

1-1-2006

Migration Out of 1930s Rural Eastern Oklahoma: Insights for Climate Change Research

Robert McLeman

University of Guelph

Follow this and additional works at: <http://digitalcommons.unl.edu/greatplainsquarterly>



Part of the [Other International and Area Studies Commons](#)

McLeman, Robert, "Migration Out of 1930s Rural Eastern Oklahoma: Insights for Climate Change Research" (2006). *Great Plains Quarterly*. Paper 151.

<http://digitalcommons.unl.edu/greatplainsquarterly/151>

This Article is brought to you for free and open access by the Great Plains Studies, Center for at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Great Plains Quarterly by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Migration Out of 1930s Rural Eastern Oklahoma Insights for Climate Change Research

ROBERT MCLEMAN

The question of how communities and individuals adapt to changing climatic conditions is of pressing concern to scientists and policy-makers in light of the growing evidence that human activity has modified the Earth's climate. A number of authors have suggested that widespread changes in human settlement and migration patterns may occur in response to the future impacts of human-induced climate change, such as sea level change, changes in agricultural yields, and increasing frequency and intensity of extreme weather events.¹ While

it is generally believed that changes in the natural environment can indeed influence human migration and settlement patterns, the nature of this relationship is not well understood, and the number of empirical studies is relatively few.²

With this in mind, I undertook an investigation of how rural populations responded to a period of adverse climatic conditions in rural eastern Oklahoma during the 1930s, with particular interest in those households that adapted by migrating to rural California. This is not the first time that 1930s Oklahoma has been the subject of research into how people and communities adapt to difficult environmental conditions. In the wake of a 1985 conference entitled "Social Adaptation to Semi-Arid Environments" at the Center for Great Plains Studies in Lincoln, *Great Plains Quarterly* presented a series of papers by well-known scholars exploring human-environment interactions that gave rise to the "Dust Bowl" conditions of the 1930s and the consequent social impacts.³ Unlike the western part of the state, eastern Oklahoma does not lie in the semiarid environment of the Dust Bowl, but its rural population also suffered considerably

Key Words: climate change, drought, Dust Bowl, Great Depression, migration

Robert McLeeman is a postdoctoral fellow in geography at the University of Guelph, Ontario, Canada. His research specializes in human-environment relations and has been published or is forthcoming in journals including Climatic Change, The Canadian Geographer, and Die Erde (Germany).

from the harsh climatic conditions of that decade. While the climatic conditions of that decade were not necessarily the product of climate change, they are analogous to predictions of future climatic conditions in this and other continental regions. Studying how populations then adapted may provide insights on how people may respond to adverse impacts of future climate change. My intent in presenting these findings to today's *Great Plains Quarterly* readers is to stimulate further discussion of adaptation to climate change among scholars experienced in Great Plains research, a region where the human-environment relationship is so readily visible and where the future impacts of climate change are expected to be especially pronounced.⁴

MIGRATION PATTERNS IN OKLAHOMA DURING THE 1930S

In Oklahoma during the 1930s, three broad migration patterns occurred that were distinct from those observed before or after, and which were superimposed on a region where there already existed a fluid movement of people between farms and in and out of farm tenancy, depending upon their economic fortunes.⁵

The first of these was a migration into rural areas of central and eastern Oklahoma that began in the first half of the decade and coincided with the onset of the Great Depression.⁶ This movement consisted of two subgroups. The first was made up of people displaced from the wage-labor economy of the region, particularly from urban centers or areas where oil production or mining took place. These sectors of the economy contracted with the onset of the Depression, and many of those left unemployed went into subsistence farming to support their families. The entry of this group into farming briefly interrupted a longer-term trend that began in 1900, in which the proportion of Oklahoma's overall population living in rural areas had fallen into decline.⁷ The second subgroup consisted of rural migrants from semiarid regions in western Oklahoma who had lost their farms through inability to meet mortgage or

leasing payments. In the case of both subgroups, the attraction to eastern and central Oklahoma was the availability of large numbers of small tenant farms, where a mix of cash crop and subsistence farming could be taken up with modest amounts of economic capital.

The second movement began mid-decade. When rural sociologist Otis Durant Duncan reported that "an exodus from the State is proceeding rapidly," he was likely observing the front end of the departure of more than 300,000 people from Oklahoma over the following five years.⁸ One-third of these joined the large-scale interregional migration of over 300,000 people from the southern Great Plains to California between 1935 and 1941.⁹ Two distinct subgroups have been identified within the California migrant stream: migrants who originated in urban areas of the source region and tended to settle in urban areas in California, and those who originated in rural areas in the source region and settled in rural parts of California.¹⁰ The population of Kern County, California, the largest agricultural-county recipient of rural in-migrants from Oklahoma and other states, grew by more than 63 percent between 1935 and 1940.¹¹ Of the rural-to-rural migrants within this interstate migrant stream, most originated in eastern and central Oklahoma, Texas, Arkansas, and Missouri, and not in the semiarid "Dust Bowl" region to the west, despite that moniker having been given to the migration.¹² The Oklahomans within this group are the primary focus of this study.

The third movement observed was an intra-regional rural-to-urban migration, most visibly manifested in the form of an accumulation of squatter settlements on the outskirts of urban areas in the latter half of the decade (Fig. 1).¹³ Observers at the time noted that the high turnover of farms in Oklahoma, between one-quarter and one-third of farms in any given year, did not typically reflect an increase in farmers' socioeconomic status.¹⁴ Only a minority of farm moves led to a higher level of land tenure, and in more than one-half of cases no improvement in net wealth resulted from farmers' moves.¹⁵ There was increasing land-



FIG. 1. Shack camp on outskirts of Oklahoma City, 1939. Source: U.S. Library of Congress, Prints and Photographs Division, FSA-OWI Collection, LC-USF34-033878-D DLC.



FIG. 2. Location of study counties.

lessness, and for many, a pattern of socioeconomic descent emerged, from landownership to tenancy, sharecropping, agricultural labor, and ultimately, joining those who sought urban wage labor or government assistance.¹⁶

What motivated individual households to join one of these migrant streams, and what enabled others to avoid migration and adapt by other means? Recently developed theories in migration scholarship suggest that access to capital in its economic, social, and cultural forms has a significant influence on the migration behavior of individuals.¹⁷ In this study, I investigated the extent to which the capital endowments of rural eastern Oklahoman households were reflected among those who migrated to rural California in the 1930s. A wide range of information sources was drawn upon, including reports of federal government agencies and Oklahoma's agricultural experiment station, transcripts from congressional hearings, contemporary and post-event scholarly research, published oral histories and autobiographies, and migrant camp administrative records. These were supplemented by visits to Kern County, California, and Sequoyah County, Oklahoma (Fig. 2), to interview twenty-six individuals who participated in or witnessed the migration firsthand.¹⁸

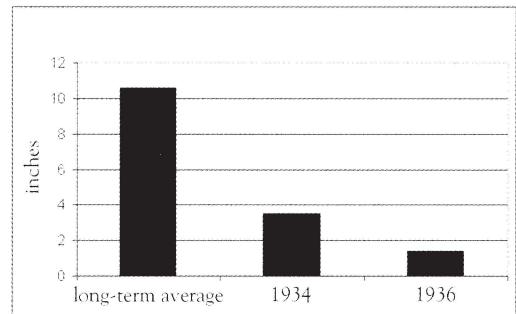


FIG. 3. Summer precipitation in Sequoyah County, Oklahoma, 1930s. Sources: U.S. Department of Agriculture (USDA) Weather Bureau Climatological Data, Oklahoma Section, vols. 43 and 45, 1934 and 1936; U.S. National Weather Service (NWS) Forecast Office records, Tulsa. "Long term average" shown here is based on NWS records, 1961-present, for Sallisaw, due to discontinuity of USDA records. Summer = June, July, August.

Average annual temperatures and precipitation levels in the state of Oklahoma are highly variable, and periods of extended drought are common. However, in Sequoyah County, which is located in the heart of the interregional migrant source area, unusually severe droughts occurred in 1934 and 1936 (Fig. 3), destroying crops and making water for livestock and draft animals scarce. Such conditions prevailed across most of the migrant source region, with local variations, and followed on the heels of several years of below average precipitation.¹⁹



FIG. 4. Agricultural worker's home near Sallisaw, Sequoyah County, Oklahoma, ca. 1939. Source: U.S. Library of Congress, Prints and Photographs Division, FSA-OWI Collection, LC-USF33-012266-M2 DLC.

In 1935 and 1937 severe storms caused flooding and widespread damage to crops in eastern Oklahoma, with Sequoyah County farms experiencing heavy crop damage in 1935.²⁰ Harsh climatic conditions such as these are expected to occur with greater frequency in this region in coming years as a result of climate change, making this a particularly useful case study for considering the potential impacts of future climate change on rural populations.²¹

The majority of farms in Sequoyah County in the 1930s were small (60-180 acres), located in upland areas, with thin soils. In a study of Haskell County, across the Arkansas River from Sequoyah, rural sociologist Robert McMillan suggested this area was characterized by "excessive landlessness, small farms, poor soils, large families, and [a] generally low plane of living" and that "small patches of cotton and corn, together with a few cows, hogs and chickens, make up the subsistence economy upon which the open-country people depend for a living."²² Farm operators in this part of Oklahoma typically lived on the land they worked (Fig. 4). Horse and mule teams were the norm; economist Carey McWilliams noted on a visit in 1940 that there were not more than ten tractors in all of Sequoyah County.²³ Crops were rain-fed, and draft animals and livestock drank from creeks or shallow ponds dug by horse-drawn

"fresnos." Farmers planted corn, a feed crop, on lower-lying parts of their land where soil moisture was highest. Cotton, the main cash crop, required less soil moisture than corn and was planted on higher ground.

A relatively small area of flat, fertile land could be found in floodplains along the southern edge of Sequoyah County, but this land was not farmed in the same manner as most land in the county. Beginning in the 1920s these "bottomlands" were bought up by a small number of corporate farm operators who farmed using tractors and employees instead of draft animals and family or tenant labor.²⁴ The majority of the rural population in Sequoyah was, as a result, living and working on the least productive agricultural lands in the county.

In 1935 farms other than those in the bottomlands of Sequoyah County were a mixture of owner-operated and tenant-operated, with tenants representing over 68 percent of the farming population.²⁵ Three types of tenancy existed: cash rent, crop sharing (typically referred to as "quarters and thirds"), and sharecropping.²⁶ The principal distinction between the latter two types of tenancy was whether the landlord or the tenant furnished the production materials (i.e., draft animals and crop inputs). Tenants who had their own draft animals and equipment would give the landlord a quarter of their cotton production and a third of their corn at the end of the year in exchange for the use of the land. Sharecroppers contributed little more than their own labor, and consequently would have to share the harvest equally with the landowner. Tenancy agreements were made orally, unless the landowner happened to be a corporation, and had to be renewed each year. At the end of the crop year the landlord could evict the tenant with three days' notice.²⁷ Tenants who had worked the same land for years enjoyed no more security than those less well established.

The alternating droughts and floods of the mid-1930s caused repeated crop failure throughout Oklahoma's cotton-producing region, including Sequoyah County. The right of tenant farmers to reside on their farm was

contingent upon producing sufficient crops and/or cash to pay the landowner. Repeated crop failures led to tenants being displaced in large numbers. Consequently, small-acreage tenant farmers from cotton-producing areas became the largest single group of entrants to Oklahoma's migrant population during the 1930s.²⁸

CAPITAL ENDOWMENTS OF MIGRANT AND NON-MIGRANT HOUSEHOLDS

Households that migrated from eastern Oklahoma to California during this period displayed distinctive patterns of capital endowments. They were generally young, intact nuclear families with a high level of social capital in the form of preexisting family connections to California.²⁹ By the 1920s a community of 60,000 former Oklahomans lived in California, many drawn by opportunities to obtain wage-based employment.³⁰ Historian James Gregory suggests that the 1930s migration was thus "not an atomistic dispersion of solitary families, but a guided chain migration."³¹ McWilliams noted that many 1930s squatter communities in rural California were made up of people who had all migrated from the same county.³² In oral history interviews conducted in the 1980s under the California Odyssey Project, interviewees who migrated from Oklahoma to California during the 1930s regularly reported that they followed other family members to California.³³

Interviewees I spoke with in California had similar experiences. The family of one interviewee, which had lost their farm in Oklahoma due to flooding, had to split up. The interviewee's stepfather and mother migrated to Arvin, California, where her stepfather's sister was already established. Meanwhile, she and her grandparents lived as squatters on private farmland in Oklahoma, and moved to California once her parents found work there. Another typical story was that of an Oklahoman I spoke with whose oldest brother went out to the San Joaquin Valley in the early 1930s and found work with DiGiorgio Farms, a large commercial

grower. He encouraged the rest of the family to follow, correctly assuring his father that with his skills with draft animals, he would quickly find work on arrival. Successive years of poor corn harvests in Oklahoma due to the droughts convinced his family to migrate. An excerpt from a poem written by another former migrant describes this process best:

My Daddy's older brother
Who had settled in Lamont
Said "I'll send you the money
To join us if you want"
He sent two hundred dollars
So we severed all our ties
Then to dusty Henryetta
We said our sad goodbyes.³⁴

The migration of the first family member to start the chain did not necessarily occur years ahead of following family members. One interviewee I spoke with in California had migrated there with his fifty-four-year-old father and family after their third successive loss of crops due to drought, hailstorms, and more drought. The interviewee's older brother had, in his words, "seen the writing on the wall" and moved to California in 1936. The remaining family members joined him the next year after yet another crop failure.

Social capital was not distributed uniformly across households that migrated to California, nor did all households that migrated to California have family members already well established there. Some families did go simply based on word-of-mouth reports, and others migrated only weeks or months on the heels of a family member. The father of one migrant I spoke with, for example, had lost his oilfield job near McAlester, Oklahoma, in 1929, and so tried sharecropping with his father. When that enterprise failed because of drought, her father in desperation took work as a farm laborer for fifty cents a day plus the right to occupy a dirt-floor cabin. Upon hearing by word of mouth that they could find better opportunities in California, her entire family, including grandparents, packed up and migrated at once, without family support

awaiting them. However, such accounts of independent family migration to California are a minority among my own interviews and those recorded in oral history projects I studied.

In general terms, social capital influenced the California migration in four key ways. First, information about job opportunities in California flowed back to Oklahoma through networks of friends and relatives. The flow of information was such that poems and folk songs singing the praises of California began circulating among Oklahomans.³⁵

Second, migrants typically did not have a great deal of money, and the presence of friends or relatives in California helped direct them to a place to stay, even if it was a squatters' camp or shack. Sometimes these camps were on the property of Oklahomans who had migrated previously, as was the case of two men I interviewed, one whose family lived in such a camp, the other whose family owned it.³⁶

Third, word of mouth among migrant communities helped members learn about job opportunities and the relative desirability of employers. Migrant camp administrator Tom Collins's weekly reports provide numerous references to the remarkable degree to which social capital continued to form among migrant communities after they arrived in California.³⁷ One California interviewee, whose father was an alcoholic widower, told me how the women of the camp looked after him while his father was away working or off drinking. Another interviewee recalled how one camp resident had gone back to Oklahoma for a visit and run out of money; the other camp residents took up a collection to help him get back. A breakfast meeting I had over biscuits and gravy with fourteen migrants was peppered with stories of how one person's family had lived with another's on arrival in California, or how vehicles were loaned between families.

Finally, access to social capital and the enhancement of it after arrival enabled "Okies," as the migrants were disparagingly called by locals, to maintain themselves in an area where the reception was often hostile. While central California's corporate farms needed large

numbers of workers to draw upon at particular times during the growing season, established residents did not want these workers to settle in their communities after harvest. In the words of one migrant, "It did not take long before the Okies and Arkies were viewed as a blight on the neighborhood."³⁸ Conflicts between migrants and residents have been well documented in novels, books, and film, and Collins's camp reports and Stanley's account of the building of the Sunset School for migrant children at this camp provide additional insights.³⁹ Before the Sunset School was built, many migrant children suffered discrimination in the local public schools. One migrant stated:

For two years we walked to the Vineland School. It was quite a trip and I can definitely remember the teachers weren't all pleased with the deluge of smart brained Okie kids. . . . I can definitely remember not appreciating the treatment received at this school. Some of the children at times were made to sit on the floor at the back of the room, even if seats were empty. I believe it was because some of these children were barefoot and less clean.⁴⁰

The migrant-built Sunset School quickly became a source of pride in the migrant community, and many interviewees related fond memories of how local, non-Oklahoman residents soon sought to enroll their children to take advantage of facilities like the in-ground swimming pool and unusual courses like aircraft mechanics.

Also common among migrants from rural Oklahoma to rural California was an endowment of embodied cultural capital, what might otherwise be referred to simply as human capital, in the form of particular agricultural skill sets and physical health and well-being. Until the 1950s cotton in California's San Joaquin Valley was picked manually, and draft animals still played a role on farms (Fig. 5). The ability to chop and pick cotton efficiently and to manage draft teams were skills in large supply in eastern Oklahoma. In previous decades,

Oklahomans had often sought seasonal agricultural work in neighboring states after their own growing season was finished, but in the 1930s these traditional employment destinations no longer had work for them.

For example, by 1936 there were more workers than needed to pick cotton in Texas, and by 1940 hunger was breaking out in out-of-state migrant camps along the Rio Grande.⁴¹ On the other hand, migrants who went farther afield, to Arizona or to California's San Joaquin Valley during cotton-picking season, would quickly find work. However, it was not possible to subsist year-round on cotton-picking wages alone, and so to remain in California required the ability to move frequently between farms and to perform physically demanding tasks like swamping potatoes and hauling irrigation equipment, often in scorching heat. Migrant families therefore tended not to bring elderly, unhealthy, or physically weak relatives with them. Instead, they tended to be young, healthy, married couples with children, and if old enough, the children worked with them in the fields.

In my interviews in Kern County, I encountered no migrants whose parents were well educated prior to migration, consistent with what I found in other sources. This is not surprising, as schools in Oklahoma were, as one interviewee carefully put it, "insufficient." Schools in Oklahoma were funded by property taxes, and in areas where landowners were the minority of rural residents, they had little incentive to fund anything more than rudimentary schools for the landless population. Landless farmers in Oklahoma generally had lower levels of education than landowners, with few having been educated beyond elementary school.⁴² There is no evidence to suggest that landless Oklahomans as a group did not value education, as witnessed by the school story referred to above. Oklahomans in the California migrant camps placed tremendous value on having a decent school available to them. Moreover, a full quarter of children enrolled in rural Kern County schools in 1938 were originally from Oklahoma.⁴³ In other words, lack of



FIG. 5. Cotton harvest in Kern County, California, 1930s. Source: U.S. Library of Congress, Prints and Photographs Division, FSA-OWI Collection, LC-USF34-018378-E DLC.

educational attainment (i.e., institutionalized cultural capital) among the heads of migrant households was likely the result of opportunities unavailable to them in Oklahoma, not the result of cultural preferences.

Economic capital among households that migrated to California also showed patterns of similarity. Draft animals, agricultural equipment, automobiles, and personal possessions were the principal manifestations of economic capital in the migrant source community. Ownership of automobiles among Oklahoman migrant families was as high as that of non-migrants, even though migrant families were typically poorer than non-migrants and possessed lower levels of many types of farm-related capital.⁴⁴ Most California migrants report having sold off their animals, personal possessions, and farm equipment prior to migrating, some using the money to purchase their first automobile. One interviewee told me that his father could not bear to sell his two favorite hunting dogs, and so these rode on the fenders of the automobile or ran alongside all the way to California. The most common

vehicle used by migrants, according to people I spoke with, was a Ford Model T or Model A, several years old, with mattresses strapped to the roof and towing behind a flat trailer of family possessions. Access to an automobile was not only necessary to make the long journey to California, but the agricultural labor market in California required workers to travel between farms. Year-round employment in one location on a large commercial farm was difficult to find and highly sought after; most workers would have to relocate frequently or travel long distances on a daily basis if maintaining a permanent home base.

Very few migrants to California appear to have owned any land prior to migration. In one study of 6,655 migrants to rural California, only 3.7 percent had owned land prior to migration.⁴⁵ Arvin migrant camp records show that only a handful of Oklahoman migrants had owned farmland immediately prior to migration.⁴⁶ Both sources suggest virtually all migrants had been landless agricultural laborers or tenant farmers prior to migration, and this is consistent with studies done in Oklahoma around the same time.⁴⁷ My own interviews with migrants and non-migrants in Oklahoma and California similarly confirmed that landownership or lack thereof was a factor that distinguished migrants and non-migrants. As one interviewee told me, "If you had your land [in Oklahoma] paid for, you probably made it [through the droughts]."

This distinction between landownership and tenancy appears to have been a key point of separation between those who were displaced from their homes and those who were not in 1930s Oklahoma. Not all tenant farmers were displaced, however, and not all that were displaced migrated immediately to California. For example, one interviewee's family, after losing their farm to drought, was able to remain in Oklahoma for several years by living with extended family members (i.e., making use of their local network of social capital). In his case, his mother's unexpected death led directly to his father's decision to migrate to California, as the extended family network was

no longer sufficient to support them without her presence.

Although they were clearly much poorer than established residents of California, the migrant stream included few that were completely penniless. Few migrants lacked access to automobiles or to interregional family networks, and few were elderly, physically disabled, or unwell. Those Oklahomans who were absolutely destitute had to find ways of adapting other than leaving for California. One source's parents, who remained in Oklahoma while other relatives went to California, were so destitute they spent one winter during the 1930s living in a chicken coop. Another said he would have left Sequoyah County sooner than he did (in the 1940s) if only he had had more money.

As money from cash crops became scarce in Oklahoma in the 1930s, noneconomic forms of capital increased in value. Strong local networks of social capital helped many rural Oklahomans adapt to the harsh conditions without migrating. Barter became a principal form of economic transaction in the rural community and was carried out through local family networks and community relationships. Milk and eggs were products commonly exchanged by farmers at rural stores for coffee and sugar. One interviewee, whose father had operated a store in Sallisaw during the Depression years, confirmed that having good standing within the community helped one obtain short-term credit from local merchants at a time when credit from financial institutions was prohibitively expensive or simply unavailable. Another interviewee, whose father was an electrician in Sallisaw, figured that at least half of her father's customers could not pay him.

Other households that resisted migration had networks of relatives within Oklahoma with whom they shared farms or residences. Some report using social connections within their local community to get work on local infrastructure projects under the Works Progress Administration (WPA), gaining an advantage over those who lacked such connections. As one migrant, whose family tried but failed to get WPA work, summarized, "There was a lot

of politics played.⁴⁸ At times, WPA work was the only wage labor available in places like Ballisaw during the 1930s, and farmers who could supply their own teams and equipment received additional payments on WPA jobs. The benefits of WPA jobs were significant, but social stigma could be attached. In the words of one migrant,

If you were on the WPA they would send a commodity truck around. A commodity truck was where they had staples in it like cheese, sugar, coffee, oatmeal, corn meal and stuff like that. It would meet at the schoolhouse which was about a mile and a half from where we lived and the people wouldn't go to meet this truck because they didn't want the handout. They were hungry but most of them had too much pride see. So they sent out a letter that if you didn't meet this truck to get these staples, they would cut you off the WPA. It hurt my dad so bad that he would send me on a horse up there with a sack to get the staples. It didn't bother me because I was young, but it would hurt his pride.⁴⁹

Cultural capital employed in sometimes ingenious ways also helped families who remained in Oklahoma adapt, through supplementing their diets and incomes. One interviewee described how his father earned money catching skunks for pelts without using guns or snares, which cost money, by fishing barbed wire down into the lair. Another explained how catfish were caught without bait or tackle "noodling" one's fingers under a sunken board and enticing the fish to bite them. During prohibition, many an isolated farm produced homemade whiskey for sale, and a still could be found on even the tiniest creek in Sequoyah County. Farm women canned or preserved practically every foodstuff imaginable, and agricultural extension agents helped pass along ideas on how to expand the range even further. Skills employed by farm women, such as the ability to make clothing by hand from practically any scrap of available material,

helped families reduce their dependence on cash money. California migrants frequently recall a particular sense of loss felt when the family had to sell the Singer sewing machine to finance the trip west.

DISCUSSION

Their capital endowments indicate that migrants who went to rural California were neither a random nor a representative selection of the general population of rural eastern Oklahoma. This is in part because New Deal programs to assist struggling families reached some households but not others, and those that did receive assistance found that it did not meet all their needs. For example, in Oklahoma in 1940 more than 90,000 families were eligible for WPA jobs but only one-third were so employed, many only occasionally.⁵⁰ Similarly, more than 130,000 tenant farmers in Oklahoma were eligible for relief assistance under programs administered by the Farm Security Administration, but funds for only about 16,000 were available.⁵¹ Assistance under the Agricultural Adjustment Act (AAA), which paid farmers to reduce acreages in an attempt to stabilize commodity prices, favored those who owned farms.⁵² As one migrant described it, even those who did participate in AAA did not always get paid promptly:

After Roosevelt was elected in 1932 he had the farmers plow up their cotton crop that they were growing because there was a surplus on the market. He thought that would bring prices up. My father plowed under his cotton crop that year [1937] and I know he didn't get paid for all of that until 1940. I don't know how far back it went. I don't remember if he got paid for any of it while we were in Oklahoma, but after we came to California he got paid for some of the crops he plowed under in Oklahoma.⁵³

Unlike owner-operators, tenant farmers did not have the option to subsist from year to year on land they did not own; the landlord

must be paid, and so a successful cash crop was required each year. It is also reported that some landlords evicted tenants specifically to collect the AAA acreage-reduction subsidy for themselves.⁵⁴

In short, the overall demand for government assistance, especially among Oklahoma's landless rural community, greatly exceeded what was available. Consequently, rural households that could not access government relief programs, which included large numbers of tenant farmers, were obliged to adapt in their own ways. Those households possessing the particular types of capital endowment described above adapted by migrating to California.

It should also be noted that, even as out-migration occurs from an area suffering under harsh climatic conditions, new migration can still occur into that area. This was the case in many eastern Oklahoma counties like Sequoyah County during the 1930s. Even while local tenant farmers were being displaced, displaced and unemployed people were arriving from other parts of the state where relatively fewer tenant opportunities existed. The increased demand for tenant farmland added economic capital to the pockets of landlords, who were able to collect "privilege money," an upfront demand for cash on top of the typical share of the crop to which the landlord was entitled.⁵⁵

The behavior of rural eastern Oklahomans during this period shows that, under harsh conditions, the different forms of capital may be interchangeable. With repeated droughts and floods, the principal vehicle by which farmers could obtain economic capital—by selling a harvest of cotton for cash—vanished. The value of other forms of capital changed in response. These new valuations of non-economic capital are reflected in the migration patterns. With fewer crops to harvest in Oklahoma and surrounding drought-stricken areas, the value of human capital in the form of agricultural labor skills became significantly less valuable on the local employment market, as there was little off-farm work to be had. Railroads, oilfields, and mines, the traditional sources of off-farm employment, had cut back

when the Depression set in. At the same time, demand was growing in rural California for the very skills many Oklahomans possessed, because the pool of immigrant workers who had traditionally performed such work were excluded from entering the United States as a result of immigration policy changes.⁵⁶ Moreover, agricultural wages were considerably higher in California than in Oklahoma. But to travel to California and gain access to opportunities there came with a cost, and so social capital built around former Oklahomans already established in California facilitated new migration.

An overarching objective that led me to undertake this research is to eventually be able to answer the question, If a community experiences adverse climatic conditions in the future, is migration likely to ensue, and if so, who is likely to leave? This case study suggests that the answer depends in the first instance on the nature and effectiveness of institutional and community-level adaptations. Had farm assistance under New Deal programs been more readily available to nonlandowning farmers, migration from eastern Oklahoma might have been less pronounced. Conversely, had there been no AAA or WPA assistance at all, more landowning farmers and even more tenants might have joined the migrant streams.

In the absence of institutional support, households will adapt to climatic adversity in their own ways as best they can given their capital endowments. How household capital endowments respond to climatic stimuli will vary from place to place, not only because of differing human systems but because of differing natural environmental conditions as well. In eastern Oklahoma, a decline of economic capital due to cash crop failure and stress on livestock was the most obvious impact of the climatic conditions of the 1930s. Had the location of this study been moved a relatively short distance, the effects of climate on capital endowments may have been quite different. For example, in southwestern Kansas in the 1930s, drought led to crop failure and stress on livestock, affecting farmers' economic capital,

as it did in eastern Oklahoma. However, cultivation of soils in the semiarid landscape of Kansas left them prone to wind erosion during dry periods, and the resulting dust storms caused respiratory illnesses in people, thereby impacting their health and ability to work (i.e., their embodied cultural capital) and providing another possible impetus for migration.⁵⁷ Moreover, the embodied cultural capital of southwestern Kansan grain farmers was different from that of eastern Oklahoman cotton farmers, and so the migration destination choices of the two groups may have differed accordingly.⁵⁸ This highlights the importance of exploring the effects of climate on all forms of capital; if we focus on only the economic impacts of climatic conditions, for example, we could overlook other important factors in the climate-migration relationship.

The methods used in this study could potentially allow for forecasting the spatial patterns of future climate-related migrations. For example, it is unsurprising that tens of thousands of Oklahomans migrated to California during the 1930s, but far fewer went to Washington State. Social networks were already well established between Oklahoma and California before the droughts struck, and the embodied cultural capital common among rural Oklahomans was valuable in California's cotton fields and oilfields. Fewer Oklahomans had social ties to Washington, and their embodied cultural capital was less valuable there, where neither cotton nor oil was produced. Therefore, large-scale migration to California was a foreseeable response to the droughts of the mid-1930s, and at least one researcher accurately made such a prediction before it began to gain momentum.⁵⁹

This case study suggests that the spatial patterns of existing social networks in a community influence their adaptation to climate change. Where household social networks are strong at the local scale, adaptations that do not lead to migration, or that lead to local-scale relocations, are more likely responses than long-distance migration away from the area. Conversely, if the community has widespread social networks, or is part of a transnational

community, then far-reaching migration is possible.⁶⁰ However, the social network is not in itself the sole indicator of the potential migration outcome; the relative value of the household's cultural capital in potential migration destinations may also prove influential. In this case study, cultural capital in its embodied form proved most influential, but researchers elsewhere have shown the importance of, for example, institutionalized cultural capital in migrant settlement.⁶¹

In conclusion, this case provides a rich example of the relationship between climate and human migration behavior. The lessons gained from its examination provide a useful first step in developing the ability to analyze and anticipate the effects future climate change may have on human population movements. It may be possible to extend the consideration of household endowments of capital beyond its effects on climate-related migration behavior to a broader theory of climate change adaptation. While caution needs to be taken not to make overly broad inferences from this one historical case, it is a promising departure point for future research of this type.

ACKNOWLEDGMENTS

This research was supported by the Social Science and Humanities Research Council of Canada, the Canada Research Chairs Program, and the Canadian Foundation for Innovation. Indirect support was also received from the International Region of Citizenship and Immigration Canada. I gratefully acknowledge the assistance of residents of Sequoyah County, Oklahoma, and Kern County, California, who shared their knowledge and experience. Not all can be named here, so I would like to acknowledge on behalf of all interviewees the following individuals who were instrumental in helping me establish my interview programs: John Maynard, Dick Mayo, Jeff Nickell, Ray Rush, Earl Shelton, and Doris Weddell. A special acknowledgment is made to the Oklahomans who meet each Thursday morning at the West Chester Bowl in Bakersfield. This paper benefited

from suggestions made by Barry Smit, Harald Bauder, Craig Johnson, Chris Bryant, and two anonymous reviewers.

NOTES

1. Michael H. Glantz and Jesse H. Ausubel, "Impact Assessment by Analogy: Comparing the Impacts of the Ogallala Aquifer Depletion and CO₂-Induced Climate Change," in *Societal Responses to Regional Climate Change*, ed. Michael H. Glantz, 113-42 (Boulder: Westview Press, 1988); Bo R. Döös, "Environmental Degradation, Global Food Production, and Risk for Large-Scale Migrations," *Ambio* 23, no. 2 (1994): 124-30; Graeme Hugo, "Environmental Concerns and Migration," *International Migration Review* 30, no. 1 (1996): 105-31; F. Landis MacKellar, Wolfgang Lutz, A. J. McMichael, and Astri Suhreke, "Population and Climate Change," in *Human Choice and Climate Change*, ed. Steve Rayner and Elizabeth L. Malone, 1:89-194 (Columbus: Battelle Press, 1998); C. H. D. Magadza, "Climate Change Impacts and Human Settlements in Africa: Prospects for Adaptation," *Environmental Monitoring and Assessment* 61, no. 1 (2000): 193-205; Elisabeth Meze-Hausken, "Migration Caused by Climate Change: How Vulnerable Are People in Dryland Areas?" *Mitigation and Adaptation Strategies for Climate Change* 5, no. 4 (2000): 379-406; John Hay and Martin Beniston, "Environmental Change and Migration," *Tiempo* 42 (December 2001): 17-21; Norman Myers, "Environmental Refugees: A Growing Phenomenon of the 21st Century," *Philosophical Transactions of the Royal Society London: Biological Sciences, Series B*: 357, no. 1420 (2002): 609-13; Jon Barnett, "Security and Climate Change," *Global Environmental Change* 13, no. 1 (2003): 7-17.
2. Nasra M. Shah, "An Overview of Present and Future Emigration Dynamics in South Asia," *International Migration* 32, no. 2 (1994): 217-68; A. A. Afolayan and I. O. Adelekan, "The Role of Climatic Variations on Migration and Human Health in Africa," *The Environmentalist* 18, no. 4 (1999): 213-18; Sabine Henry, Victor Piché, Dieudonné Ouédraogo, and Eric F. Lambin, "Descriptive Analysis of the Individual Migratory Pathways According to Environmental Typologies," *Population and Environment* 25, no. 5 (2004): 397-422.
3. See *Great Plains Quarterly* 6, no. 2 (Spring 1986).
4. National Assessment Synthesis Team, *Climate Change Impacts on the United States: The Potential Consequences of Climate Variability and Change*, vol. 2002 (New York: Cambridge University Press, 2000).
5. John H. Southern, *Farm Tenancy in Oklahoma*, Report no. B-239 (Stillwater: Oklahoma Agricultural Experiment Station, 1939); Robert T. McMillan, *Migration and Status of Open-Country Families in Oklahoma*, Report no. T-19 (Stillwater: Oklahoma Agricultural Experiment Station, 1943).
6. Robert T. McMillan, "Some Observations on Oklahoma Population Movements since 1930," *Rural Sociology* 1, no. 3 (1936): 332-43; U.S. House, "Testimony of Wheeler Mayo, Editor of Sequoyah County Times, Sallisaw, Okla., Oklahoma City Hearings, September 19-20, 1940," in *Select Committee to Investigate the Interstate Migration of Destitute Citizens, House of Representatives, on H. Res. 63 and H. Res. 491, 76th Cong., 3rd Sess., 1940-1941* (Washington, DC: Government Printing Office, 1941), 2122-2128; Douglas Hale, "The People of Oklahoma: Economics and Social Change," in *Oklahoma: New Views of the Forty-Sixth State*, ed. Anne Hodges Morgan and H. Wayne Morgan, 31-92 (Norman: University of Oklahoma Press, 1982); Donald W. Whisenhunt, "'We've Got the Hoover Blues': Oklahoma Transiency in the Days of the Great Depression," in *Hard Times in Oklahoma: The Depression Years*, ed. Kenneth E. Hendrickson, 101-14 (Oklahoma City: Oklahoma Historical Society, 1983).
7. Otis Durant Duncan, *Recent Population Trends in Oklahoma*, Report no. B-269 (Stillwater: Oklahoma Agricultural Experiment Station, 1943).
8. Otis Durant Duncan, *Population Trends in Oklahoma*, Report no. B-224 (Stillwater: Oklahoma Agricultural Experiment Station, 1935), 28; Hale, "People of Oklahoma."
9. Carey McWilliams, *Ill Fares the Land: Migrants and Migratory Labor in the United States* (Boston: Little, Brown, 1942); Hale "People of Oklahoma"; James N. Gregory, *American Exodus: The Dust Bowl Migration and Okie Culture in California* (New York: Oxford University Press, 1989).
10. Gregory, *American Exodus*.
11. Gerald Haslam, "What About the Okies?" *American History Illustrated* 12, no. 1 (1977): 28-39.
12. Paul Bonnifield, *The Dust Bowl: Men, Dirt, and Depression* (Albuquerque: University of New Mexico Press, 1979); R. Douglas Hurt, *The Dust Bowl: An Agricultural and Social History* (Chicago: Nelson-Hall, 1981).
13. McWilliams, *Ill Fares the Land*; Whisenhunt, "'We've Got the Hoover Blues"'; Gregory, *American Exodus*.
14. J. T. Sanders, *The Economic and Social Aspects of Mobility of Oklahoma Farmers*, Report no. B-195 (Stillwater: Oklahoma Agricultural Experiment Station, 1929); Southern, *Farm Tenancy in Oklahoma*.
15. McMillan, *Migration and Status of Open-Country Families*.
16. Conrad Taeuber and Charles S. Hoffman, *Recent Migration from the Drought Areas* (U.S. Resettlement Administration, U.S. Farm Security

Administration, U.S. Bureau of Agricultural Economics, 1937).

17. For example, Victor Nee and Jimy Sanders, "Understanding the Diversity of Migrant Incorporation: A Forms-of-Capital Approach," *Ethnic and Racial Studies* 24, no. 3 (2001): 386-411.

18. Interviews were conducted on the understanding that interviewee identities would remain anonymous. No recording equipment was used during interviews, out of respect for the comfort and privacy of the interviewees, many of whom are elderly and in declining health. Handwritten notes were taken during interviews and then transcribed afterwards into electronic software. Consequently, lengthy verbatim quotes from interviews cannot be reproduced here. The quotes that are contained in this article are taken from sources where the identity of the source has been publicly disclosed elsewhere.

19. McMillan, "Some Observations on Oklahoma Population Movements."

20. Jacqueline Gordon Sherman, "The Oklahomans in California during the Depression Decade, 1931-1941" (PhD thesis, University of California, 1970); Whisenhunt, "We've Got the Hoover Blues"; U.S. House, "Testimony of Wheeler Mayo."

21. Cynthia Rosenzweig and Daniel Hillel, "The Dust Bowl of the 1930s: Analog of Greenhouse Effect in the Great Plains?" *Journal of Environmental Quality* 22, no. 1 (1993): 9-22; National Assessment Team, *Climate Change Impacts on the United States*.

22. Robert T. McMillan, *Migration of Population in Five Oklahoma Townships*, Report no. B-271 (Stillwater: Oklahoma Agricultural Experiment Station, 1943), 10.

23. McWilliams, *Ill Fares the Land*.

24. U.S. House, "Testimony of Wheeler Mayo."

25. William J. Coleman and H. Alfred Hockley, *Legal Aspects of Landlord-Tenant Relationships in Oklahoma*, Report no. B-241 (Stillwater: Oklahoma Agricultural Experiment Station, 1940).

26. For a detailed description of Oklahoman farm tenancy, see Southern, *Farm Tenancy in Oklahoma*.

27. Coleman and Hockley, *Legal Aspects of Landlord-Tenant Relationships in Oklahoma*.

28. McMillan, *Migration of Population in Five Oklahoma Townships*.

29. This observation has also been made previously in American Exodus, historian James Gregory's derailed 1989 account of the California migration.

30. McMillan, "Some Observations on Oklahoma Population Movements"; Otis Durant Duncan, *The Theory and Consequences of Mobility of Farm Population*, Report no. C-88 (Stillwater: Oklahoma Agricultural Experiment Station, 1940); U.S. House, "Testimony of Wheeler Mayo."

31. Gregory, *American Exodus*, 28.

32. McWilliams, *Ill Fares the Land*.

33. California Odyssey Project, "Oral History Interviews," 1981, California State University-Bakersfield Library, <http://www.lib.csub.edu/special/interviews.html>.

34. Excerpt from "Thank You Henryetta" by Ron Langley, which appeared in the *Dust Bowl Journal*, supplement to the *Arvin Tiller/Lamont Reporter*, October 16, 2002, 10. Henryetta is the author's hometown in Oklahoma; Lamont is a farming community in California's southern San Joaquin Valley.

35. Gregory, *American Exodus*.

36. This latter gentleman has passed away since I met him, highlighting the urgency of documenting, before it is lost irrecoverably, the wealth of information this group of Americans possesses about adaptation to adverse climatic.

37. Tom Collins, *Weekly Administrative Reports, Arvin Federal Migrant Labor Camp* (San Francisco: Farm Security Administration, 1936). Among these reports is recorded the visit of John Steinbeck, who based much of his novel *The Grapes of Wrath* on information obtained from Collins and observations made at the Arvin camp.

38. Flora Nichols, "Leo B. Hart Saw Okie Children as 'Diamonds in the Rough,'" *Dust Bowl Journal*, a supplement to the *Arvin Tiller/Lamont Reporter*, October 2, 1996, 6.

39. See Walter J. Stein, *California and the Dust Bowl Migration* (Westport, CT: Greenwood Press, 1973); Gregory, *American Exodus*; Steinbeck's novel *The Grapes of Wrath* and the subsequent film version; Collins, *Weekly Administrative Reports, Arvin*; Jerry Stanley, *Children of the Dust Bowl: The True Story of the School at Weedpatch Camp* (New York: Crown Publishers, 1992).

40. E. R. Selbach Johnson, "1934-1939: A Journey to Weedpatch Camp," *Dust Bowl Journal*, a supplement to the *Arvin Tiller/Lamont Reporter*, October 20, 1999, 5-6.

41. U.S. House, "Testimony of J. H. Bond, Assistant Director; R. McKinley, Farm Placement Supervisor; and E. H. Banks, Farm Placement Supervisor, Texas State Employment Service, Austin, Oklahoma City Hearings, September 19-20, 1940," in *Select Committee to Investigate the Interstate Migration of Destitute Citizens, House of Representatives, on H. Res. 63 and H. Res. 491, 76th Cong., 3rd Sess., 1940-41* (Washington, DC: Government Printing Office, 1941), 1812-32.

42. McMillan, *Migration of Population in Five Oklahoma Townships*.

43. "Oklahoma Pupils Form 24 Per Cent," *Bakersfield Californian*, May 10, 1938, 9.

44. McMillan, *Migration of Population in Five Oklahoma Townships*.

45. Alma Holzschuh, *A Study of 6655 Migrant Households Receiving Emergency Grants* (San Francisco: Farm Security Administration, 1939).

46. Collins, *Weekly Administrative Reports*, Arvin.
47. McMillan, *Migration of Population in Five Oklahoma Townships*.
48. Mildred Lenora Morris Ward and James Harrison Ward, Oral history interview for the California Odyssey Project.
49. Terry Bennett Clipper, Oral history interview for the California Odyssey Project.
50. McWilliams, *Ill Fares the Land*.
51. McWilliams, *Ill Fares the Land*.
52. Gilbert C. Fite, *Cotton Fields No More: Southern Agriculture 1865-1980*, New Perspectives on the South, ed. Charles P. Roland (Lexington: University Press of Kentucky, 1984).
53. Martha Lee Martin Jackson, Oral history interview for the California Odyssey Project.
54. Dorothea Lange and Paul S. Taylor, *An American Exodus: A Record of Human Erosion* (New York: Reynal and Hitchcock, 1939).
55. Southern, *Farm Tenancy in Oklahoma*.
56. Donal F. Pearis, "The California Farm Worker, 1930-1942" (PhD thesis, University of California, 1971).
57. Caroline A. Henderson, "Letters from the Dust Bowl," in *Americans View Their Dust Bowl Experience*, ed. John R. Wunder, Frances W. Kaye, and Vernon Carstensen, 93-112 (Boulder: University of Colorado Press, 1999).
58. It is therefore unsurprising that I did not encounter any Kansans when seeking interviewees in Kern County.
59. McMillan, "Some Observations on Oklahoma Population Movements."
60. See description in Thomas Faist, "Trans-national Social Spaces out of International Migration: Evolution, Significance and Future Prospects," *Archives Européennes de Sociologie* 39 (1998): 213-47.
61. Harald Bauder, "'Brain Abuse,' or the Devaluation of Immigrant Labour in Canada," *Antipode* 35 (2003): 699-717.