12 Applied Rural Geography: Choices and Opportunities

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INTRODUCTION

The first chapter of this book stressed that applied research is a logical continuation of the scientific method. Its primary concern is to extend the earlier stages of description, analysis, and prediction to the fourth and fifth stages, evaluation and implementation. The first and other chapters also emphasized the role of values and trust inherent in applied research. This chapter provides a discussion of values, how these impact research and policy, and special attention to how one can participate in the process of change in rural geography. To do this, we must carefully consider past literature in order to understand why new directions and analytical choices must be made. Applied rural geography includes the geographical analysis of environmental, economic, and social problems in the countryside, unincorporated hamlets and villages, and on the rural-urban fringe around metropolitan centers. Here a whole host of environmental and spatial problems affecting people abound. Although the major points made herein apply to this topic, the discussion of the impact of values on research and policy have applicability to any area of study.

Applied research in geography must specifically apply geographic techniques and concepts to the understanding and solving of land-related and spatial societal problems. Only a comprehensive critical analysis of these problems can lead to sound public policy recommendations. Pure geographic research does not qualify as applied geography because it neither evaluates its findings and the conditions that led to them nor does it suggest potential

solutions to special problems. Purely academic geographic researchers never work to see recommendations implemented. Nevertheless, research that is not intended for practical purposes can often be useful to applied geographers. Indeed, because of the shortage of studies in explicitly applied rural geography, pure agricultural research is an important source of information.

The paucity of applied rural research in geography represents an unfulfilled professional responsibility. In order to justify our roles in state-supported universities, especially land-grant colleges, geographers are obligated to direct a significant proportion of their attention to land-related social problems: to study the nature of rural problems, to provide short-term improvements based on rigorous analysis, and to formulate long-term alternatives to present practices, policies, and institutions. In the hope of stimulating more work in a neglected though essential area, this chapter is meant to be provocative, to challenge traditional views of agricultural geography, and to offer new empirical and analytical research directions for applied rural geography.

The chapter consists of four parts. First, past applied agricultural research is contrasted with the absence of such research today. Because theory determines explanations and subsequent solutions, the choice of an analytical framework is critical in applied research, and the second section looks at those choices as they relate to rural geography. Six major areas of future applied research are outlined in the third section. And finally, because applied research requires the implementation of findings, the fourth section considers the development of change-agent skills so important to geographers who want to do work with and to persuade policymakers and the public that they should consider, and perhaps adopt, what their research indicates.

REVIEW OF PAST APPLIED RURAL RESEARCH

A critical review of past applied rural geographic research provides the basis for appreciating the need for new directions in this subfield. To ignore past applied research would render the subsequent discussions on the necessity for alternative analytical perspectives, the importance of new applied research topics, and the acquisition of change-agent skills meaningless. After all, the past is prelude to the future.

You will remember from Chapter 1 that early applied geography was characterized by substantial mapping applications and field work, and dates back to the beginning of this century. During this time, geography in the United States was distinguished from European geography by the American emphasis on field research. Ideas and procedures of detailed field study were first formulated by researchers in agricultural geography. In the last decade of the nineteenth century, one geographic research frontier was the mapping of field data. Researchers were not interested in policy problems directly, but rather in academic questions. Jones and Sauer developed some of the initial methods of intensive large-scale field studies. In 1917, Sauer described the proposed soil survey by the State of Michigan. "The creation of such a survey marks an important step in the development of resources of the state." Sauer already foresaw that the soil survey would "gradually evolve into an agricultural survey." Such county surveys would include location (distance to markets and accessibility to them), topography and drainage, classification of soil types related to slope, climatic studies, land uses (character of unimproved land, fields in crop), and farm types (manner of tillage, nature of farm buildings). Most of these data would be presented on maps and in photographs. In subsequent years, Sauer outlined the soil classification of Michigan and the general mapping procedures for land utilization studies.

In the 1920's, prominent geographers participated in annual field conferences at which they developed more advanced techniques. These subsequently played important roles in applied research when geographers worked on government sponsored soil and land-use surveys. Jones and Finch summarized the advancements and argued that intensive field studies of typical small agricultural areas would lead to sound generalizations. These studies required: (1) separate maps showing land uses and natural features (slopes, soil, drainage, and natural vegetation) and (2) maps combining all the significant features of both the natural and the cultural landscapes. The fractional code of notation allowed three elements of the physical land to be recorded by digits in the denominator and three elements of land use by digits in the numerator.

Chapter 1 also noted applied geography in government-sponsored land-use surveys, including the now classic Michigan Land Economic Survey, the Tennessee Valley Authority projects, and work in Appalachia. Additional research, in addition to these, with the Land Utilization Survey of Great Britain, Stamp provided the first comprehensive national documentation of land uses and their related problems. Through analysis of land use, misuse, and abuse, he helped introduce solutions through a planning approach, which was institutionalized by the 1947 Town and Country Planning Act. Coleman continued this land survey tradition by completing the Second Land Utilization Survey in 1967. Another descendant of the earlier land surveys was the Rural Land Classification Program of Puerto Rico in the early 1950's. The practical application of geographic field mapping techniques and resource inventories provided valuable research topics and planning materials.

For some geographers of the time, such as Baker and Bowman, the essence of agricultural geography was utilitarian, to offer information and explanations to residents of a region to allow them "to use national resources to the greatest possible economic advantage." Bowman probably made the strongest statement in support of applied rural geography: "If geography is ever to influence political and social policies it must deal with ideas that..."
seem to be of critical importance to government and society, conveyed in terms that leaders can understand. Nevertheless, by the late 1940's, Finch and Ackerman felt that geographers had emphasized academic matters over practical research on national and international problems.15

As Frazier notes in Chapter 1, this is true. Because although a few geographers were performing services for government and other agencies, most were actually concerned more with resolving academic mapping problems. The research frontier of these geographers coincided with the data needs of government agencies to solve land-related societal problems. In short, even though major advancements in technique were being accomplished, interest was still largely academic, with only minor concern for providing policymakers with land-use maps and analysis.

The appeal for applied research on agricultural topics continued to be heard in the 1960's and 1970's. McCarty and Lindberg envisioned the work of economic geographers, which included agricultural geographers, to find solutions to problems, both theoretical ones ("Why is this phenomenon located here?") and practical ones ("What types of economic development would be most successful in this area?"). Symons made an even stronger statement for applied research: "Any contribution that agricultural geography can make in this direction to help solve global hunger is ultimately more important than its academic justification." Yet Symons himself spent 260 pages on description and analysis of various types of agricultural systems without reference to application! Perhaps he thought greater knowledge would remedy global problems.

In Chapter 7, Gustafson discusses the application of remote sensing to a number of problems, particularly crop monitoring and Third World development problems, which are certainly rural geography. These applications are in their infancy and are certainly laudable. However, they are quite few in number and the bulk of rural geographic problems remain ignored from an applied viewpoint. This is quite apparent in that very little applied research has been included in recent agricultural textbooks or published in professional journals in the last few decades. Hardly any applied rural work has been conducted, either published or unpublished.14 Applied rural geography continues to be espoused, but little practiced. The few agricultural geographers, therefore, who were trained in the 1960's and 1970's, have not had adequate role models to do applied research; consequently, they have done little. Instead, rural geographers have pursued pure research.

During the 1960's, two groups of rural and agricultural geographers emerged. One group applied new techniques, namely mathematics and computers, to the same academic questions, while the other group provided new empirical evidence for traditional questions. The former and smaller of the two groups proceeded to build abstract models and to seek mathematical solutions to theoretical issues rather than tackle continuing and emerging social problems in the contemporary countryside. Harvey presented a review of the literature on such normative models—Thunen, static or partial equilibrium, dynamic economic function, decision-making, and behavioral models—used in the mathematical approach to agricultural activities.19

Tarrant's Agricultural Geography, for example, stresses data sources, statistical analysis, and theoretical formulations within a supply-and-demand framework but fails to ask essentially different theoretical questions from those in traditional textbooks.20

The second group represents the majority of agricultural geographers. Their work is not reviewed here, but a few examples are cited to illustrate the lost opportunities in applied rural research.21 Many of these geographers studied potentially valuable applied topics yet ignored both social problems associated with their work and their public policy implications. Their interests reflect the long-standing academic tradition of knowledge for its own sake. Because most rural geographers were trained to do pure research, they are unfamiliar with, and often uncomfortable doing, applied rural research. Many fear that policy-oriented research is harmful to their professional image, distorts academic judgements, and prostitutes the profession.22

Some of the best contributions in rural geography, which would be the most appropriate for applied research, are cited here. Hart is one of the better known rural geographers, because of the amount and variety of topics he has researched, and is representative of the kinds of work other rural and agricultural geographers have done. Although Hart has studied many important applied rural topics, he, like other rural geographers, has not extended his analysis to the last two stages of the scientific method, prescription and implementation, which are necessary for research to be applied. When Hart studied the correlation between farm mechanization and field sizes and shapes for cash-corn, corn-hog, and general farming systems in Indiana, he identified a major problem in farm communities.23 The impact of mechanization on farming and farm families is described and explained, but no evaluations of these trends and suggestions for alternatives are offered. In another study, Hart examined the effects of urban expansion, strip mining, the Soil Bank program, and land acquisition by companies in the forest industry to explain the rate and location of the loss and abandonment of farmland and agricultural land in the eastern United States.24 The loss of farmland and agricultural land is another major social problem in the United States. The rural out-migration is another major social problem in the United States. The opportunities to conduct applied geographic research again are lost. Evaluation of these developments and policy suggestions are absent. In a related study, Hart examined the loss of farmland around metropolitan centers.25 Although many nongeographers are doing applied research for local, state, and federal agencies on this topic, Hart concluded that because the annual rate of urban conversion of farmland is only about 1.2 million acres (0.5 million ha), no applied research exists.26 Most other rural geographical studies reflect the same shortcomings found in Hart's work. Only the descriptive and explanatory stages of research are provided, whereas the prescriptive and evaluative stages are omitted. Both Gregor's research on industrial and large-scale farming in the West and Prunty's work on crop changes and the restructuring of plantations in the South could have been important applied research topics.27 Similarly,
research by Raitz and Mather on ethnic groups and specialty crops, and by Smith on fragmented farms in the Midwest could prove useful topics in dealing with and solving related social problems. Carlson's research on the importance of migrant workers to large-scale agriculture again avoids critical policy questions that might help alleviate the persistent associated societal problems. These and other rural geographers neither address the social problems at hand nor offer solutions to remedy these problems. And by not doing so, they provide justifications for the status quo and the perpetuation of real-world problems. Rural geographers cannot escape applied research: either they do pure research that supports and justifies, usually implicitly, current practices and policies, or they do applied research that provides holistic explanations and makes policy recommendations to facilitate progressive social change.

ANALYTICAL CHOICES: THEORY DETERMINES SOLUTIONS

Before applied rural geographers conduct their research, they need to select an appropriate analytical paradigm. This choice is particularly important because in applied rural geography, the focus is on understanding in order to provide specific solutions rather than on description and explanation for its own sake. And such solutions are determined by their antecedent analytical paradigm. The debate in the late 1960's over relevance in geography was really about for whom was our research and teaching relevant and how was it “that research done in the name of science (which was supposed to be ideology-free) was having effects that appeared somewhat biased in favor of the status quo and in favor of the ruling class of the corporate state.”

The striking absence of applied rural geography is probably due to the so-called value-free position taken by most social scientists. Because the majority of geographers believe in the possibility and desirability of ethical objectivity and neutrality, they find it difficult to do applied research and to participate in public-policy formulations, both of which clearly deal with difficult and complex value issues. By contrast, in sociology, where this debate about value-free science has been raging for a long time, applied research is well established. Geographers, as Stamp pointed out, think of their analysis as objective but planning solutions as subjective.

Buttimer, one of the first geographers to explicitly consider the question of values in geographical writing and teaching, concluded that geographers generally admit to values in the choice of the problems studied and again in the implications of their research, but “the process of analysis is, or should be, value free.” Buttimer, however, admitted that one's professional activities cannot be separated from one's many personal and political values. Geographers such as Peet, Morrill, Harvey, de Souza and Porter, Blaut, King, and Soja argue that objective science is both undesirable and impossible. Instead, they suggest that geographers should make their values explicit so that their analyses can be judged accordingly. Indeed, they argue that positivistic science is an ideology to which alternatives must be considered.

Although most geographers purport to do value-free work, a careful reading of their research reveals the implicit values inherent in one of three analytical perspectives—conservative, liberal, and radical. The a priori assumptions about human nature, the role of the state, and the general workings of the economy are fundamentally different for each paradigm and lead to a different analysis and evaluation in applied research. Each of the three alternative paradigms will be briefly described and then shown to lead to completely different results in applied research for one specific rural issue—agricultural migrant workers.

Conservative Perspective

Conservatives assume that individuals need material incentives to be productive. A capitalist economy based on competition and maximizing profits allows all individuals to achieve maximum personal liberty and material well-being. Individuals, households, and firms are assumed to act freely and rationally to produce a harmonious state of equilibrium by means of market forces. Consequently, social and economic changes occur gradually, not abruptly, all through the actions of individuals. Faith in the efficiency and optimality of private market mechanisms—essentially forces of supply and demand—allow conservatives to postulate a limited role for governments. Probably the single most important function of the state is to provide national and international law and order through the use of police and military forces so that capitalism can operate freely. Given this view of the state, conservatives hold that government involvement in the economy causes more problems than it solves. They argue that many national and international problems are due to government interference and that the solutions to these problems lie in fewer government regulations and programs.

The conservative approach to rural problems rests on two points. First, more participation by rural populations in the world market economy will assure their faster and greater economic development. Second, difficulties of rural economic development, which are recognized by conservatives, are due to lack of natural resources and to traits of individuals. Characteristics such as traditionality, racial composition, lack of education and work incentives, and inefficient farm sizes are often cited to explain the problems of the countryside. Critics of the conservative perspective label this approach “blaming the victim.”

Liberal Perspective

Liberals share most of the same fundamental assumptions with conservatives about human nature and the importance of capitalism. But because they
place the highest value on individual equality and social justice, they argue that governments, acting on behalf of all the people, are justified to act whenever market mechanisms fail to satisfy human needs, such as housing, health care, food, and employment. Liberals believe that laws and governmental programs can improve the workings of the market economy at the national and international levels. Although most liberals also blame the victim in explaining causes of societal problems, they, unlike conservatives, are willing to provide governmental assistance to the needy. Consequently, the liberal perspective supports government involvement in agriculture, for example, price supports, crop insurance, acreage limitations, food stamps, and special programs for agricultural migrants.

Radical Perspective

The conservative and liberal perspectives are widely accepted by social scientists, although at present the latter has more followers than the former. Conservative and liberal perspectives are not radical, according to Marxists, because their analyses do not go to the root or origin of problems. The liberal viewpoint is the least understood and accepted among North American scholars and the general public.

Assuming that humans are naturally productive and cooperative, the radical paradigm consists of five broad hypotheses about society. These are briefly summarized as:

1. The structure and evolution of any society depend principally on the society's dominant mode of production or the manner in which a society produces, appropriates, and distributes its means of subsistence.

2. The most important and distinctive feature of the capitalist mode of production is its organization of labor by means of wage contracts. Human labor is treated like a commodity.

3. The private ownership of capital (e.g., land, machinery, money) and the dominance of impersonal markets in which goods and productive factors are exchanged for money combine to provide the central dynamics of capitalist societies. The forces of competition cause owners of capital to protect themselves by accumulating more profits which in turn are reinvested to produce even more profits. In such a society, human needs become subordinated to the needs of the market place; only commodities that have exchange value are produced, while unprofitable use values remain unmet. For example, in the United States food is distributed on the basis of ability to pay (exchange value) rather than on the basis of need (use value). Consequently, farmers are encouraged to grow less food to keep prices up while at the same time 10 million Americans are hungry.

4. Technological advances are hastened on by the competitive advantage that capitalists require in order to stay ahead of their competitors. The results are the factorization of work (labor-intensive practices by mechanization and automation) in the context of competitive individualism (vs. cooperation), and class struggle between workers and capitalists (and class struggle between workers and capitalists). These forces produce a constantly changing set of basic social institutions that determine the nature of social relations in daily life, the distribution of power among groups and individuals, and therefore the distribution of benefits to those directly included or associated with the capitalist class. In such a market economy, the state and its programs predominately serve the interest of the ruling class, the capitalists, not the workers whose labor produces the wealth of the society.

The unequal relations between the urban center and the rural periphery, in both spatial and structural terms, results in the underdevelopment of the countryside. These present inequalities in wealth and power result from the very nature of the capitalist world economy. Economic development of rural areas cannot ultimately occur in a market economy, with or without government intervention, but only under a collectively owned and governed economic system that allocates resources according to need, not private profit.

The three paradigms are also differentiated by their scientific method. Scientists who use logical positivism as their scientific methodology work to define and define their paradigm within a conservative or liberal paradigm. They argue that objective analysis is essential to understand societies; subjective policy solutions can be made, but outside the scientific method. The radical paradigm relies on a fundamentally different scientific methodology, one based on dialectic reasoning and the inseparable nature of facts and values. Human societies do not work out universal laws as in nature but rather create the changing institutions and social relations that govern our existence.

The choices among these three perspectives have led to significantly different results in the research on migrant workers. The work of Carlson illustrates the conservative analytical framework so common in geography. His research has four characteristics. There is a heavy emphasis on description, in this case, of the establishment and growth of specialty agriculture in California and Ohio and its changing requirements for seasonal farm laborers. Emphasis is on production, on the distribution of work and money, on the relative position of owners and migrants. Migrants respond to impersonal forces, the push and pull factors associated with the market. Spanish Americans are considered underemployed and comprise a surplus labor pool. “The technological revolution and growing awareness of the quality of living conditions for farm laborers” determined the number of seasonal farm laborers in the San Luis Valley. The positive actions of migrants are emphasized: “willing to do stoop labor;” “they [Nevajos] have a great sense of reliability as farm workers; and “they [Spanish Americans] have a sense of reliability as farm workers.” This did not mean they were not compensated for the poor picking conditions, and many considered that merely leaving the reservation was a vacation.”

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quences of government involvement in the marketplace were shown when state and federal income and housing standards and other regulations encouraged farmers to mechanize their harvesting and thus reduce their need for migrants. The impression is left that by supposedly helping migrants, government regulations actually harmed them by reducing the total number of jobs available and by not increasing wages.

Geographic explanations that emphasize regional resource endowments, distance from markets, cultural isolation, and spatial patterns also employ other components of the conservative paradigm as well. If geography is a conservative discipline, as Morrill has argued, then geographers view societal problems that are not government-induced as temporary aberrations or as evidence of human biological inequalities. The former problems are too short-lived to alter or too temporary to warrant attention, and the latter problems are unchangeable. Hence, applied research cannot exist except as a critique of government involvement, and this perspective may explain why so little applied rural geography has been done to date.

No geographers have provided a liberal or radical perspective on migrant workers, but the liberal perspective is illustrated in the work of Robert Coles, a psychiatrist. He has lived with, researched, and written about migrant families, particularly migrant children. His writings rest heavily on letting migrants speak for themselves, expressing their hopes, despair, worries, and working conditions. As a clinician, he prides himself on distinguishing between the objective conditions that constitute the migrant problems and the range of subjective responses to those problems. While very sympathetic to improving the living conditions of migrants, he is quick to point out that these problems are complicated and that there are many causes of poverty.

Although he uses logical empiricism for his scientific method, his analysis and recommendations are based on liberal formulations. He does not blame migrants for their economic impoverishment but sees them as complex human beings suffering from many kinds of exploitation. Social justice is clearly a goal of his professional work, and “only the federal government, through OSHA standards, for example, can provide some protection for migrants.” Michael Burawoy, a sociologist, provides a radical analysis of migrant labor. Only the salient features of his analysis are outlined here.

1. Theoretical formulation in the dialectical materialism mode is the main thrust of the paper; description is used to support theoretical arguments and to provide historical reference. For Burawoy, individuals cannot be conceived of as “rational actors maximizing their self interests under market forces, because the flow of labor is directed by supramarket institutions beyond the control of an individual or even a group of migrants.”

2. Throughout the article, the Marxist concept of reproduction of labor power is employed. That is, migrant workers must be maintained on a day-to-day basis and be reproduced to perform work in the next generation. In the United States, as elsewhere, the processes of maintenance and renewal of migrant labor take place “in geographically separate locations.” Normally, the cost of subsistence and renewal are borne by employers and local communities in the same place, but with migrants, the renewal costs are externalized to the state of their origin or indeed to a foreign country, such as Mexico. One class and regional economy is thus pitted against another class and region, resulting in conflicts that are particularly evident in the fields of California and Texas.

3. Class-differences are often masked in capitalist countries by the prevailing racial prejudices. This allows class relations between growers and migrants to be subordinated to racial differences between these two groups and between the different racial groups of migrants. In the presence of these obfuscations, conservative analysis becomes widely accepted, as Carlson’s work demonstrates.

4. Migrant labor functions as a regulator of capitalist crises, cushioning the impact of the expansion and contraction of capital. When mechanization increases, seasonal workers, treated as any other factor of production, are displaced with little difficulty because of their few numbers, racial composition, economic poverty, and political powerlessness.

5. Because family farm labor, and especially migrant families, are exploited, receiving less in wages and fringe benefits than they produce, individual wages can be kept at subsistence levels. This explains why most migrant families earn below the official poverty level.

6. The role of the state through the former bracero program, research on plant breeding for mechanization by land-grant colleges, minimum standards in hourly wages and housing quality, and closing of schools during harvest seasons, is critical in supporting the dominant class interests of agribusiness and large-scale producers. The economic and social costs resulting from these agribusiness and government decisions are born disproportionately by migrants, small-scale farmers, and consumers. Despite the awareness of these problems and the good intentions of some liberal politicians, the strength of the farm lobby in Washington has prevented any effective changes.

7. Contradictions and conflicts between growers, growers and migrants, and agriculture and other industries are pervasive and persistent under capitalism. With the absence of foreign workers and increased unionization of domestic migrant workers, large-scale producers prefer to reduce their dependence on dis obedient and costly labor and substitute capital in the form of mechanization instead. This trend, however, is detrimental to small-scale producers who lack the capital (mostly borrowed) to mechanize in order to stay competitive with the larger producers. Increased farm mechanization in turn eliminates competi-
tion and consequently rewards the large-scale producers even more. Conflict also exists between growers and migrants on the matter of working conditions, wages, and control over the means of production. Because growers as a group represent capital, they control migrants. As migrants organize to increase their share of the surplus produced, growers, if they can, mechanize, thereby displacing migrants and often reducing the wages of those still remaining. In addition, contradictions exist between agriculture and other sectors. Nonagricultural industries prefer to have food costs low so that they can pay their workers lower wages for subsistence; but these lower food prices are detrimental to the food producers. Higher food prices for the food industry increase the cost of living for all consumers, who in turn demand higher wages, which could cut into the profits of the nonagricultural sectors. Thus, what is rational for any one firm, agricultural or industrial, results in the anarchy of production for the whole society.

As can be seen from these different perspectives on a single issue, the research of Hart and others reviewed previously can be critiqued not only because it fails to fulfill the requirements of the definition of applied rural research but also because the chosen analytical perspectives cannot lead to profoundly change-oriented directives. Hart’s logical positivistic analysis reflects the conservative paradigm. In his study on the loss and abandonment of cleared farmland in the eastern United States, he concluded, “In the East as a whole it appears that physical hindrances to effective agriculture have been the most important factor influencing the loss and abandonment of cleared farm land.”

59 Given this environmental and frankly deterministic explanation, human institutions, for example, agricultural pricing policies by private firms and government agencies, are ignored, and because nature can hardly be altered by human actions, public policy issues are conveniently never dealt with.

Although Hart has worked on some of the more important rural research topics, his conservative conceptual framework prevents him from offering other than geographical explanations. His article on farmland loss on metropolitan fringes illustrates this shortcoming clearly. The seemingly small loss of farmland can be shown to be actually much larger because of urban shadow effects, the quality of the cropland converted, and where this converted farmland is located within regions and states. Furthermore, the institutions and policies that subsidize the suburbanization of the countryside and new irrigated cropland in the West on the one hand and drained farmland in the Midwest on the other are conveniently ignored. Indeed, the argument to preserve prime farmland is different at metropolitan, national, and global scales and for various time periods.60 The absence of these considerations not only weakens his arguments but, more seriously, renders no service to policy makers. Indeed, it reinforces the current economic and political decisions as if they were the most beneficial and rational, thus supporting present policy decisions.

In contrast, the radical paradigm illustrated by Bawarowsky provides a more subtle, integrative, and holistic framework within which social problems can be understood dialectically. His analysis suggests that by transcending the logical positivist tradition, geographers can liberate their analytical and societal powers. A radical paradigm, seeking understanding of the fundamental causes of societal problems, provides an intellectual framework for effective and progressive social change. In this context geography is seen as a special way of viewing societal processes and institutions reflected in space and landscapes and not as a restrictive form of explanation that justifies the status quo or at best provides band aid solutions. In future research, rural geographers must consciously choose among the three paradigms and recognize the resulting implications for public policies and social changes.

FUTURE RURAL RESEARCH THEMES

One of the major shortcomings of earlier applied agricultural geography was the narrow conceptualization of research themes. Geographers, then and now, by emphasizing restrictive environmental and spatial perspectives, fail not only to provide comprehensive understanding of rural issues but also, consequently, to provide effective solutions. Instead, geographers can serve themselves and society more effectively if they function as social scientists with a geographical viewpoint. Geographers, after all, claim a holistic approach to the study of the world: the interaction and interdependence of human-environmental systems, distinctive regional ensembles, and spatial organizations of societies. With such a wide range of research areas and justifications, they need hardly concern themselves with whether or not a research problem is geographical. To do so would only distract from the more important tasks that lie ahead. The real limits on what geographers can do effectively are essentially determined by the competence of individual researchers and the support and assistance they receive from other professionals.

Although this chapter focuses on rural geography, future research themes should focus on the functional relationships that bind rural hinterlands to urban centers through economic, political, and social institutions.61 These relations are expressed in various geographical dimensions — environmental, regional, and spatial. Peter Gould expressed this rural-urban connection well:

There are always nodes and linkages in such systems binding and articulating the spatial processes that are at the heart of a geographer’s concern. These are not rural or urban, even for the sake of intellectual convenience. Rather, they are rural and urban, and are quite inextricably entwined. The rural areas are tied ever more tightly to the urban nodes as people, goods and messages flow and grow reciprocally to feed back information through geographic space.62

During the late 1960’s and 1970’s, few rural geographers shared the interest of some urban geographers in social problems. The absence of rural
geographers on this research frontier is reflected in *Antipode*, which has published 22 issues since 1969, yet only two issues focused on rural social problems. Rural geographers, who have avoided such topics, have thus rendered themselves irrelevant to applied research. Unfortunately, this represents the vast majority of rural and agricultural geographers. The next section of this chapter offers research directions in addressing social problems in the countryside for the next generation of rural geographers to explain and help eradicate.

Six major neglected topic areas are suggested for future analytical and policy research.

**Land-Related Laws** A vast array of federal and state laws and practices dealing with land-related issues exists. The paucity of evaluative research on laws dealing with different assessment of farmland near urban centers, corporate farming, and federal land-granting policies suggests a major research frontier in rural applied geography. Today, 42 states have laws to preserve farmland near metropolitan centers. Are these laws achieving their stated objectives? Would alternative objectives and laws be more appropriate to preserve prime cropland and farming as a way of life? These and many other specific questions must be answered before state policymakers can effectively serve the public. Rural geographers with their environmental and spatial training are well suited to do this research, yet almost none has.

Six states in the Great Plains and northern Midwest have laws on corporate farming. Geographers could examine the effectiveness of these laws to control and/or monitor such farms. Substantial evaluative research is needed to prove or disprove the rhetoric of the threat of corporate farming to family farmers and take-over of farmland by foreign interests. The geographic skills of field work, public record analysis, and spatial thinking would be valuable contributions to the prevailing legal and agricultural economic perspectives on this topic.

A few historical geographers have done preliminary work on the alienation of the public domain. Minnesota, for example, received one third of all the land within its boundaries through various federal land-granting laws. The purposes and objectives of the grants were part of the laws, yet important geographical research remains as to who benefited, where, and why. McIntosh’s studies on the use and abuse of the Forest Reserve Act of 1897 and the Timber Culture Act of 1873 demonstrate the fruitfulness of social-problem-oriented research. When this kind of research deals with land-granting laws that are still in force, recommendations for changes in the laws and financial adjustments can be made. Land grants to railroads and the Emigration Act of 1902 are two other examples. In Minnesota, railroad companies received free of charge 26 percent of all land in the state (5.1 million ha or 12.7 million acres). Often, particularly in the West, railroads failed to meet all the conditions under which they received their land grants but still enjoyed financial benefits of their illegal actions. In another example of this kind of research, the Homestead Act was to deliver federally subsidized water to resident owners of a maximum of 64.8 ha (160 acres). Despite the clear purpose of the act, the law has been systematically violated. Because the Department of the Interior is currently considering new guidelines for the act, research on the environmental and regional consequences of violating the act could substantiate the need finally to enforce it.

**Rural Poverty** The level of living, measured by income, education, health care, working conditions, and housing, in rural areas is below metropolitan standards. A few examples illustrate this point. Rural families occupy 2.5 million substandard houses, which is 60 percent of the inadequate housing in the United States. Yet, over 60 percent of the federal monies available for improving housing go to cities. The geography of income balance is well suited to spatial analysis. “While eight percent of urban families are below the official subsistence poverty level, fifteen percent of the rural families are among the subsistence poor.” In many regions, particularly the South and Southwest, enormous areas have over half the families with incomes below the poverty level. Based on analysis of regional income disparity, Peet recommended that at least one large growth pole be located within or on the fringe of each poverty core and that these growth centers be built, owned, and maintained by the federal government. Although the specific policy implications are not developed in this article, Peet’s work indicates one direction for applied rural research.

The role of federal agricultural policies on food and fiber production has caught the attention of some rural geographers, but they have slighted the applied aspects of this research topic. The rationale for governmental commodity production controls has been to stabilize farm commodity prices and hence to improve the standard of living for farm families. Critical questions remain, however: Who benefits from these programs and hence what are the real functions of these programs? Too often, unjustified statements, which reject clarifying applied research, are made about farm programs.

**Rural Ethnicity and Race** Rural ethnic and racial groups are mostly studied for their contributions to area differentiation or regional uniqueness, while the correlation between certain ethnic groups and rural poverty is largely ignored. Urgent research is particularly necessary on several fronts. In numerous states, especially in Maine and Washington, Indian land claims and treaty rights are being argued by tribes in the courts. The need for detailed county courthouse research on land ownership patterns and land capabilities on reservations, and historical work on territorial treaty claims provides rural geographers great opportunities to offer their services to the longest- oppressed people in North America.

Although the use of children in industries was outlawed by the Fair Labor Standard Act of 1938, 25 percent of the 1970 farm wage workers were under 16 years of age. This problem is especially acute because Chicano and child agricultural workers are mostly localized in the same
regions in which agribusiness is dominant. Although this areal and functional relationship has been explored by Alvar Carlson, he ignores the impoverishment of migrants and the financial gains of growers. His narrow spatial description fails to provide an explanation that could serve to eradicate this persistent societal problem. Again, the potential for applied rural research remains undeveloped.

Black farm-ownership in the South is another topic for applied rural geographers. Fisher has shown that in 1969, the acreage and number of nonwhite farm owners in selected southern states was only 30 percent of that in 1910. His explanation of these trends rests on a vague description of commercialism in agriculture and blaming black farmers for "a less advanced attitude toward improved methods." Such analysis supports the status quo and fails to provide alternatives to black land-grant colleges, the impact of federal acreage allotments and marketing quotas on black farmers, and the value of keeping blacks on farms in an industrial society.

Rural Women Research into the special problems associated with rural women is nonexistent in geography. The 30 million women in rural America have the double plight of discrimination based on sex and invisibility conferred by place of residence. The effect of spatial isolation on rural women is a logical geographic research frontier. For example, what forms of sexist oppression (such as wife abuse or role restrictions) increase in frequency and intensity as settlement density decreases? What are the particular problems of establishing and effectively operating social services (abortion clinics, shelters for battered women, and divorce projects), which liberate women in low density areas from sexism? The contribution of women to nonfarm labor varies with the type of farming (e.g., dairy vs. cash grain farms) and may interact with ethnicity or religion; yet the value of this labor is ignored by most rural researchers. A complete analysis of farm incomes would include female household and field work and thus reveal the actual level of farm labor exploitation in the United States. In addition, what special consequences has farm mechanization had on rural women? Have they been less affected than men, and at what psychological costs? Have they been forced to take off-farm employment to keep their farms solvent? What are the spatial problems of providing day-care centers for the children of these women? Our general ignorance of issues related to rural women is so great that even the task of identifying questions that demand our attention will be a challenge for most geographers.

New Forms of Farming New organizational forms are emerging in rural America. Although a few forms—sidewalk and suitcase farming—have been described, trends in large-scale mechanization and contract farming are ignored. In any case, the economic and social consequences of these new institutional forms on rural communities and small towns has not been studied. As a graduate student, LaRose contributed the only research by a geographer on the effects of large-scale farming on rural communities. In the 1960's, LaRose reexamined Arvin, a large farm community, and Dinuba, a small farm community; both communities had been initially compared by Goldschmidt in the mid-1940's. LaRose found, as Goldschmidt had 20 years earlier, that Dinuba had more educational, social, and cultural facilities, higher educational attainment, better rural infrastructures, and a higher standard of living than Arvin.

A related question beyond who owns farms and who benefits from their ownership is who controls the farmers. Farmers might own the land and do the farm work but might not make the management decisions. Off-farm corporations, for example, Del Monte,Ralston Purina, and Tenneco, are contracting with farmers to produce poultry, fruits, and vegetables. In the vegetable processing industry, 80 percent of the product is under the direct control of corporations; 10 percent produced by the processors themselves and 70 percent produced by contract farmers. Contract farming is not restricted to such states as Florida and California but is found in many areas of the Midwest and Northeast. Yet, where are the geographies of large-scale farming and vertical integration?

The Ecology of Agriculture The environmental impact of large-scale agricultural production needs to be examined by rural geographers. The possibility that companies mine both land and water to obtain high, short-term profits, then move on to new areas, requires applied research. Geography has had a long standing interest in ecology; indeed, some have argued that this tradition should be the essence of geography itself. Nevertheless, rural geographers have not examined the ecological consequences of modern agricultural practices in the United States. The financial, socioeconomic, and soil impoverishment problems inherent in monoculture, as practiced both in industrial and Third World countries, have received only parenthetical remarks. But as Igbaruzike has shown, "an unbalanced soil and force-fed crop, two symbols of monoculture, result in grossly defective food, as the declining protein content of U.S. wheat shows."

With the abandonment of soil conservation practices in the last five years, problems of soil erosion and water pollution will become problematic. Already in many areas, topsoil is measured in inches, where it was once measured in feet. With the loss of natural soil fertility, greater quantities of fertilizers are applied to the land, causing further soil and water problems. The southeastern and delta states contain 8 percent of the national farmland but these states consume 17 percent of the nitrogen fertilizers and 20 percent of the pesticides used in the United States. Organic farming provides an alternative to high-energy agriculture. The environmental and social implications of organic farms need to be explored by rural geographers, so that their findings can provide realistic and viable alternatives to present modes of agricultural production. Today, organic farming is economically
feasible because of the cost of energy for artificial fertilizers and pesticides. Finally, the effects of pivot irrigation on the water table in the Great Plains and the effects of run-off from feedlots in the West require study with a view towards solving these regional environmental problems.

IMPLEMENTING SOLUTIONS:
CHANGE-AGENT SKILLS

Although the works of Carlson, Coles, and Burawoy are not explicitly applied, their respective analytical frameworks have profound implications for public policy recommendations. Solutions to rural problems cannot exist in isolation from specific paradigms from which they arise, however implicit. After the analysis of a particular problem and the recommendation of specific solutions, rural geographers are faced with the final stage of the scientific method in applied research. To stop short of implementation would be to preserve the academic, isolated, and elitist nature of traditional science and fail to justify the energy spent, because a recommendation ignored is not better than an analysis without recommendation. Bringing the findings of applied research to fruition requires that geographers develop change-agent skills that will insure the acceptance of their recommendations by the communities affected and by the policy-makers responsible to these communities.

Applied geographers can perform several overlapping change-agent roles: They can be catalysts, solution givers, helpers in problem-solving, and resource persons. Many people resist change, even though they can identify major problems in their own communities. Professionals in conjunction with a few local leaders can often overcome this inertia. The role of applied rural geographers is critical at this stage because their training and resources can allow them to document the nature of the problems in the communities. Such studies can form the necessary catalyst to overcome apathy. Based on their research findings, geographers can also function as solution givers. Having studied the specifics of a problem, they can present alternative short-term and long-term solutions. Aside from these two initiating roles, applied geographers can also perform two supportive functions. They can help groups and organizations through the various stages of problem-solving. Specific community needs must first be recognized and defined as precisely as possible. The relevant problems are then diagnosed and objectives determined to solve these problems. Relevant resources, personnel and financial, must be assembled. A variety of solutions are selected from those known to exist in practice and theory, and other solutions are created where necessary. Certain solutions are then adopted and implemented. Finally, these solutions are evaluated to determine if they have satisfied the previously stated needs and problems of the community target group. Geographers can also provide numerous kinds of resources necessary to facilitate the public problem-solving process: funding sources, data and research studies, and knowledgeable and skill-specific persons.

Any one or a combination of these four change-agent roles allows rural geographers to do applied work. Applied rural research can be done either as an insider with an intimate knowledge of the problem, a group wants to solve, or as an outsider, working on problems around which mobilization is necessary. Rural geographers can also work from below, working with people who have no formal power, or from above, working with established power structures. Change agents need research, communication, and facilitation skills but also special attitudes towards the people with whom they are working to bring about social change. Effective change agents welcome the insights, knowledge, and experiences of local people. They try to appreciate and understand other people, particularly oppressed people, as much as they can. Change agents need to avoid leadership responsibilities and encourage instead local people to become leaders and encourage mass participation in the democratic process of planned change.

For applied research to reach fruition, geographers require patience and persistence with community leaders and lawmakers of all kinds in order to see their recommendations considered and at least part of their recommendations implemented. In contrast to pure researchers, applied geographers need to make repeated presentations of their findings and policy alternatives to as many audiences as possible. In the political arena, repeated exposure to ideas and policies is essential before effective laws and programs can be enacted.

Controversy occurs with public participation in the implementation stage of applied research. With effective change-agent skills and appropriate attitudes, however, geographers will be equipped and should be eager to help clarify public issues. At this stage, applied rural geographers receive their greatest satisfaction and rewards. For as Bunge said, "science must be done, not simply thought about."}

NOTES


7. At one time or another the following geographers were in attendance: Charles C. Colby, D.H. Davis, V.C. Finch, William Haas, Wellington D. Jones, A.K. Lobeck, Kenneth C. McMurry, A.E. Parkins, Robert S. Platt, C.O. Bauer, and Derwent S. Whittlesey.


21. Gregor, *Geography of Agriculture*, provides an extensive review of this literature.


34. Buttimer, *Values in Geography*, p. 6.

35. See particularly David Harvey, "The Population, Resources, and the Ideology of Science," *Economic Geography*, Vol. 50 (July 1974): 256-77; and Leslie J. King, "Alternatives to a Po...
69. White and Black land grant colleges are compared in Highwater, *Hard Tomatoes*, pp. 70-71.