

A History of Research on Business and the Natural
Environment: Conversations from the Field

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Conversations from the Field**

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Introduction

Every field of inquiry goes through a life cycle; a new idea emerges, it develops into a growing body of literature and either continues to grow or enters a decline. A sure sign of the successful growth of a field is an effort to institutionalize its history, categorize its accomplishments and project its future directions. The field of Business and the Natural Environment (B&NE) has now reached that stage. After expanding in the early 1990s as a distinct field of empirical inquiry, it has grown to include contributions from the full gamut of business disciplines. This volume is an analytical synopsis of that work, both through a summary in this introductory chapter and through the major works that are collected in this volume.

The B&NE field emerged as a response to the growing calls for the corporate sector over the last forty years to reduce pollution and prevent damage to the environment. Despite some progress, many of these problems continue to persist, and new and grave problems have surfaced. These problems include climate change, water scarcity, toxic waste, habitat destruction, species extinction, and many others that have direct interconnections with the ways our market systems provides society with food, buildings, energy, transport, mobility, clothing, synthetic chemicals and other material aspects of our modern culture. These interconnections are explicit domains where business is heavily implicated, both as part of the problem and as part of the solution. B&NE scholars have sought to uncover the deeper elements of what drives companies to address these issues, the organizational and technical structures they develop to respond to them, and the resultant innovations that emerge to transform market system.

Although a few authors started addressing the environmental problems associated with our production and consumption patterns as early as the beginning of the twentieth century, it is

roughly within two decades that B&NE scholars have been vigorously engaged in their work. Some of B&NE's earliest work emerged in the broader and older field of corporate social responsibility (CSR) (Matten and Moon, 2008; Aguilera, Rupp, Williams and Ganapathi, 2007; Matten and Crane, 2005; Carroll, 1979). But given that environmental pollution and protection lent itself more readily to clear quantification and regulation, the B&NE field found itself able to connect to existing paradigms of shareholder capitalism and regulatory control, and therefore carve itself out as a separate (but related) domain. While some continue to use the notions of B&NE and CSR interchangeably, others make the clear distinction with CSR placing more emphasis on the philanthropic, social and less quantifiable aspects of business practice (e.g. combating child labor, fighting corruption, philanthropy to support local endeavors etc.) and B&NE denoting quantitative damages to the natural environment (e.g. CO₂ emissions, toxic emissions, waste, water and energy use). Some associate CSR more with MNCs than SMEs, but there is a growing interest amongst European scholars in how SMEs are grappling with these issues (Petts, Herd, Gerrad and Homes, 1999; Ángel del Brio and Junquera, 2003; Hilary, 2004). Others emphasize the difference between the US and European approaches to CSR: US corporations with their emphasis on philanthropy are considered as have a much more explicit approach to CSR than the European corporations, which focus more on working conditions (Matten and Moon, 2008). Some bemoan the lack of a precise definition for both CSR and B&NE, but in seeking strict, consistent definitions there is a risk of 'overlooking' the contested nature of these issues (Macnaghten and Urry, 1998) and, more importantly, it also glosses over the complexities, uncertainties and ambiguities of what these related domains entail. However, the dangers of too much interpretive flexibility may be that it is blinding us (in the eyes of some, such as Gladwin, 2012) to the challenges of changing corporate behavior and to the complex

contingencies of ‘success’ (less environmentally damaging behavior). Indeed, as the ecological challenges continue to grow (despite 30-40 years of efforts to contain the damages), both domains will continue to be of great importance, even though strict distinctions may be difficult to uphold as the social and environmental continues to become more entangled. But as a distinct and autonomous field, B&NE has passed through and encompassed multiple iterations: empirically, theoretically, conceptually and geographically.

Empirically, the focus has considered media based issues of water, air, and land based pollutants in a variety of different industries, and moved from end of pipe solutions to clean technologies, the introduction of management tools systems (ISO, EMAS etc.), the greening of the supply chains, and others issues.

Theoretically, scholars have approached these issues through the lenses of existing business disciplines regarding organizations, corporate strategy, marketing, economics, operations, accounting and finance, augmenting these perspectives with further insights from economics, sociology and psychology.

Conceptually, the field has been characterizing in multiple ways. Some characterize the phenomena of environmental issues reaching deeper into the corporate system as a linear evolution of stages of corporate development process, with companies moving up the ladder of environmentalism; others problematize this phenomena as an ongoing battle waged among competing interests and social movements, with its requisite ebbs and flows; still others see this as a model for continual internalization of the environmental externality, with the policy system playing a critical role in monetizing environmental insults; some see a darker side to corporate environmentalism as merely attempt at green-washing and regulatory capture; and finally some

see corporations as the solution to environmental problems as they respond to an evolving market, institutional, and political environment.

Geographically, the B&NE field is a multi-national field, growing largely in North America and Europe. While both domains emerged around the same time and grew in unison, there are differences with regard to the topics addressed and the theoretical and methodological approaches used. North American scholarship has emphasized the theoretical focus of the disciplinary management journals and directed its inquiry at academic colleagues. European scholarship, on the other hand, has tended to draw upon (newer) social theories such as critical management theory, practice theory and actor-network theory, has a stronger emphasis on qualitative studies, is been published more in specialized journals, and has engaged more with audiences within the corporate community. Today, the two fields are finding more interconnections as the journals, conferences and norms of doctoral training begin to merge. Such a merging of these two research traditions serves to institutionalize the field even more, normalizing its scope, expanding its volume, and creating a rich foundation of literature upon which to build future inquiry. This work has been increasingly published in mainstream “A” journals but also continues to flourish within specialized journals that allow deviation from the strict norms of theoretical orthodoxy.

In short, the field of B&NE is a wide-ranging and ever-growing field that now includes various empirical foci, theoretical disciplines, conceptualized models and geographic traditions. Each component offers a different piece of the composite whole for understanding how and why environmental issues impact the corporate system. More importantly, this growing literature has now reached a stage where it has sufficient critical mass and intellectual rigor that it has gained the legitimacy of not only fitting within, but also augmenting and improving the existing

paradigms of academic literature. At the same time, the field has maintained some of its more provocative roots by honoring on-going critical analyses that challenge those existing paradigms (Bansal and Hoffman, 2012; Bansal and Gao, 2006; Kallio and Nordberg, 2006; Gladwin, 1993).

But this growing legitimacy raises questions about the present state of the field and its future trajectory. In light of its history, B&NE research can hardly be said to represent one stream of discussion, but what are the streams and sub-streams? Are the debates and discussions that make up the B&NE domain best represented as one large interconnected discourse, many individual and isolated conversations, or some combination in which a few articles bridge disciplines? And even further, how does this domain of scholarship fit with the rest of the work within the management literature? Is B&NE research engaged more with the disciplines or with each other? In short, how do we characterize the B&NE as a composite whole?

That is our goal in presenting this introduction and this collection of papers. We hope to offer a view of the field that may allow the B&NE scholar to understand the overall landscape as well as its various contours. At the same time, we hope to stimulate reflection and debate over the state of the field of B&NE scholarship and where it might be going. To that end, we do not offer the definitive final word, but rather a perspective and commentary upon which we hope others will build. At this time in the history of B&NE research, we have an opportunity to explore the ways in which corporate practice has been studied and theorized as a backdrop for thinking about renewed ways in which it could be studied. It is important for the training of new scholars who enter the domain to periodically take stock of where senior scholars have laid the field's foundations. (We refer to "senior" scholars with some amusement; as B&NE is in fact a relatively new field, where the senior members within it are relatively young – at least in our eyes! – compared to what we traditionally consider to be more mature and established fields.)

But again, a question that this point raises is whether B&NE being characterized as a “young” field is due to a lack of conceptual clarity or a vibrancy that allows it to avoid the inertia of a long historical legacy.

The rest of this chapter comprises three parts. The first part offers a history of publications within the field; presenting a statistical synopsis of when papers have been published, where and with what focus. The second part considers the layout of that field, using network analysis mapping to depict the form and flow of its multiple conversations. The third part of this chapter highlights the main conversations taking place, emphasizing how the various conversations cluster and interconnect and the major papers that inform those discussions and set future directions. These three components provide the basic groundwork for understanding the structure, nature and history of the B&NE field, one that will be entertaining for the experienced scholars who have lived it with us, and informative for the novice scholar who wishes to take the challenge of continuing the field into the future.

Historical Development of the B&NE Field

Figure 1 presents an historical trajectory of the publication dates of a sample of 874 major articles in B&NE.¹ This graph shows that B&NE dates back to before the early 1970s, did not fully develop as a substantial body of literature until the early 1990s, and has been

¹ This list of articles was created by merging the bibliographies of the 38 chapters published in *The Oxford Handbook of Business and the Natural Environment* (Bansal and Hoffman, 2012). The chapters, written by 65 authors representing 10 countries and 3 continents, cover each of disciplines found in a business school – strategy, business policy, organizational theory, operations, marketing, accounting and finance, as well as sections for emergent and future perspectives. Authors were asked to write from their particular discipline and discuss where the field has been, is now and will be in the future on the topic of B&NE. Authors were also asked to make their bibliographies as inclusive as possible of what might be considered the seminal papers of the field in their particular discipline. The merged bibliographies created a total of 874 articles which represent a database proxy of the B&NE field as defined by 65 scholars of the field. One observation of this list is that there are far more North American articles than European. This may be due to the combined effect of journal rankings and the imperative for scholars on both sides of the Atlantic to publish in highly ranked journals, which predominantly are North American journals.

growing at a steady rate ever since (Hoffman, 2011a). Seventy-three percent of these articles were published in mainstream academic journals (non-specialized), while 27% were published in journals that focus specifically on environmental issues in a particular discipline.

INSERT FIGURE 1 HERE

The emergence of the field in the early 1990s coincides with a growth in salience and attention for environmental issues as strategic issues within the business community, what is called the “second wave” of environmental management as shown in figure 2 (Hoffman and Bansal, 2012). Within the world of academia, 1990 marks the first gathering of management scholars on the topic at the Greening of Industry Network in 1989, the establishment of the Organizations and the Natural Environment (ONE) special interest group of the Academy of Management in 1994 and the establishment of specialized academic journals dedicated to the interface between managerial action and environmental protection, including *Business Strategy & the Environment* (started in 1992), *Organization & Environment* (started as *Industrial and Environmental Crisis Quarterly* in 1987 and changed to *Organization & Environment* in 1997), and the *Journal of Industrial Ecology* (started in 1997).

This growth in the field was spurred on by a series of special issues on B&NE themes that emerged in multiple journals and disciplines, including: *Psychology & Marketing* (1994), *Academy of Management Review* (1995), *Journal of Advertising* (1995), *British Journal of Management* (1996), *American Behavioral Scientist* (1999), *Business History Review* (1999), *American Behavioral Scientist* (1999), *Business History Review* (1999), *Academy of Management Journal* (2000) *Production and Operations Management* (2001) and others. With

this as a backdrop, B&NE research began to emerge in a broad spectrum of journals, both specialized and mainstream.

INSERT FIGURE 2 HERE

Journals in which B&NE research has been published

Our 874 major B&NE articles were published in 258 journals and 85 book chapters (See Appendix I for a list of the journals). Of these articles, the majority (36%) was in the broad discipline of management, followed by accounting, economics and operations (see table 1). Notably low in research productivity were the disciplines of finance and information technology.

INSERT TABLE 1 HERE

The mean number of articles per journal was 1.00, and the average was 2.91. Thirty-six journals accounted for 56% of all articles published and specialized journals made up 27% of the total scholarship. The journals that published the most B&NE research were the *Journal of Industrial Ecology*, *Academy of Management Journal*, *Business Strategy & the Environment*, *Strategic Management Journal*, *Academy of Management Review* and *Organization & Environment* (see table 2). Note that of the top 10 journals, 4 are non-specialized mainstream journals. Although B&NE research is visible in top journals, it does not figure prominently. A study by Bansal and Gao (2006) found that B&NE research figured in less than one percent of the space in mainstream journals, when a few special issues on the topic were taken out of the

sample. Our study confirms that specialized journals continue to remain a prominent outlet for B&NE research.

INSERT TABLE 2 HERE

Citation counts of B&NE research.

It appears that the most influential articles, measured by citations per article in Table 3 (gathered from Google Scholar[®]), came from the professional journals by a wide margin. Citation counts per article ranged from 0 to 4,461 overall. The average citation count per article was 130, but the median was 50 citations per article, suggesting that some articles at the top of the list skew the distribution.

INSERT TABLE 3 HERE

More specifically, articles with the highest influence (measured by citation count per article) came from the *Academy of Management Review*, *Harvard Business Review*, *Academy of Management Journal*, *Journal of Marketing, Accounting, Auditing and Accountability Journal*, *Business & Society*, and *California Management Review*. These rankings do not appear to correlate with the journal's overall Impact Factor (see Table 4).

INSERT TABLE 4 HERE

Are B&NE scholars publishing in the right outlets for maximum impact? The results seem to be mixed. Notice the mismatch between journals listed in tables 2 and 4. For example, *Business & Society* received a high rank for citation/article but does not appear in the list of journals in which the research is published (only 4 articles were posted). Conversely, *Business Strategy & the Environment*, the *Journal of Industrial Ecology* and *Organization & Environment* were prominent outlets for B&NE research but receive very low ranks for citation counts. In between, *Academy of Management Review*, *Academy of Management Journal* and *Strategic Management Journal* rank comparably on both tables. Might these latter journals represent the mainstreaming of B&NE research while the former journals represent the development of new ideas and the development of a field separate from the mainstream?

Network Mapping of the B&NE Field

For this volume, we were asked to select seventy articles that represent the major focus of the field since its inception. We selected articles based on past impact (measured by citation count), potential future impact in the field (measured by citations per year)² and empirical and theoretical diversity (measured by what we saw as the scope of streams and conversations taking place). Our list (shown in Appendix II) therefore, does not include all major citations of the field. For example, while there were a great number of articles on the topic of “whether it pays to be green?” that emerged in the 1990s and had a great influence on the development of the field, we chose only a small number of that stream in order to make room for a more representative scope of papers to depict the field. Figure 3 presents the citation network among

² Were we to create a ratio of citations per year to overall citation count in Appendix II, those articles that rank higher on the list for citations per year than overall citation count may be considered to be up and coming articles relative to their peer set (presuming their citation trend continues). Those articles with a higher citation count rank than citations per year rank may be considered to be sun setting in influence relative to their peer set.

these works based in Histcite[®] mapping software.³ Several observations become immediately apparent in this map.

INSERT FIGURE 3 HERE

First, there are a number of highly cited articles that are central to the map. These eleven articles include 2 (Wood, 1991), 10 (Gladwin, Kennelly and Krause, 1995), 11 (Starik and Rands, 1995), 12 (Shrivastava, 1995a), 13 (Hart, 1995), 14 (Jennings and Zandbergen, 1995), 17 (Hart 1997), 19 (Russo and Fouts, 1997), 20 (Mitchell, Agle and Wood, 1997), 23 (Sharma and Vredenberg, 1998) and 26 (Hoffman, 1999).

Second, these articles are highly concentrated in the mid-1990s with five of the eleven appearing in a 1995 special issue of *Academy of Management Review*, while the other highly cited articles appear in other top journals, notably *Academy of Management Journal* and *Strategic Management Journal*. The topics addressed in these articles include the strategic implications of environmental concerns and the development of theoretical frameworks to address the issues of B&NE, notably institutional theory, resource-based view of the firm and stakeholder theory.

Third, articles 1 (Hahn and Stavins, 1991), 3 (Gray, 1992), 4 (Wood, 1991), 6 (Thierry, Salomon, Van Nunen and Van Wassenhove, 1995), 8 (Wapner, 1995), 25 (Georg, 1999), 32 (Klassen and Whybark, 1999), 34 (King and Lenox, 2001), 40 (Sarkis, 2003), 59 (MacKenzie, 2009), 60 (Nidumolu, Prahalad and Rangaswami, 2009), and 61 (Shove and Walker, 2010) are

³ Histcite[®] uses the Web of Science[®] database to create citations maps. Nine articles in our sample are not listed in Web of Science[®] because they are either too old, they are book chapters or they are in journals that are not cited in the database. The key code for the articles can be found in Appendix II. The size of the circle indicates the number of overall citations, and the arrows refer to who cites who. The size of the circles for the more recent articles are expected to be smaller, given the reduced amount of time in which the articles can be cited.

completely separate from the network map. Moreover, these contributions come from fields separate from the more mainstream B&NE fields of organizational theory and strategy, and many of them are European: 1 (economics), 3 (accounting), 4 (European), 6 (operations), 8 (political science), 25 (ecological economics), 32 (operations), 34 (though this is a strategy paper, it appears in an operations journal), 40 (operations), 59 (accounting), 60 (Base of the Pyramid), and 61 (political science). We see these as areas of future research for the B&NE field.

Fourth, most of the operations papers in the sample do not even cite each other or those in the broader network. Article 49 (Vachon and Klassen, 2006) is an operations paper that is integrated into the network but with only one tie to article 24 (Henriques and Sardorsky, 1999). Article 38 (Corbett and Kirsch, 2001) is in an operations journal but about industry standards with only two ties (to articles 39 (Delmas, 2002) and 17 (Hart, 1997)).

Fifth, there is a distinctly European conversation taking place on the role of technology in ensuring societal transitions (see articles 2, Kemp, Schot and Hogma, 1998, and 48, Smith, Stirling and Berkhout, 2005). And, there is a semi-distinct conversation that centers on Corporate Social Responsibility (CSR), with a bridge to a broader conversation on the role of stakeholders, among articles 2 (Wood, 1991), 5 (Clarkson, 1995), 20 (Mitchell, Agle, and Wood, 1997), 45 (Bansal and Clelland, 2004), 47 (Matten and Crane, 2005), and 52 (Aguilera, Rupp, Williams, and Ganapathi, 2007), and linking with 31 (Bansal and Roth, 2000). This represents a significant stream of research that forms a foundational element of B&NE research.

Sixth, the picture of the B&NE field depicted in figure 3 indicates the multifaceted-ness of the research discourse and returns us to an important question for B&NE scholars: Is there one concise and intact field called B&NE, or does it represent a composite of a highly fragmented (and even disconnected) streams of research? While figure 3 illustrates that there is a core body

of literature that is commonly referenced (indicated by the large nodes), some articles (and authors) appear to be talking more to each other than to the broader field. This could be an artifact of our sample selection, but it is a broader question that many within the field have been asking as they seek to provoke conversation among multiple disciplinary approaches.

Seventh, and finally, the depiction of the field, shown in figure 3, raises questions about the geographic representation at the field's academic core. Our choice of articles has a strong US focus: of the 61 texts included in figure 3 approximately two thirds of them are authored by scholars affiliated US universities and a handful are co-authored by Canadian and US scholars, while the remaining articles have been written by scholars from affiliated universities in other countries, notably the United Kingdom. This mirrors a citation pattern found within organizational theory in general: the field is dominated by work from North America, predominantly the United States (March, 2007). Moreover, if one considers who quotes whom, it is clear that North American authors are cited more heavily in the work of non-North Americans than vice versa. In our sample it looks as if North Americans primarily cite North Americans. Although this may, perhaps, be attributed to a bias in our material, others have observed this pattern as well (Meyer and Boxenbaum, 2010). With so few of the authors being non-English speaking countries (i.e. Spain, the Netherlands, and Denmark), it is fair to say that the dominant language in B&NE research is English.

In sum, the previous two sections have offered a statistical and analytical analysis of the corpus of the B&NE field. It is a useful snapshot for assessing the overall landscape of the field. In our next section, we highlight the contours of the field by providing an overview of a series of themes that we consider as critical domains of the field's inquiry. These include the conceptual models used to explain business behavior, the work done to identify the drivers of change and

the organizational responses. We conclude with a discussion of the future directions of the field and by identifying areas in which further research is needed.

Multiple Conversations that Comprise the B&NE Field

Our task of choosing seventy articles to represent the B&NE field is certain to be contentious. There will be many that will disagree with our choices, both for what we included and what we left out. Again, we do not propose to be the definitive final word on institutionalizing the field. But, in our attempt at such a task, we hope to stimulate conversation among B&NE scholars to come to greater clarity over who we are and where we going. In developing our list, we chose four general categories to represent the research streams taking place. As is evident by the dates of the articles that represent each stream, this list also represents a progression through which the B&NE literature has evolved, beginning with (1) the broader conceptual models to consider environmental issues within the management literature, moving to (2) considerations for the drivers of corporate environmental action, then considering (3) the organizational response to such pressures, and ending finally with (4) emergent directions.

Conceptual models⁴

Much early B&NE research sought to establish a new paradigm on its own, one that did not draw from existing literatures in mainstream business. However, this began to change in the mid-1990s with a call to clarify “The meaning of greening” (Gladwin, 1993). Not only did this paper issue a “plea” for using organizational theory in analyzing how businesses grapple with environmental issues, it also criticized B&NE research for being too ideologically informed,

⁴ Articles N2, N3, 2, 5, 7, 10, 11, 12, 13, 14, 15, N4, 16, 18, 19, 20, 23, 26, 28, 31, 34, 35, 37, 41, 43, 47, 51, 52, 53, and 55.

lacking in precise definitions, providing low-quality empirical findings, and not being cumulative or building upon previous work (Gladwin, 1993). With that call, B&NE research began to anchor on existing debates within other disciplines, most notably environmental philosophy, sociology and economics. And, in the ensuing years, the field has branched out to engage with rigorous application of multiple theoretical lenses, most predominantly in the disciplines of strategy and organizational theory. This section will overview the discussions taking place within five central mainstream domains -- linking environmental and financial performance, competitive strategy, resource-based view, institutional theory, and stakeholder theory – while also highlighting two domains in which the field still seeks to defy mainstream – theorizing – attempts to integrate the natural environment into management theory and critical theory.

Linking environmental and financial performance. Within B&NE research, the relationship between business success and environmental protection has been subject of much attention. With the publication of a one-page commentary on the conflict between environmental protection and economic competitiveness, published in *Scientific American* in 1991, Michael Porter challenged conventional economic wisdom regarding this relationship. Prior to that paper, the interests of economic growth and environmental protection had been treated primarily in oppositional, zero-sum terms; investments in environmental protection were considered unproductive and, therefore, likely to undermine corporate competitiveness. Instead, Porter argued that this was a false dichotomy based on a static view of competition (Porter, 1991). Drawing upon the paradigm of dynamic competitiveness developed in the 1980s, he argued that environmental concerns could, if environmental regulations were sufficiently stringent, be turned into a competitive advantage.

This essay led to a great deal of coverage of the question of whether it “pays to be green” in both the scholarly and popular literature. Initially formed as a debate among economists and strategy scholars (Walley and Whitehead 1995, Porter and van der Linde 1995), it has grown to encompass researchers from other disciplines (Boon and Wagner, 2009; Barnett and Salomon, 2006; King and Lenox, 2001; Waddock and Graves, 1997; Wood, 1991). And yet, despite well-developed theoretical arguments and numerous studies, the answers to this question continue to be uncertain (Margolis and Walsh 2003; Orlitzky, Schmidt and Rynes, 2003). Many researchers have therefore suggested that the question needs to be reformulated. Instead of asking “if” it pays to be green, attention should refocus on “how” and “when” it pays to be green (Siegel, 2009; Howard-Grenville and Hoffman, 2003; Margolis and Walsh, 2003; King and Lenox, 2001).

Competitive strategy Beyond this central strand of discourse, there are two streams within the strategy literature that have drawn significant attention. The older of the two begins with discussion of a shifting paradigm, out of which could emerge either new environmental strategies (Gladwin, Kennelly and Krause, 1995) or the redefinition of generic strategies, addressing how low-cost, differentiation, and niche strategies of firms can influence environmental performance (Reinhardt, 1998; Shrivastava, 1995a). Also in this vein are a number of studies characterizing corporate environmental strategies as ranging from reactive regulatory compliance to proactive corporate behavior (Post and Altman, 1992; Schmidheiny, 1992; Hunt and Auster, 1990) and offering analysis of the determinants of environmental performance (Christmann, 2000; Henriques and Sadosky, 1996). A characteristic feature and output of much of this work leads to a second stream of strategy research; to direct attention into the processes that take place within the “black box” of a firm that drive it to be “green.” One of

the central domains for this inquiry is the resource-based view of the firm, and its variant, the natural resource based view (Hart, 1995).

Resource-based view. This strand of the corporate strategy literature focuses on the ways in which corporate environmental strategies are implemented, and, importantly, how those strategies are configured based on developments in the external environment. In a sense this perspective offered an “outside-in” view of competitive advantage, but with an emphasis on the internal competencies of the firm, it blended this perspective with an “inside-out” view. Competitive advantage was seen as rooted in how a firm links its core competencies to resources in the firm’s external environment. This perspective directs attention to organizational capabilities to leverage key resources.

But, going further, Hart (1995: 986) criticized the resource-based view for one glaring and serious omission: “It systematically ignores the constraints imposed by the biophysical (natural) environment,” which in his view rendered the theory incomplete. As an alternative, Hart (1995) suggested a “natural-resource-based view” where a firm’s competitive advantage was seen as rooted in its capabilities to undertake activities that are environmentally sustainable. To this end, Hart argued that there were three stages of proactive environmental strategy, each involving strategic capabilities: pollution prevention, product stewardship and sustainable development, which differ in terms of external driving forces, necessary resources and source of competitive advantage.

With this critical addition, the resource based view has been put to widespread use in numerous analyses of corporate environmental strategy (Aragón-Correa and Sharma, 2003; Russo and Fouts, 1997; Shrivastava, 1995a). This stream of research pays particular attention to the development of competitively valuable organizational capabilities (Sharma and Vredenberg,

1998; Hart, 1995), absorptive capacity (Delmas, Hoffmann and Kuss, 2011; Lenox and King, 2004) and complementary assets (Christmann 2000) as key levers for creating competitive advantage through environmental performance. Further, these studies acknowledge that external stakeholders provide an important impetus for change that can improve organizational performance, thus, adding to the growing understanding of how the external environment can influence the development of corporate environmental strategies and valuable organizational capabilities (Aragón-Correa and Sharma, 2003; Sharma and Vredenburg, 1998). Further, this work introduces notions of uncertainty, complexity and munificence in a firm's external environment, which can moderate the competitive value of proactive environmental strategies. In this way, the resource based view offers explanations of why firms with similar resources may perform differently by either developing different environmental strategies and/or obtaining different economic results while relying on similar environmental strategies.

This work has primarily focused on analyzing pollution prevention strategies, and paid less attention to the development and competitive impact of product stewardship and sustainable development strategies (Hart and Dowell, 2011). The latter is thought of in terms of clean technology strategies and “Base of the Pyramid” strategies (Prahalad and Hart, 2002; Hart, 1997), both of which are heralded as a means for enabling “green” or “sustainable growth.” In light of the growing economic, environmental and social challenges facing business and society, the original argument for recasting the resource-based view of the firm has, according to Hart and Dowell (2011: 1476), “only become stronger and more relevant.”

Institutional theory. Inherent in much of the strategy literature on corporate environmentalism is an efficiency argument, i.e. sustained competitive advantage depends on the firms' strategic choices or the leveraging of its' capabilities, resources and assets (Porter and van

der Linde, 1995; Hart, 1995). However, viewed through the lens of institutional theory, other factors need to be considered. Firms also have to behave in ways that are considered “legitimate” by powerful social actors within their institutional environments.

In the often-cited special issue of *Academy of Management Review*, Jennings and Zandbergen (1995) were among the first to demonstrate the usefulness of institutional theory in analyzing corporate environmental behavior. They pointed to the processes through which the institutionalization of ecological concerns can take place and to how these processes could influence what “organizational sustainability” might mean. Although the notion of organizational sustainability has since been subject to critique (Sterman, 2012; Roome, 2011; Banerjee, 2003, 2008), Jennings and Zandbergen were one of the early works in what has become a solid stream of B&NE research.

In another early paper, Hoffman (1999) builds a framework for understanding the co-evolution of organizational fields, institutions and organizational structure. He theorized organizational fields as forming around key issues – in this case environmental protection – and considered as arenas for debate, contestation and interpretation. Hoffman demonstrates that corporate environmental strategy is shaped by the field, and not just as a matter of strategic choice, thus, qualifying claims that economic and environmental performance automatically go hand in hand.

A central implication of firm behavior being shaped by constituents in the field is that of organizational and institutional isomorphism (i.e. as more and more organizations conform with “rationalized myths” as to what is the proper course of action, they come to resemble one another more and the myths become more entrenched or institutionalized). The diffusion of organizational ideas and practices is the key mechanism, and it takes place through the

regulatory, normative and/or cognitive pressures that firms face. With this as an orienting structure, B&NE studies have focused on how environmental regulation, as a coercive force, has influenced firms to develop clean technologies (Georg, 1994; Ashford, 1993; Kemp, 1993; Ashford, Ayres and Stone., 1985), environmental management systems (Henriques and Sadorsky, 1996), and environmental strategies (Aragon-Corres, 1998; Nehrt, 1998).

In light of the growth of environmental regulation from the 1970s onward, this interest in the regulatory ‘drivers’ is hardly surprising. But with the advent of voluntary approaches and an increase in industry self-regulation in the 1980s, the number of studies that focused on normative influences increased, as witnessed by the many studies of industry associations and certification agencies that influence the diffusion of environmental management systems such as ISO 14001 and the European counterpart, EMAS, (King, Lenox and Terlaak, 2005; Delmas, 2002; King and Lenox, 2000; Bansal and Roth, 2000). While both the regulatory and normative pressures for environmental change have received quite a bit of attention, cognitive pressures have received comparatively less attention. One of the reasons for this gap is that they are more difficult to identify and isolate empirically; and are at best captured by proxies such as discourse. Also, the three types of pressures are more difficult to disentangle empirically than theoretically.

Although there has been and still is much interest in how widely accepted ideas and practices diffuse across industries, there is a growing interest in explaining why companies within the same field respond differently (Lounsbury, 2001). One stream of this research draws attention to the importance of social movements and occupational groups as inter- and intra-organizational linkages that can filter inputs from the field to the organization (Hoffman, 2001). Corporate environmentalism is, thus, theorized as the result of institutional pressures as well as the organizational structure, communication patterns, and culture. Delmas and Toffel (2008)

have demonstrated the empirical relevance of Hoffman's model in their study of how institutional pressures are channeled to different organizational functions and how this influences the ways in which these signals are received.

A second stream of institutional deviance focuses on the ability of firms to defy institutional pressures by acting as "institutional entrepreneurs" (Lawrence, 1999; Fligstein, 1997; DiMaggio, 1988) in shaping the discourse, norms and the structures that guide organizational action (Maguire, Hardy and Lawrence, 2004). This research focuses on change as the outcome of concerted and organized action. But strategic deviance can also take the form of stasis, as firms conform symbolically to institutional pressures by decoupling their core activities from the practices and procedures forced upon them from the outside, what is labeled as "greenwashing" (Greer and Bruno, 1996). Signaling in this way that they are doing the 'right thing', the aim is to placate company stakeholders by creating a green ceremonial façade (Jermier and Forbes 2003).

A third stream of this research draws from the Scandinavian approach to institutionalism (Bergström and Dobers, 2000; Boons and Strannegård, 2000; Czarniawska and Sevón 1996). Informed by March (1991), Cyert and March (1992), Weick (1995), and Latour (1987, 1998), this approach challenges both the isomorphism and de-coupling arguments. Instead of focusing on the field and/or the institutional pressures, Scandinavian institutionalism focuses on organizational practices, and argues that practices are "translated" every time they are applied in a new context and in this way, processes are changed. This makes it difficult to assess just exactly what is being diffused (Bergström and Dobers, 2000).

Stakeholder theory. The importance of stakeholders was canonized with the publication of *Strategic Management: A Stakeholder Approach* (Freeman, 1984), which described

companies as being situated within a web of relations to others who have legitimate interests – or a stake – in what the company does. Be it the neighbors, employees, investors, insurance companies, government, the press, or others, stakeholders can exert pressure, provide important resources, and impose costs through protest. Stakeholder management entails deliberate actions to appease stakeholder concerns while simultaneously pursuing company objectives.

In light of the many stakeholders that engage around environmental issues (including regulatory agencies, environmental activists, customers, suppliers, employees, and others), it is understandable that a great deal of research attention has been given to characterizing stakeholders as internal or external and primary or secondary (Clarkson, 1995), and to developing typologies to classify them (Mitchell, Agle and Wood, 1997). According to Mitchell, Agle and Wood. (1997), stakeholders should be considered in terms of their power to influence the firm as well as their legitimacy and the urgency of their claims. However, due to the limited insights and cognitive barriers managers may have (Kassinis and Vaveas, 2006; Buysse and Verbeke, 2003; Bazerman and Hoffman, 1999), defining “who and what really counts” (Mitchell, Agle and Wood, 1997) is likely to be less straightforward than depicted in the literature. Another complicating factor is that both the “stakes” and the “holders” can change rapidly and unexpectedly.

Much of the work informed by stakeholder theory focuses on specific stakeholder groups and analyzes how they influence corporate environmental behavior (Sharma and Henriques, 2005; Buysse and Verbeke, 2003; Delmas, 2001). There is also work seeking to assess how stakeholders and stakeholder management affects corporate and environmental performance (Harrison, Bosse and Phillips, 2010; Kassinis and Vafeas, 2006; Berman, Wicks, Kotha and

Jones, 1999). Analogous to the work on whether it pays to be green, the findings on whether “it pays to do good” are also inconclusive.

Incorporating the natural environment into management. While much of the B&NE literature focuses on the strategic, managerial, and economic aspects of changing business behavior, it pays very little attention to what happens in the natural environment. One such formative study that began to refocus that trend took place in 1997 when thirteen economists, ecologists and geographers conducted an analysis of 17 ecosystem services and determined a value for nature to the human economy estimated at between \$16 and \$54 trillion per year, with a likely figure of at least \$33 trillion (Costanza et al, 1997). Many environmentalists bristled at the idea of placing an economic value on nature, but the researchers used the conclusion to highlight an important point. If one compared the figure to the \$18 trillion gross national product (GNP) of the world, it became clear that the services provided by nature exceed the services provided by the human economy. Protecting nature, they argued, should therefore be given greater importance in relation to our own economic considerations

Coincident with this study, there were a number of strands of work seeking to forge stronger links between what happens to the natural environment and the social activities taking place in and around companies (Crane, Matten and Moon., 2008; Costanza et al., 1997; Egri and Pinfield, 1996; Starik and Rands, 1995). On a general note, and inspired by the debate about the dominant economic paradigm versus a new ecological paradigm (Catton and Dunlap, 1980), there are calls for a reconceptualization of the organizational environment and a stronger integration between the natural environment and organizational perspectives (Bansal and Roth, 2000; Egri and Pinfield, 1996). This stream points to the need for developing eco-centric approaches to business management and recognizes that there are limits to growth under existing

models (Gladwin, Kennelly and Krause, 1995; Meadows, Meadows, Randers and Behrens, 1972). This critique has been taken a bit further in a broadside critique of capitalism and a call for B&NE research to develop more critical and normative analyses (Gladwin, 2012).

There are, however, some contributions seeking to “re-work” established theories, like stakeholder theory, to bring them into line with environmental realities (Crane, Matten and Moon, 2008; Starik, 1995). Starik (1995), for example, makes a case for considering the natural environment – all its living and non-living components – as stakeholders,. Crane, Matten and Moon. (2008) introduce the notion of ecological citizenship as a means to capture the political dimensions of corporate environmentalism. Others draw on systems thinking to capture the complexity of corporate environmentalism, where business is considered as embedded in myriads of relations, and changes in business behavior are conditioned by multiple feedback loops, time delays and unexpected effects (Sterman, 2012; Roome, 2011; Egri and Pinfield, 2006). Viewed from this perspective, the notion of a single company being sustainable has almost an oxymoronic ring to it.

Critical theory. When considering the theories most commonly evoked in the B&NE literature, one can conclude that the apple does not fall far from the tree, given that the theoretical grounding of much of this literature is within the mainstream of organizational and management theory. Although hardly surprising, if one considers the development of a field in terms of extending extant theories to new empirical domains, many are, nevertheless, critical of the way in which B&NE research has developed (Banerjee, 2008). Some argue that it has been “hijacked” (Welford, 1997), that it should have a stronger eco-centric focus (Egri and Pinfield, 1996), it should not be just for Northern elites (Gladwin, Newburry, and Reiskin, 1997); it pays too little attention to the power and politics at play (Springett, 2003; Orsato and Clegg, 2002;

Orsato, den Hond and Clegg, 1999; Latour, 1998) and is, by and large, separated and oblivious to the environmental harms that continue to escalate in the natural world (Gladwin, 2012). This may be attributed to B&NE research's emphasis on business rather than the natural environment, but it could also be that mainstream theories are "blind" to certain issues and that we need to develop different lenses through which we can view and assess the relationship between business and the natural environment. In what follows we point to two such lenses, critical management studies and actor-network theory.

Authors drawing on critical management theory focus on the power, politics and forms of resistance involved in developing corporate sustainability and ensuring sustainable development (Banerjee 2008; Orsato and Clegg, 1999; Levy 1997). Rather than assume that these terms can be easily defined or that they are unproblematic, critical approaches attend to the discursive, material, institutional power plays that confer legitimacy to the ways in which business deals with environmental issues and offers skeptical accounts of business behavior, particularly with regard to how it impacts the lives of more impoverished and marginal stakeholders (Banerjee, 2008).

The second perspective, actor network theory (Latour, 1987; Callon, 1986; Law, 1992) shares institutional theory's interest in understanding how certain practices become institutionalized. Premised on an assumption that both human and non-human actors must both be considered when explaining how relations arise and are changed, scholars argue that the relationship between business and the natural environment is an effect; an outcome of the processes through which identities and interests of the involved actors are negotiated and transformed (Newton, 2002; Newton and Hartje, 1997). Rather than making claims as to the merits or drawbacks of corporate environmentalism (and CSR), emphasis is given to how these

concepts *unfold in practice* (Bergström and Diedrich, 2011; Bergström and Dobers, 2000;). This line of thinking has also recently been extended to studies of climate policy and the intricacies of what it takes to create a market for carbon (MacKenzie, 2010; Callon, 2010).

Disparate as these conversations may be, they each point to limitations in the mainstream B&NE research. But equally, if not more importantly, they also ask questions that the mainstream B&NE literature does not. Each of these perspectives extends analysis beyond the interests of a single firm or organization and emphasizes the contentiousness in bringing about deep transformative environmental change. By asking us to consider the fundamental structures and values of our current modes of organizing, they present new and provocative understandings and routes for research, and thus, extend the field into new realms.

Drivers of change⁵

The question of what drives business companies to improve their environmental performance is, not surprisingly, a recurring question in B&NE research's many guises. Even though there may be almost any number of factors influencing firm behavior, this section focuses on the four drivers that figure prominently in the literature – government regulation, industry self-regulation, consumer pressure, and social movements. The order in which these drivers are listed is also indicative of shifts in our understanding of who can bring about environmental change and the politics by which this happens. What was once solely the domain of government has, over time, given rise to new areas of inquiry that encompasses other modes of governance.

Government regulation. Environmental regulation was introduced in most (Western) industrialized countries at more or less the same time in the 1970s, and these countries have continued to add to these regulatory frameworks ever since. In light of these developments, it is

⁵ Articles 1, 4, 8, 25, 30, 38, 39, 42, 54, 58 and 59

not surprising that there is a large body of B&NE research dedicated to examining effect of this regulation on, notably, the economic performance of companies (Barnett and Salomon, 2006; King and Lenox, 2001; Waddock and Graves, 1997), the development of clean technology (Kemp 1993; Schot, 1992;), innovation (OECD, 2000; Ashford, 1993), and the introduction of environmental management systems (Dahlmann and Brammer, 2011; Khanna and Anton, 2002; Delmas, 2001). Although some have argued that regulatory policies will work differently depending on industry and company characteristics (i.e. some policies will evoke proactive behavior in some industries/companies and not in others) (Dahlmann and Brammer, 2011; Hunt and Auster, 1990), it appears that even within the same industries there are substantial differences in regulatory response (Prakash and Kellman, 2004). These differences may be attributed to, for instance, differences in managerial perceptions, strategic action, organizational culture, and operations.

While much of the early research focused on the ‘dirtiest’ industries (i.e. the extraction and manufacturing industries) (Sharma and Henriques, 2005; Jänicke, Binder and Mönch, 1997) and on the use of mandatory regulations regarding specific environmental targets and/or emission standards, attention eventually shifted to both other industries (i.e. electronics, IT and tourism) and other regulatory instruments and environmental policy goals. For example, there has been a marked increase in research on the use of voluntary negotiated agreements and market-based instruments such as environmental taxes, and emission trading schemes. The introduction of voluntary negotiated agreements does not imply abandoning the use of mandatory measures. Quite the contrary, in many instances the use of negotiated voluntary agreements is supported by credible threats of a mandatory approach, should the voluntary scheme fail (Potoski and Prakash, 2004; Labatt and Maclaren, 1998; Georg, 1994). The use of

negotiated voluntary agreements is, however, more common in Europe than in the United States (OECD, 2003; Glachant, 1994).

Research on market-based instruments has been founded on conventional analyses that consider the economic efficiency of such programs over “command and control” regulation (Hahn and Stavins, 1991). However, while successful in reducing sulfur dioxide emissions in the U.S., the failure of negotiations to institute a carbon trading scheme to address climate change and flaws in the European Trading Scheme (Carter, Clegg, and Wåhlin, 2011; MacKenzie, 2010), the effectiveness and broad applicability of these instruments has been called into question, prompting a need for further empirical analysis of, for example, the benefits some industries derive from influencing and lobbying regulators to introduce regulatory measures that fit their needs (Perrow, 2010; Reinhardt, 1998, 1999).

Industry self-regulation. Industry self-regulation is an umbrella term for the myriad of activities that industry, notably industry associations, introduce to regulate corporate behavior and competition (i.e. certification schemes such as the ISO14000 series or its European counterpart, EMAS) (Darnall and Sides, 2008; Delmas, 2002; Corbett and Kirsch, 2001). There are two forces driving the introduction of self-regulatory systems – the problem of asymmetric information and market failure (Barnett and King, 2008; King and Lenox 2000). In the first instance, information disclosure can be a means to reduce asymmetries and gain positive reputational benefits. In the second instance, self-regulation entails the development of a collective defense mechanism that can either help forestall and preempts government regulation, or “weed out” poor environmental performers so as to minimize the detrimental reputational effect of the industry as a whole with regulators.

Much of the research on industrial self-regulation focuses its effect on the economic and environmental performance of companies as compared to the absence of such a program, or the implementation of formal regulatory measures (Terlaak and King, 2006; Toffel, 2006; King, Lenox and Terlaak, 2005). Other studies consider the reasons why certification has become so widespread (Delmas and Toffel, 2004; Delmas, 2002), whether self-regulatory actions have the desired effect on recalcitrant companies within the industry (Rivera and de Leon, 2005; Lenox and Nash, 2003; King and Lenox, 2000), and the importance of sanctions for self-regulatory actions to work (Lenox and Nash, 2003). Although much of this work shows that industrial self-regulation often falls short of desired economic and environmental ends (Darnall and Sides, 2008; Barnett and King, 2008), industry continues to have a strong interest in this particular governance approach.

Consumer pressure. The role of consumers in environmental performance is an obvious one – they influence company behavior by either buying or not buying company products/services. The extent to which environmental issues are influencing the buying habits of consumers is not clear, despite commonplace references to and calls for “green consumerism.” While much of the research in this area has centered on characterizing green consumers, identifying their values, and assessing their motivations for their choosing green products (Kilbourne and Beckmann, 1998), it is not clear how widespread a phenomenon green consumerism is (Pedersen and Neergaard, 2006). And the effect of green consumerism on company performance is, indeed, debated (Eriksson, 2004). It is, for instance, not clear whether or how the prospects of green consumers are changing marketing practices (Peattie, 2001).

Studies have analyzed the linkages between green products and consumer identification with a company or its strategy (Bhattacharya and Sen, 2003). Others have shown that the

environmental awareness of many consumers is relatively low (Fineman and Clarke, 1996) and that they often are skeptical of company claims (Bjørner, Hansen and Russell, 2004). Other studies find that consumers have a tendency to free ride and let others, notably those in developing countries, suffer the environmental costs of consumer goods production.. Research also finds that consumers have a tendency to over-discount the future (Wade-Benzoni and Tost, 2009) thereby minimizing the power of consumer behavior in addressing long-term issues like climate change and population growth. These studies highlight the mismatch between the way markets, and notably retail markets, work and the conditions that are ideal for fostering green consumerism (Gershoff and Irwin, 2012).

Much of this literature is focused on the individual end-consumer and explains consumer behavior in terms of behavioral and cognitive theory. There is, however, a growing body of literature on the greening of household consumption that draws upon (social) practice theory (Shove, Chappells, Lutzenhiser and Hackett, 2008; Shove and Pantzar, 2005; Warde, 2005; Shove, 2003; Schatzki, Cetina, and von Savigny, 2001) to studies issues like energy-use (Gram-Hanssen, 2010) and information and communication technologies (Røpke, Christensen, and Jensen, 2010) that attend both to the individual and contextual influences on (household) consumption.

Social movements. Tree lovers, citizens against genetically modified organisms (GMOs) in food, anti-nuke activists, and many kinds of NIMBY'ists (not-in-my-back-yard activists) have at least one thing in common – they are concerned about the ways in which production and consumption patterns are affecting the natural environment. While many of these groups are acting on the behalf of others – animals, trees, the planet and future generations – and link to broader concerns such as “the treadmill of production” (Schnaiburg, 1980), environmental

injustice and social emancipation (Banerjee, 2008), there a myriad of environmental concerns driving citizens to take action in multiple organized ways (Georg, 1999). Collective interests and concerns are, however, not “given” or pre-existing, but generally are considered to be socially constructed (Coglianese, 2001; Macnaghten and Urry, 1998; Jennings and Zandbergen, 1995; Yearley, 1992). And the use of science to help stake their claims tends to confer legitimacy to their concerns in social and political debates (Yearly, 1992).

Research on how environmentally concerned groups affect business emphasizes three approaches: (1) lobbying for changes in government regulation and policies, (i.e. NGO protests that prompted an EU moratorium on GMOs in food) (Ansell and Vogel, 2006; Doh and Guay, 2006); (2) more adversarial tactics such as the issuing of lawsuits, extensive media exposure and boycotting (King, 2008); and (3) more collaborative approaches where environmental groups work with business to develop new products or services, such as the Environmental Defense Fund’s collaboration with McDonalds to develop new packaging, environmental groups assisting in the development of renewable energy technology markets (Sine and Lee, 2009), citizen groups collaborating with construction firms to build eco-villages (Georg and Irwin, 2002) and the creation of certification and auditing schemes to help business change behavior, notably in connection with agricultural production in developing countries (Arts, 2002). This activity takes place on multiple scales from the local to the international (Wapner, 1995) and leads many to consider a growing gap in the literature. While there is a rather substantial body of literature focusing on how environmental groups can influence business, there is less research on the influence that business can have on the environmental organizations and on how the two organizations co-evolve.

Organizational Response⁶

There is a large body of research dedicated to understanding how companies attend to environmental issues, and the context in which those responses occur. In this section, we will cover four organizational domains for analyzing business response – organization and culture, framing and discourse, individual and managerial perception, and disclosure and reporting – and four broader domains in which these responses take place – multi-national corporate context, clean-tech and entrepreneurship, supply chain management and industrial ecology.

Organization and culture. One of the vexing questions in B&NE research is why business firms have such varied responses to environmental issues. Although some attribute this to organizational capabilities (Aragón-Correa and Sharma, 2003; Sharma and Vredenburg, 1998) or to field level developments (Delmas and Toffel, 2008; Aguilera, Rupp, Williams and Ganapathi, 2007; Bansal, 2003), many researchers are seeking to “open the black box” of the firm by attending to organizational culture (Howard-Grenville, 2006; Forbes and Jermier, 2002). This work addresses how organizational culture, subcultures, and the relations between them are key to understanding how and why firms respond the way they do to environmental demands. This work emphasizes how the success of environmental initiatives is hinged on the support of senior management (Dixon and Clifford, 2007; Bansal, 2003; Ramus and Steger, 2000), the importance of environmental champions as both role models and ambassadors (Markusson, 2010; Bansal 2003; Andersson and Bateman, 2000), and the enabling influence of environmental management systems, policies and incentive schemes that effect employee behavior (Douglas, 2007; Smith and Brown, 2003; Ramus and Steger, 2000).

Framing and discourse. The meaning given to environmental concerns is to a large extent dependent upon how they are framed through the discourse that constitutes these concerns

⁶ Articles: N1, 3, 6, 9, N5, 22, 24, 27, 29, 32, 33, 36, 40, 44, 45, N8, 49, 50 and 57.

as legitimate and attention worthy. Discourse can be established within an organization, as a particular way of seeing, understanding and interpreting environmental issues, thus having much in common with perspectives that consider culture as a “web of meaning” (Geertz, 1973), but they are most often associated with group processing and societal debate (Dryzek, 1997; Hajer, 1997).

Research within this area focuses on how companies seek to influence environmental discourses, ranging from discourses regarding the company itself (Bansal and Clelland, 2004) to broader environmental discourse on climate change, exemplified by the heated debates between climate skeptics and large parts of the scientific communities within the natural sciences (Hoffman, 2011b). Whilst the first-mentioned line of research addresses some of the same issues as research on company disclosure, the second issue pertains to issues of institutional change, particularly to how “language games” can help to support, re-orient or completely de-institutionalize and re-orient existing institutions (Garud, Gehman and Karnøe, 2010; Maguire and Hardy, 2009; Evans and Kay, 2008). This research relates to work being done on the rhetorical strategies of institutional entrepreneurs (Suddaby and Greenwood, 2005; Lawrence and Philips, 2004) and the path creation that leads to new markets for clean technologies (Karnøe and Garud, 2012).

Individual and managerial perceptions. While the broader cultural considerations are important for understanding environmental change, much research also attends to the individual level processes that can be considered as the micro-foundations of organizational response (Reverdy, 2006). Corporate environmental response in B&NE literature has considered the role of individual and managerial perception, particularly how these processes inform decision-making and action. Some of this work draws on behavioral theory, which sees individuals as

attempting to act rationally but as bounded by cognitive limitations regarding their self-interests and the interests of others, both now and in the future (Bazerman and Hoffman, 1999). Others explore the issue more inductively by attending to the ways that managerial interpretations effect company choice of environmental strategies (Henriques and Sadosky, 1999; Sharma, 2000; Banerjee, 2001). These and other studies highlight the role of experience (Ramus and Steger, 2000; Walls and Hoffman, forthcoming), emotions (Fineman, 1997), individual values (Bansal, 2003) and organizational context (Sharma, 2000) in providing managers with views as to possible strategies (Egri and Herman, 2000). In keeping with some of the research on stakeholders, others point to the importance of internal and external constituencies in shaping corporate environmental perceptions and response (Banerjee, 2001; Andersson and Bateman, 2000). In addition to these approaches, others have focused on how the scope, scale and speed of organizational response is linked to the intertwining of individual perceptions and organizational values that can lead to competing agendas, mixed motives and mixed results (Bansal, 2003; Hoffman and Ocasio, 2001).

Disclosure and reporting. Accounting for companies' social and environmental impacts is a growing area of practice and research, with practice shifting in terms of both what is reported and how over the past two decades. There has been both a move to extend reporting to include issues such as climate change impacts (i.e. through the Carbon Disclosure Project) and link such outputs to mandatory financial statement disclosure through "integrated reporting" as the next evolution beyond stand-alone environmental or sustainability reports (Gray, Kouhy, and Lavers. 1995; Gray, 1992). Further, this is a growing move from relying on printed reports to also having various forms of web-based disclosures.

In line with the accounting truism that if something “doesn’t get measured then it doesn’t get managed,” there is a body of research that focuses on accounting techniques, and in particular, the more technical aspects of how to account for activities not traditionally included within financial accounting, such as numerical disclosures of emission data (that can be made commensurate with other emissions data so as to render this information intelligible to the presumed readers) (Kolk, Levy and Pinkse, 2008) and narratives of key stakeholders (Gray, Bebbington, Walters and Thomson, 2000; Bennett and James, 1998; Ditz, Ranganathan and Banks, 1995). While much of the accounting literature is less instrumental, more analytical, and more critical of what environmental reporting can achieve (Deegan, 2002), reporting does provide some degree of visibility regarding the issues that are important to key external constituents (i.e. government, environmental activists, employees and financial markets).

Given the propensity to gear reports towards basic communications objectives, some B&NE research seeks to explore whether disclosures are seeking to provide the readers with a particular picture of firm performance that may be at variance with reality. Viewed from this perspective, environmental reporting/accounting/disclosure is considered as a means for increasing legitimacy by managing stakeholder impressions (Neu, Warsame and Pedwell, 1998) and often cast as a matter of “greenwash” (Lyon and Maxwell, 2011; Jermier and Forbes, 2003). There are, indeed, numerous studies of how thematic content, narrative structures, language use (Cho, Roberts and Patten, 2010), and visualizations of environmental reporting can help “veil” the firm (Justesen and Mouritsen, 2009), providing one view to the readers while shielding the inner workings from external scrutiny (Hopwood, 2009). While much of this research examines environmental reporting from an external perspective, with emphasis on the intended effect on

external stakeholders, others focus on disclosure and reporting as auto-communication that enhances employee and managerial workplace identification (Morsing, 2006).

Developments within global climate policy, particularly the creation of markets in carbon emissions provides yet another arena in which accounting and environmental concerns are closely intertwined (Hopwood, 2009). There is a growing body of work addressing the link between carbon disclosures and corporate strategies (Reid and Toffel, 2009), the incommensurability of corporate carbon disclosures (Kolk, Levy and Pinkse, 2008), and of the “performativity” of these accounts as calculative devices that not only construct visibility and incentives for action, but also help shape the ways in which the markets are organized (MacKensie, 2009; Callon, 2009).

Managing in a multi-national corporate (MNC) context. The role of multinational corporations in the economy is controversial in both the economic (Korten, 1995), and the environment domains (Gladwin and Welles, 1976). Historically there have been four main strands of research in this research. The first is that of “eco-imperialism” associated with MNCs through trade liberalization (Paterson, Humphreys and Pettiford, 2003; Gonzales, 2001) is a persistent, but less prominent conversation within B&NE literature. The second is that of MNC “double standards” (Castleman, 1987) in which MNCs operate with older technologies or less stringent standards of care and compensation abroad than at home. The Bhopal catastrophe is one such tragic example (Shrivastava, 1987; Gladwin and Welles, 1976). The third is the flight of MNCs to “pollution havens” in the developing countries and emerging economies (Utting, 2005; Clapp, 2002). Such studies have been largely inconclusive, presumably because there are many more important factors shaping MNCs location decision (Javorcik and Wei, 2005; Eskeland and Harrison, 2003).

The fourth, and most prominent area of B&NE research has been the positive effects of MNCs in introducing uniform standards, technology transfer and the “greening” of their supply chains across global operations (Christmann and Taylor, 2001). Studies of the introduction of uniform standards have focused on the difficulties of navigating among diverse institutional environments (Kostova, Roth, and Dacin, 2008; Hunter and Bansal, 2006; Kostova and Zaheer, 1999), the cost reduction and efficiency gains to be made by streamlining organizational procedures (Sharfman, Shaft and Tihanyi, 2004; Corbett and Kirsch, 2001; Dowell, Hart and Yeung, 2000) and the benefits of technology transfer and the growth opportunities (Hart and Milstein, 2002; Hettige, Huq, Pargal and Wheeler, 1996) from the “greening” of the supply chain (Koplin, Seuring and Mesterham, 2007; Zhu and Sarkis, 2004). Much less attention is given to the negative effect that MNCs have on the environment and indigenous peoples (Banerjee, 2008), local industries (Jeppesen and Hansen, 2004) and environmental legislation nationally and internationally (Perrow, 2010).

Clean-tech and entrepreneurship. Technology is often considered as having an ambivalent role when it comes to the natural environment, that is, some technologies are seen as being at the root of a number of environmental problems while others are considered potential “solutions.” Hardly surprising, interest has centered on both “end of pipe” and “clean(er) technologies” (Dean and McMullen, 2007; Sine, Haveman and Tolbert, 2005). Although the market for these “green” technologies is growing internationally (Jänicke and Jacob, 2004), much of the research in this area attends to the determinants on the decision to develop and/or adopt “green” technologies; be they strategic considerations regarding competitive advantage (Shrivastava, 1995b; Reinhardt 1998), path dependency and the economic incentives for developing and adopting “green” technologies (Smith and Sterling, 2006; Klassen and Whybark,

1999; Kemp and Soete, 1992), environmental entrepreneurship (Sine and Lee, 2009), and product recovery management (Thierry, Salomon, Van Nunen and Van Wassenhove, 1995). Much of this work also focuses on the institutional context in which entrepreneurs and firms are embedded, but does so by mobilizing quite different theoretical domains. Some draw on institutional theory (Sine and Lee, 2009), while others draw on evolutionary economics (Geels, 2004; Kemp Schot and Hoogma, 1998; Schot, 1992), practice theory (Shove and Walker, 2010), and still others emphasize the ways in which entrepreneurs frame or qualify the technologies as green, mobilize the interests of others throughout the supply chain (Vachon and Klassen, 2006; Sarkis, 2003), and enroll them in endorsing the technology (Karnøe and Garud, 2012; Callon, 1986). Expanding to the broadest level, much research has focused on entire industrial ecosystems as a means for reducing pollutant outputs in the aggregate through industrial ecology (Ehrenfeld and Gertler, 1997).

Supply chain management. Research in the “greening of the supply chain” has developed in the wake of industry out-sourcing to suppliers located in countries with poorer social and environmental standards, where it is often difficult to ensure that that products are produced under socially and environmentally acceptable conditions. With increased media and activist scrutiny, a growing number of suppliers are being coerced into improving their environmental performance to meet purchaser requirements (Qinghua and Sarkis, 2004; Walton, Handfield and Melnyk, 1998).

Research within this field focuses on three prime issue areas: (1) the strategic implications and advantages that greening the supply chain can have for companies (Walker, Sisto and McBain, 2008; Vachon and Klassen, 2006; Sarkis, 2003; Corbett and De Croix, 2001), (2) the tools that companies need in order to develop green designs, green their operations, and

assess their suppliers (Beamon, 1999; Fleischmann, Beullens, Bloemhof-Ruwaard and Van Wassenhove, 2001; Zsidisin and Siferd, 2001; Lenzen, 2000; Min and Galle, 1997; van Hoek, 1999;), and (3) the challenges and new business opportunities associated with working with one's suppliers (Srivastava, 2007; Bowen, Cousins, Lamming and Faruk, 2001) and with closing production loops. These domains call for attention to both socio-economic considerations (i.e. nurturing inter-organizational relationships and developing trust (Vachon and Klassen, 2008)) and technical considerations (i.e. recycling and reusing of wastes or re-manufacturing these wastes into new products (Geyer, van Wassenhove, and Atasu, 2007; Thierry, Salomon, Van Nunen, and Van Wassenhove, 1995)).

Industrial ecology. This area of B&NE research is grounded on a systemic understanding of what firms can do to improve their environmental performance (Boons and Wagner, 2009; Whiteman and Cooper, 2000). Rather than focus on individual firms, this research attends to how resource use can be optimized within systems of firms (Erkman, 1997; Frosch and Gallopoulos; 1989). Although there is a strong emphasis on the more technical aspects of measuring and analyzing material and energy flows and on increasing resource efficiency by closing the loops (Ayres, 1997; Wernick and Ausubel; 1995), there is a considerable amount of research that examines how regional industrial eco-systems work, notably the exemplar cases in the Danish town Kalundborg (Chertow, 2007; Jacobsen, 2006; Ehrenfeld and Gertler, 1997) and other parts of the world (Zhu, Lowe, Wei and Barnes, 2007; Baas and Boons, 2007). Another key area of research deals with the organizational aspects of industrial ecology, such as the strategic interests of those involved and the coordination, collaboration and governance issues necessary to align those interests (Lifset, 2008; Esty and Porter, 1998; Boons and Baas, 1997). Other topics addressed within field include how life-cycle

analysis, life-cycle management and life-cycle costing can be used to promote resource efficiency, and the use of reverse and forward logistics to improve operations management. Hitherto, the main thrust of this research emphasis has been on how to change production patterns, but there is a budding interest for changing consumption patterns as well (Hertwich, 2005).

Emergent directions⁷

There are several domains in which new directions are emerging within the B&NE field, directions that expand both the disciplinary and topical domains on which this scholarship is built. As noted earlier, research productivity in the disciplines of finance and information technology (IT) have been notably low. Why is this so? Are the editors of the journals in these fields uninterested in the topic? Does the empirical domain fail to provide an avenue for theoretical contributions within these disciplines? Aside from these theoretical questions, the growing salience of environmental concerns in the practical world persists; environmental problems persist and get worse, the world economy struggles to recover from its collapse in 2008 (Stiglitz, 2009) and information technology continues to grow at its rapid pace. Given this growing professional salience, it is likely that the finance and IT will come to address B&NE issues. And emergent research on weather derivatives (Randalls, 2010; Dessai and Hulme, 2004), carbon accounting (Mackenzie, 2009) and information systems innovation for environmental sustainability (Melville, 2012) indicates that this is, indeed, happening.

Beyond this disciplinary expansion, growth can be seen in topical domains that have not generally received significant attention, despite their environmental importance. New research has begun to focus on eco-tourism, agriculture (Weber, Heinze and DeSoucey, 2008), and

⁷ Articles 17, 21, N6, N7, N9, 46, 48, 56, 60 and 61.

construction (Henn and Hoffman, forthcoming). As well, new streams include attention to new roles of the firm, base of the pyramid strategies (Nidumolu, Prahalad and Rangaswami, 2009; London and Hart, 2004; Hart, 1997), and sustainability more broadly (Ehrenfeld, 2004). There is a growing recognition that the complexity and interrelatedness of society's contemporary environmental problems calls for developing not only new technologies and products but also new forms of governance that can enable a move to a low-carbon society (Kolk and Pinske, 2004; Levy and Kolk, 2002); what some authors have dubbed sustainable transition management (Shove and Walker, 2010; Smith, Stirling and Berkhout, 2005; Kemp, Scot and Hoogma, 1998). This work includes attention to new organizational forms, such as hybrid organizations, NGO-business partnerships (Kong Salzman, Steger and Ionescu-Sommer, 2002), public-private partnerships for the environment (Koppenjan and Enserink, 2009), and local-global associations of heterogeneous actors (Georg and Irwin, 2002). The underlying ambition of much of this work is to develop a better understanding of the socio-technical lock-ins (Unruh 2000) and to examine how new development paths are being created (Karnøe and Garud, 2012).

And finally, emergent areas include a link between B&NE research and positive organizational studies (POS) and positive psychology (Dutton and Glynn, 2008). Both domains are grounded in the core concept of flourishing. Positive organizational scholarship is concerned with "conditions that foster flourishing at the individual, work group, and organizational levels" (Dutton & Glynn, 2008). Sustainability holds "the possibility that human and other life will flourish on the planet forever" (Ehrenfeld, 2008: 6). As a vision, POS research seeks to explore organizational and institutional contexts that help to realize the fullest human potential. Sustainability research explores economic development that will "meet the needs of present generations without compromising the ability of future generations to meet their own needs"

(World Commission on Environment and Development, 1987). With these as foundational starting points, these domains are growing increasingly interconnected (Hoffman and Haigh, 2011).

Conclusion

B&NE research has established more than a twenty-year foundation of scholarly output, with trajectories showing a steady upward trend (see figure 1). As we look to the future, we can expect continued expansion of work within both the mainstream literature and the specialty journals. This duality of being both on the “inside” and on the “outside” is critical to the growth and vitality of the field. It represents a healthy tension of focusing on environmental issues within the existing models, theories, and paradigms of “normal science” (Kuhn 1970) while also pushing “the literature to ask the ‘big’ questions and push beyond the existing paradigm” (Hoffman and Bansal, 2012: 21) that are built on a model of “revolutionary” science (Kuhn 1970). Certainly there is a need for both. The first helps to bring existing theories into more close alignment with biophysical reality. It also helps scholars to succeed and, in turn, become themselves “sustainable” by building upon the models and theories of the academic craft with rigorous analysis. The second recognizes that, despite the growing research on environmental issues, the environment continues to worsen with growing concerns for climate change, water depletion, species extinction and habitat destruction. As a result, B&NE research holds a special vantage point from which to examine those theories for possible alteration and adjustment in the face of an anomaly in the face of which these existing theories no longer work. And in this way, B&NE research holds a critical key for invigorating and revitalizing the broader field of management research of which it is a part.

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FIGURE 1
Articles per year on B&NE, 1975-2010 (Hoffman, 2011a)

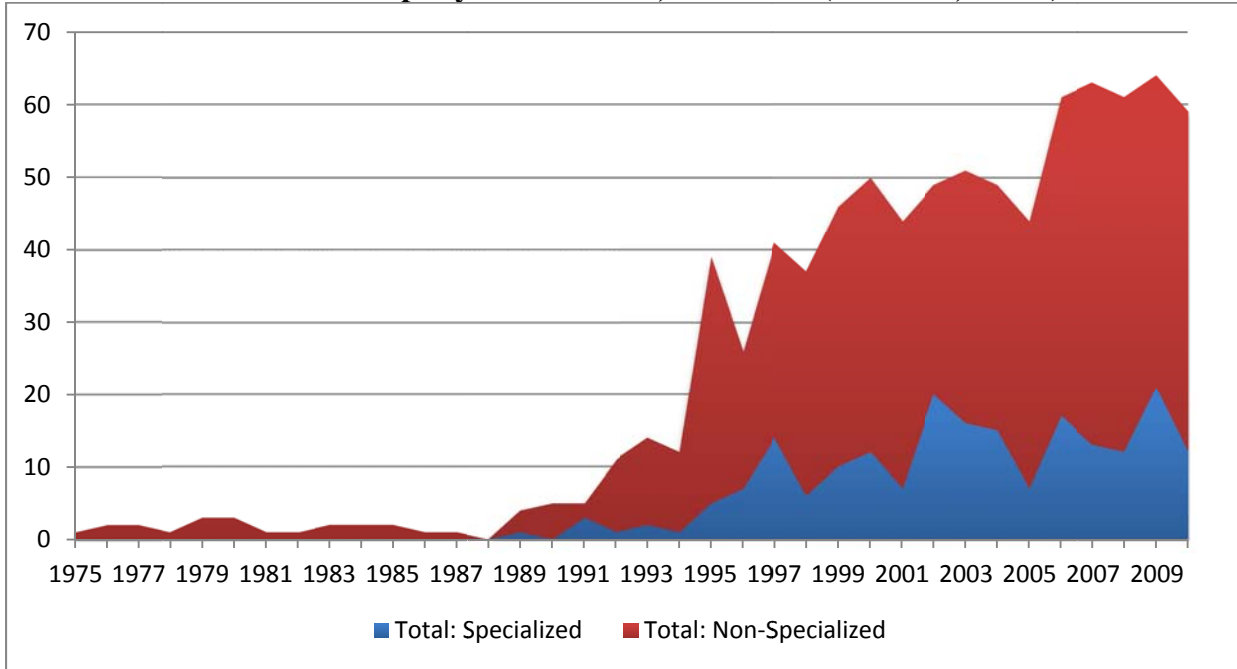


FIGURE 2
The Three “Waves” of Environmental Management (Hoffman and Bansal, 2012)



FIGURE 3
HISTCITE[®] NETWORK MAP
 (see Appendix II for Article Codes)

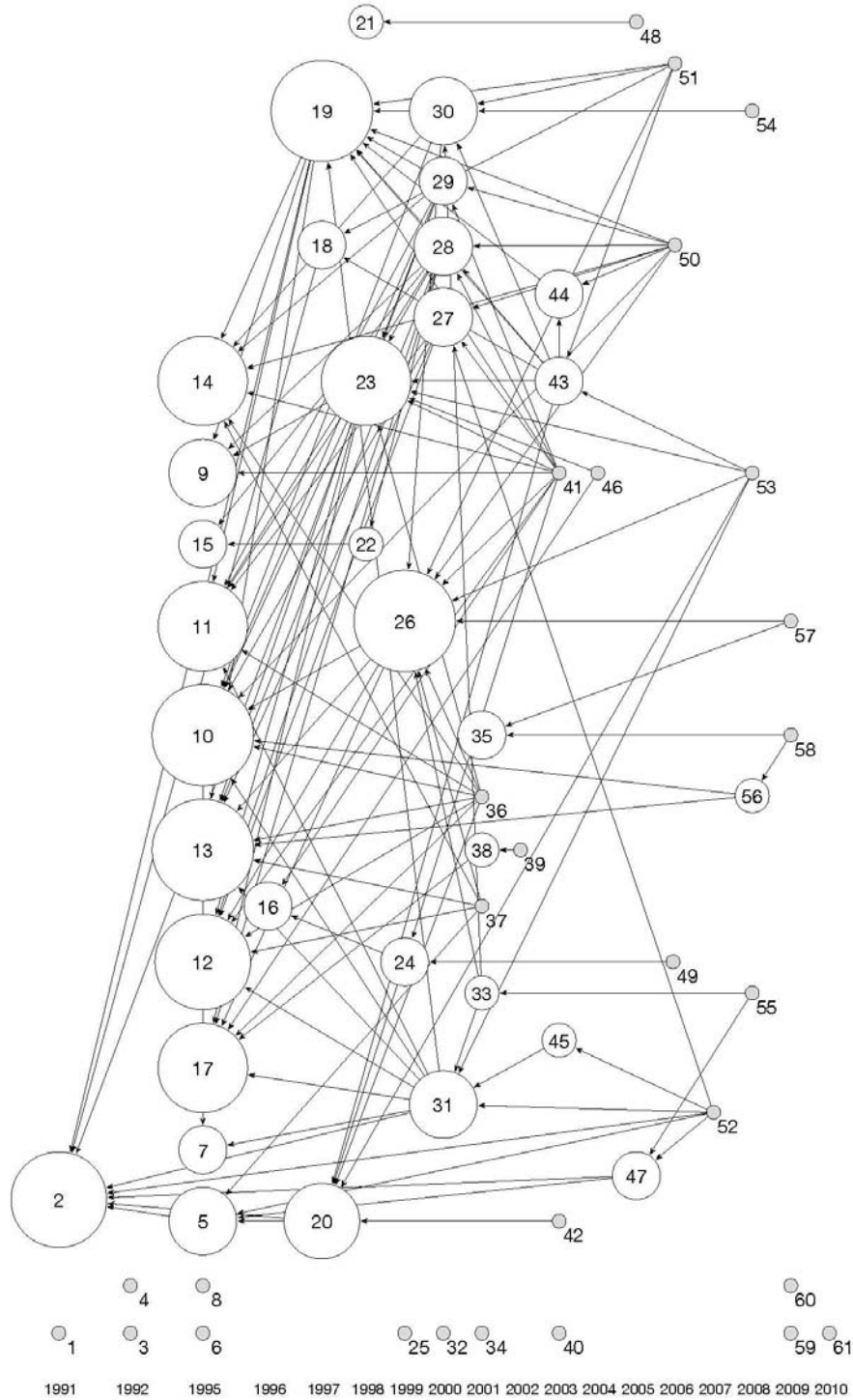


TABLE 1
Distribution of B&NE Articles by Discipline

DISCIPLINE	ARTICLES	PERCENTAGE
Management	280	36%
Accounting	90	12%
Economics	74	10%
Operations	56	7%
Behavior: Psychology, Sociology, Org Behavior	50	6%
Engineering/Science/Environment	47	6%
Marketing	47	6%
Political Science	47	6%
Professional	45	6%
Law	27	3%
Finance	12	2%
Information Systems	2	0%

TABLE 2
Distribution of B&NE Articles by Journal

JOURNAL	ARTICLES
<i>Journal of Industrial Ecology</i>	36
<i>Academy of Management Journal</i>	29
<i>Business Strategy & the Environment</i>	27
<i>Academy of Management Review</i>	25
<i>Organization & Environment</i>	25
<i>Strategic Management Journal</i>	25
<i>Journal of Business Ethics</i>	20
<i>Accounting, Organizations and Society</i>	19
<i>Accounting, Auditing and Accountability Journal</i>	17
<i>Journal of Cleaner Production</i>	17
<i>Journal of Environmental Economics and Management</i>	17
<i>California Management Review</i>	16
<i>Greener Management International</i>	15
<i>Production and Operations Management</i>	12
<i>Harvard Business Review</i>	10
<i>Journal of Management Studies</i>	10
<i>Administrative Science Quarterly</i>	9
<i>Journal of Economics and Management Strategy</i>	9
<i>Management Science</i>	9
<i>Ecological Economics</i>	8
<i>Journal of Business Venturing</i>	8
<i>Organization Studies</i>	8
<i>Organization Science</i>	7
<i>Policy Sciences</i>	7
<i>Advances in Environmental Accounting and Management</i>	6
<i>Journal of Marketing</i>	6
<i>Journal of Operations Management</i>	6
<i>Sloan Management Review</i>	6

<i>Academy of Management Executive</i>	5
<i>Advances in Public Interest Accounting</i>	5
<i>American Behavioral Scientist</i>	5
<i>Corporate Governance</i>	5
<i>Corporate Social Responsibility and Environmental Management</i>	5
<i>European Accounting Review</i>	5
<i>Journal of Law and Economics</i>	5

TABLE 3
Citation Counts of B&NE Articles by Discipline

DISCIPLINE	CITATIONS/ ARTICLE
Professional	258.33
Economics	173.41
Engineering/Science	147.13
Management	146.75
Accounting	120.44
Finance	107.00
Law	105.33
Behavior: Psychology, Sociology, Org Behavior	96.40
Political Science	77.55
Operations	73.00
Marketing	68.17
Information Systems	18.50

TABLE 4
Citation Count of B&NE Articles by Journal

JOURNAL	CITATIONS / ARTICLE	JOURNAL IMPACT FACTOR
<i>Academy of Management Review</i>	606.4	7.87
<i>Harvard Business Review</i>	481.9	1.66
<i>Academy of Management Journal</i>	267.3	6.48
<i>Journal of Marketing</i>	223.0	3.78
<i>Accounting, Auditing and Accountability Journal</i>	188.1	na
<i>Business and Society</i>	186.5	na
<i>California Management Review</i>	186.3	1.98
<i>Management Science</i>	182.9	2.23
<i>Journal of Environmental Economics and Management</i>	178.6	2.58
<i>Accounting, Organizations and Society</i>	173.6	1.90
<i>Strategic Management Journal</i>	169.4	4.46
<i>Organization Studies</i>	169.0	2.12
<i>Sloan Management Review</i>	145.7	1.14
<i>Journal of Operations Management</i>	129.0	3.24
<i>Administrative Science Quarterly</i>	125.3	3.84
<i>Academy of Management Executive</i>	120.4	na
<i>Journal of Management Studies</i>	115.9	2.81
<i>Production and Operations Management</i>	89.8	2.08

<i>Journal of Law and Economics</i>	87.0	1.64
<i>Ecological Economics</i>	78.1	2.42
<i>European Accounting Review</i>	71.7	0.96
<i>Journal of Business Ethics</i>	66.7	1.09
<i>Journal of Cleaner Production</i>	64.4	1.87
<i>Business Strategy & the Environment</i>	64.3	na
<i>Journal of Economics and Management Strategy</i>	62.8	1.24
<i>Organization Science</i>	62.4	3.13
<i>Policy Sciences</i>	61.0	0.73
<i>Advances in Public Interest Accounting</i>	52.6	na
<i>Business Ethics Quarterly</i>	51.3	1.62
<i>Journal of Industrial Ecology</i>	50.8	na
<i>Policy Studies Journal</i>	46.2	0.62
<i>Advances in Environmental Accounting and Management</i>	44.6	na
<i>American Behavioral Scientist</i>	30.8	0.71
<i>Journal of Purchasing and Supply Management</i>	30.0	na
<i>Organization & Environment</i>	27.0	1.07

APPENDIX I

258 Journals in which B&NE Research was Published Between 1975-2010

ACCOUNTING

Non-Specialized: *ACCA Research Report; Accounting and Business Research; Accounting Forum; Accounting Horizons; Accounting Review; Accounting, Auditing and Accountability Journal; Advances in Environmental Accounting and Management; Advances in Public Interest Accounting; Australian Accounting Review; British Accounting Review; Chartered Accountants Journal of New Zealand; Contemporary Accounting Research; Critical Perspectives on Accounting; European Accounting Review; International Journal of Accounting; International Journal of Accounting Information Systems; Irish Accounting Review; Journal of Accounting and Economics; Journal of Accounting and Public Policy; Journal of Accounting Literature; Journal of Accounting Research; Journal of Accounting, Auditing and Finance; Pacific Accounting Review; Research on Accounting Ethics; Review of Accounting Studies*

Specialized: *Accounting, Organizations and Society; Attitudes and Environmentally-Sensitive Accounting; Social and Environmental Accountability Journal*

BEHAVIOR: PSYCHOLOGY, SOCIOLOGY, ORGANIZATIONAL BEHAVIOR

Non-Specialized: *American Behavioral Scientist; American Journal of Sociology; American Sociological Review; Annual Review of Sociology; Basic and Applied Social Psychology; British Journal of Sociology; Cultural Anthropology; Human Resource Management; Journal of Applied Behavioral Science; Journal of Applied Psychology; Journal of Experimental Social Psychology; Journal of Organizational Change Management; Journal of Organizational Excellence; Journal of Personality and Social Psychology; Organization; Organization Science;*

Organization Studies; Organizational Behavior and Human Decision Processes; Psychological Science; Research in Organizational Behavior; Rural Sociology; Sociologia Ruralis; Sociological Inquiry; Sociological Perspectives; Sociological Theory

Specialized: *Journal of Environmental Psychology; Organization & Environment*

ECONOMICS

Non-Specialized: *American Economic Review; Comparative Economic Studies; Contemporary Economic Policy; Contributions to Economic Analysis and Policy; Development; Economic Geography; Economic Inquiry; Empirical Economics; Energy Journal; Energy Policy; Forest Policy and Economics; Journal of Agricultural and Food Industrial Organization; Journal of Development Economics; Journal of Economic Behavior and Organization; Journal of Economic Literature; Journal of Economic Perspectives; Journal of Economics and Management Strategy; Land Economics; Major Themes in Economics; RAND Journal of Economics; Review of Economics and Statistics; Small Business Economics; Socio-Economic Review; Southern Economic Journal; The BE Journal of Economic Analysis and Policy; Topics in Economic Analysis*

Specialized: *Ecological Economics; Environmental and Resource Economics; Frontiers of Environmental Economics ; International Yearbook of Environmental and Resource Economics; Journal of Agricultural and Resource Economics; Journal of Environmental Economics and Management; Resource and Energy Economics*

ENGINEERING/SCIENCE/ENVIRONMENT

Non-Specialized: *Building Research and Information; Computers and Industrial Engineering; Issues in Science and Technology; Nature; Science; Transactions of the Institute of British Geographers; FINANCE; European Financial Management; Financial Analysts Journal; Financial Management; Financial Services Review; Journal of Banking and Finance; Journal of Behavioral Finance; Journal of Corporate Finance; Journal of Financial and Quantitative Analysis; Journal of Financial Economics; Journal of Investing*

Specialized: *Annual Review of Energy and the Environment; Annual Review of Environment and Resources; Annual Review of Environmental Resources; Climatic Change; Environmental Pollution; Environmental Science and Technology; Journal of Industrial Ecology*

INFORMATION SYSTEMS

Non-Specialized: *MIS Quarterly*

LAW

Non-Specialized: *Administrative Law Review; American Business Law Journal; Duke Environmental Law and Policy Forum; Harvard Environmental Law Review; Journal of Criminal Law and Criminology; Journal of Law and Economics; Journal of Law, Economics and Organization; Law and Policy; University of Pennsylvania Law Review; Yale Law Journal*

Specialized: *Ecology Law Quarterly; Environmental Law Reporter; Stanford Environmental Law Journal; UCLA Journal of Environmental Law and Policy*

MANAGEMENT

Non-Specialized: *Academy of Management Journal; Academy of Management Learning and Education; Academy of Management Review; Administrative Science Quarterly; Benchmarking;*

An International Journal; British Journal of Management; British Management Journal; Business History Review ; Business Horizons; Canadian Journal of Administrative Sciences- Revue Canadienne Des Sciences De L Administration; Columbia Journal of World Business; Cornell Hotel and Restaurant Administration Quarterly; Corporate Governance; Corporate Reputation Review; Decision Sciences; Decision Support Systems; Emergence: Complexity and Organization; European Management Journal; Family Business Review; Global Business and Organizational Excellence; Growth and Change; Interfaces; International Business Review; International Entrepreneurship Management Journal; International Journal of Management Reviews; International Studies of Management and Organization; Journal of American Academy of Business; Journal of Business Research; Journal of Business Strategy; Journal of Business Venturing; Journal of International Business Studies; Journal of International Management; Journal of Management; Journal of Management Studies; Journal of Managerial Issues; Journal of Risk and Uncertainty; Long Range Planning; Management Decision; Management Research News; Management Science; Strategic Management Journal; Strategic Organization; Technology Analysis and Strategic Management; Transnational Corporations

Specialized: *Business and Society; Business and Politics; Business Ethics Quarterly; Business Strategy & the Environment; Corporate Environmental Strategy; Corporate Social Responsibility and Environmental Management; Corporate Social Responsibility and Human Rights; Environment and Planning; Environmental Education Research; Environmental Management; Environmental Performance; Global Environmental Change; Greener Management International; Industrial and Environmental Crisis Quarterly; International Journal of Environment and Sustainable Development; International Journal of Sustainable Development; Journal of Business Ethics; Journal of Corporate Citizenship; Journal of Environmental Management; Journal of Environmental Planning and Management; Research in Corporate Social Performance and Policy; Resources, Conservation, and Recycling; Society and Natural Resources; Sustainable Development; Journal of Cleaner Production*

MARKETING

Non-Specialized: *Advances in Consumer Research; European Journal of Marketing; Industrial Marketing Management; Journal of Academy of Marketing Science; Journal of Advertising; Journal of Business and Industrial Marketing; Journal of Communication Management; Journal of Consumer Affairs; Journal of Consumer Marketing; Journal of Consumer Policy; Journal of Consumer Psychology; Journal of Consumer Research; Journal of Macromarketing; Journal of Marketing; Journal of Marketing Management; Journal of Marketing Theory and Practice; Journal of Strategic Marketing; Marketing Intelligence and Planning; Marketing Review; Qualitative Market Research: An International Journal*

OPERATIONS

Non-Specialized: *Business Process Management Journal; European Journal of Purchasing and Supply Management; Industrial Management and Data Systems; International Journal of Operations and Production Management; International Journal of Physical Distribution and Logistics Management; International Journal of Production and Operations Management; International Journal of Production Economics; International Journal of Production Research; International Journal of Purchasing and Materials Management; Journal of Operations Management; Journal of Purchasing and Supply Management; Journal of Supply Chain Management; Operations Research; Production and Operations Management; Supply Chain*

Management; Systems Dynamics Review; Transportation Research Part E, Logistics and Transportation Review

POLITICAL SCIENCE

Non-Specialized: *American Journal of Political Science; British Journal of Political Science; International Journal of Public Administration; International Studies Quarterly; Journal of Comparative Policy Analysis: Research and Practice; Journal of Policy Analysis and Management; Journal of Political Economy; Journal of Politics; Journal of Public Administration Research and Theory; Journal of Public Economics; Journal of Public Policy and Marketing; New Political Economy; Oxford Review of Economic Policy; Policy Sciences; Policy Studies Journal; Public Administration Review; Regional Studies; Regulation and Governance; Research Policy; Social Forces; Social Problems; World Politics; Zeitschrift für Umweltpolitik*

Specialized: *Environmental Politics; Journal of Environmental Assessment Policy and Management*

PROFESSIONAL

Non-Specialized: *Academy of Management Executive; California Management Review; Harvard Business Review; New York Times; New York Times Magazine; Sloan Management Review; Stanford Social Innovation Review; Technology Review; Technovation*

Specialized: *Total Quality Environmental Management; EPA Journal; Waste Management*

APPENDIX II
Representative Papers in the B&NE Field

Article Title	HistCite File Code	Google Scholar Citation Count	Citations Per Year
Gladwin T. and Welles, J., (1976). "Multinational corporations and environmental protection: Patterns of organizational adaptation," <i>International Studies of Management and Organization</i> , 6(1-2): 160-184.	N1	28	0.8
Carroll, A. (1979). "A three-dimensional conceptual model of corporate performance," <i>Academy of Management Review</i> , 4: 497-505	N2	2048	62.1
Hahn, R., and Stavins, R. (1991) "Incentive-based environmental regulation: A new era from an old idea," <i>Ecology Law Quarterly</i> , 18(1): 1-42.	1	431	20.5
Wood D. (1991) "Corporate social performance revisited," <i>Academy of Management Review</i> , 16(4): 691-718.	2	1566	74.6
Gray, R. (1992). "Accounting and environmentalism: An exploration of the challenge of gently accounting for accountability, transparency and sustainability," <i>Accounting, Organizations and Society</i> , 17(5): 399-425.	3	324	16.2
Yearly, S. (1992). "Green ambivalence about science: Legal-rational authority and the scientific legitimation of a social movement," <i>British Journal of Sociology</i> , 43: 511-532.	4	58	2.9
Gladwin, T. (1993). "The meaning of greening: A plea for organizational theory," in K. Fischer and J. Schot (eds.), <i>Environmental Strategies for Industry: International Perspectives on Research Needs and Policy Implications</i> . (Washington, DC: Island Press): 37-61.	N3	157	8.3
Clarkson, M. (1995). "A stakeholder framework for analyzing and evaluating corporate social performance," <i>Academy of Management Review</i> , 20: 92-117.	5	1979	116.4
Thierry, M., Salomon, M., Van Nunen, J., and Van Wassenhove, L. (1995). "Strategic issues in product recovery management," <i>California Management Review</i> , 37(2): 114-35.	6	568	33.4
Starik, M. (1995). "Should trees have managerial standing? Toward stakeholder status for non-human nature," <i>Journal of Business Ethics</i> , 14: 207-217.	7	175	10.3
Wapner, P. (1995). "Politics beyond the state: Environmental activism and world civic politics," <i>World Politics</i> , 47: 311-340.	8	933	54.9
Shrivastava, P. (1995). "Environmental technologies and competitive advantage," <i>Strategic Management Journal</i> , 16: 183-200.	9	405	23.8
Gladwin, T., Kennelly, J., and Krause, T. (1995). "Shifting paradigms for sustainable development: Implications for management theory and research," <i>Academy of Management Review</i> , 20: 874-907.	10	628	36.9
Starik, M. and Rands, G. (1995). "Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organizations," <i>Academy of Management Review</i> , 20(4): 908-935.	11	347	20.4
Shrivastava, P. (1995). "The role of corporations in achieving environmental sustainability," <i>Academy of Management Review</i> , 20 (4): 936-960.	12	514	30.2
Hart, S. (1995) "A natural-resource-based view of the firm," <i>Academy of Management Review</i> , 20(4): 986-1014.	13	1229	72.3
Jennings, P. D. and Zandbergen, P. (1995). "Ecologically sustainable organizations: An institutional approach," <i>Academy of Management Review</i> , 20(4): 1015-1052.	14	296	17.4
Porter, M. and van der Linde, C. (1995). "Toward a new conception of the environment-competitiveness relationship," <i>Journal of Economic Perspectives</i> , 94: 97-118.	15	1850	108.8
Egri, C. and Pinfield, L. (1996). "Organizations and the biosphere: Ecologies and environments," In S. Clegg, C. Hardy, and W. Nord (eds.), <i>Handbook of Organization Studies</i> (London: Sage Publications): 459-483.	N4	96	6.0
Henriques, I. and Sadorsky, P. (1996). "The determinants of an environmentally responsive firm: An empirical approach," <i>Journal of Environmental Economics and Management</i> , 30(3): 381-395.	16	401	25.1

Ehrenfeld, J. and Gertler, N. (1997). "Industrial ecology in practice: The evolution of interdependence at Kalundborg," <i>Journal of Industrial Ecology</i> , 1(1): 67-79.	N5	231	15.4
Hart, S. (1997). "Beyond greening: Strategies for a sustainable world," <i>Harvard Business Review</i> , 75: 66-76.	17	817	54.5
Waddock, S., and Graves, S. (1997). "The corporate social performance-financial performance link," <i>Strategic Management Journal</i> , 18: 303-319.	18	1132	75.5
Russo, M. and Fouts, P. (1997). "A resource-based perspective on corporate environmental performance and profitability," <i>Academy of Management Journal</i> , 40: 534-559.	19	1092	72.8
Mitchell, R., Agle, B., and Wood, D. (1997). "Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts," <i>Academy of Management Review</i> , 22: 853-886.	20	2635	175.7
Kemp, R., Schot, J., and Hoogma, R. (1998). "Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management," <i>Technology Analysis and Strategic Management</i> , 10(2): 175 - 198.	21	527	37.6
Reinhardt, F. (1998). "Environmental product differentiation: Implications for corporate strategy," <i>California Management Review</i> , 40(4): 43-73.	22	177	12.6
Sharma, S. and Vredenburg, H. (1998). "Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities," <i>Strategic Management Journal</i> , 19(8): 729-53.	23	602	43.0
Henriques, I. and Sadosky, P. (1999). "The relationship between environmental commitment and managerial perceptions of stakeholder importance," <i>Academy of Management Journal</i> , 42: 87-99.	24	452	34.8
Georg, S. (1999). "The social shaping of household consumption," <i>Ecological Economics</i> , 28: 455-466.	25	44	3.4
Hoffman, A. (1999). "Institutional evolution and change: Environmentalism and the US chemical industry," <i>Academy of Management Journal</i> , 42(4): 351-371.	26	662	50.9
Egri, C. and Herman, S. (2000). "Leadership in the North American environmental sector: Values, leadership styles, and contexts of environmental leaders and their organizations," <i>Academy of Management Journal</i> , 43(4): 571-604.	27	213	17.8
Christmann, P. (2000). "Effects of 'best practices' on environmental management on cost advantage: the role of complementary assets," <i>Academy of Management Journal</i> , 43(4): 663-680.	28	374	31.2
Sharma, S. (2000). "Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy," <i>Academy of Management Journal</i> , 43: 681-697.	29	441	36.8
King, A. and Lenox, M. (2000). "Industry self-regulation without sanctions: The chemical industry's Responsible Care program," <i>Academy of Management Journal</i> , 43(4): 698-716.	30	632	52.7
Bansal, P. and Roth, K. (2000) "Why companies go green: a model of ecological responsiveness," <i>Academy of Management Journal</i> , 43: 717-736.	31	634	52.8
Klassen, R. and Whybark, D. (1999). "The impact of environmental technologies on manufacturing performance," <i>Academy of Management Journal</i> , 40(6): 599-615.	32	348	26.8
Christmann, P., and Taylor, G. (2001). "Globalization and the environment: Determinants of firm self-regulation in China," <i>Journal of International Business Studies</i> , 32(3): 439-458.	33	267	24.3
King, A. and Lenox, M. (2001). "Does it really pay to be green? An empirical study of firm environmental and financial performance," <i>Journal of Industrial Ecology</i> , 5(1): 105-116.	34	253	23.0
Lounsbury, M. (2001). "Institutional sources of practice variation: Staffing college and university recycling programs," <i>Administrative Science Quarterly</i> , 46: 29-56.	35	199	18.1
Banerjee, S. (2001). "Managerial perceptions of corporate environmentalism: Interpretations from industry and strategic implications for organizations," <i>Journal of Management Studies</i> , 38(4): 489-513.	36	124	11.3
Hoffman, A. (2001). "Linking organizational and field-level analyses: The diffusion of corporate environmental practice," <i>Organization & Environment</i> , 14(2): 133-156.	37	129	11.7
Corbett C. and Kirsch, D. (2001). "International diffusion of ISO 14000 certification," <i>Production and Operations Management</i> , 10(3): 327-342.	38	134	12.2

Delmas, M. (2002). "The diffusion of environmental management standards in Europe and in the United States: An institutional perspective," <i>Policy Sciences</i> , 35(1): 91-119.	39	153	15.3
Georg, S. and Irwin, A. (2002) "Re-interpreting local-global partnerships," in T.de Bruijn and A. Tukker (eds.) <i>Partnership and Leadership - Building Alliances for a Sustainable Future</i> , (Kluwer Academic Publishers, Dordrecht): 61-76.	N6	1	0.1
Sarkis, J. (2003). "A strategic decision framework for green supply chain management," <i>Journal of Cleaner Production</i> , 11(4): 397-409.	40	194	21.6
Aragón-Correa, J. and Sharma, S. (2003). "A contingent resource-based view of proactive corporate environmental strategy," <i>Academy of Management Review</i> , 28(1): 71-88.	41	313	34.8
Bhattacharya, C. B. and Sen, S. (2003). "Consumer-company identification: A framework for understanding consumers' relationships with companies," <i>Journal of Marketing</i> , 67(4): 76-88.	42	378	42.0
Margolis, J. and Walsh, J. (2003). "Misery loves companies: Rethinking social initiatives by business," <i>Administrative Science Quarterly</i> , 48(2): 268-305.	43	799	88.8
Bansal, P. (2003) "From issues to actions: The importance of individual concerns and organizational values in responding to natural environmental issues," <i>Organization Science</i> , 14: 510-527.	44	113	12.6
Bansal, P. and Clelland, I. (2004). "Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment," <i>Academy of Management Journal</i> , 47(1): 197-218.	45	153	19.1
Ehrenfeld, J. (2004) "Searching for sustainability: No quick fix," <i>Reflections</i> , 5(8): 1-13	N7	31	3.9
Jeppesen S. and Hansen, M. (2004). "Environmental upgrading of Third World enterprises through linkages to transnational corporations. Theoretical perspectives and preliminary evidence," <i>Business Strategy & the Environment</i> , 13(4): 261-274.	N8	20	2.5
Kolk, A. and Pinske, J. (2004) "Market strategies for climate change," <i>European Management Journal</i> , 22(3): 304-314.	N9	113	14.1
London, T and Hart, S. (2004) "Reinventing strategies for emerging markets: beyond the transnational model," <i>Journal of International Business Studies</i> , 35: 1-21.	46	297	37.1
Matten, D. and Crane, A. (2005). "Corporate citizenship: toward an extended theoretical conceptualization," <i>Academy of Management Review</i> , 30(1): 166-179.	47	328	46.9
Smith, A., Stirling, A., and Berkhout, F. (2005). "The governance of sustainable socio-technical transitions," <i>Research Policy</i> , 34: 1491-1510.	48	246	35.1
Vachon, S. and Klassen, R. (2006). "Extending green practices across the supply chain: The impact of upstream and downstream integration," <i>International Journal of Operations and Production Management</i> , 26(7): 795-821.	49	72	12.0
Howard-Grenville, J. (2006). "Inside the 'black box': How organizational culture and subcultures inform interpretations and actions on environmental issues," <i>Organization & Environment</i> , 19: 46-73.	50	37	6.2
Barnett, M. and Salomon, R. (2006). "Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance," <i>Strategic Management Journal</i> , 27(11): 1101-1122.	51	124	20.7
Aguilera, R., Rupp, D., Williams, C. and Ganapathi, J. (2007). "Putting the S back in Corporate Social Responsibility: A multi-level theory of social change in organizations," <i>Academy of Management Review</i> , 32(3): 836-863.	52	256	51.2
Banerjee, S. (2008). "Corporate social responsibility: The good, the bad and the ugly," <i>Critical Sociology</i> , 34(1): 51-79.	53	157	39.3
Darnall, N. and Sides, S. (2008). "Assessing the performance of voluntary environmental programs: Does certification matter?" <i>Policy Studies Journal</i> , 36(1): 95-117.	54	38	9.5
Matten D., and Moon, J. (2008) "Implicit' and 'explicit' CSR: A conceptual framework for a comparative understanding of corporate social responsibility," <i>Academy of Management Review</i> , 33(2): 404-424	55	196	49.0

Weber, K., Heinze, K. and Desoucey, M. (2008) "Forage for thought: Mobilizing codes in the movement for grass-fed meat and dairy products," <i>Administrative Science Quarterly</i> , 53: 529-567.	56	41	10.3
Maguire, S. and Hardy, C. (2009). "Discourse and deinstitutionalization: The decline of DDT," <i>Academy of Management Journal</i> , 52: 148-178.	57	33	11.0
Sine, W. and Lee, B. (2009)" Tilting at windmills? The environmental movement and the emergence of the U.S. wind energy sector," <i>Administrative Science Quarterly</i> , 54: 123-155.	58	26	8.7
Mackenzie, D. (2009). "Making things the same: Gases, emission rights and the politics of carbon markets," <i>Accounting, Organizations and Society</i> , 34(3-4): 440-455.	59	69	23.0
Nidumolu, R., Prahalad, C.K., and Rangaswami, M. (2009). "Why sustainability is now the key driver of innovation," <i>Harvard Business Review</i> , September: 4-10.	60	51	17.0
Shove, E. and Walker, G. (2010). "Governing transitions in the sustainability of everyday life," <i>Research Policy</i> , 39(4): 471-476	61	21	10.5