



Revisiting the Origins of and Distinctions Between Natural Resource Sociology and Environmental Sociology

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A forum focusing on similarities and differences in environmental sociology and the sociology of natural resources is healthy. Attempts to more adequately understand the relationships between social organization and the natural world need to be informed by reviews and critiques of past and current work by resource/environmental social scientists and the array of theoretical frameworks, research designs, and problem-solving capabilities that are represented in the literature. In this article, we provide a perspective on the paths that natural resource sociology and environmental sociology have taken. We draw distinctions based on their origins, conceptual orientations, theoretical perspectives, and problem-solving focuses. Clarifying the differences between natural resource sociology and environmental sociology will not only help in tracing the intellectual foundations for these subfields of inquiry and bring to light lost literature, but also point to areas where synthesis and convergence in these subfields are possible.

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Fred Buttel's 1996 article in *Rural Sociology*, entitled "Environmental and Resource Sociology: Theoretical Issues and Opportunities for Synthesis," offered rural

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sociologists a forum for thoughtful debate regarding environmental sociology and natural resource sociology. While the title of that article implied a distinction between environmental sociology and natural resource sociology, Buttel's discussion generally treated the two as focusing on a convergent set of themes. However, we believe these two areas of sociological inquiry are distinguished by more than just the nominal differences Buttel referred to in his first footnote. Here we suggest that a variety of fundamental differences has existed between these two subfields of sociology. If a meaningful synthesis is to occur, these differences must first be recognized, understood, discussed, and addressed. Our article is organized around three themes where differences occur. These include (1) origins as a subfield of inquiry; (2) conceptual orientation and theoretical perspective; and (3) problem-solving tradition.

Origins as a Subfield of Inquiry

Two threads of research activity place natural resource sociology at the heart of American rural sociology. First, early rural scholars, perhaps because of their appointments in colleges of agriculture at the nation's land-grant institutions, focused considerable attention on documenting a new form of community unique to rural America, namely, the dispersed farmstead settlement pattern. This community formation, in contrast to the traditional New England village, Mormon village, or line village settlements, consisted of a trade center community and its associated farm hinterland population.

The focal point of research on the trade center community was an explicit concern with land use patterns and the social organization of rural life in space and time. This body of research and its emphasis on the roles of land and spatial factors represent an important foundation for what eventually emerged as the field of natural resource sociology. Several early rural sociologists, including C. J. Galpin (1915), Carl Zimmerman (1930), T. Lynn Smith (1953), and C. J. Lively (1932), relied upon geographical parameters to describe this new form of community and the relationships of farm families to the community center. Additional studies, which documented the time required to leave the farm gate and travel to town for supplies and return home, helped to define the boundaries of the trade center community (Wilson 1912). Subsequent analyses began to add characteristics of the farming system such as acres in production, crop mix, land cover, soil quality, and technological changes in farming to the land use equation. For example, Chittick (1955) examined the role of resource conditions, such as soil type and rainfall patterns, as factors influencing population distributions and patterns of social organization in rural South Dakota.

By the late 1930s and early 1940s, these concerns were fully integrated into the Bureau of Economic Analysis's farm community work. Its Rural Life Study Series, which focused on a set of comparative analyses of six rural communities thought to represent points along a high community stability to great instability continuum, is perhaps the best encapsulation of concerns over land use patterns and the social organization of rural life in space and time. This work, when coupled with the synthesizing efforts of Sorokin and Zimmerman, first in the *Principles of Rural-Urban Sociology* (1929) and later in Sorokin, Zimmerman, and Galpin's *Systematic Source Book of Rural Sociology* (1930), helped to frame the orientation for a rural sociological discipline. According to these authors, the people, social organization of community, and land were the critical elements for study.

The second line of research that can be identified as an early point of departure for the field of natural resource sociology developed in response to the impact of the

relative isolation associated with farm life. Specific concerns about rural family well-being and poverty emerged out of the activities of the Rural Country Life Commission. Rural sociologists, including John Kolb (1933), mapped the patterns of social relations among farm and rural families. By using such maps, Kolb established that the nature and extent of social relations among neighbors were shaped by spatial locations of residences. This work was among the earliest to document that hills and valleys (topographical relief) and road systems impeded or facilitated the development of sociability, an important criterion in family well-being. Kolb's work echoed that of Sorokin, Zimmerman, and Galpin (1930), who noted that it was the relations between social and nonsocial phenomena (geographical and biological environment) that distinguished the rural sociological research approach.

The association between land and resource conditions and patterns of social well-being and social organization was a focal point of research among a number of early rural sociologists. For example, Benton (1918) examined relationships between depletion of soil fertility and the social organization of farm communities. Similarly, Schickele et al. (1935) examined the effects of soil erosion on the declining stability of community institutions such as schools and churches. Buie (1944) linked soil erosion levels to levels of participation in rural churches, while Hypes (1944) "equated soil erosion with human erosion" (Field and Burch 1988, 18).

Clearly, concern with natural resources helped shape the analytical strategies of rural sociologists from the outset. Moreover, it continues to provide a framework for those who approach the understanding of rural life through the eyes of small town/social area analysis (Fuguitt and Field 1972; Fuguitt and Kasarda 1981), rural communities (Wilkinson 1991), and social landscape analysis (Radeloff et al. 2000; 2001; Field et al. 2000). Natural resource sociologists have made use of sophisticated spatial analytical tools, including geographic information systems (Luloff and Befort 1989; Bradshaw and Muller 1998), to inform studies on the relationships between natural resources and rural society. Analyses of forest and mining dependent communities have helped to further define the conceptual foundation and measures of natural resource sociology in rural sociology. The linkage between the emergence of the Rural Sociological Society in 1937 and the attention that came to be focused on natural resource issues has been a central aspect to the history of the discipline. This linkage in the early 1960s led to the development of a formally organized interest group within the Rural Sociological Society, the Natural Resources Research Group. Not coincidentally, these traditions contributed to the central role many rural sociologists have played in the much later development of environmental sociology.

Environmental sociology, which emerged as a distinct subfield much later than natural resource sociology, has its core connections in general sociology, philosophy, and the humanities. Yet the legitimacy to study the environment within a sociological framework was slow to emerge. Writing in the late 1960s, Sam Klausner (1971) assessed sociologists' attention to the environment. He scanned papers presented at the American Sociological Association over a period of 10 years. He noted two collections of papers concerning the environment. The first was by Merton, Broom, and Cottrell, and presented in 1959; the second was by Larzarfield, Sewell, and Wilensky in 1967. Klausner concluded that these efforts did not move the sociological community to embrace the environment. Further, he stated, "neither collection of papers demonstrates an interest in transposing physical environmental variables into sociological coordinates" (Klausner 1971, 2).

Almost all commentators on the origins of environmental sociology link its birth to the late 1960s, a period of great social and political unrest in the United States and

many other societies. Moreover, they usually point to key events, including the Santa Barbara oil spill and growing concerns about pesticide contamination spurred by the publication of Rachel Carson's *Silent Spring*, as the precursors to shifts in public consciousness about environmental quality and concerted action by people concerned about environmental issues.

The political activism of this period was an essential element in the emergence of modern environmentalism. Individuals who had participated in a variety of social movements—including antiwar, Black and gray power, and women's rights—now fixed their attention on the environment. Because they had gained much experience through involvement in other large-scale movements, the startup time (necessary for central tasks including organizational development, fund-raising activities, gaining legitimacy, goal setting, and implementation strategies) for environmental actions was greatly reduced, and the environmental movement was well established by the time of the passage of the National Environmental Policy Act in 1969 and the first Earth Day in 1970.

These events and changes stimulated much of the early work by environmental sociologists, many of whom focused their efforts on attempts to document and understand the changing values and attitudes of people toward environmental problems. The social movements literature played an important role in guiding this work. Essentially, two major areas of study emerged at this time: (1) large-scale survey research designed to measure environmental attitudes and concerns, and (2) attempts at establishing a theoretical perspective on the societal origins of environmental problems and their implications for future social change. A number of sociologists, including Denton Morrison, Allan Schnaiberg, Riley Dunlap, William Catton, Craig Humphrey, and Fred Buttel, played important roles in institutionalizing this area of study, especially in graduate programs in sociology. These and other environmental sociologists focused their work on the growing concerns related to problems of environmental degradation, particularly as it reflected human uses and abuses of the environment. By fixing their attention here, the early environmental sociologists were able to incorporate a wide assortment of related work into their studies, including concerns about the impacts of modern technology, threats of over- and underpopulation, problems of environmental abuse associated with the production systems and political economies of advanced industrial societies, and the potential for conflicts associated with resource scarcity and environmental deterioration. By focusing on such issues they were able to capture much of the attention that surrounded growing public concerns about environmental crises. As a result, environmental sociology emerged and flourished beginning in the 1970s.

Conceptual Orientation and Theoretical Perspective

Rural community studies and human ecology reflect the intellectual centerpieces of natural resource sociology. Social and biophysical variables come together in studies of agricultural, forestry, fisheries, and/or mining resource-dependent communities and their hinterlands. Thus, the examination of human behavior on the land, along rivers, in the mines, and on the seas has been a regular line of social science research, especially in rural sociology. In such studies, attention is regularly placed on understanding how environmental/natural resource endowments condition social organization, and how social well-being is linked to and affected by resource conditions and use patterns.

The research by natural resource sociologists draws from several basic theoretical orientations and traditions. The early emphasis on spatial factors, such as proximity to population centers and topographic features of the landscape, clearly reflects the influences of the theoretical tenets of sociological human ecology (including social area analysis), as well as related work in the fields of geography and regional economics. Much of the work focusing on patterns of community change associated with expansions and contractions of resource-based industries (e.g., research on various resource dependent communities) draws upon several core theoretical traditions in sociology, including theories focused on the social implications of modernization and urbanism.

Given the emphasis in natural resource sociology on the linkages of localized resource conditions with patterns of community organization and change, it is hardly surprising that community theory has played a significant role in informing the work of many natural resource sociologists. In an early exemplar of this tradition, Paul Landis (1938) described the formation and development of community institutional structures in association with the discovery and mining of iron ore in the Mesabi range of Minnesota. He noted the expansion and contraction in community affairs and services as ore production increased or decreased.

Similarly, W. A. Anderson (1953) described the demise of hops farming in New York State as the acidification of soils increased with successive annual plantings. With this change in soil acidity, dairy farming replaced hops production as the dominant agricultural activity in upstate New York. Anderson then described the sociological implications of this change not only for the rural farm population, but for the structure and institutions of local communities, including government, banking, services, trade, and voluntary organizations. As a result of the transformation from hops production to dairy farming, new trade service communities arose and linkages to the natural resource base evolved as well.

Harold and Louise Kaufman's (1946) study of forest-dependent communities around Libby, Montana, documented the associations among forests and timber and the public agencies charged with their management. In this pioneering study, the U.S. Forest Service was shown to have a direct influence on the economic structure of the rural community. As a result of its control of the timber supply, and inequitable allocation among local mills, the political role and influence of the forest industry on the host community were evidenced.

Walter Goldschmidt's mid-1940s study of the impacts of different agricultural models on local community structure also contributes to our understanding of the relationship between natural resources and the human population dependent upon them (Goldschmidt 1978). Goldschmidt's analysis led him to conclude that farm structure, and by implication class structure, was the principal determinant of rural community well-being. In subsequent years numerous studies have continued to assess the "Goldschmidt hypothesis" in a broad range of rural areas characterized by differing resource conditions and diverse patterns of agricultural organization (e.g., see Barnes and Blevins 1992; Fujimoto 1978; Gilles and Dalecki 1988; Green 1985; Harris and Gilbert 1982; Heffernan 1982; Lobao 1990; Swanson 1990).

More recent research representative of the focal themes that characterize natural resource sociology includes a broad range of studies focusing on the ways in which resource development and use patterns affect patterns of social change and social well-being in rural communities and rural regions. For example, since the 1970s there have been numerous studies of the effects of large-scale energy resource development on patterns of community growth and decline and associated shifts in various

dimensions of social well-being (e.g., Brown et al. 1989; Gramling and Freudenburg 1990; England and Albrecht 1984; Freudenburg 1981; 1986; Freudenburg and Gramling 1994; Freudenburg et al. 1998; Freudenburg and Jones 1991; Gold 1986; Greider and Krannich 1985; Krannich et al. 1985; 1989; Wilkinson et al. 1984). Also, a number of more recent studies have focused on timber-dependent communities and the social implications of changing timber resource and timber industry conditions and management practices on both timber workers and timber-dependent communities (for example, Brown 1995; Carroll 1995; Carroll et al. 2000; Joshi et al. 2000; Kusel et al. 2000; Lee et al. 1991; Weeks 1990). In a similar vein are various studies focusing on the effects of changing resource conditions and management practices on fishing communities and fishers (see Ellis 1986; Haedrich and Hamilton 2000; Hamilton and Duncan 2000). Common to these and similar bodies of research in the field of natural resource sociology is a focus on linkages between specific resource conditions and their implications for social organization, community change, and social well-being.

These themes are further represented by the emergence of social impact assessment in the 1960s. Much of this work has explicitly adopted a community systems approach such as that outlined in Roland Warren's (1978) adaption of social systems theory to understanding community structure, function, and change (cf. Little and Krannich 1989; Branch et al. 1984). Studies of the linkages between the resource conditions and use patterns and various aspects of community adaptability and capacity and community well-being also have drawn on theoretical perspectives on community and well-being derived from Senn (1984) and Wilkinson (1991). For example, Kusel's (1996) discussion of the implications of resource conditions and management issues for community capacity in the Sierra Nevada ecosystem and Krannich and Zollinger's (1997) discussion of the ways in which various resource dependency contexts may affect the prospects for community action, community development, and well-being reflect such a perspective. Applications of the theoretical notion of "social capital" to understanding community capacity and adaptability in the context of changing resource conditions further illustrate the application of sociological theory to the community-based research focus that is so widespread in natural resource sociology (see in particular Flora's [1998] presidential address to the Rural Sociological Society, which also lists other citations to this body of work; also Kusel 1996; Bridger and Luloff 2000).

The conceptual orientation and analytical focus of environmental sociology have rotated from the individual to the nation-state. Some of this work draws, at least implicitly, on theoretical orientations about the linkages among values, attitudes, behavioral intentions, and behaviors (e.g., Fishbein and Ajzen 1975; also see Albrecht and Thompson 1988). Further, social movement theory has underpinned much of the work focusing on the evolution and trajectory of the environmental movement in general (see Albrecht, 1975; Downs, 1972), as well as studies examining more focused social movement processes pertaining to environmental issues, such as the environmental justice movement (Bullard 1990; Cable and Cable 1995) and anti-technology movements focusing on issues such as nuclear and toxic contamination issues (Szaz 1994).

This is not to imply that environmental sociologists are of a single mind in pursuing their research goals. Several distinct approaches and concerns can be identified in this literature. Perhaps the most familiar is the concern of many with describing the emergence of modern environmentalism, measuring environmental concern, and identifying correlations between environmentalism and a range of

attitudes, values, beliefs, and sociodemographic characteristics. The work of Dunlap and his colleagues as well as of many other environmental sociologists is strongly associated with this literature (for example, see Dunlap 1992; Dunlap and Beus, 1992; Dunlap and Dillman 1976; Dunlap and VanLiere 1977; Dunlap and Mertig 1992; Jones and Dunlap 1992; Kanagy et al. 1994; Lowe and Pinhey 1982; Lowe et al. 1980; Mohai 1992; Mohai and Twight 1987; Morrison and Dunlap 1986; Tremblay and Dunlap 1978; VanLiere and Dunlap 1980). A related literature has focused on elaboration of broad-scale changes in social and cultural orientations toward the environment and their implications for support for environmental protection; examples include more theoretical discussions of the distinctions between a “human exemptionalism paradigm” (HEP) and a “new environmental paradigm” (NEP) (see Catton and Dunlap 1980; Dunlap 1980; Kempton et al. 1995; Milbrath 1984), and related efforts to develop a variety of scales to measure such distinctions (Albrecht et al. 1982; Dunlap and VanLiere 1978; VanLiere and Dunlap 1981).

A considerable body of work in the realm of environmental sociology has drawn upon various theoretical perspectives focusing on the role of the state and on associated patterns of political-economic organization as factors influencing environmental abuse and degradation and response to resource scarcity at a global level. A key example is Schnaiberg’s (1980) seminal work, which in part reflects an application of a neo-Marxist perspective regarding the role of advanced industrial capitalism in contributing to a “treadmill” of overproduction, resource exhaustion, pollution, and environmental collapse. Additional work by Schnaiberg and Gould (1994) figures prominently in this vein of environmental sociology, as does earlier work by Anderson (1976) and Heilbroner (1975). More contemporary theoretical perspectives that share a strong emphasis on the role of the state include ecological modernization theories (see Mol 1997). Related to this focus are studies of ecological deterioration and scarcity as consequences of the processes of societal growth and development (e.g., Catton 1980; Morrison 1976).

Other theoretical orientations that have emerged more recently in environmental sociology include postmodernist perspectives focusing on environmental discourse (see Brulle 1996; Weinberg 1994) and the subjective nature of environmental meanings (see Hannigan 1995). In a different vein, Murphy (1994) has applied a Weberian perspective on rationality to examine linkages between nature and patterns of social organization and social change.

While the theoretical perspectives that inform environmental sociology are both numerous and broad-ranging, they share a relatively macro orientation, frequently focusing on the nation-state or on global processes of political and economic organization. Much of the work in environmental sociology is representative of what might be thought of as “grand” theory, rather than the middle-range theory that tends to inform work in the field of natural resource sociology. This is reflected in a tendency to deal with the environment in relatively general and nonspecific terms, rather than with specific biophysical conditions in specific spatial contexts with consequences for specific populations or communities.

In contrast to the orientation of natural resource sociology, the orientation of environmental sociology has generally not involved a focus on place-specific or resource-specific conditions or on the status of communities and populations that are associated with particular resources and landscapes. Instead, environmental sociology has most often been oriented toward an understanding of how large-scale social/cultural systems and conditions influence, impact, or respond to various dimensions of environmental quality such as air and water quality and global warming.

Environmental sociologists have often addressed these concerns through their studies of broad-based social responses to environmental events or in theoretically oriented analyses of the social, cultural, and political antecedents of environmental problems and crises. As with the other dimensions considered here, it seems that natural resource sociologists and environmental sociologists have initially pursued distinct pathways with respect to both their conceptual orientations and the specific theoretical perspectives that provide the foundations for work in the two subfields.

Problem-Solving Tradition

Environmental sociology draws its strength from its theoretical emphasis rather than from its application. While good theory leads to sound principles of application, others have more often answered the call to problem solving. With a strong academic focus, application has taken on a relatively limited focus for environmental sociology. It is through policy analysis and the political process that application has appeared most often in the context of environmental sociology.

We concur with Buttel's (1996) assertion that natural resource sociology has been characterized by a strong emphasis on application of social science knowledge to solving resource and environmental management problems. The origin of natural resource social science corresponds with the concern for solving conditions of rural living and quality of life for rural families. Many natural resource social scientists have been associated with land-grant colleges and universities where much of this research has been conducted. The philosophy of land-grant colleges, often referred to as the "people's universities," has nurtured the applied style of research and honed the tools of application. This focus continues today as natural resource social scientists seek to solve resource problems such as soil erosion, reduction of chemical fertilizers applied in agriculture and forest management, mitigation of nonpoint pollution, and documenting of sustainability in resource systems. As social scientists have joined colleges of natural resources and departments of forestry, fisheries and wildlife, and parks and recreation, both internal and external to the land-grant system, the science of application and the natural resource subject matter have broadened, and the applied tradition has been nurtured (Machlis and Field 1992).

Examples of this applied focus include the development of social impact assessment both as a field of applied scholarly work and as a component of the environmental impact assessment process incorporated into decision-making processes used by federal as well as state resource-management agencies (see Branch et al. 1984; Burdge 1998; Interorganizational Committee on Guidelines and Principles for Social Impact Assessment 1994; Taylor et al. 1995). More recently, natural resource sociologists and social scientists have played key roles in the development and application of ecosystem management principles by federal natural resource management agencies in the United States (for a summary, see Endter-Wada et al. 1998; also Yaffee et al. 1996). Examples of such application include the federal government's Forest Ecosystem Management Assessment Team (FEMAT) process that developed guidelines for resource management in the spotted owl region of the Pacific Northwest in the early 1990s, as well as several subsequent federal agency ecosystem management efforts such as the Interior Columbia Basin Ecosystem Management Project (ICBEMP) and the Sierra Nevada Ecosystem Project.

Another significant application of natural resource sociology and social science to efforts to resolve natural resource problems has involved the general area of public participation in resource-management decision making. Natural resource

social scientists have contributed conceptually to the development of public involvement strategies and procedures and have evaluated the effectiveness of various public involvement approaches (see Blahna and Yonts-Shepard 1989; Burdge and Robertson 1990; Heberlein 1976). More recently, natural resource social scientists have contributed to the development of new public involvement strategies based on principles of community-based collaboration and comanagement strategies (Crowfoot and Wondolleck 1990; Daniels and Walker 1995; Walker and Daniels 1996), as well as analyses of the nature and implications of community-based participation in resource management issues and concerns (Weber, 2000).

Application of science to problem solving is both an art and a science. Drawing upon educational principles and behavioral studies in rural sociology and contemporary natural resource social science, scholars of this applied tradition continue to examine the results of their research and consider the implications for problem solving. Application of science takes many forms. It is an interactive process by which the scientist and client together seek strategies to resolve problems. Clients include farmers, land management professionals, park rangers, wildlife management specialists, local community leaders, extension agents, local citizen groups, and a plethora of other groups and constituencies. While university-based social scientists continue to play an important role in such interactions, increasingly both federal and state resource management agencies have established social science units or "human dimensions" sections to address the social aspects of resource management, with many of those hired to fill such positions trained in rural sociology or forest social sciences.

Future Directions

Based on the preceding discussion, it is clear that there are some substantial and long-standing areas of divergence between natural resource sociology and environmental sociology. Our goal in pointing out these distinctions is to advance the discussion of how the fields have developed and where they may be headed. We do not wish to suggest that there are significant tensions between the two fields. Rather, we believe that they have developed and continue to exist as distinct but complementary fields of inquiry, with only limited areas of overlap.

It is important to note that there are some areas of convergence, and areas where additional synthesis and convergence may hold substantial promise. For example, research focused on the issues of environmental equity and environmental justice tends to draw upon some elements central to environmental sociology (e.g., social movement processes) as well as elements that are more closely associated with natural resource sociology (e.g., a focus on the well-being of specific populations in specific community contexts). Similarly, research focusing on the social implications of hazardous industries and toxic exposure incorporates a focus on environmental quality concerns and environmental attitudes and perceptions that typically have been associated with environmental sociology, but also frequently include a focus on assessing social impacts and collective response at the community level. Also, while social constructionist orientations have been applied most frequently by environmental sociologists, natural resource social scientists as well as resource-management agencies have increasingly adopted such conceptual and theoretical frameworks in attempting to understand such phenomena as place meanings and place attachments and their implications for natural resource management (see Brandenburg and Carroll 1995; Eisenhauer et al. 2000; Williams and Stewart 1998).

There would seem to be substantial potential for synthesis of one additional area of inquiry. In particular, it would seem useful to bring together into one conceptual and analytic frame both the focus on specific spatial or landscape-based contexts that is characteristic of natural resource sociology, and the focus on larger scale linkages to national and/or global economies and sociopolitical systems that has characterized much of environmental sociology. While the challenges of working across highly divergent analytic scales with very different units of analysis are by no means insignificant, such an approach would seem crucial in order to provide a more comprehensive understanding of how localized resource use and management patterns are in many ways manifestations of broader social, economic, and political processes, and how those linkages in turn affect the patterns of change and levels of well-being experienced by specific communities and resource users.

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