dramatically diverse average economic circumstances for farms in the six counties, with varying returns and production behaviors. Finally, Table 6.6, on page 259 provides us with data about the counties and their farm operators' participation in the class processes, both fundamental and subsumed. Again, these tables may present more questions than answers in our quest to gain greater

understanding of the real lives of central Nebraska's farm families, but they do provide us with some level of understanding of the complexities of the lives farm operators and their families in the 21st century.

TABLE 7.1: Questions and Hypothesis:

Primary Research Question: What evidence can be found to indicate the mutual constitutivity, the reciprocal relationships, through overdetermination, of processes within and between the environmental orders specified by Park? Significant evidence was found of complex interacting processes within and between Park's environmental orders.

Subcomponents of the Research Question:

A) Considering central Nebraska farms, what is the evidence of the prominence of each of Park's primary types of social interaction, competition, conflict, accommodation, and assimilation, in influencing the characters of other social processes occurring within each the environmental orders? As predicted, some of the social processes in which farm families participate do not fit neatly into one of these categories, but evidence was found for their influence on multiple social processes.

B) How do natural processes and conditions in the ecological order, from precipitation to average temperature or dominant soil type, influence a range of behaviors and relationships of farm operators in counties of central Nebraska? Evidence was found that, while natural processes and conditions have profound influences on the behaviors and relationships in which farm operators participate, the influences are ameliorated by processes in each of the other environmental realms.

C) How do social processes occurring within the other environmental orders specified by Park (the economic, the political, and the moral) influence the behaviors of the same farm operators in relation to the physical environment of the farm itself? Evidence was found that economic, political, and cultural processes do influence the behaviors of farm operators, including input and output markets, federal and state policies, and cultural traditions in local areas.

D) What are the class and non-class processes in which Nebraska's farmers engage in their productive lives? Farmers and their families participate in a wide range of non-class processes and relations, such as engaging in federal farm programs and leasing a share of their ground to others. A significant share of operators in each of the six counties of concern here participate in the fundamental class process, either employing non-family workers or working off the farm to supplement their agricultural income.

Hypothesis: Measurable relationships will be found among variables both within and between each of Park's environmental orders. The concept of measurability was problematic in this research, due largely to the incredible complexity of the agricultural system, the natural conditions and processes with which farm families must deal, the overall economic conditions in local areas, local political realities, and significant cultural differences between locales. While the existence of a variety of relationships between variables were demonstrated through this work, the true influence of each process on the characters of the others was found to be difficult, if not impossible to measure.

TABLE 7.2: RESEARCH QUESTIONS AND PAIRED COMPARISONS

Each of the paired comparisons may shed some light on the question of prominence of the basic social processes in the lives of farm families.

A) Chapter 4, comparing Brown County, in the Nebraska Sandhills, and Hitchcock County, dominated by rich silt and silt loam soils, will help to clarify the influence of the natural environment on the behaviors of farm families in central Nebraska

B) While each of the comparisons will consider a range of natural, economic, political, and moral-cultural processes and their influence on the behaviors of farm families, Chapter 5, comparing Furnas County, a fully rural county, with Dawson County, the core of a Micropolitan Statistical Area, will be most well suited to revealing patterns of intersection and interaction among these variables.

D) Each of the paired comparisons will evaluate the same set of variables, including particular participation in fundamental and subsumed class and non-class economic processes.

Table 7.3: General Cultural and Economic Trends in the Six Counties for Comparison (2002 and 2007)

	Red Willow County	Valley County	Brown County	Hitchcock County	Dawson County	Furnas County
Geographic Location Degrees North/ Degrees West	40.2/100.5	41.6/99.0	42.5/99.9	40.4/100.0	40.9/99.8	40.2/101.0
Size-Square Miles	717	568	1,221	710	1,019	721
Mean Annual Temperature Degrees Farenheit	51.4	49.4	49.3	50.5	50.0	53.0
Average Annual Precipitation Inches	21.62	25.1	22.99	21.48	24.18	23.77
Population						
1990	11,705	5,169	3,657	3,750	19,940	5,553
2000	11,391	4,647	3,525	3,111	24,365	5,324
Educational Attainment 2000						
% High School +	88%	85%	83.3%	85.6%	73.6%	84.2%
% Bachelor's +	15%	16%	17.2%	13.8%	14.4%	16.1%
Median Household Income						
2002	$33,230	$29,241	$29,562	$27,413	$35,418	$29,897
2007	$38,960	$34,631	$34,337	$33,548	$41,447	$35,696
Poverty Rate: All Ages						
2002	11.4%	13.4%	17.2%	20.5%	11.4%	14.5%
2007	11.3%	13.8%	19.4%	23.2%	11.6%	14.5%
Annual Unemployment Rate						
2002	3.0%	2.9%	3.5%	3.2%	4.0%	3.3%
2007	2.5%	2.4%	2.6%	2.7%	3.0%	2.9%
Per Capita Federal Expenditures						
2009	$8,712	$12,183	$11,020	$12,398	$7,858	$14,078

Table 7.4: General Agricultural Trends in Six Counties for Comparison (2002 and 2007)

	Red Willow County	Valley County	Brown County	Hitchcock County	Dawson County	Furnas County
# Farms						
2002	380	419	311	288	718	412
2007	386	391	282	272	728	365
Average Farm Size-Acres						
2002	1,129	751	2,207	1,450	867	1,070
2007	1,157	911	2,266	1,279	880	1,221
% Land in Farms						
2002	93.6%	86.5%	87.8%	95.4%	96.1%	95.9%
2007	97.3%	98.0%	84.6%	76.6%	98.8%	97.0%
% Farms Full Owners						
2002	49.2%	55.6%	42.4%	48.3%	43.2%	42.2%
2007	47.2%	47.6%	46.5%	50.7%	44.4%	46.0%
% Acres Full Owners						
2002	37.2%	35.4%	23.9%	30.0%	20.5%	23.7%
2007	22.2%	25.7%	32.1%	19.4%	14.3%	15.9%
% Operators Farming Primary Occupation						
2002	72.6%	77.3%	74.2%	84.4%	74.2%	78.9%
2007	56.2%	71.6%	57.1%	58.5%	63.5%	67.7%
% Operators 200+ Days Off-Farm Work						
2002	36.6%	29.8%	35.1%	26.4%	30.8%	28.6%
2007	42.2%	34.3%	37.6%	34.6%	38.7%	27.1%
% Farms Family/Individual Organization						
2002	89.5%	88.3%	86.8%	85.1%	76.7%	88.4%
2007	85.8%	81.1%	83.7%	83.8%	72.3%	83.3%
% Acres Family/Individual Organization						
2002	83.0%	78.0%	81.5%	85.1%	Data Unavailable	78.5%
2007	72.0%	69.8%	59.5%	76.6%	52.0%	74.7%

Table 7.5: Agricultural Economic Trends in Six Counties for Comparison

	Red Willow County	Valley County	Brown County	Hitchcock County	Dawson County	Furnas County
Average Net Return on Agriculture						
2002	$21,197	$25,519	$3,133	$13,327	$40,959	$10,735
2007	$142,747	$86,983	$39,142	$77,407	$128,693	$108,762
% All Farms Reporting Gains						
2002	64.7%	62.5%	44.7%	64.9%	60.6%	46.1%
2007	69.2%	67.5%	55.3%	70.6%	67.4%	79.2%
Average Gains for Farms with Gains						
2002	$54,226	$52,378	$67,389	$39,961	$87,721	$63,267
2007	$215,467	$142,819	$118,802	$124,441	$220,547	$146,584
% Farms-Corn for Grain						
2002	32.4%	49.4%	26.4%	32.3%	52.2%	41.5%
2007	39.4%	57.3%	34.8%	38.2%	50.1%	53.4%
% Farm Acres Corn for Grain						
2002	8.7%	17.4%	5.4%	6.0%	28.1%	11.9%
2007	18.4%	24.4%	6.4%	13.7%	34.4%	19.7%
% Farms-Wheat for Grain						
2002	50.0%	45.9%	0.0%	73.3%	5.1%	57.3%
2007	6.2%	14.1%	1.1%	54.0%	8.9%	62.5%
% Farm Acres Wheat for Grain						
2002	15.5%	0.0%	0.0%	18.0%	0.1%	14.9%
2007	14.9%	1.1%	Data Unavailable	17.2%	1.2%	18.4%
% Farms-Cattle/Calves						
2002	58.7%	66.6%	68.5%	62.5%	56.8%	51.5%
2007	57.8%	66.0%	60.0%	48.5%	50.5%	49.0%

Table 7.6: Fundamental and Subsumed Class Processes in the Six Counties for Comparison (2002 and 2007)

	Red Willow County	Valley County	Brown County	Hitchcock County	Dawson County	Furnas County
% Operators 200+ Days Off-Farm Work						
2002	36.6%	29.8%	35.1%	26.4%	30.8%	28.6%
2007	42.2%	34.3%	37.6%	34.6%	38.7%	27.1%
% Farms-Hired Labor						
2002	30.8%	46.3%	34.7%	36.8%	47.4%	43.0%
2007	29.5%	33.2%	33.0%	26.5%	38.6%	33.4%
Average Cost of Production						
2002	$244,796	$151,799	$309,528	$105,525	$490,312	$216,067
2007	$308,873	$284,457	$543,649	$157,649	$702,119	$308,305
% Farms Part-Owner & Tenants						
2002	50.8%	43.9%	57.6%	55.6%	56.9%	57.6%
2007	52.9%	52.5%	59.1%	49.3%	55.6%	53.9%
% Farms Paying Rent Land/Buildings						
2002	25.0%	43.2%	52.4%	52.8%	53.3%	46.4%
2007	42.2%	52.2%	51.7%	33.8%	50.4%	41.9%
% Farms Paying Interest						
2002	66.1%	52.5%	78.8%	62.5%	58.2%	58.0%
2007	47.9%	58.3%	49.3%	48.5%	50.0%	52.3%

Chapter Eight: Epilogue

Eric thought he could see his breath in the reflection through the window of the full moon off the snow. He thought he heard the crack of ice breaking on the creek near the old red barn. He did hear coyotes off in the distance, howling and yapping at that full moon, bathing their bedroom with a soft light. Remembering that it was his turn to stoke the fire, he slowly got out of bed and pulled on the bright red Huskers sweats, heavy robe, and fuzzy slippers Rachel and the kids had given him for Christmas a few weeks ago. The dog stood by the kitchen door, doing a little impatient dance and waiting to go out in the cold to take care of business.

Eric could feel some warmth as he made his way to the old potbelly stove in the semi-dark. “Good. There are still coals,” he thought. “Maybe Tim stoked it when he got home last night.” Poking the coals and adding a few small pieces of Ash, he went off to push the button on the coffeemaker and get it started. It was just an hour or so before daylight and he wanted to be ready to head out the door as soon as the sun was up. Just checking their water and feeding a herd of nearly 600 cows, spread throughout the yard near the house and three different pastures, took nearly two hours in the morning and a couple more in the evening.

It had been an unusually cold and snowy spring and Eric was concerned about new calves out in the weather. It had been nearly thirty degrees yesterday, with just about four inches of snow during the day, but the forecast high for today was just fifteen. He had tried to keep all the cows about ready to calf up near the house, but with so many, it was easy enough to miss a cow or two, so he gladly invested another hour or two, morning and evening, checking all the draws and cuts to make sure one of the cows had not given birth out in the elements. They still had more than 200 calves to go, some not due for another two or three weeks, so it was going to be a long road to the final

tally. He had had to pull four calves so far and had needed the help of the vet with two more, but they had only lost five so far, which wasn't too bad for a herd of this size.

As he smelled the coffee brewing, he sat by the woodburner and flipped the TV on to the Weather Channel. It was just three degrees this morning and with a light breeze, the windchill temperature was four below. It looked like more snow later in the day too, to add to the 29 inches they had received so far this winter. Putting a couple more small logs in the old potbelly, he headed back to the kitchen to pour a cup. He would have to get Rachel and the boys up soon, so he took advantage of the few minutes he would have alone and unoccupied that day. He was glad it was Saturday and his sons, Tim and James, were now old enough to be of some real help on the farm. James, twelve years old, drove the tractor and Eric, along with Tim, sixteen, tossed bales off the trailer to the waiting cows.

Finishing his first cup of coffee, Eric bundled up and went to start the tractor in the cold darkness, the old Shepherd at his heals the whole time. When he came back in, he shook off the cold and a few flakes and went back to the kitchen to start breakfast. He had made it a tradition to cook for the family on weekends. Rachel sometimes complained about the mess he made, but the scent of bacon was often all it took to get the rest of the family down the stairs and ready to start the day. Tim had been out until nearly midnight last night, at the movies in Ord, so he did not expect the smell of pork to do the trick for him this morning. He was surprised when he was the first up, sprinting down the stairs, two at a time, wearing his first layer, long underwear, and ready for his bacon and eggs.

Rachel followed a few minutes later, all dressed and ready for her shopping trip to Grand Island with Mary, their neighbor from the next farm, about three miles west. Mary's place was small by the standards of the farms in the area, at just 600 acres, and her herd was small too, around 100 head, so she could get her feeding out of the way

pretty early in the day. Mary's son Steve, who lived on the next place west, would come and do her evening feeding for her, if necessary

While Tim crunched on bacon and told Rachel about the movie they had seen, *Iron Man 2,* Eric went to roust out Mark. He knocked in the center of the "Keep Out" sign taped up on the old, ornate door, and entered the cluttered room. He thought about reminding Rachel to pick up some Febreeze at Walmart. Just the top of Mark's head sticking out of the old quilt, Eric shook him and turned on the little bedside lamp. No wonder it smelled so bad in here. A half eaten sandwich and a glass, still mostly full of curdled milk, were mixed with papers and videos on his desk. Gym shorts, sweats, and a hoodie decorated the office chair, each contributing their own "air" to the room. Mark grumbled something and slowly pulled the covers back, his soft brown hair sticking out with static.

About thirty minutes later, everyone had had their breakfast and they all headed out the door at the same time. Rachel, in her purple, long down Cabela's coat and cream-colored felt beret, headed to Mary's house in the crew cab while Eric and the boys crunched their way across the frozen ground to the tractor, their breath following them in little white clouds and Mark's glasses steaming up instantly. Both of the boys were wearing the new camouflage coveralls they had received for Christmas, over jeans, sweaters, and long underwear. Eric's old bibs still had some life in them so he pulled them on, under his old Carhart jacket, saving his own new coveralls for next winter.

Feeding the cows up by the barn, Eric noticed that 137's calf didn't seem to be doing all that well. Seemingly a sturdy little guy three days ago when he was born, the little Angus was lethargic today, hanging his head and standing in one place. This was 137's first calf and some cows, like some people, never did take to the parenting thing. It appeared that this cow might just be one of them. He would try to put that calf on number 220, who had lost her calf the same morning this one was born. Mark had been

looking over the calves for his 4-H project this year, and this little guy had made his short list. Eric decided to assign him take care of the calf, bottle feeding it if 220 would not take it.

Morning feeding done and cows checked by around 10:30, the middle of Eric's day was taken up with the books, the damned books. Rachel was a big help with some of the paperwork and planning, but he always wanted to keep of top of things himself too. As much as he hated it, they had to run their operation like any business, spending a big share of time planning along with calculating risks and benefits. He would need to buy a couple of new bulls this year, and the hay mower needed some work, but all-in-all, he felt like they were in pretty good shape. The beef markets had improved a little, something about drought in Argentina, so he hoped the trend would continue until the calves were fattened and ready for market.

Rachel was home by around 2:30 and started the rump roast she had pulled out of the freezer the night before. They had butchered three of last year's calves, one for their own freezer, one for Rachel's sister's family, and one that his parents in Lincoln, and Rachel's parents in Ord split. Having a fourth set of hands made the evening feeding go a little quicker and they were eating in front of the television by about 6:00. Katie Couric reported on the environmental crisis in China and terrible floods in Brazil, along with the housing and unemployment problems here in the US. Even though all of these stories seemed a little remote to their everyday lives, Eric still always felt a little depressed after watching the news. Kicking his feet up in the old La-Z-Boy, Eric was quietly snoring in his chair before a rerun of *Without a Trace* started on Channel 10 at 7:00. Rachel rousted him and sent him to bed around 9:00. At about 2:00, Snowy, the white Shepherd was whining in his ear, letting him know that he needed to go out in the chill. Rachel and the boys must have forgotten to let him out before they all went to bed last night. There had been occasions when he had thought he would gladly trade lives

with Snowy, with no responsibilities but not to kill any livestock. Other times, like this one, not so much.

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