

From fringe to core? The integration of environmental sociology

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The extent to which environmental sociology remains a fringe specialty or a leading area of research and practice within the larger discipline is frequently commented on, but rarely examined systematically. This paper assesses environmental sociology's integration with the core of the discipline with an analysis of environmental publications in the US sociology's most prestigious mainstream journals between 1970 and 2014. We draw on the theory of scientific intellectual movements (SIMs) to develop a coherent narrative of this integration process and develop testable hypotheses about its extent and timing. Findings indicate that environmental sociology has a growing presence in the top-tier US journals, especially after 1990, and that a unique core of knowledge, focused on the relationship between society and the physical environment has increasingly come to characterize the literature in environmental sociology. A key finding is that growing acceptance of the field by the sociological mainstream was critically facilitated by increased attention to core sociological concerns of stratification and inequality within environmental sociology literature. We also find that cross-national research and global environmental concerns receive notably increased attention in top disciplinary journals over the observation period, especially after the 1992 Rio Earth Summit.

Keywords: environmental justice; environmental sociology; intellectual movement; publications; scientific movement

The relevance of environmental sociology to the larger discipline has been debated in the United States since the field's inception. Where early field leaders regularly bemoaned the lack of opportunities for publishing in general sociology journals, environment-related research now appears in top disciplinary journals on a routine basis. As the field of environmental sociology celebrates its 40th anniversary (the American Sociological Association (ASA) section on Environment and Technology (E&T) was established in 1976), we think it is a propitious time to empirically assess the field's development. This paper evaluates the extent and timing of environmental sociology's integration into the American sociological mainstream, and tests theoretically driven hypotheses about this integration and concomitant historical shifts in the characteristics of what constitutes environmental sociology research within the United States. We focus our analysis on an examination of relevant publications in top-tier disciplinary journals between 1970 and 2014. Publications in these outlets are an important indicator of the extent to which a field is seen as legitimate and central to the wider discipline.

Our theoretical approach draws from our understanding of the field of environmental sociology having emerged as the result of an organized and purposive collective intellectual endeavor that occurred within distinct institutional environments. We view this collective intellectual project as analogous to a social movement and borrow from theories of scientific intellectual movements (SIMs) (Frickel and Gross 2005), and strategic action

fields (Fligstein and McAdam 2012) in our attempt to understand it. SIMs represent organized efforts to 'challenge established patterns of inquiry' in science and to overcome resistance to new ways of doing science (Frickel and Gross 2005, 204). The earliest American environmental sociologists saw themselves as participating in a collective SIM building endeavor, with prominent practitioners expressing a clear sense of the need to build a distinct scientific field in order to elevate the environment to a legitimate area of sociological inquiry. The field was also nurtured in a distinct institutional environment: land-grant universities, institutions in the United States, especially likely to house rural sociology programs. The combination of sustained collective action among individual scientists and the supportive institutional environment provided by land-grant universities helped to make the building of a vibrant field of environmental sociology with a distinct core of knowledge possible.

Empirically, we focus on developments within the United States where, early in the time period, environmental sociology was highly marginalized and relevant research rarely appeared in the top four disciplinary journals.¹ This early research was dominated by approaches that applied 'standard' sociological theories and methods to environmental topics, what has been referred to as *the sociology of environmental issues* (Dunlap and Catton 1979). We document acceleration in the frequency of environmental publications during the 1990s and then rapidly after 2000 when environmental sociology research regularly began to appear in the

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discipline's flagship journal. Moreover, research that might be classified as environmental sociology proper, which takes the bio physical environment itself as an important variable of interest to explaining behavior among human groups, has increasingly come to dominate this literature. There is, in other words, evidence that a distinct knowledge core has increasingly come to define the field (Buttel 2002; Freudenburg 2008; Lockie 2015a; Pellow and Nyseth Brehm 2013).

While environmental sociologists have increasingly incorporated bio physical variables in theoretical and empirical models, its practitioners have found success in mainstream sociology publications by grappling with core sociological questions that motivate research across diverse substantive topics. That is, as the field of environmental sociology has moved closer to the core of the discipline, it has also evolved to increasingly adopt the discipline's customary focus on racial, class and gender inequalities (Pellow and Nyseth Brehm 2013).

In what follows, we first review SIM theory and the history of environmental sociology's development into a coherent field, focusing on the ways in which American environmental sociologists organized as an intellectual movement to promote their ideas and how the institutional environment of land-grant universities facilitated research on environmental issues. After reviewing procedures for identifying and coding information, we display data on environmental publications in graphical form, focusing attention on the pace of publications and the journals in which environmental research is being produced. We then examine changes in the content of these publications in terms of environmental focus, substantive area, the incorporation of stratification concepts, and geographic scope of analysis. We conclude by discussing opportunities for future research.

Theoretical orientation

Theoretical reviews of the burgeoning field of environmental sociology now occur on a regular basis (Buttel 1987; Buttel and Gijswijt 2001; Dunlap 1997; Dunlap and Catton 1979; Krogman and Darlington 1996; Lidskog, Mol, and Oosterveer 2015; Mol and Spaargaren 2006; Rudel, Timmons Roberts, and Carmin 2011) as do reviews of many of its constituent segments such as environmental justice (Pellow and Nyseth Brehm 2013), natural resource sociology (Field, Luloff, and Krannich 2013; York and Dunlap 2012), and risk and disasters (Tierney 2007, 2014). We do not seek a comprehensive review of theoretical and methodological developments within the environmental sociology field. Instead, we focus on tracing the integration of the field into the mainstream of sociology, specifying the changes in research topics and approach that have accompanied this integration.

Our theoretical framework draws especially from the work of Frickel and Gross (2005) in understanding how new approaches and/or topics of inquiry develop within science through a process very similar to social

movements. That is, intellectuals organize around distinct intellectual projects and seek to gain resources and adherents to advance these projects. SIM theory focuses analytic attention on (1) resources, (2) micro-mobilization contexts, (3) political opportunities, and (4) the framing of grievances as keys to explaining the development of a SIM. SIM theory also draws heavily from institutional approaches to understanding social movements and social change, and we conclude this section by elaborating on these connections.

The primary SIM resources identified by Frickel and Gross (2005) are publications and academic appointments which provide legitimacy and prestige, as well as material benefits. The central importance of publications is evinced, for instance, in the frequency by which the establishment of specialty journals and/or publications in leading disciplinary journals is invoked as a proxy for the development of scientific/intellectual fields. Journal publications serve as recognition of the acceptance of a scientific project, further promote the project, and are the primary currency held by academics seeking university appointments, perhaps the most critical SIM resource. In both the short and the long run, jobs at leading graduate programs are particularly critical as they create opportunities for accessing additional resources and developing young scholars that may continue to move a SIM forward. Scholars who are able to publish in leading disciplinary outlets and to secure appointments at highly ranked graduate institutions are considerably more likely to mobilize other types of resources (such as organizing sessions and conferences) than lower status scientists, to have greater access to institutional power holders (i.e., political allies) and to successfully force disciplines to accommodate intellectual projects such as environmental sociology.

In addition to mobilizing resources, SIMs, like social movements generally, need to build and exploit relevant micro-mobilization contexts. For SIMs, this means establishing specialty sections and convening relevant conferences. The primary relevant micro-mobilization context, however, is found in academic departments that nurture interactions at both a high volume and that are more likely to be emotionally charged and influential on scientific trajectories (Camic and Gross 2004; Frickel and Gross 2005; Shapin 1995). These micro-mobilization contexts contribute importantly to identity formation and the feeling on the part of scientists that they are social isolates or part of a vibrant research community. We discuss the importance of one of these micro-mobilization contexts, Washington State University's (WSU) Department of Sociology, in the following section of the paper.

Moreover, like social movements, SIMs operate within, and must be attuned to, the wider institutional and political environments. In their analysis, Frickel and Gross (2005) focus on the need for SIMs to develop intellectual frames that resonate in the relevant intellectual field or fields. Intellectual traditions have their own rules of observation, of evidence, and of argumentation. SIMs may seek to change certain aspects of a scientific

endeavor, but do so within specific disciplinary contexts. A central goal of the environmental sociology SIM, at least in the United States, was to move from a *sociology of environmental issues* to *environmental sociology* where biophysical concepts are central to analysis. We will argue below that framing this inquiry around issues of race, class, and gender was key to its acceptance in the disciplinary mainstream.

A focus on disciplinary context also draws attention to the wider institutional environment in which SIMs operate, and which has been a focus of social movement research. In particular, movement scholars have borrowed heavily from institutional field theory in focusing attention on the nested structure of fields in which movements are enmeshed (Armstrong and Bernstein 2008; Davis et al. 2005). Institutional fields both exert isomorphic pressures that structure the task demands of organizations and individuals housed within them (DiMaggio and Powell 1983), and are themselves ‘sites of contestation, organized around multiple and competing logics’ (Schneiberg 2013). For SIMs, the modern university, along with scientific communities and associations, are key sites of contestation. Larger political environments may also have influence on the development of scientific fields of inquiry. We argue in the next section that environmental sociology’s strong early association with rural sociology, and the land-grant university form more generally, both facilitated early research on environmental issues, and served to keep such research relatively marginalized within the sociological mainstream because it was often located in departments of rural sociology.

We review the history of environmental sociology in the next section, drawing on our general theoretical orientation to both structure this review and to develop theoretically informed hypotheses about the pace and nature of environmental sociology’s integration into the mainstream of the US sociological research, and about changes in the types of research that have come to be associated with the field.

Building the field of environmental sociology

Among the public, the 1970 Earth Day events proved catalytic, spurring an unprecedented explosion in public concern over environmental problems (Erskine 1972), and accelerating growth among civic environmental organizations (Johnson and Frickel 2011). Within sociology, the study of environmental opinion and movements would become two important facets of environmental sociology. The field was slow to ascend to a position of prominence within the discipline however.

During this early period of development, there was a ‘vibrant *esprit de corps*’ among sociologists concerned with ecological limits and the interaction between societies and their environment, and who consciously sought to build an organized scientific community to advance their intellectual project (Buttel 1987). Early environmental sociologists were keenly aware of their limitations in

gaining access to key disciplinary resources, most importantly, publications in top-tier general interest journals. The difficulty of ‘doing’ early environmental research outside of rural sociology contexts and in leading scholarly outlets in sociology, and the prominence of this concern for early environmental sociology SIM participants, is readily apparent in conversations with leading figures of the time. The oral history project of the E&T section of the ASA, led by Beth Caniglia, has set forth to interview leading figures in the section (beginning with an attempt to interview all surviving winners of the Fred Buttel Distinguished Contribution Award). In a published interview with Bill Freudenburg (2010), and in preliminary interviews we reviewed with Eugene Rosa and Thomas Rudel, subjects express a keen awareness of the difficulty in accessing mainstream journals in the early period of the SIM. Freudenburg, for example, talks about the need to disguise environmental research in the 1970s under more traditional sociological approaches to studies of communities. ‘... you couldn’t say “environment” so it had to be disguised as something else, or it had to be about something else’ (7). ‘... [T]he very earliest [papers] really had to be carefully disguised so that the environment is just almost incidental’ (15).

In this early period, access to key disciplinary resources was low and environmental SIM members consciously sought to build intellectual structures, having the most success in the Society for the Study of Social Problems (SSSP). As a result of these efforts, the ‘Environmental Problems Division’ of the SSSP was established in 1973. Shortly thereafter, in 1976, a Section on Environmental Sociology (now the E&T section) was established within the ASA. The ASA’s E&T section maintained relatively stable enrollment of around 300 members per year through the 1990s (Dunlap and Catton 1994), after which enrollment climbed to 431 in 2000 and has been around 500 in recent years.

Although traditional sociologists were initially reluctant to legitimize environmental sociology research, it did eventually land in mainstream publication venues. Because SSSP was an early home for sociological research on environmental issues and is also responsible for the journal *Social Problems*, we expect it to be an early adopter of environmental sociology research. Moreover, the ascendance of *Social Problems* in journal rankings over the observation period is considerable. In the early observation period, *Social Problems* was a distinctly lower ranked journal than the other leading journals we examine here, and as such maybe more willing to publish research that presented a challenge to dominant institutional logics (Strang and Sine 2002). Thus, we expect:

Social Problems to be the first of the top four disciplinary journals to publish environmental sociology (E1a).

On the other hand, as the discipline’s flagship journal published by the ASA, we expect:

American Sociological Review to be the last of the top four journals to accept work on the environment (E1b).

The leaders of the early environmental sociology SIM often had appointments at land-grant universities, which provided fertile micro-mobilization contexts. At small, rural, WSU, for example, the departments of sociology and rural sociology brought together first Riley Dunlap and Bill Catton, and then Bill Freudenberg and Eugene Rosa during the 1970s to form a research 'hot spot', and arguably, the birthplace of environmental sociology in the United States. The presence of the Social Research Center (now called the Social and Economic Survey Research Center), established by sociologist James Short and later directed by rural sociologist Don Dillman, provided a unique platform for WSU environmental sociologists to study the environment, and especially public opinion on the environment. Riley Dunlap, a leading authority on environmental public opinion, was a key SIM activist who consciously and actively sought to knit together a network of scholars, and continues to do so. In 1975, Dunlap created an early directory of environmental sociologists and was one of the primary forces pushing for the establishment of the E&T section of the ASA, ultimately serving on the inaugural Section Council. Three additional nexuses of activity were the University of Wisconsin and Michigan State University (both land-grant institutions) and the Yale University School of Forestry.

Although there are doubtless many reasons for the slow acceptance of environmental work within the discipline's leading scholarly journals, it may be in part a product of early environmental sociology's strong association with rural sociology. At land-grant universities, and especially in the more applied rural sociology departments closely associated with the land-grant form, professors are encouraged to conduct research and outreach projects that benefit, especially, rural state residents who are comparatively likely to be engaged in natural resource-related industries (e.g., farming, forestry, and mining). Studies of resource dependent communities are a staple research focus for rural sociologists. As such, the intellectual links and institutional structures for conducting environmental research are relatively plentiful, and rural sociology provided a supportive institutional environment for sociologists interested in ecological issues to perform research.

Where natural resources are a logical focus for rural sociologists interested in communities where livelihoods are often dependent upon their exploitation, they have always been peripheral to the larger discipline. Rather, the core of the sociological enterprise is tightly tied to issues of urbanity and located predominately in urban centers (Durkheim 1997; Park, Burgess, and McKenzie 1984; Tonnies 1957; Weber 1958). The Chicago School, and its emphases on urban problems, dominated early American sociology and remained a prominent influence during the 1970s. Indeed, the Rural Sociological Society was formed when rural sociologists broke away from the

ASA out of concern that the larger discipline was overlooking rural community issues. We expect:

The increased frequency of environmental publications to be associated with the movement of environmental sociology beyond land-grant universities (E2).

The institutional structure of land-grant universities invites greater oversight from politicians and can have real implications for the type of research faculty pursue. In particular, sociologists employed in rural sociology departments at land-grant universities are less likely to invoke concepts of race or class in their argumentation, tending instead to study subjects in a more de-politicized manner (Hooks 1983). The interview with Freudenberg (2010, 52) echoes these concerns about the lack of distributional justice issues in early environmental sociology research. We expect:

Increased attention to issues of race, class and gender to facilitate increased frequency of environment publications in top-tier journals (E3).

While focused on the immediate institutional environment in which the environmental sociology SIM mobilized, we recognize that environmental sociology exists within a broader series of interconnected, multi-institutional fields. In particular, academia and individual academic institutions are highly influenced by political context, including social movements (Rojas 2007; Studer-Ellis 1995). Political context exerts signaling effects about what type of research is important, especially in the case of environmental sociology given its roots in social movements and political change. When environmental issues are prominent on national public and political agendas, they both motivate participation of, and lend legitimacy to, sociologists interested in the environment. Earth Day and the 1970s environmental era were clearly important in mobilizing original environmental sociology SIM participants, most of whom saw their work as tied to the larger environmental social movement (Freudenberg 2010; Rudel interview forthcoming). A national political discourse highly critical of environmentalism during the 1980s had a de-mobilizing effect on the environmental sociology SIM (Buttel 1987; Dunlap and Catton 1994). In this political climate, membership in the ASA's E&T section stagnated, fewer papers on the environment were presented at professional meetings, and there was very little mention of the importance of ecological perspectives for the discipline (Dunlap and Catton 1994).

There was a palpable and important shift among the public, policymakers, and our SIM of interest driven by a new concern for the international and transnational aspects of environmental disruption in the 1990s. The Intergovernmental Panel on Climate Change was established in 1988, drawing widespread attention to the issue of global warming (Conca and Dabelko 2010; Dunlap and Catton 1994) and in June, 1992 the landmark United

Nations Conference on Environment and Development, commonly referred to as the 'Earth Summit' convened in Rio de Janeiro (Dunlap and Catton 1994). From this conference, the international community established Agenda 21, a voluntary action plan focused on transnational ties to environmental problems and the pursuit of solutions through sustainable development (Conca and Dabelko 2010; Nyerere 1990). The 1990s was also a period of revitalization in environmental sociology internationally (Dunlap 1997; Dunlap and Catton 1994). Membership in the ASA's E&T section rose sharply, environmental sociology organizations or sections were established throughout Europe, Canada, and Japan, and the International Sociological Association established the Working Group on Environment and Society (Dunlap 1997). Because of increased attention from political elites and the public to global environmental threats, the growth of the field around the world, and increased availability of data necessary to test theories (Smith, Fisher, and Heath 2011), there is strong reason to expect more research that extends beyond the US context. Therefore, we expect:

A shift towards cross-national research in the 1990s (E4).

A key to establishing environmental sociology as a distinct area of study was defining its unique contribution to knowledge. A series of articles published at the tail end of the 1970s, and outside the leading general interest disciplinary journals we review here, catalyzed this endeavor and defined the field as 'the study of societal-environment interactions'. These articles strongly critiqued sociology's insistence on the Durkheim dictum of explaining social facts with other social facts as well as the discipline's reliance on theoretical foundations that promoted a 'Human Exceptionalist Paradigm' (HEP) (Catton and Dunlap 1978; 1980; and Dunlap and Catton 1979). The HEP was alleged to embody a general neglect of ecological constraints, and as an alternative, it was suggested the discipline adopt the 'New Environmental Paradigm' (NEP), put forth by Dunlap and Van Liere (1978), which recognized social life as affected and constrained by the natural environment, and humans as one among many interdependent species (Catton and Dunlap 1978; 1980; Dunlap and Catton 1979). From this perspective, research examining how societies impact ecological processes, and the converse, how biophysical change effects society, can be considered environmental sociology. Dunlap and Catton (1979) emphasized the importance of using bio physical variables in conducting environmental sociology, as opposed to 'normal' social science in the examination of environmental issues. As they defined it, the *sociology of environmental issues* considers environmental topics from sociological perspectives, whereas *environmental sociology* emphasizes 'the environment as a factor that may influence, and in turn be influenced by, human behavior' (252).

Neither environmental sociology nor the sociology of environmental issues is necessarily more important than

the other, and both types of research have much to contribute to sociology. A rise in environmental sociology is though, we think, one indicator of a growing and distinct area of knowledge production. Articles in top generalist journals that include measures of pollution levels or a variable for ecological footprint demonstrate analytic concerns that break with the traditional sociological foci and the adherence to social facts. A rise in articles focused on the interaction between society and the biophysical environment is relatively new and signifies advancement and acceptance of a distinct area of inquiry. Therefore, we expect:

Growth over time in the proportion of articles focused on 'environmental sociology' relative to 'sociology of environmental issues' (E5).

Methods

To trace the integration of environmental sociology and examine research trends, we examine environment articles published in sociology's top four generalist journals, as determined by Thomson Reuters' (2014) Journal Citation Reports: *American Sociological Review (ASR)*, *American Journal of Sociology (AJS)*, *Social Forces* and *Social Problems*. The record of publication in top general disciplinary journals represents 'a dependable index of the scope and strength of the academic effort in a subdiscipline' (Crist and McCarthy 1996, 91). While clearly an incomplete picture, top-tier journal publications represent influential work in a field, and because of space restrictions, a measure of the field's relative centrality to sociology. As summarized by Crist and McCarthy (1996, 90), 'Publication in an elite journal within a discipline stamps the discipline's seal of approval upon an item in a repertoire'. According to journal impact factors published by Thomson Reuters (2014), *ASR*, the discipline's flagship journal and *AJS*, published by the University of Chicago are historically the most prestigious journals in the discipline. *ASR* and *AJS* are followed by *Social Forces* and *Social Problems*.

The data for this analysis includes all environment articles published in these four journals between 1970 and 2014. The decision to include an article was determined by examining the title of every published research article, and then abstracts as necessary to determine if the article should be considered as environmental. Book reviews, comments, and errata were not included in the sample. For our purposes, environmental sociology was conceptualized as including any research concerning the physical environment, energy (i.e., solar, nuclear), disasters, risk, and environmental organizations and movements. In addition to scanning the titles of every article published during the observation period, we also ran an electronic search in JSTOR using environment subareas as keywords to ensure an exhaustive sample. In total, 126 out of 7841 articles compose the sample.

After assembling the sample, entire articles (not just the title and abstract) were used to code a number of attributes, including the year and journal of publication for each article, and whether the primary university affiliation of the first author is part of the land-grant system. One indicator of environmental sociology's success as a SIM would be proliferation well beyond the confines of land-grant universities.

Articles were also coded as pertaining to either *sociology of environmental issues* or *environmental sociology*. Distinguishing articles as environmental sociology or sociology of environmental issues presented occasional difficulty. While Dunlap and Catton (1979) were quite insistent on a clear and significant difference in the approaches, Krogman and Darlington (1996) argue that all environmental sociology exists on a continuum between the two extremes. Often, to maximize coding reliability, we reverted to an examination of the variables included in each analysis. If an article included bio physical variables (e.g., carbon dioxide emissions, toxic wastes, ecological footprints, etc.), it was coded as environmental sociology. If an article applied a standard sociological approach (e.g., social movements or social psychology) to an environmental issue, or concerned public opinion on the environment, it was coded as sociology of environmental issues. For example, the articles 'The Economic Gains and Environmental Losses of the US Consumption: A World-Systems and Input-Output Approach' by Prell et al. (2014) and 'Moral Outpouring: Shock and Generosity in the Aftermath of the BP Oil Spill' by Farrell (2014), were coded as *environmental sociology* and *sociology of environmental issues*, respectively. The first falls closer to *environmental sociology* on the continuum because it includes a measure of sulfur dioxide which was central to the analysis, and the later resides in the realm of *sociology of environmental issues* because it uses panel data on public opinion to determine how Americans respond to catastrophes.

Various reviews of environmental sociology (Buttel 1987; Dunlap and Catton 1979; 1994; Krogman and Darlington 1996) influenced the structure of the coding scheme for identifying substantive focus. Buttel (1987) argued that there are five main areas of environmental sociology. These include studies of 'new human ecology', 'environmental attitudes, values, and behaviors', 'the environmental movement', 'technological risk and risk assessment', and 'political economy of the environment and environmental politics'. Buttel's (1987) 'areas' were considered when defining the parameters of this study, and all articles received a code as to their *primary* area. In addition to including work traditionally thought of as human ecology, the 'new human ecology' code included theoretical pieces seeking to further define the field and critiques of mainstream sociology.

An article was determined to have a stratification focus if the driving research question(s) pertained to any form of inequality. Among the usual categories and variables of race, class, and gender, we also included articles that

considered inequalities among nation states. This included works like Jorgenson, Dick, and Mahutga's (2007) 'Foreign Investment Dependence and the Environment: An Ecostructural Approach' which tests whether countries dependent on foreign investment in manufacturing have higher levels of per capita noxious gas emissions. Articles that were not included were those that only used stratification variables as controls in data analysis. Grant, Jones, and Trautner (2004), for example, test the effects of absentee management on the environmental performance of chemical plants in the U.S, finding that plants pollute less when located in civically engaged communities. In their analysis, they control for percent poor, black and Hispanic in each community, but these variables were not of primary interest to their research.

The *geographic scope* code consists of single-nation studies and cross-national work. Not to be confused with the unit of analysis, an article coded as a single-nation study means research pertained to, or occurred within, a nation. Single-nation studies were not limited to the United States, but included all articles in which a study was limited to one country. If an article compared two or more countries or took place within a geographic region containing multiple countries, it was coded as cross-national work.

Findings

Two different strategies are used for data interpretation and visualization. Because we are interested in changes within the environmental sociology field over time, results are displayed using line graphs (with 3-year rolling averages to smooth data and make long-term trends more apparent) or collapsed and presented by select time periods (four decades plus a truncated half decade in the most recent period from 2010 to 2014). We begin with a look at the frequency and rate of environment publications, and the universities with which first authors are affiliated. Next, we analyze trends in the content of publications to capture historical patterns of research interests.

Institutionalization

The frequency and rate of environment articles published in top-tier journals from 1972 through 2014 are displayed in Figure 1. There is high correspondence between the frequency and rate of publications, with both metrics demonstrating that environmental sociology has gained traction within sociology over time. While very little environmental sociology research was published in leading journals during the first half of the 1970s, there was subtle growth mid-decade around the time that the E&T section of the ASA was established. Yearly publications declined in the early 1980s, and remained relatively low until a dramatic rise in the early 1990s around the 20th anniversary of Earth Day in 1990 and the Rio Conference in 1992. Most dramatic of all is environmental sociology's relatively prolific presence following the turn of the

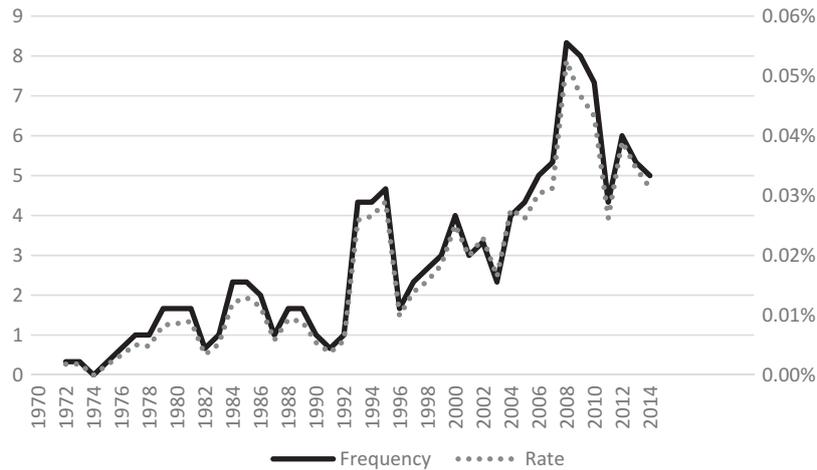


Figure 1. Frequency and rate of environment articles from 1970 to 2014.

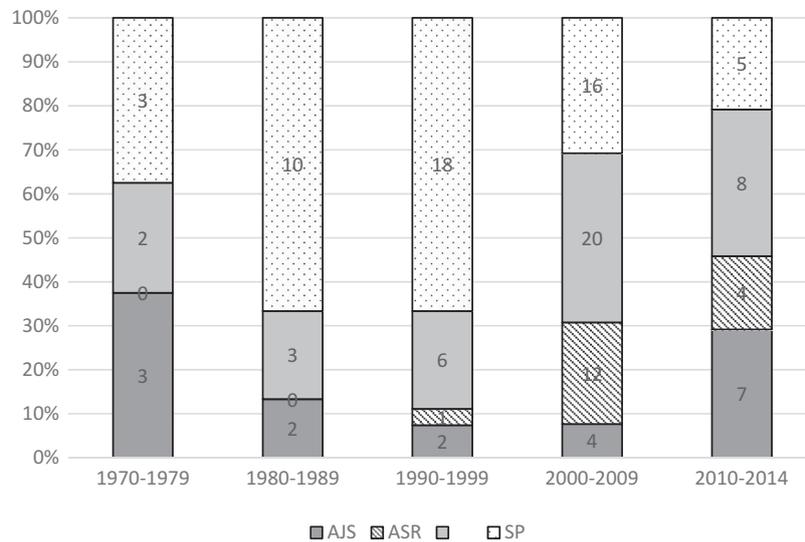


Figure 2. Total environment articles in each journal by select time period.

century. As the next figure shows, the rapid rise in environmental sociology publications after 2000 correlates to when environmental sociology research regularly begins to appear in the discipline’s flagship journal.

We next examine the journals publishing work on the environment by decade, and the 5 years from 2010 to 2014. Assessing the specific journals of publication provides further understanding of environmental sociology’s integration. As shown in Figure 2, *Social Problems* has historically been most receptive to environmental sociology (E1a), whereas *ASR* published very little on the environment until the turn of the century (E1b). Since 2000, 16 environmental focused articles were published in *ASR*, a dramatic rise compared with a single article published in the 1990s.

Since SSSP was an early site of SIM mobilization, it may be that editors and reviewers of *Social Problems* during the early years of environmental sociology were more familiar with the specialty area than those of other mainstream journals. Another possible explanation for the

environment’s early popularity in *Social Problems* is that, as one of the lower ranked of the four journals, it was a better venue for environment articles during a time when the discipline as a whole was uncertain of environmental sociology’s legitimacy. Since the 1970s, however, the data show a gradual rise in environment publications across all four journals. Moreover, the recent surge in publications from the discipline’s flagship journal, *ASR*, implies a growth in environmental sociology’s prominence, and serves as evidence of the environmental SIM’s success.

Figure 3 compares the university affiliation of each article’s first author by select time periods. This figure does not support our expectation that the growth of environment publications in mainstream journals would accompany a greater number of first authors affiliated with non-land grant departments (E2). Rather, the divide between first author publications from land-grant and non-land-grant universities has remained fairly consistent over time.

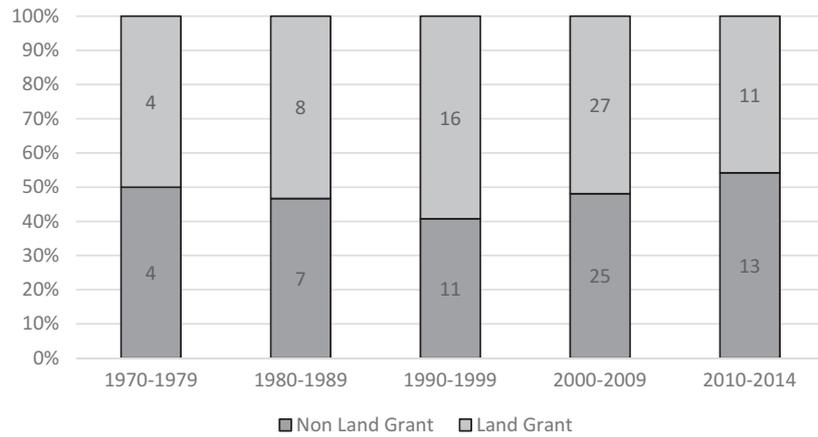


Figure 3. First author university affiliation by select time period.

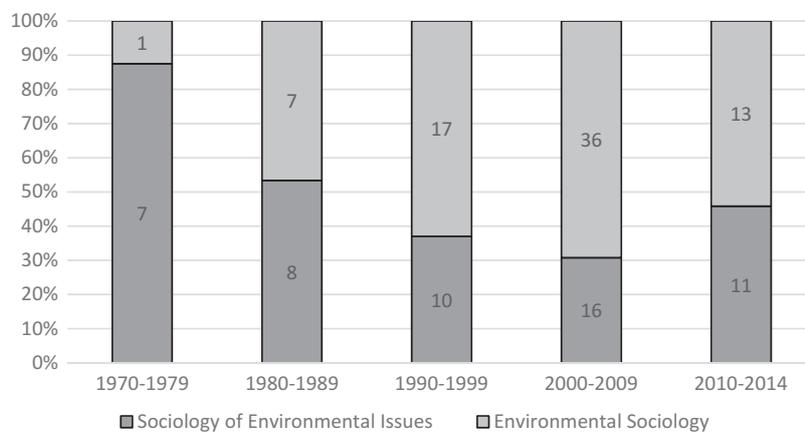


Figure 4. Environmental focus by select time period.

As mentioned, early environmental sociologists described having to sometimes disguise their environmental work so as to get published in mainstream sociology journals. Therefore, we coded articles as pertaining more to *sociology of environmental issues* or *environmental sociology* to determine the growing acceptance of studying human–environment relations. Figure 4 indicates that as the field has evolved, environmental sociology has gradually shifted in emphasis from *sociology of environmental issues* to *environmental sociology* (E3). In the 1970s, sociology research on the environment was more likely to study issues from a standard sociological perspective than be grounded in ecological conditions. The one ‘environmental sociology’ article published between 1970 and 1979 (Schnaiberg 1977) was a theoretical piece that served an important role in developing a foundation for the field. As the field progressed, environmental sociologists began to incorporate variables traditionally found outside the discipline into their analysis. For example, several articles published in the most recent time period use variables like the ecological footprints, carbon dioxide levels, and toxic waste sites. The ability to incorporate such measures, which have become far more available from the 1990s onward, indicates that environmental sociology has successfully

integrated the study of society and biophysical systems within the discipline. The relative transition toward environmental sociology does not imply that sociology of environmental issues has been replaced. Top-tier journals are not experiencing a decline in sociology of environmental issues at the expense of environmental sociology, but rather, data indicate that environmental sociology of both types are gaining greater overall presence in the discipline.

Content analysis of trends

Figure 5 illustrates the primary area of research for each article by select time periods. Of the five environment areas, articles addressing ‘political economy/environmental politics’ are the largest single segment, consisting of between 25% and 33% of articles in each time period. While survey research on environmental attitudes was especially popular during the 1970s, such work has been far less prevalent in recent decades. Conversely, work in the ‘new human ecology’ tradition and on environmental movements has steadily grown. The relative rise in new human ecology and decline in environmental attitudes research provides additional evidence that environmental sociology is moving away from employing traditional

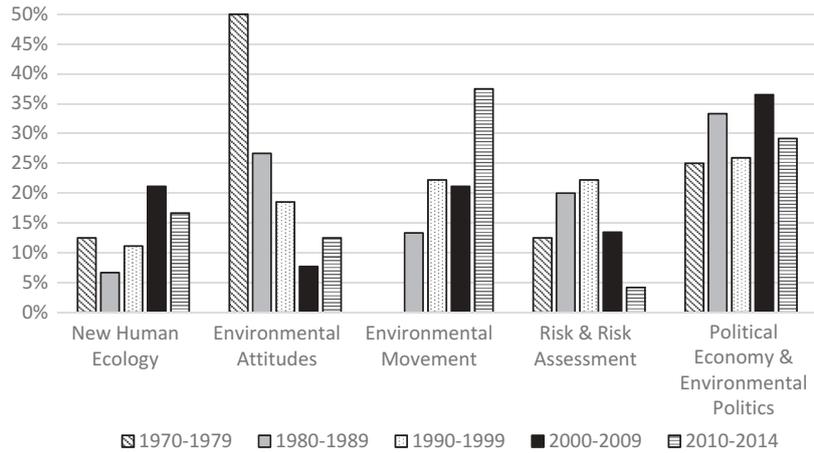


Figure 5. Environment area by select time period.

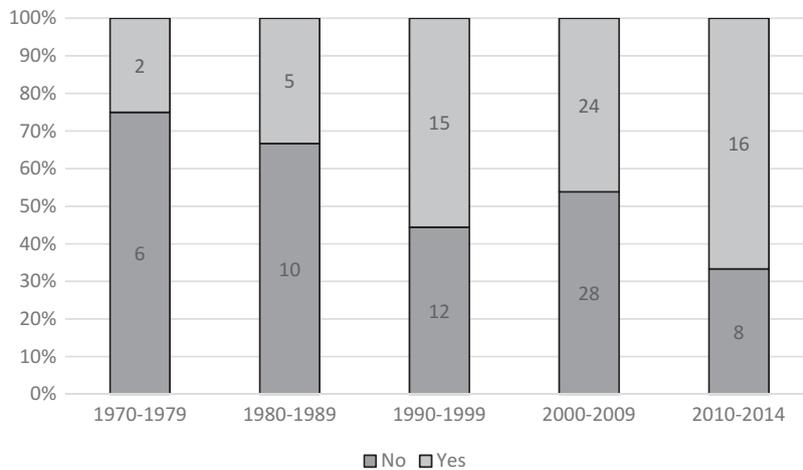


Figure 6. Issues of stratification by select time period.

sociological perspectives and embracing a more ecological perspective.

Figure 6 demonstrates that as environmental sociology gained a larger presence in top disciplinary journals, it assumed a growing interest in issues related to inequality (E3). The 1990s was the first decade in which a majority of environmental articles included a stratification focus. This finding coincides with the emergence of environmental justice research following the United Church of Christ report (1987) ‘Toxic Wastes and Race’. In the most recent time period (2010–2014), a significant number of the stratification articles examine global inequalities, especially as they relate to pollution, trade, and climate change. As we anticipated, environmental sociology’s growing attention to issues of inequality, within the United States and cross-nationally, proved critical for the field’s acceptance into the discipline’s top generalist journals.

Figure 7 depicts the notable rise in multi-national studies around the turn of the century, providing support for the expected increase in cross-national research beginning in the 1990s (E4). The rising popularity of cross-

national work within environmental sociology reflects the growing attention paid to global environmental issues among political elites. The increasing availability of cross-national data has also allowed environmental sociologists to operationalize concepts of interest on a global scale, enhancing the ability to test theories that are increasingly oriented toward global environmental disruptions which span national boundaries.

Conclusion

The environmental sociology SIM challenged sociology’s neglect of human–environment relations. As a SIM at the margins of sociology, the early days of environmental sociology were characterized by considerable difficulty in publishing environmental research in the top-tier US journals. Doing so sometimes required that environmental sociologists mask their work on the environment as something more mainstream. Our analysis of the past 40 years demonstrates that greater engagement with concepts of stratification has been crucial to the field’s integration with the larger discipline.

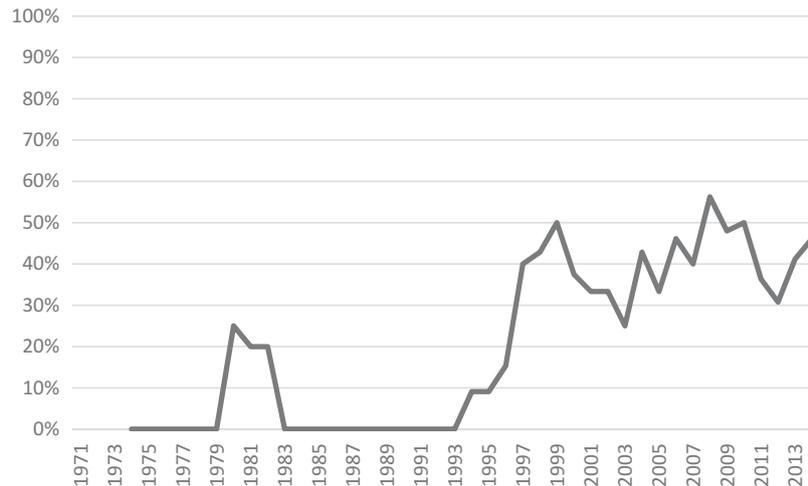


Figure 7. Multi-national studies from 1970 to 2014.

Today environmental sociology is an institutionalized branch of sociology. This is evinced in the greater frequency of publications in top-tier journals focused on the environment, and the surge of environmental research published in the discipline's flagship journal *ASR*. While *Social Problems* has consistently been the most receptive to studies of the environment, there has been a significant rise in environment publications from *ASR* and *AJS*. Since the turn of the century, *ASR* accounts for nearly a quarter of the published work, a drastic change compared with previous time periods. The increased integration of environmental sociology was facilitated by a greater focus on stratification within the extant research but did not, however, coincide with a move away from land-grant universities.

One question raised by this review is what it implies for likely future directions in environmental sociology research. We see little indication that the major trends we identify in term of the increased integration of environmental sociology into the mainstream and increased research foci on issues of stratification, biophysical measures, and cross-national research are temporary. By examining each of these trends in turn, we are able to identify some notable gaps and make some informed speculations about likely new directions of research in the field.

Given the growing significance of ecological disruption within modern society (York and Rosa 2012), we think, sociology will continue to embrace environmental research. Environmental topics have become increasingly central to a range of subdisciplines in sociology to which they were previously marginal (e.g., political sociology, social movements, and organizations), and we expect to see continued alignment across other core areas of the discipline. In particular, despite it being the largest specialty area within American sociology, there is a notable lack of research on crime and deviance in connection to the environment. Although there is a nascent research field in green criminology (Stretesky, Long, and Lynch 2014), it

is absent from our sample and there remains considerable growth potential.

We argue in this paper that a key shift in environmental sociology that corresponds to its acceptance within the disciplinary mainstream was a growing focus on socioeconomic and racial inequalities. As the environmental sociology field begins to feminize (Kennedy and Dzialo 2015; Mol 2006), following trends in the discipline more generally in the United States (ASA 2012), we would expect to see increased attention to issues of gender and intersectionality within leading environmental sociology research. A heightened focus on stratification within environmental sociology will, moreover, serve to reinforce the trend toward cross-national studies (discussed more below). While within nation inequality has generally widened in recent decades (Piketty 2014), inequality between nation states remains far more substantial (Firebaugh and Goesling 2004).

Our findings also suggest that the US environmental sociology has achieved broad acceptance over the validity of incorporating biophysical systems into sociological analyses. Now that the link between human and biophysical systems is widely accepted, we see new and critical research streams opening for environmental sociologists. In particular, climate change makes the relationship between social and biophysical systems, especially stark, and we see the gravity and urgent nature of climate change as requiring greater sociological and interdisciplinary research. Sociologists outside the United States have historically been willing to engage in 'environmental social-science' before 'environmental sociology' (Lidskog, Mol, and Oosterveer 2015). The US environmental sociologists are just beginning to mobilize to assert their relevance to interdisciplinary climate research (Dunlap and Brulle 2015). Given the subfield's sustained attention to issues of environmental justice and inequality, we see particular utility in sociologists contributing to broader efforts aimed at climate change mitigation and adaptation. We fully

expect that further engagement with interdisciplinary climate research will import new ideas into the sociological enterprise.

Growth in cross-national research is not unique to the environmental realm, but a distinguishing feature of the sociological enterprise and the social sciences more generally in recent decades (Heath, Fisher, and Smith 2005; Smith, Fisher, and Heath 2011). Given that globalization shows little sign of abatement, we expect the US sociology to have a continued strong cross-national focus. That American sociologists have been leading participants in this journal's pages in its first year of publication (Lockie 2015b) suggests that American practitioners are open to environmental sociological perspectives developed in other nations. Perhaps integration of theories from around the world will lead to Beck et al.'s (2013) 'methodological cosmopolitanism' replacing cross-national research (Lidskog, Mol, and Oosterveer 2015). Regardless, the global nature of many environmental problems, such as climate change, requires continued attention to international and cross-national analyses.

Our analysis of the top-tier US journals allowed us to trace the integration of American environmental sociology into the larger discipline. However, publications found in American mainstream sociology journals are not analogous to the field itself, and a sole focus on the US journals makes it difficult to speculate on the field's future if environmental sociology is indeed becoming more cosmopolitan. We see at least two opportunities for future research. First, extending the scope of this study to include second-tier, environment-specific, and/or sociology journals from other nations explicitly aimed toward an international audience to provide useful comparison cases. Second, one might examine environmental sociology dissertations and compare them to our sample of published research. A brief analysis of English language sociology dissertations on the environment written in the last 5 years reveals a strong focus on food and food production systems. With climate change serving as the backdrop for many, sustainable development, our energy future, and sustainability of urban planning appear as additional emerging trends that comport with the early history of this journal (Lockie 2015b).

This paper examines environmental sociology's integration into the disciplinary mainstream. The incorporation of traditional sociological concepts of stratification and inequality was critical, we argue, to growth in environmental sociology publications and the institutionalization of the subfield in the United States. The international focus of environmental research today, along with continued integration of social and biophysical systems in scientific analyses, offer important opportunities for greater cross-fertilization between American environmental sociology and other sociological fields, the international sociological community, and other disciplines.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Note

1. We recognize that environmental sociology has a long and vibrant history outside the United States, especially in the European context (e.g., Beck 1992; Redclift 1987). Given the oft noted divide between European and American environmental sociologies, both in terms of the historical context in which they developed and the content of these intellectual enterprises (see e.g., Dunlap 1997; Mol 2006; Lidskog, Mol, and Oosterveer 2015), we keep the focus of this paper on the American case and the intellectual movement that emerged there. In the conclusion to the paper, we revisit possible connections between environmental sociology in the United States and other countries.

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