

BUILDING THE FUTURE BY LOOKING TO THE PAST

Examining Research Published on Organizations and Environment

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Organizations and environment (O&E) researchers focus on either organizational outcomes or environmental outcomes. In this article, the authors argue that these are significantly different approaches to O&E research. The first aims to contribute to organization theory and performance; the latter aims to improve environmental performance. With a starting position that most research published in influential general management journals is of the organizational outcomes variety, the authors reviewed O&E research published from 1995 to 2005 to test this theory. The authors found, in fact, that most research is directed at environmental outcomes. This finding suggests that the most influential general management journals are receptive to environmental research that does not fit neatly into the organizational boxes. Yet, the authors also find that there is room for O&E research to have considerably more impact than there has been so far. This is a call for more high-quality O&E research in general management journals.

Keywords: *organization and environment; publications; natural environment; organizational outcomes; environmental outcomes; environmental context*

The anchor in any research program is the phenomenon being explained. In the field of organizations and environment (O&E) research, there are two different anchors: organizations and the natural environment. With the first, researchers see the natural environment as an important factor in determining organizational outcomes. With the second, researchers assume that the environment is an important outcome in itself and are interested in how organizations interact with the natural environment. An assumption common to both approaches is that the natural environment and organizations are related to each other and warrant research consideration. However, there is also a deep-rooted difference.

On the organizations side, we frame our work in the language, theories, and assumptions of mainstream business researchers and professionals. We assume

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that the audience for our research should be drawn from more traditional management disciplines, such as strategy, organizational behavior, and finance. Without such an audience, we speak only to ourselves and have very little effect on the wider field of business. The natural environment represents one variable among the many that explain organizational outcomes. So, our job is to demonstrate the efficacy of the natural environment. In doing so, we can grab wide attention from general managers and have the largest possible impact. If successful, we can move seamlessly in and out of the traditional business disciplines, with little risk of being labeled marginal or nonmainstream.

On the natural environment side, we see the natural environment as an important end in itself. We assume that the purpose of industrial development is to improve human health, and its success depends on a healthy planet. Business and the natural environment are inextricably linked. As a consequence, researchers direct energy into investigating environmental performance, either at the organizational level of analysis or at a more macro level. Their research findings are often targeted to government policy makers or even society, rather than primarily at business managers.

This article was motivated by our curiosity about which of these two approaches would be most pervasive and persuasive in the journals that shape organizational studies, university research ratings, and researcher promotion and tenure processes. We have focused our attention on the most heavily cited general management journals because many researchers, even those in O&E (Cohen, 2006), believe that these journals house the most influential research. As well, these journals have a heavy influence on practice because of their general management focus.

At the outset of this project, we had two starting biases. First, we expected that most O&E research would be of the organizational variety. We assumed that the editors and reviewers of general management journals would be predisposed to research that looked like traditional organizational research. As well, authors would assume these biases of general management reviewers and editors and frame their research accordingly. Second, we expected that research into environmental outcomes would be the more innovative of the two because it is not constrained by prior organizational research. The most theoretically and methodologically interesting research would likely reside in the domain of environmental outcomes.

The purpose of this article, in part, is to assess whether these starting positions are supported. By analyzing prior O&E research in the most influential general management journals, we can identify trends and biases in prior research and use these as an opportunity to advise on research gaps. We have attempted to deliver on these objectives by organizing the article into three parts. First, we briefly describe the analysis we undertook to ground our observations. We analyzed 79 O&E articles published in 11 general management journals. Second, we offer observations on the content of these articles, especially their approach to organizational and environmental outcomes. We find that, contrary to expectations, most research published in these general management journals explained environmental outcomes, as opposed to treating the environment as merely the empirical context or as an explanatory variable. We also describe the types of theories and methodologies used in prior research. In the final section, we speculate on what these observations mean to our research domain.

ANALYZING O&E PUBLICATIONS IN MANAGEMENT JOURNALS

To locate articles in the O&E area, we searched ABI/INFORM (distributed by ProQuest) for the following keywords: environmental performance, environmental management, environmental policy, environmental issues, natural environment, ecological, toxic, pollution, corporate sustainability, and sustainable development. A similar approach, with different keywords, was used in prior reviews of the O&E field (Gladwin, Kennelly, & Krause, 1995; Jermier, Forbes, Benn, & Orsato, 2006). We did not analyze articles that simply included environmental performance as one dimension of a composite measure of corporate social responsibility (CSR). It is arguable that the paradigms and trends underpinning the CSR body of research are sufficiently different to warrant separate treatment (van Marrewijk, 2003). As well, several comprehensive reviews of CSR research have already been published (Lockett, Moon, & Visser, 2006; Orlitzky, Schmidt, & Rynes, 2003; Walsh, Weber, & Margolis, 2003).

Following the lead of Coopey (2003), we limited the search to articles published in the "top" academic journals. As a starting place, we included the eight journals on Cohen's (2006) list of highest quality journals: the *Academy of Management Journal* (AMJ), *Academy of Management Review* (AMR), *Administrative Science Quarterly* (ASQ), *Journal of Management Studies* (JMS), *Management Science* (MS), *Organization Science* (OrSc), *Organization Studies* (OrSt), and the *Strategic Management Journal* (SMJ). We also included three additional journals that we believed to be held in high esteem: the *British Journal of Management* (BJM), *Journal of International Business Studies* (JIBS), and the *Journal of Management* (JM).

Three of the journals we reviewed, BJM, JMS, and OrSt, are published in the United Kingdom, whereas the remaining eight journals are published in the United States. We will refer to these journals loosely as European and U.S.¹ We chose these 11 journals because they influence other areas of business studies and because they are relevant in the tenure and promotion processes of most academic institutions (Bergh, Perry, & Hanke, 2006). We limited our search to the 11 years between January 1, 1995, and December 31, 2005. We did not include book reviews or dialogue articles.

OBSERVATIONS ON RESEARCH PUBLISHED IN O&E

Our analysis of the quality and quantity of O&E research published in influential management journals over the past decade leads us to make four observations.

Observation 1: O&E research is represented in all of the influential management journals.

We identified 79 O&E articles published in the influential journals from 1995 to 2005. Figure 1 illustrates the trend over time.

Two special issues appeared during this period. In 1995, the AMR published a special issue on "Ecologically Sustainable Organizations," which included seven articles that fit within our analytical boundaries. In 2000, the AMJ published a special issue on "Management of Organizations in the Natural Environment," which included nine articles relevant to our study. Figure 1 shows that when the effect of these special issues is removed, the publishing rate of O&E research has been

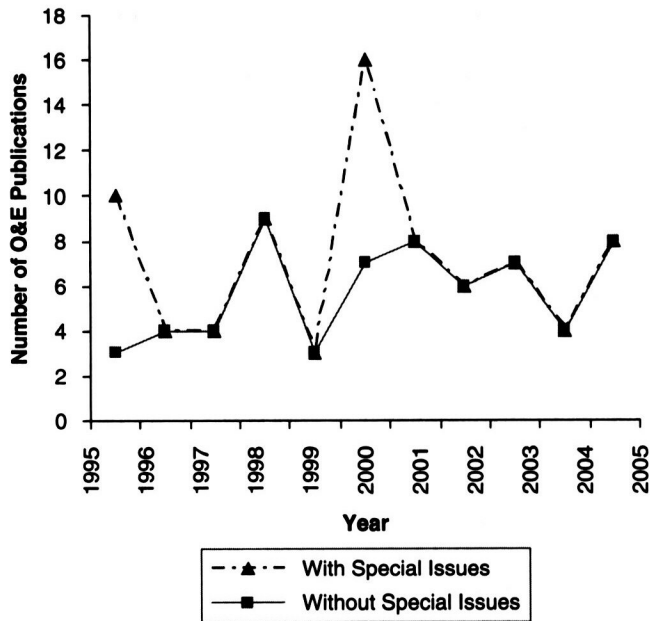


FIGURE 1: Number of O&E Articles Over Time

Note: O&E = organizations and environment.

quite stable over the past 11 years. Approximately six papers were published each year, except for a spike in 1998, in which there were nine articles published. There may be a number of reasons that explain this spike. It may be due to the increased interest in environmental issues because of the increased profile of the AMR special issue 3 years earlier. As well, Lockett et al. (2006) noted a similar surge in CSR research during that period, which may indicate an increased attention to social and environmental issues. There also appeared to be a larger supply of graduating doctoral students just prior to that period, who are often among the most research active (e.g., Lin & Buongiorno, 1998; Nehrt, 1998; Sharma & Vredenburg, 1998).

A stable publishing rate is encouraging; it shows that the O&E research domain is not a fad, at least in highly influential academic journals. On the other hand, this stability is disappointing because it does not acknowledge the increasing urgency of environmental problems nor our improved understanding of O&E research issues. It is interesting to contrast this finding with that of Jermier and colleagues (2006), who surveyed a much larger set of journals. They discovered a dramatic increase, more than 300%, in the number of O&E-related publications, in all of the scholarly journals catalogued in the ABI/Inform Global database from the period 1990-1994 to 2000-2004. Over the same period, the number of O&E articles grew by more than 2.5 times relative to the other management fields. This could imply that the growth of scholarly interest in O&E issues is not being reflected in the more influential academic journals.

It is worth highlighting the scarcity of articles in ASQ and OrSc, two U.S. journals that are perceived to be more open to diverse research methods, such as qualitative

research. There are several possible reasons that O&E articles might be under-represented in these journals. From our own experiences, we expect that ASQ remains elusive because of its rigorous and, possibly idiosyncratic, research standards. OrSc, we suspect, is not the journal of first choice for traditional organizational researchers. These researchers likely prefer comparable journals, such as the AMJ and SMJ, which appear more frequently on the "A" lists of most North American business schools. The two O&E articles that appear in OrSc, in fact, applied nontraditional research methods (Bansal, 2003; Hoffman & Ocasio, 2001). The size of the sample is too small to do anything more than speculate.

It would be interesting to assess if there is a negative or positive disposition to publishing O&E research in these most influential journals. However, making such judgments is difficult, as benchmark data are not easily available. The O&E articles we analyzed represent roughly 1.3% of the journal space in the selected influential journals, which is consistent with the findings in previous reviews (Coopey, 2003; Jermier et al., 2006). If we remove the two special issues focused on O&E (AMR, 1995, and AMJ, 2000), less than 1% of journal space pertains to O&E research. As a benchmark, approximately 3.4% of the members of the Academy of Management (AoM) are also members of the Organizations and Natural Environment (ONE) interest group. But, not all O&E researchers belong to this group, nor do the members of it exclusively research O&E issues. As well, most ONE members belong to other divisions. So, whereas 3.4% represents the percentage of AoM members who belong to the ONE division, the percentage of O&E articles appearing in journals would be expected to be much lower than this.

We can say something, however, about the relative representation of O&E research in European and U.S. journals. A total of 57 articles was published in the eight U.S. journals, about a 1.2% share of voice. The three European journals published relatively more articles with a total of 22 articles, which is about a 1.6% share of voice. Without the AMJ and AMR special issues, even fewer articles would have been published in U.S. journals. Special issues are often an opportunity to publish groundbreaking ideas in influential journals that might otherwise overlook such research. Special issues also often motivate researchers to produce work they may not have attempted otherwise.

It is worth asking why relatively more O&E articles appear in European journals than in U.S. journals. Once again, we can only speculate, given that we only have anecdotal evidence on which to base opinions. From our own experiences, the review process for European journals accommodates more author flexibility than U.S. journals; the reviews are shorter and less detailed, and the reviewers often give the authors more latitude in responding to their comments. Having said this, we realize that the review process for European journals has intensified in recent years. European journals, more so than U.S. journals, may also be more receptive to environmental issues or may view them as being more central to business.

Observation 2: More O&E research aims to improve environmental performance over organizational performance.

To determine how the natural environment was being included in prior research, we categorized the O&E articles into three groups depending on whether the natural environment was studied in terms of (a) environmental context, (b) organizational outcomes, or (c) environmental outcomes. In the first

category, O&E research uses the natural environment as context. The data are grounded in the natural environment, but the theory and constructs are not. Thus, this research remains within mainstream business research and draws the attention of a wide group of business scholars, including O&E scholars. In the second category, environmental variables explain organizational outcomes, such as actions, structures, and processes, at any level of analysis. In the third category, researchers investigate whether organizational variables influence the natural environment. In these cases, the dependent variable was related to the natural environment, which was the key target of interest. Our analysis is summarized in Table 1. The left side of the table shows the absolute numbers and percentage of O&E articles that fell into each of the three categories described above, by journal and country. The right side of the table shows the absolute numbers and percentage of O&E articles across five levels of analysis, by journal and country, which is discussed in Observation 3.

Our starting position was that prior O&E research would look like other organizational research; that is, it would use environment merely as context or investigate organizational outcomes. We expected researchers to lean toward research that fit within existing paradigms and research questions, on the assumption that the gatekeepers of our profession (senior researchers, reviewers, and editors) would be more receptive to these approaches. We were wrong. A full 60% of articles in U.S. journals and 69% of articles in European journals focused on environmental outcomes.

Environmental context. Of the 79 articles we analyzed, 12 used the natural environment as context for researching other management issues. Lewis and Harvey's (2001) study illustrates this approach most simply. They tested whether Miller's (1993) scale of business environmental uncertainty applied to the natural environment, without any additional theoretical development.

Most organizational researchers who include the natural environment as context for their research extend theory by using environmental issues for empirical insights. Institutional analysis has been the dominant theoretical theme among studies with a natural environment context, likely because institutional forces have such a significant role in environmental issues. For example, Hoffman (1999) used the evolution of corporate environmentalism within the U.S. chemical industry as the empirical issue to demonstrate how an institutional field takes form around issues, rather than markets or technologies. Other researchers have based empirical research on end-of-life vehicle recycling (Orsato, Hond, & Clegg, 2002), recycling programs within colleges and universities (Lounsbury, 2001), and the corporate environmental policies of chemical companies in emerging economies (Child & Tsai, 2005).

Some researchers in this group have focused on decision making in the context of environmental management. For instance, Wilhelm and Srinivasa (1997) developed a mathematical model of crisis response management in the presence of oil spills; Nault (1996) developed his model under the conditions of negative production externalities. Aragon-Correa and Sharma (2003) refined the existing resource-based view by identifying its contingencies within the context of the natural environment.

Organizational processes are another important area of research in the environmental context category. Researchers in this area investigate the set of actions or events that help us understand *how* business is conducted within an environmental

Table 1: Focus of Research on Organizations and Environment (O&E) by Journal

Journal	Explained Outcome				Level of Analysis						
	Journal	Context	Organizational	Environmental	Both O&E	Total	Individual	Organizational	Institutional/Industry	Paradigm	Cross-Level
U.S.-Based Journals	ASQ	1 100%	0 0%	0 0%	0 0%	1 100%	0 0%	0 0%	1 100%	0 0%	0 0%
	AMR	1 9%	1 9%	9 82%	0 0%	11 100%	0 0%	3 28%	4 36%	4 36%	0 0%
	AMJ	0 0%	5 25%	14 70%	1 5%	20 100%	4 20%	9 45%	2 10%	0 0%	5 25%
	SMJ	1 10%	5 45%	5 45%	0 0%	11 100%	0 0%	6 55%	2 18%	0 0%	3 27%
	JIBS	0 0%	0 0%	2 100%	0 0%	2 100%	0 0%	2 100%	0 0%	0 0%	0 0%
MS	2 22%	2 22%	4 44%	1 12%	9 100%	0 0%	6 67%	3 33%	0 0%	0 0%	0 0%
	OrSc	2 100%	0 0%	0 0%	0 0%	2 100%	0 0%	0 0%	1 50%	0 0%	1 50%
JM	0 0%	1 100%	0 0%	0 0%	1 100%	0 0%	1 100%	0 0%	0 0%	0 0%	0 0%
	7 12%	14 25%	34 60%	2 3%	57 100%	4 7%	27 47%	13 23%	4 7%	4 7%	9 16%
Euro-Based Journals	OrSt	2 29%	0 0%	5 71%	0 0%	7 100%	0 0%	2 29%	2 29%	1 14%	2 29%
	JMS	3 26%	1 8%	7 58%	1 8%	12 100%	1 8%	4 33%	2 17%	3 25%	2 17%
BJM	0 0%	0 0%	3 100%	0 0%	3 100%	0 0%	1 33%	0 0%	0 0%	0 0%	2 67%
	5 23%	1 4%	15 69%	1 4%	22 100%	1 4%	7 32%	4 18%	4 18%	4 18%	6 28%
Total	12 15%	15 19%	49 62%	3 4%	79 100%	5 6%	34 43%	17 22%	17 22%	8 10%	15 19%

Note: ASQ = Administrative Science Quarterly; AMR = Academy of Management Review; AMJ = Academy of Management Journal; SMJ = Strategic Management Journal; JIBS = Journal of International Business Studies; MS = Management Science; OrSc = Organization Science; OrSt = Journal of Management; JM = Journal of Management Studies; JMS = Journal of Management Studies; BJM = British Journal of Management.

context. For example, Zietsma, Winn, Branzei, and Vertinsky (2002) examined multilevel organizational learning processes in response to environmental criticism. Mintzberg and Westley (2000) looked at the job of managing by investigating the management styles of two senior executives at Greenpeace. Bansal (2003) traced the process by which environmental issues are addressed within two computer firms, from the moment they were identified to the point of organizational action. Branzei, Ursacki-Bryant, Vertinsky, and Zhang (2004) extended control theory to the formation of green strategies in Chinese firms, and Rothenberg (2003) looked at the dynamics of worker participation in environmental management programs in an automotive plant.

Organizational outcomes. Of the 79 papers, 15 treated the natural environment as important in shaping organizational outcomes. Most research in this area had a strong pragmatic or utilitarian focus, investigating the effect of environmental actions on organizational performance (Klassen & McLaughlin, 1996; Klassen & Whybark, 1999; Russo & Fouts, 1997), competitive advantage (Christmann, 2000; Nehrt, 1998; Shrivastava, 1995b), and anticipated firm performance (Gilley, Worrell, Davidson, & El-Jelly, 2000). Some organizational outcomes are not directly associated with financial performance but are critical for the continued growth or the survival of the firm. These outcomes include acquiring organizational resources and capabilities (Chan, 2005; Hart, 1995; Marcus & Geffen, 1998; Sharma & Vredenburg, 1998), integrating environmental issues and strategic planning (Judge & Douglas, 1998), unsystematic stock market risk (Bansal & Clelland, 2004), perceived importance of different stakeholders (Buysse & Verbeke, 2003; Henriques & Sadorsky, 1999), and organizational birth rates (Dean & Brown, 1995).

Environmental outcomes. More than half (62%) of the articles in our sample studied environmental outcomes, and most of the articles in the special issues of AMR and AMJ fit this category. Research that focuses on organizational outcomes attempts to demonstrate that the natural environment is relevant to organizations, but research on environmental outcomes makes no such claim. This category of research assumes that organizations affect the natural environment; thus, researchers must understand how these effects can be reduced to alleviate environmental harm (Douglas & Judge, 1995). The most groundbreaking research often appeared in this category, so it warrants consideration here, especially because there are many research streams in this area.

Many researchers in this field attempt to explain environmental performance using proxies such as toxic releases (King & Lenox, 2000; Klassen & Whybark, 1999; Russo & Harrison, 2005), waste generation and waste processing activities (King & Shaver, 2001), material consumption (Corbett & DeCroix, 2001), environmental litigation (Kassinis & Vafeas, 2002), and the adoption of ISO 14001 (Christmann & Taylor, 2001; Gonzalez-Benito & Gonzalez-Benito, 2005; Jiang & Bansal, 2003). Others have taken a more holistic view of environmental performance (e.g., Bansal & Roth, 2000). Meanwhile, much research in this stream rates environmental performance by the degree to which organizational actions exceed environmental regulations (Aragon-Correa, 1998; Aragon-Correa & Sharma, 2003; Buysse & Verbeke, 2003; Hart, 1995; McKay, 2001; Sharma, 2000; Winn & Angell, 2000).

Another group of researchers has examined the role of regulation in shaping environmental performance (King & Lenox, 2000; McKay, 2001; Nehrt, 1998; Newton & Harte, 1997; Rugman & Verbeke, 1998a, 1998b). Their underlying interest is in the relative efficacy and influence of voluntary policy measures versus mandatory regulations. Another stream of related research shifts the conversation from government regulators to a wider group of stakeholders. These researchers often argue that different stakeholders lead to different types of organizational strategies and actions with respect to the natural environment. And, some stakeholders are more effective in shaping environmental performance than others (Buysse & Verbeke, 2003; Christmann, 2004; Fineman, 1996, 1997; Fineman & Clarke, 1996; Henriques & Sadowsky, 1999; Sharma & Henriques, 2005).

Not all researchers have focused on measuring or explaining environmental performance; another group has considered different types of outcomes. For example, some have investigated alternative environmental solutions (Tenbrunsel, Wade-Benzoni, Messick, & Bazerman, 2000) and the optimum timing for environmental technology investment (Cortazar, Schwartz, & Salinas, 1998). At the systems level, some have tried to model the effectiveness of different environmental management processes within different ecosystems, such as forest management (Lin & Buongiorno, 1998) and fishery management (Meester, Mehrotra, Ault, & Baker, 2004). Still others have focused on the individual, investigating managerial decision making (Cordano & Frieze, 2000; Flannery & May, 2000) or the tendency for employees to spearhead environmental initiatives (Andersson & Bateman, 2000; Egri & Herman, 2000; Ramus & Steger, 2000).

Recently, some researchers have moved beyond environmental performance to the wider construct of sustainable development, which includes social and economic dimensions in addition to the environmental ones. They have explored both the concept of sustainable development (Bansal, 2005; Starik & Rands, 1995) and its physical manifestation (Bansal, 2005; Russo, 2003; Sharma & Henriques, 2005; Shrivastava, 1995c). Some of the research in this domain has taken novel approaches. For example, Whiteman and Cooper (2000) conducted an ethnographic study of indigenous managers embedded in local ecological systems. Banerjee (2003) has drawn on perspectives from colonialism and imperialism to argue that the current discourse in sustainable development may be a reflection of the colonization of developing countries and rural regions to sustain the well-being of dominant regions.

Finally, a group of researchers has examined the underlying paradigm of corporate greening by extending the innovative theories that view the environment as an important outcome in itself. Most of these corporate greening studies discuss the presence of a different set of underlying values, beliefs, and cognitions associated with environmentalism, such as technocentrism, sustaincentrism, ecocentrism, and deep ecology, and contrast them with the more utilitarian and pragmatic framing of mainstream business practices (Banerjee, 2001; Crane, 2000; Fineman, 1996; Gladwin et al., 1995; Newton, 2005; Prasad & Elmes, 2005). Researchers within this tradition argue that our dominant business paradigm dissociates humans from nature and that environmental management can be viewed more inclusively when the natural environment is integrated with business (Gladwin et al., 1995; Jennings & Zandbergen, 1995; Prasad & Elmes, 2005; Purser, Park, & Montuori, 1995; Shrivastava, 1995a).

Observation 3: O&E research crosses all levels of analysis.

Environmental issues apply at all levels of analysis: individual, organizational, industrial, and institutional. As a result, we anticipated that research would span these levels and that considerable attention would be paid to cross-level analysis. These expectations were confirmed.

To evaluate the levels of analysis, we assigned articles to five categories: industrial/institutional, organizational, individual, cross-level, and superordinate paradigm. The paradigm level addressed the theoretical and philosophical foundations of research in O&E, without empirical analysis.

Organizational-level analysis dominated the sample (43% of the total), and many studies were at the institutional/industry level of analysis (22% of the total). These findings were not surprising given that environmental problems (and solutions) are inextricably tied to societal pressures and expectations. For example, researchers in this group have investigated industry dynamics and response to constraints (Aragon-Correa & Sharma, 2003; Dean & Brown, 1995; Fineman & Clarke, 1996; Hoffman & Ocasio, 2001; McKay, 2001), institutional evolution and forces (Jennings & Zandbergen, 1995; Lounsbury, 2001), ecological or social systems (Lin & Buongiorno, 1998; Starik & Rands, 1995), and the effectiveness of regulation relative to voluntarism (Newton & Harte, 1997).

We were most surprised by the relatively small number of individual-level studies (5). This may be a promising direction for further research; several cross-level studies have argued that the personal attributes of managers are important to a firm's environmental strategy (Bansal, 2003; Sharma, 2000). The individual-level studies examined environmental champions and leaders (Egri & Herman, 2000; Flannery & May, 2000), environmental managers (Cordano & Frieze, 2000; Whiteman & Cooper, 2000), and employee participation in environmental management (Rothenberg, 2003).

We were pleased to see a healthy amount of cross-level research (19%). Three studies explained organizational outcomes with organizational-level factors and individual or industrial determinants (Andersson & Bateman, 2000; Bansal, 2003; Marcus & Geffen, 1998). Ten studies focused on environmental outcomes at the organizational level of analysis, modeling industry factors (King & Lenox, 2000; Sharma & Henriques, 2005), organizational and field factors (Bansal & Roth, 2000), individual factors (Banerjee, 2001; Fineman, 1996, 1997), and both individual and organizational factors (Crane, 2000; Sharma, 2000). One even modeled all major levels, including analysis at the group level (Bowen, 2002). Another three studies were exceptional because either their dependent variable was at the individual level (Ramus & Steger, 2000) or they fell within the environmental context category (Branzei et al., 2004; Child & Tsai, 2005). However, most of the cross-level research introduced different levels of analysis but did not investigate their interactions.

We found that paradigm-level research challenged the status quo most effectively (Gladwin et al., 1995; Newton, 2002; Purser et al., 1995; Shrivastava, 1995a). These studies push readers to evaluate what is truly unique about the natural environment. European journals seemed especially responsive to paradigm-level research (Banerjee, 2003; Halme, 2002; Newton, 2005; Prasad & Elmes, 2005). The only paradigm-level articles that appeared in U.S. journals were in the AMR special issue. This raises the question of whether these articles would have been accepted into regular issues of these journals or whether the authors were inspired to pen their thoughts because of the opportunity afforded by the special issue.

Observation 4: Most research uses mainstream organization theory; the research methodologies, however, are diverse.

Most of the papers published (71%) are empirical (see Table 2) and this pattern does not appear to have changed over time (see Table 3). It is interesting to contrast this observation with that made by Lockett et al. (2006), who reviewed CSR research published in influential academic journals and found that theoretical papers increased, and empirical papers decreased, over time. One would expect that most new research domains would typically grow through a theory-building process, followed by a theory-testing process. Neither O&E nor CSR research reflected this pattern.

The empirical articles used both qualitative and quantitative methods, but it seems that there is a higher propensity of qualitative methods in O&E papers (36%) relative to papers in other business fields. This is likely a testimony to the emergent nature of the field and the desire of researchers to build theory that is grounded in data. However, it is noteworthy that qualitative methods were far more common in European journals than in U.S. journals. Only 16% of O&E articles in U.S. journals used qualitative methods, compared with 78% of articles in European journals. For example, all six empirical articles in the European-based OrSt were based on qualitative methods. This outcome may reflect the emphasis on positivist science in North America (Ghoshal, 2005), so that U.S.-based journals receive relatively more quantitative papers and are more likely to accept them.

Most studies emphasized economics-based theories, such as the resource-based view and dynamic capabilities, agency theory, industrial organization and competitive dynamics, and stakeholder theory. Sociology-based theories also made a strong appearance, including institutional theory, social network theory, and social cognition. A few researchers used more macro-level theories, such as political ecology and postcolonial theory (Banerjee, 2003; Orsato et al., 2002). Psychology-based theories were rare, which is not surprising given the paucity of individual-level studies. However, we did see some applications of goal theory, Ajzen's theory of planned behavior, and control theory (Branzei et al., 2004; Cordano & Frieze, 2000; Flannery & May, 2000). The theory employed did not appear to vary according to the outcomes being explored.

The obvious explanation for the preponderance of strategy and organizational theories is that many O&E researchers come from these disciplines. And, strategic management and institutional theories naturally extend to the O&E research arena. There may also be some selection bias in the journals we included in our analysis; for example, the SMJ has a strong strategy bias.

WHAT THESE OBSERVATIONS SAY ABOUT OUR RESEARCH DOMAIN

At the outset of this article, we exposed our biases. We anticipated that O&E researchers would be more focused on organizational outcomes than on environmental outcomes in general management journals. We also assumed that the truly novel theoretical insights and methodological advances would be made in research publications focused on the natural environment. This preconception was based on the assumption that the gatekeepers and audiences of general management

Table 2: Type of Research on Organizations and Environment by Journal

Journal	Conceptual	Empirical	Analytical/Simulation	Total	Qualitative	Quantitative	Total Empirical
U.S.-Based Journals							
ASQ	0	1	0	1	0	1	1
	0%	100%	0%	100%	0%	100%	100%
AMR	11	0	0	11	0	0	0
	100%	0%	0%	100%			
AMJ	0	20	0	20	2	18	20
	0%	100%	0%	100%	10%	90%	100%
SMJ	1	10	0	11	2	8	10
	9%	91%	0%	100%	20%	80%	100%
JIBS	1	1	0	2	0	1	1
	50%	50%	0%	100%	0%	100%	100%
MS	0	3	6	9	0	3	3
	0%	33%	67%	100%	0%	100%	100%
OrSc	0	2	0	2	2	0	2
	0%	100%	0%	100%	100%	0%	100%
JM	0	1	0	1	0	1	1
	0%	100%	0%	100%	0%	100%	100%
Subtotal of U.S. Journals	13	38	6	57	6	32	38
	23%	67%	10%	100%	16%	84%	100%
Euro-Based Journals							
OrSt	1	6	0	7	6	0*	6
	14%	86%	0%	100%	100%	0%	100%
JMS	3	9	0	12	6	3	9
	25%	75%	0%	100%	67%	33%	100%
BJM	0	3	0	3	2	1	3
	0%	100%	0%	100%	67%	33%	100%
Subtotal of European Journals	4	18	0	22	14	4	18
	18%	82%	0%	100%	78%	22%	100%
Total	17	56	6	79	20	36	56
	21%	71%	8%	100%	36%	64%	100%

Note: ASQ = Administrative Science Quarterly; AMR = Academy of Management Review; AMJ = Academy of Management Journal; SMJ = Strategic Management Journal; JIBS = Journal of International Business Studies; MS = Management Science; OrSc = Organization Science; JM = Journal of Management; OrSt = Organization Studies; JMS = Journal of Management Studies; BJM = British Journal of Management.

a. Wilm and Angell (2000) used a two-study design, containing both a quantitative analysis on survey data and a qualitative case study. We count its methods as qualitative overall, for convenience.



Table 3: Type of Research on Organizations and Environment by Year

U.S. vs. Euro	Year	Conceptual	Empirical	Analytical/Simulation	Total	Qualitative	Quantitative	Total Empirical	
U.S.-Based Journals	2005	0	3	0	3	0	3	3	
	2004	0	3	1	4	0	4	3	
	2003	1	3	0	4	1	2	3	
	2002	1	2	0	3	0	2	2	
	2001	0	4	1	5	1	4	4	
	2000	0	13	0	13	2	11	13	
	1999	0	3	0	3	0	3	3	
	1998	3	3	2	8	1	4	3	
	1997	0	1	1	2	0	2	1	
	1996	0	1	1	2	0	2	1	
	1995	8	2	0	10	1	1	2	
			13	38	6	57	6	32	38
	Subtotal of U.S. Journals		23%	67%	10%	100%	16%	84%	100%
	Euro-Based Journals	2005	2	3	0	5	1	2	3
2004		0	0	0	0	0	0	0	
2003		1	2	0	3	2	0	2	
2002		0	3	0	3	3	0	3	
2001		0	3	0	3	2	1	3	
2000		0	3	0	3	3	0	3	
1999		0	0	0	0	0	0	0	
1998		0	1	0	1	1	0	1	
1997		1	1	0	2	1	0	1	
1996		0	2	0	2	2	0	2	
Subtotal of European Journals	1995	0	0	0	0	0	0	0	
		4	18	0	22	14	4	18	
		18%	82%	0%	100%	78%	22%	100%	
	Total	17	56	6	79	20	36	56	
	21%	71%	8%	100%	36%	64%	100%		

journals are most influenced by research that speaks the same language and makes the same assumptions that they do. So, researchers with an organization bias produce research that looks and feels like prior organizational research, whereas researchers with a natural environment bias can break from these constraining shackles.

We were surprised by the findings. In fact, 62% of O&E research published in these influential general management journals explained environmental outcomes. In these cases, the natural environment was not merely the empirical context or an explanatory variable. Our second expectation, that the most innovative research was in the area of environmental outcomes, was confirmed. But scratching the surface, we found clear biases in what was being published. In this section, we offer our own interpretations of the problems and we muse about the solutions. Inevitably, we have introduced our own prejudices based on our researching, publishing, and reviewing experiences. However, such provocation is often necessary to generate dialogue that will allow us to have a greater effect on business and the natural environment through our research.

Collaborating With Organizational Researchers

This review showed us that research involving the natural environment was reaching the most influential general management journals. Our research was often as theoretically rich and methodologically rigorous as the other research published in these journals. As well, this research often presented strong evidence that there is a business case for environmental management. Yet, if the natural environment is truly important to organizations, then the question needs to be asked: Why do only 1.5% of the articles published in these journals pertain to the natural environment?

We can only speculate on the answer. One possible reason that more O&E research does not reach general management journals is that the gatekeepers are unreceptive to it. This might be an easy explanation, but we found little evidence of its veracity in our experience. As a frequent reviewer for the U.S. journals, the first author has, in fact, experienced just the opposite. Indeed, in 1999, Anne Tsui, a former editor of the AMJ, wrote the following on a manuscript submitted by the first author:

All three reviewers agreed that your paper deals with an interesting topic. As you know, there is a special research forum at *AMJ* dealing with this general topic. Within the last two years, I have accepted three papers that relate to this issue. Therefore, your manuscript is certainly on a topic that is welcomed at *AMJ*.

As a frequent reviewer, the first author has read numerous decision letters from editors to O&E researchers. It is clear that this same sentiment is shared widely among editors. Resistance to O&E research, then, does not appear to be the reason that more O&E research has not reached general management journals.

We believe that the issue is mainly one of supply. There are just too few O&E researchers undertaking work of a quality to reach these journals. There is no way of telling whether the supply of researchers has changed in the past two decades, but there is some evidence suggesting that the field is likely growing. Many of the doctoral students who graduated in the 1990s, who were partly responsible

for the spike in publications in 1998, are now in the position to mentor O&E doctoral students. As each faculty member often mentors several students over his or her career, the supply should increase. As well, business schools are increasingly staffing for O&E researchers and many of the most prestigious universities have hired a new O&E graduate within the past 5 years. This increased demand will likely stimulate increased supply and the "coming out" of environmental researchers disguised as organizational researchers.

Whereas the supply of researchers is slow to change and difficult to manipulate, it is relatively easier to improve the quality of research. The quality of the research being published is indisputably high, but for every article accepted for publication in these journals, there are likely many more that are rejected. The high number of conference papers presented on O&E issues annually certainly supports this claim.

Part of the challenge in hitting these journals is one of crafting a good research program and writing an interesting and defensible argument. Many of these skills are tacit, such as framing the arguments and contribution, building theory, and linking tightly the methods with the theory. Craftsmanship, although seemingly transparent, is often not. Many of the general management journal editors understand this challenge and have published several articles in recent years that help researchers navigate the publishing process (Clark, Floyd, & Wright, 2006; Kilduff, 2006; Rynes, 2006). Doctoral students and researchers having difficulty reaching these general management journals are encouraged to read these insightful articles.

But, quality is not exclusively determined by craftsmanship of the research project. It is also determined by the language and style of the manuscript. We must speak the researchers' language of organizations fluently. We must use the same vocabulary, turn of phrases, and style to be viewed as an insider. Good training, thorough peer reviews, and strong collaborations are helpful in ironing out our own idiosyncrasies. Therefore, it is important for O&E researchers not only to mingle with their environmental peers but also to identify their organizational counterparts and build strong liaisons. The more that O&E researchers partner with folks outside of the O&E field, the easier it is to learn the language and the more the O&E field will cross-pollinate into mainstream business and ultimately be seen as mainstream itself. It is important for O&E researchers seeking to reach the organizations audience to work intimately with that audience.

Pushing Theoretical and Methodological Frontiers

The large percentage of O&E articles addressing environmental outcomes suggests that the natural environment is now recognized as an important issue within the general management audience. However, scratching the surface revealed an anomaly. Only a small fraction of this research offered radically new insights about the empirical phenomena. The truly innovative articles that spoke to the unique aspects of the natural environment were published primarily in European journals. In the United States, most of the articles appeared in the special issue of the AMR. Had this special issue not been published, most U.S. O&E research would have used conventional organization-based theories, hypo-deductive logic, and quantitative theory testing. Very few O&E articles explored the interactions among the different levels of analyses; most simply treated the levels as independent.

These comments may be read as a failure of O&E researchers to uncover what is unique and interesting about the natural environment. But, they can also be viewed as an opportunity to explore a myriad of new research streams. Here, we offer suggestions for a few of the more obvious directions.

Starik and Rands (1995) argued that the web of multilevel and multisystem relations around ecological sustainability might be much more complex than we think. It may include political-economic, social-cultural, and ecological environment relationships, not just the typical four levels of analysis. Gladwin et al. (1995) have spoken about these relationships in terms of inclusiveness, connectivity, and equity. These attributes suggest that there is an opportunity to explore cross-level, cross-theoretical, cross-enterprise, and cross-disciplinary analysis in new and unique ways.

Much of our research focuses exclusively on a single disciplinary domain, whether it be organizational behavior, strategic management, finance, and so forth. However, environmental issues require cross-disciplinary solutions. For example, research into the base of the pyramid (Prahalad & Hammond, 2002) has relied heavily on marketing theory and models. For the base of the pyramid business model to be truly sustainable, production and consumption must be connected. However, working through the production and consumption systems is not easy and leads to theoretical challenges. There is an opportunity, arguably a need, to understand the paradoxes and tensions that arise when applying two different lenses from different theoretical foundations.

Environmental issues have emotional, cognitive, and value-based elements that pertain to the individual. And environmental issues also influence production systems, offer marketing opportunities, and require measurement and management systems at the organizational level of analysis. At the institutional level, many environmental issues require coordinated responses among groups of firms and changes to formal and informal systems. O&E researchers have an enormous opportunity to explore how these various levels are nested within each other. Individuals, organizations, and institutions operate within an interconnected system of relationships. As well, such explorations will require us to apply research methodologies that are relatively new to the field of business, such as Hierarchical Linear Modeling, two-stage and three-stage least squares, and qualitative research methods. By exploring these relationships between different levels of analysis, theories, enterprises, and disciplines, we will really start to push new frontiers that are afforded to us by the environmental domain.

CLOSING THOUGHTS

Good O&E research is being published in management's most influential journals and it is pushing new frontiers. It was heartening to write this review because we quickly learned that the O&E field has matured in important ways. Much O&E research is theoretically rich and methodologically rigorous. O&E research has clearly made significant advances in the organization's domain.

Although we were encouraged by the great strides made in the O&E field, we also saw some important opportunities for growth. We are sympathetic to the need to connect with core business disciplines, but it is troubling that we have not had an even greater presence in the most influential organizations journals. We have suggested here that more O&E researchers need to partner with colleagues

in core disciplines. In doing so, not only do O&E researchers improve our own ability to speak to different core audiences, but we can generate new insights through these collaborations.

As well, we have argued that we have fallen short in exploring what is new and interesting about the O&E field. Some articles have taken big risks and have made huge leaps. However, most articles that attempt to explain environmental outcomes use the same theories and methodologies that have dominated the organizations field. O&E researchers have an opportunity to really push the theoretical and methodological frontiers based on insights that are unique to the natural environment.

Researchers in our field are now in somewhat more privileged times than in 1995, as there is heightened public and business awareness of the natural environment. O&E research no longer needs to establish its legitimacy. As a research community, we need to take bigger strides into organizations research and bold steps into understanding environmental outcomes. Good research takes time, and our time has come.

NOTE

1. Our analysis shows that 70% of data samples in UK journals are based on European data sources and 69% of data samples in U.S. journals are based on North American data. Based on this evidence, one could infer that Europeans are more often targeting UK journals and North Americans are more often targeting U.S. journals.

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