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ABSTRACT

The literature on organizations and the natural environment, published since 1992, is reviewed, with the purpose of determining if and what the contributions have been to strategy and organizational theory. I perform the review at three levels – firm, industry and organizational environment. Subsequently, I discuss empirical and conceptual constraints on the production of quality research, and highlight research that successfully overcomes these barriers.

RESEARCH ON ORGANIZATIONS AND THE NATURAL ENVIRONMENT, 1992-PRESENT: A REVIEW

In this article, I review the academic literature on how organizations, especially businesses, perceive, react and interact with issues relating to the natural environment. The vast majority of the work I reference was published from 1992 onwards, when environmental issues became more widely known, following the Rio De Janeiro Earth Summit. Academic interest in issues relating to business and the environment increased significantly shortly thereafter[1]. Indeed, over the last decade, large-scale cultural changes, most notably relating to global warming, have transformed the natural environment into a broad and interrelated set of issues (Meyer, 2002) with which all organizations must grapple.

It is not easy to make a clear distinction between environmental issues and other, ostensibly unrelated issues. Virtually every organizational decision generates an impact on the natural environment, even though the organization may be unaware of what these impacts are. Managerial decisions in strategy, in organizational structure, in human resource management and of course in operations create positive or negative environmental impacts through ambiguous and poorly understand pathways (Hoffman & Ventresca, 2002). Since environmental issues can be both technical in nature (as in the domains of design, manufacturing, marketing), but also social (business responsibility towards communities, employees and the public at large) (Hoffman & Ventresca, 2002), a clear and uncontested definition of what is actually included and excluded from the definition of corporate responsibility towards the environment is lacking (McGee, 1998). Moreover, environmental issues are closely intertwined with the broader concept of sustainable

development, which - in the context of business - is commonly understood as integration of social and environmental concerns into a company's goals and mission, without foregoing financial vitality.

Thus it is not surprising to find that the academic literature on organizations and the natural environment is not particularly cohesive. Researchers from various sub-disciplines – strategy, economics, organizational theory, policy, organizational behavior, operations and others - have tackled environmental issues, each utilizing the theories and paradigms afforded by their respective domains of expertise. While this wide range of perspectives might be expected for a theme as broad and as ubiquitous as the natural environment, it creates difficulties in collecting and synthesizing the various insights and theories that researchers have developed. In an attempt to generate some order in this diffuse domain of research, I analyze environmental issues in organizations using three distinct viewpoints, each elaborated in one of this article's three main sections.

The first section focuses on the individual firm and on firm attributes which are relevant to environmental performance. Much research in this area attempts to identify specific firm characteristics and capabilities which allow firms to attain the best possible environmental performance. As such, this discourse is very similar in its approach and argumentation to the general strategy literature, in which researchers attempt to identify means for achieving superior performance vis-à-vis competitors.

In the second section, analysis is shifted to the level of industry. The intermediate level of industry, between the individual firm and the organizational environment in its entirety, is relevant for research regarding organizations and the natural environment, since regulators, customers and competitors are significantly influenced by industry level

considerations. The prevalent research perspective in studying industry is an economic one, tempered with some cognitive and behavioral insights.

The third section focuses on the firm within its organizational environment. Environmental issues are important for a large number of actors external to the organization, among them activists, investors and the media. Here the favored approach tends to be sociological, focusing on how organizations perceive, react and at times influence these external audiences.

The fourth and concluding section of this article identifies specific shortcomings characteristic of the environmental research corpus as a whole, and describes some recent research which may serve as a beacon for future work in the field.

Clearly, an attempt to assign studies in a mutually exclusive manner to one of these three viewpoints would be ill-advised, since the firm, industry and environmental levels interact with each other as regards the natural environment in much the same way as they do in general organizational research. Moreover, no form of classification can be considered to be authoritative; each classificatory method highlights some issues while obscuring others. Thus, the subdivision and analysis put forth here is one approach to assessing the current state of knowledge, and to identify thoroughly-studied and under-studied phenomena.

THE INDIVIDUAL FIRM

When examining individual firms, researchers focus primarily on specific characteristics which influence a firm's environmental performance. There are two essentially different types of relevant characteristics. The first type, I call *strategic*

attributes. This includes those attributes of a firm which can consciously be managed by an organization's leadership in order to attain superior performance. Researchers attempt to identify these attributes and describe the context in which their presence or absence influences a firm's environmental impacts. Managerial implications are directly forthcoming from this research stream, and prescriptive recommendations can usually be easily formulated from the research findings. In its intrinsic form, this research stream rests squarely within the domain of the general strategy research paradigm.

Other firm attributes are not manipulated as easily, and their theoretical impact on environmental performance cannot be described as convincingly using strategy theory. As such, these attributes, which I call *contingency attributes*, are generally exogenous to environmental performance. In theory-based research, they are rarely dealt with directly; typically, they are utilized merely as control variables in econometric models designed to assess the strategic attributes described above. While less malleable to managerial manipulation, it is not clear that these factors have less of an influence on environmental impact than strategic attributes. Below, I discuss both types of firm attributes separately.

Strategic Attributes

Researchers have devoted significant effort to identifying the key organizational attributes that bear upon superior environmental performance. Four organizational attributes have been consistently linked to improved environmental performance: innovation; the cognitive inclinations of employees; integration of multi-stakeholder perceptions and concerns; and organizational information flows.

Innovation. Innovativeness relates to environmental performance by allowing the organization to shift away from current practices, in which environmental considerations

are considered secondary, and develop new, more encompassing practices, in which environmental impact plays a more central role. Innovation leading to improved environmental performance can be narrow or broad – it can be limited to design and manufacturing issues (Christmann, 2000; Sroufe, Curkovic, Montabon & Melnyk, 2000), or it can encompass far-reaching issues like development of new markets (e.g. the base of the pyramid) and new means of sustainably servicing existing markets (such as transitioning from selling products to selling services) (Hart & Milstein, 1999; Senge & Carstedt, 2001). The main thrust of these arguments is that thinking outside the box, while being cognizant of environmental issues, will lead to improved environmental performance, which will generally be aligned with improved financial performance over time.

Workforce perceptions. The way organizational members perceive environmental issues is crucial. In general, enhanced employee awareness of environmental issues leads to improved individual behavior and practices (Jiang & Bansal, 2003). However, individual concern for an issue is not enough; it must also be congruent with an organization's values. Both elements are necessary in order for an organization to act, as for example in the case of recycling and waste minimization, when personal predisposition towards environmental protection meshes well with firm efforts to reduce operating costs (Bansal, 2003). When environmental issues are perceived positively, as opportunities for business development and growth, rather than negatively, as threats, companies will exhibit more progressive environmental strategies (Sharma, 2000). The way managers perceive environmental issues is dependant upon their understanding of the issue along three dimensions: monetary loss-gain, uncontrollableness-controllableness and overall negativeness-positiveness (Sharma, Pablo & Vredenburg, 1999). This multidimensional cognitive categorization is what drives managerial attitudes toward an environmental issue, and determines its salience.

Integration of multi-stakeholder perceptions. The capacity to assimilate divergent perspectives brought forth by a broad array of stakeholders enables a firm to consider outcomes that are not solely short-term economical in nature (Marcus & Anderson, 2006). Trust-based relationships with external audiences reduce objections put forth by external actors and increases goodwill (Russo & Fouts, 1997; Sharma & Vredenburg, 1998) while improving receptiveness to external technologies and market needs that reduce environmental impact (Hart, 1995; Russo & Fouts, 1997). Indeed, by listening to stakeholders, firms can discover ways in which they can be innovative and respond to broad societal needs.

Knowledge and information flow. Information provision, especially its timely flow from HQ levels to the business units, improves environmental performance (Lenox & King, 2004; Sharma, et al., 1999). Environmental experts at the corporate level can facilitate transfer of knowledge and information regarding regulations, best practices and firm-level initiatives. The number of staff engaged in this type of activity is positively correlated with adoption of pro-environmental practices (Lenox & King, 2004). In addition, since effective environmental management incorporates both tacit and explicit knowledge (Boiral, 2002), up to date and relevant information transfer is facilitated by highly interconnected internal information networks (Lenox, King & Ehrenfeld, 2000). Effective information flow does not, however, stop at the organizational boundary; supplier expertise, when managed effectively through flexible approaches, can also lead to marked improvement in environmental performance (Geffen & Rothenberg, 2000). Good information processing skills can lead to improved capabilities in terms of higher-order learning, and this too can improve environmental performance (Sharma & Vredenburg, 1998).

Implications for Environmental Strategy. The unifying theme common to these four attributes is their complexity and inimitability, suggesting that improved environmental performance is made possible through possession of rare resources, as proposed by the Resource Based View (Barney, 1991). Indeed, the majority of research on environmental performance at the level of the individual firm uses the RBV as a launch pad for theorizing, because truly "green" strategies tend to be developed over a long period of time, and are difficult for outsiders to fully comprehend and imitate (McGee, 1998). In keeping with the resource based view, it is just such a cumulative, ongoing process that enables a firm to generate a competitive advantage in its environmental performance.

One of the reasons that a good environmental strategy is difficult to develop is that environmental concerns are not stand-alone issues; they are best addressed through a combination of technical, competitive and strategic lenses (Howard-Grenville, 2002). Empirically, many firms view the environment as a distinct functional domain, isolated from core business issues (Elkington, Emerson & Beloe, 2006; Hoffman & Ventresca, 1999; Walley & Whitehead, 1994). However, this approach is antithetical to creating a competitively advantageous environmental strategy since greater involvement of core functional units in environmental issues usually leads to improvements in both economic performance and environmental performance (Judge & Douglas, 1998; Wade-Benzoni, Hoffman, Thompson, Moore, Gillespie & Bazerman, 2002), albeit not always (Russo & Harrison, 2006). From an even broader perspective, not only structural issues, but also alignment between environmental strategy and organizational culture, capabilities and competencies in general is conducive to improved environmental performance (Christmann, 2000; Maxwell, Rothenberg, Briscoe & Marcus, 1997; Prakash & Kollman, 2004). Indeed, a good fit (Porter, 1996) between core organizational processes and

environmental issues seems to be a key component in improving environmental performance.

It should be noted that a firm's environmental capabilities can play a role in "generating broader organizational advantages that allow a firm to capture premium profits" (Russo & Fouts, 1997: 535), i.e. a firm can leverage a proactive environmental strategy to be a means for attaining superior financial results. Russo and Fouts suggest that the deployment of physical assets in a unique way which maximizes material and energy efficiency can be understood as a *bona fide* organizational resource. In supporting their claim, Russo and Fouts contend that environmental strategies are complex, thus necessitating employee involvement, cross-disciplinary coordination, and forward thinking management. In other words, implementation of an environmental strategy, rather than being a by-product of overall organizational strategy and attributes, becomes a driver for the development of human resources and organizational capabilities as organizational resources. A similar argument suggests that successful firms will be those who have the capacity to leverage the potential of resource commitments aimed at improving *environmental* performance in a manner that permits simultaneous contribution to *industrial* performance (Hoffman, 2005; Rugman & Verbeke, 1998). The implications for strategy are obvious.

Contingent Attributes

Alongside the strategic attributes, or resources, described in the previous section, several other organizational attributes - namely: size, slack, R&D and international scope - seem also to be correlated to environmental performance. However, since these attributes are only indirectly related to environmental issues and since it is unlikely that managers

will set these attributes to levels that maximize environmental performance, all four can be considered to be exogenous factors influencing environmental performance. While some researchers have attempted to identify the causal logic connecting these contingent attributes with environmental performance, the relationships remain poorly understood. Most research to date has attempted to describe these relationships only from a phenomenal perspective, in order to generate knowledge from which theories can subsequently be developed. In many empirical studies, some or all of these attributes are used as control variables, implying that they have significant explanatory power, even if the underlying sources of this explanatory power are unknown.

R&D activities. Research on innovation in the environmental context often focuses on far-reaching radical and transformative changes to business models and markets. More limited forms of innovation, centering on incremental improvements of internal processes and on development of more benign products do, nonetheless, also serve to reduce environmental impacts. Attempts by industry to improve productivity, eliminate defects and reduce costs through redesign lead to spill-over benefits as regards environmental performance (Florida, 1996). This type of product and process-specific innovation is typically part and parcel of a firm's R&D activities. Indeed, Arora & Cason (1996) found a positive correlation between R&D intensity and voluntary over-compliance with environmental regulations. R&D expenditures have been found to be positively correlated with comprehensiveness of environmental management systems (Khanna & Anton, 2002), and negatively correlated with pollution emitted (Cole, Elliott & Shimamoto, 2005).

The line between R&D activities in general and R&D activities pursued specifically for improving environmental performance is quite blurred (Foster & Green, 2000; McWilliams & Siegel, 2000), since the same methodologies and management systems

promote both. Most of the decisions that have the greatest impact on the ultimate environmental impact of products and processes are taken early in the product development process, and thus are inseparable from wholesome R&D methods and practices (Hawken, Lovins & Lovins, 2000; Sroufe, 2003), even though awareness to environmental issues must be integrated into every step of the design and production process (Kleiner, 1991). Firms that have greater capabilities in product innovation and process implementation are better positioned to reap the benefits accruing from the adoption of environmental best practices (Christmann, 2000).

As discussed above, the direction of causality is unclear – some researchers suggest that a pro-environmental stance improves a firm's general R&D capabilities (McWilliams & Siegel, 2000; Sroufe, 2003), others see them as mutually reinforcing (Foster & Green, 2000; King & Lenox, 2002; Kleiner, 1991), and yet others see improved environmental performance as simply a result of high-quality general R&D processes (Christmann, 2000; Florida, 1996).

Size. Most research uncovers a positive relationship between firm size and environmental performance. A review of academic research on environmental issues in which the research design controlled for size (Bowen, 2000) revealed that nine out of ten relevant studies showed a positive and significant correlation between firm size and environmental performance. Size, in and of itself, may not, however, be the determining factor; large size increases firm visibility, bringing greater pressures to bear on an organization to adhere to an appropriate level of environmental performance (Bowen, 2002b; Jiang & Bansal, 2003). Small firms are understood to face lesser external pressures (Jiang & Bansal, 2003), to be less knowledgeable about environmental issues (Tilley,

1999), and to be concerned with other matters more central to their very survival (Hunt & Auster, 1990).

An alternative point of view sees size as a constraining factor, imposing rigidity in the form of standard operating procedures, thus stifling local initiative and negatively impacting environmental performance (King & Shaver, 2001). When the level of analysis is not the entire firm, but rather the individual plant or factory, large size may not be a good predictor for environmental performance (Grant, Bergesen & Jones, 2002; Theyel, 2000).

A recent attempt by Sharma and Henriques (2005) to clarify matters proceeds by examining specific environmental initiatives more closely. Straightforward, technical aspects of environmental performance like pollution control and eco-efficiency can be implemented in shorter order and more efficiently by larger companies. However, more advanced environmental issues, like eco-stewardship and general business alignment with environmental issues, are less related to size, and can be pursued by any company interested in doing so. Moreover, following this logic, small firms may attain competitive advantage through their flexibility and agility in developing and incorporating disruptive innovations, since larger incumbents are generally more committed to existing products and processes (Sharma & Henriques, 2005).

Slack. Though notoriously hard to quantify accurately, slack is a measure of resources in excess of those required to produce output. Slack can be seen as both a positive and a negative phenomenon: from an agency theory perspective, it prevents principals from capturing the entire value of investments to which they are entitled, whereas more organizational perspectives identify slack as a necessary resource for improving knowledge, communications and innovativeness (Love & Nohria, 2005).

In general, it seems that low slack is detrimental to environmental performance. When slack is low, other issues predominate the mindset of management, relegating environmental issues to lower priority (Henriques & Sadorsky, 1996). Since, in many cases, environmentally related actions are pursued at the discretion of managers (Orlitzky, Schmidt & Rynes, 2003), it is reasonable to assume that if managers have more discretionary slack at their disposal, they can better view environmental issues as opportunities, rather than as threats (Bowen, 2002a; Sharma, 2000; Sharma, et al., 1999), thus rising to the challenge in a more constructive manner. The existence of slack may be more important at the level of operational units than at the level of the entire organization (Bowen, 2002a, 2002b). Also, the importance of slack may have a temporal aspect. In early phases, when environmental issues are still ill-defined, slack is important, but its importance diminishes as the topic becomes more of a mainstream issue for the organization (Bansal, 2005). While slack is useful for implementing straightforward environmental objectives like pollution control, it may be detrimental for implementation of more progressive measures like product stewardship (Bowen & Sharma, 2005).

Obviously, slack is very closely related to financial performance. The issue of the relationship between financial performance and environmental performance has received a tremendous amount of attention in the literature (Smith, 2003). While this relation is not discussed in the present paper, a very meticulous and comprehensive meta-analysis of the issue (Orlitzky, et al., 2003) found that social performance (which, in their analysis, encompasses environmental issues) is positively correlated with financial performance and that the relationship tends to be bidirectional and either simultaneous or nearly simultaneous. Having seen earlier that firms pursuing enhanced environmental performance may accrue beneficial financial outcomes as a spillover effect, it may be logical to conclude

that slack is *not* a necessary pre-condition for enhanced environmental performance, even though managers may perceive it as such.

Multinational scope. In what might, at first glance, seem to be an issue only tenuously linked to environmental performance, numerous researchers have uncovered interesting findings. Conceptually, some researchers assume that environmental issues are more of a priority in developed countries, due to greater expendable income and higher willingness to pay (Arora & Gangopadhyay, 1995). "Environmental quality seems to behave like a luxury good; more precisely, demand for environmental quality is elastic with respect to income." (Reinhardt, 1998: 61). Other nation-specific variables matter as well: regulatory style, institutional arrangements, market structures and social and political forces are very influential in determining environmental aspects of corporate performance (Bansal & Roth, 2000; Buysse & Verbeke, 2003; Delmas & Terlaak, 2002; Doh & Guay, 2006; Kollman & Prakash, 2002; Levy & Newell, 2000; Orsato, den Hond & Clegg, 2002).

In considering the impact of multi-national operations on environmental performance, two distinct situations have been analyzed. In the first, a multi-national corporation is headquartered in a developed country, and has facilities in one or more developing countries. In the second, the headquarters are in a developed country, and the facility or facilities are in other developed countries.

Quite a lot of research has focused on the first scenario, seeking to determine whether powerful multinationals take advantage of the lower environmental standards typical of developing economies in order to profitably offshore activities with a high environmental impact (Christmann & Taylor, 2001; Nehrt, 1998; Rugman & Verbeke, 1998). Empirically, it seems that MNCs do not engage heavily in transferring

environmentally problematic activities to subsidiaries in less regulated countries (Christmann, 2004); instead, they are more likely to standardize their environmental policies throughout all territories where they are active (Khanna & Anton, 2002), with the bar being set by regulations in countries with stringent policies, or by regulations in the countries where the products are bought (Christmann & Taylor, 2001). This dynamic may be a result of international governmental cooperation (Christmann, 2004), industry self-regulation, and/or simple economic reasoning, wherein standardization and adoption of global best practices lead to improved performance (Bansal, 2005).

In the second scenario, when a focal firm has headquarters in developed country *A*, and activities in another developed country *B*, the environmental performance of the focal firm in country *B* tends to be inferior to that of local firms in country *B*. It seems that foreign firms lag domestic counterparts in minimizing environmental impacts because pollution prevention is a complex task requiring knowledge and specialization in local practices and regulations. In this scenario, standardization may actually impede local ingenuity and local performance (King & Shaver, 2001).

Summary

Firm level attributes have a direct influence on a firm's environmental performance. Certain attributes are ambiguous and imperfectly imitable resources that can provide a firm a sustainable advantage in environmental performance over competitors. Moreover, the fit between an organization's environmental strategy and its general strategy is also crucial for improved performance. These findings coincide with those of strategy research in general, and do not provide novel insights beyond the conclusion that environmental strategy is fully compatible with general strategic theory. Indeed, it is hard to disagree, ten years later,

with Newton and Harte's blunt summary, stating that "[a]t a theoretical level, writers on environmental strategy tend to simply rewrite the corporate strategy literature in environmental terms".(Newton & Harte, 1997: 87).

Of the four resources identified as prevalent for firms' environmental strategies, three (innovativeness, employee involvement and effective communication practices) are not unique to environmental issues, and are likely to be key components in firms' general strategy. The fourth resource – integration of multiple stakeholder concerns – is somewhat more interesting, but may also be closely related to the issue of how a firm addresses the task of comprehending its strategic landscape. This specific resource may well warrant further research, because it is likely that organizations will increasingly have to successfully balance competing societal interests in order to maintain their license to operate and their competitive viability. Studying how firms integrate stakeholder concerns may well be generalizable to broader theory on how firms understand and adapt to their strategic landscape; this can be a contribution of environmentally-oriented research to more general organizational research themes.

Four other organizational attributes - size, slack, R&D activity and international scope - are definitely not resources, but they too affect environmental performance. These findings are interesting, even though they are of only limited interest to formulators of strategy. Indeed, the main audience for the implications of these findings is probably not managers, but rather policymakers. Conceivably, policymakers may choose to integrate these attributes within policies that attempt to steer environmental performance. However, more research is required in order to fully understand the forces at play (especially the influence of size and slack) before these attributes can be effectively integrated into policy.

DOES INDUSTRY MATTER?

At an intermediate level between the firm and the organizational environment lies the level of industry. As a unit of analysis for environmental issues, it has received substantial attention from researchers. One reason is that some industries have quite obvious and significant environmental footprints. Not surprisingly, much research at the industry level has focused on sectors generally acknowledged as "dirtier", most notably the chemical industry (Christmann, 2000, 2004; Hoffman, 1999, 2001; King & Lenox, 2000; King & Shaver, 2001; Milstein, Hart & Ilinitch, 2002; Theyel, 2000); the automotive industry (Geffen & Rothenberg, 2000; Levy & Rothenberg, 2002; Orsato, et al., 2002); the forestry/pulp/paper sector (Bansal, 2005; Harrison, 2002; Jiang & Bansal, 2003; Nehrt, 1996; Thornton, Kagan & Gunningham, 2003); and the energy sector (Bansal, 2005; Majumdar & Marcus, 2001; Sharma, 2000; Sharma & Vredenburg, 1998). Other industries are traditionally assumed to have a much smaller environmental impact, especially in the service sector (Henriques & Sadorsky, 1996; Ramus & Montiel, 2005). Knowledge of industry specific environmental characteristics is of course important when conducting market-level (across-industry) analysis, in order to control for industry level variance

Another reason the industry level is important is because three important audiences identify the level of industry as a discrete unit: consumers, regulators and industry members themselves. Consumers often infer industry level behavior from that of specific firms (Darnall & Carmin, 2005) due to cognitive limitations or due to unwillingness of specific firms to divulge accurate information (Potoski & Prakash, 2005). Regulators tend to focus greater attention on industries that have greater environmental impacts. Firms themselves engage in a complex dynamic with their peers, trying to optimize competitive and cooperative strategies for optimal performance. These issues lie at the heart of this section.

Before proceeding, it should be noted that regulators and consumers are a force not only at the industry level, but are part and parcel of the general organizational environment which shapes individual firm behavior. The aspects of consumer and regulatory influence on the *individual* firm will be analyzed in the following section, which focuses on the organizational environment. However, since consumer and regulatory demands are often directed to an entire industry as a whole, these specific influences are elaborated in the present section.

Regulation

Industries which create significant environmental pressures tend to attract the greatest attention from regulatory institutions, who generally suffer from lack of resources (Potoski & Prakash, 2005) and thus must carefully prioritize their actions. It is likely that firms in more regulated industries will embed environmental issues into their management strategies to a greater extent than those in less regulated industries since the negative consequences of noncompliance will tend to be significantly higher (Henriques & Sadorsky, 1999). Thus we would expect that the firms most likely to formulate environmental plans are those in the natural resource sector, followed by manufacturing firms, with firms in the service sector least likely to do so (Henriques & Sadorsky, 1996; Hutchinson, 1996). Consequently, policies that may be perceived as proactive for some industries, will be just above compliance in others (Hunt & Auster, 1990).

However, it seems that this logic is not sufficiently nuanced. Firstly, all industries, whether "dirty" or not, have already developed a certain stance as regards regulation. Some industries may have developed environmentally progressive cultures, may have established effective industry-level associations, may have cheap and easy access to sources of

remediation, or may have powerful actors who promote a progressive agenda, all irrespective of the industry's "dirtiness" (Prakash & Kollman, 2004). Secondly, while regulatory pressures, when applied evenly across all members of an industry, might be expected to generate uniformity in firm responses and environmental performance, this does not seem to be generally true (Milstein, et al., 2002). Apparently, when pressures are strong, an appropriate and effective organizational response becomes more of a priority. With managerial attention focused on seeking the best possible solution, various responses are analyzed, and those most in-line with organizational structures and competencies are selected. This in turn depends upon the way objective pressures are transformed by managers' cognitive processes into perceived pressures (Delmas & Toffel, 2004). The end result is that organizational responses are quite idiosyncratic even within a specific industry governed by regulation that is equally applicable to all firms (Darnall, 2003; Milstein, et al., 2002; Prakash & Kollman, 2004).

Consumers

Consumers have a profound influence on companies as regards product performance, product safety, and environmental impact (Porter, 1990). Consumers, however, may not be rigorous in directing this influence towards targets that warrant it. In many industries, the reputation of the industry is affected by the actions of individual players. For example, the oil industry in its entirety suffered after the Exxon Valdez spill, as did the nuclear industry after the Three-Mile Island accident. One reason for this effect is that consumers, and the public at large, do not possess sufficient information to distinguish an individual firm's performance. This causes a "reputation commons problem" (King, Lenox & Barnett, 2002), because consumers may collectively sanction an entire industry or

group of companies that may be perceived to be involved or at similar risk, even if there is no objective basis for this perception. Management of a "reputation commons" is by definition an industry level issue.

Beyond the issue of reputation management, other consumer related effects are also relevant at the industry level. For example, superior environmental practices have been found to be correlated to advertising intensity (Arora & Cason, 1996; McWilliams & Siegel, 2001), implying that firms in industries with greater contact with consumers are more likely to improve environmental performance in order to signal to the public that they are environmentally conscious (King, et al., 2002). This claim is bolstered by research indicating that firms that sell final goods are more likely to have high quality environmental management systems, than firms selling primary or intermediate goods (Khanna & Anton, 2002). However, since firms manufacturing primary and intermediate goods generally have the greatest environmental impact, and are under the greatest regulatory pressure, this finding does not square with the findings discussed above, according to which firms in high environmental impact industries are more likely to be aware of public concerns regarding the environment (Banerjee, Iyer & Kashyap, 2003) and to implement comprehensive environmental plans (Henriques & Sadorsky, 1996; Hutchinson, 1996). Further research, it seems, would be warranted.

Intra-industry Dynamics

A firm's position within an industry plays a role in determining its environmental performance (Reinhardt, 1998). Environmentally proactive firms attempt to erect barriers to competition in order to ensure that the additional costs they incur in pursuit of environmental initiatives do not undermine their competitive position (Martin, 2002). This

can be achieved by forcing competitors to follow suit, presumably at greater cost than that incurred by the first-mover, through influencing regulators to make regulations *more* stringent (Arora & Cason, 1996; Kollman & Prakash, 2002; Reinhardt, 1998). By participating in the regulation process and invoking the need for strict rules and monitoring, proactive firms can create obstacles for laggards. Meanwhile, laggards that are aware of their lesser environmental capabilities prefer lax regulation, which tilts the field in their favor. Laggards that strive for less demanding regulations may make use of lobbying and other political strategies.

An important mediating factor influencing a proactive firm's strategy is "field cohesion" (Bansal & Roth, 2000), a measure of the density and intensity of ties between members of an organizational field. If field cohesion is low, proactive firms can utilize an environmental strategy as a differentiator, and thus improve their competitive stance. This strategy is less effective when cohesion is high and interrelationships within an industrial field are dominant; industries with high cohesion are characterized by conformist and often coordinated responses.

Another mechanism by which proactive firms can take advantage of their superior skills is through establishment of intra-industry coalitions and codes of conduct that place competitors at a disadvantage (Reinhardt, 1999). These coalitions and codes are collectively known as mechanisms for industry self-regulation, and to them we now turn our attention.

Industry self regulation. Industry self-regulation is a means by which firms sharing common technologies and resource dependencies can engage cooperatively to reduce external pressures relating to environmental performance. Industry associations can

mitigate the threat of stakeholder sanction by improving collective performance, by managing stakeholder perceptions, by lobbying government, and/or by co-opting threatening stakeholders (King, et al., 2002). However, it should be noted that most industry associations extend their influence *outwards*, and do not have significant power over participating firms. For example, they typically focus on establishing (non-binding) guidelines for operational environmental conduct, but not on setting environmental performance requirements (Christmann, 2004).

In practice, establishment and effective on-going operation of industry-level associations is a complex task. Firstly, industry self regulation is subject to adverse selection; i.e., lower quality firms will seek to participate, and, in essence, free-ride (King & Lenox, 2000; Orsato, et al., 2002) on the improved signaling and insurance mechanisms generated by the association. Adverse selection may eventually undermine self-regulation as more and more low quality firms join and dilute the differentiation benefits membership provide. In order to be effective the industry association may need to monitor member participation and expel non-compliant firms (King & Lenox, 2000; Lenox & Nash, 2003). Less polluting firms will strive to put these safety mechanisms in place, whereas more polluting firms will resist.

The industry-regulator relationship which results from self-regulation is also a significant factor for firms to take into account. In order to fathom its effects, Potoski and Prakash (2004; see also Ashby, Chuah & Hoffmann, 2004) use a game-theory argument in which industries can choose “self-policing” or “evasion” and regulators can choose “adversarial” or “flexible” policies. They conclude that an industry in which firms effectively self-police their environmental operations and governments provide regulatory relief for voluntarily disclosed violations yields optimal win–win outcomes, but only when

both sides cooperate. If firms are likely to evade compliance, governments are better off adopting a deterrence approach. If governments insist on rigidly interpreting and enforcing laws, firms will have incentives to adopt evasive practices. Thus, credible signaling is essential for industry-level programs to be effective and can be attained by building a reputation for cooperation and/or adopting binding commitments such as environmental management systems, staff dedicated to environmental issues, etc. (Potoski & Prakash, 2004).

One industry association which has received much attention from academics is the chemical industry's "Responsible Care" program (Hart & Milstein, 1999; Hoffman, 2001; King & Lenox, 2000; Lenox & Nash, 2003; Prakash, 1999). In this program, mechanisms for detection of noncompliance and enforcement of standards exist because the companies share similar technologies, sell intermediate products to each other, and external attention by government and the public is high. (Reinhardt, 1999). Not surprisingly, participation rates in voluntary programs initiated in other industries have not been as high (Hoffman, Riley, Troast & Bazerman, 2002; Potoski & Prakash, 2004; Reinhardt, 1999).

It is also important to note that while membership in industry associations may be associated with improved environmental performance, firms can generally undertake more or less the same steps prescribed by the industry association independently, without actually joining the association, yielding the same environmental results. In other words, participation in an industry association does not provide *environmental* added-value in and of itself. More sinisterly, self-regulation by an industry of its own members may not be a force for change, but rather an attempt to manipulate image and perception, rather than address the core issues themselves (King & Lenox, 2000). A social constructionist point of view would suggest that such associations have a dynamic that is difficult to foresee and

that evolves through time, as firms frame and shape their own perceptions of environmental issues (Hoffman, et al., 2002; Levy & Rothenberg, 2002; Orsato, et al., 2002). Some associations may lead to substantial change in an industry's environmental impacts, others may not.

Summary

Industry is a fruitful level of analysis for environmental issues. Researchers focusing on environmental issues at the industry level have successfully combined insights from economic theory and from cognitive and behavioral perspectives to describe the intricate processes at play. This research goes beyond the standard industrial organization perspective (Porter, 1981), by recognizing that some forces act at the industry level, imposing constraints as well as opportunities for action by individual firms. It seems that as regards environmental issues, being a member of a certain industry creates greater constraints on firms than other issues, because differentiation is more difficult.

Since consumers and regulators are arguably a firm's most important stakeholders, there is a clear need to understand *all* the mechanisms through which these actors wield influence on a firm - both directly and indirectly, at the industry level. Moreover, the issue of industry self-regulation is particularly interesting since this form of intra-industry dynamic is not very common, and thus can serve as a research setting that contributes to knowledge on non-market strategy and policy.

THE ENVIRONMENT

Examination of the environmental context is hindered by a mundane yet often confusing factor – nomenclature. The standard conceptualization of environment in the

organizational and strategic literature refers to the *organizational* environment. However, in discussing environmental issues, the *natural* environment is the topic that frames the debate. The interaction between these two elements – natural environment and organizational environment - as well as between each of them and various constituencies makes research complex. Even clear communication of concepts becomes difficult, since text tends to become more verbose through constant distinction between the two types of environment.

Firstly, it is important to realize that the natural environment has no voice of its own (Prasad & Elmes, 2005). The "needs" of the environment are never represented directly by the natural environment itself, but rather by different groups and collective entities, each with its own agenda and belief system. Resolution of these conflicting claims is generally achieved as a result of compromise between competing groups (Prasad & Elmes, 2005), with no possible means of ascertaining an "objectively best" environmental outcome. Thus the environment with which a firm interacts is an organizational environment, in which constituent positions reflect their attitudes to the natural environment. The natural environment has no direct influence; it is only socially constructed (Goldman & Schurman, 2000).

Moreover, environmentalism is somewhat unique in that it is not representative of any specific constituency – anyone in the world can legitimately claim to have a personal stake in environmental issues, regardless of age, sex, cultural background or geographic location. Moreover, environmentalism affects one very important, yet unrepresented, social constituent – future generations – to a greater extent than is usual in most arenas of public debate (Hoffman & Ventresca, 2002). However, like other social movements, such as civil rights and gender equity, (some) central actors are motivated by ideology (Hoffman &

Ventresca, 2002), even though economic and social logics remain central. In these debates, ideologies and interests based on very diverse cultural and social narratives compete and clash due to fundamentally different and powerful underlying conceptualizations of nature and human interaction with the environment (Levy & Newell, 2000). In ideological debates, positions emerge from deeply ingrained moral beliefs associated with powerful emotions (Wade-Benzoni, et al., 2002), so that personal involvement and commitment becomes more pronounced, at least for some individuals, than in other organizational settings.

Norms, beliefs and actions in the organizational environment are of course heavily influenced by the way actors – both within the organization and external to it – perceive and understand the natural environment, and their relation to it (Starkey & Crane, 2003). "Experts" and laypersons often perceive and evaluate the same facts differently because their relevant knowledge, perceptions, and "social environments" are different (Vastag, Kerekes & Rondinelli, 1996). External audiences are influenced to a great degree by "task visibility", i.e. by the sensory impact resulting from a firm's action on the natural environment (Jiang & Bansal, 2003). Task visibility is in turn moderated by "impact opacity", or the difficulty for outsiders to understand and measure the extent of the impact (Jiang & Bansal, 2003). Moreover, many constituencies and stakeholders are becoming increasingly well-organized (Hoffman & Ventresca, 2002) and influential. Many organizations find it difficult to accurately gauge the importance of the competing claimants, their level of influence, and the interrelation between the various actors (Banerjee, 2001). The end result is that a firm's environmental performance can generate a very wide array of responses ranging from admiration, through apathy, to condemnation,

depending on the specific activities it is engaged in and the level and source of attention which it attracts.

While various stakeholders frame environmental issues differently, perhaps ideologically, business strategies are driven primarily by perceptions of technical, competitive and economic contexts (Howard-Grenville, 2002) that are constrained - but not determined - by specific political and social contexts. Put simply, businesses tend to view environmental issues through a different lens than many stakeholders. This can lead to great difficulty in establishing viable channels of communication and developing mutual understanding between firms and external constituencies.

In sum, on the issue of the natural environment, organizations face a very diverse set of stakeholders, with a broad and often conflicting set of knowledge, demands and worldviews, some of which are far removed from financial and economic issues. I now review the influence of the various actors in the organizational environment by analyzing each type of actor separately.

The Influence of Specific Actors in the Organizational Environment

The organizational environment, as it pertains to the natural environment, is composed of quite a few key actors: regulators, customers, the media, investors, activists, Boards of Directors, and of course the public at large. As discussed previously, the degree of influence each type of actor wields varies according to the issue, the industry, and the setting.

Regulation. Regulators generally exert a strong influence on firms' environmental approach, since the regulatory environment can have a profound impact on growth and profitability (Banerjee, 2001; Fineman & Clarke, 1996). Compliance with regulations is not

solely a result of enforcement through the threat of sanction, but also contains a normative/cognitive element, determined in part by the political cultures that guide the actors in the field. A consistent set of coercive and normative forces based on shared understanding of regulatory policy creates a "regime" (Jennings, Zandbergen & Martens, 2002). Pro-environmental regulators that emphasize negotiation with companies will lead to a different regime than, for example, regulators that emphasize strict enforcement but do not consider the environment a high priority. While influenced by societal values and modes of governance (Delmas & Terlaak, 2002), regimes change over time, corresponding with demographic changes, political power shifts, and other factors.

Regulation can take many forms; it can dictate technologies that must be used; can stipulate specific environmental targets that must be achieved; can create economic frameworks for redistributing environmental costs and benefits, etc. In fact, regulatory action need not mandate punitive measures to be influential (Hoffman & Ventresca, 1999). For example, US regulation specifying the way firms report toxic releases (the Toxics Release Inventory - TRI) requires companies only to publicly post information about their emissions, without setting any targets or limits. Apparently, the mere requirement to gather data induces better communication and sharing of practices within the firm, fosters more mutual technical assistance, and improves information flow between customers and suppliers, leading to significant reductions in emissions (Kleiner, 1991; Konar & Cohen, 1997; Porter & Van der Linde, 1995b). As a matter of fact, in a study of US companies that were convicted and penalized for violating environmental law, regulatory stringency was seen to have no significant effect on environmental wrongdoing (Kassinis & Vafeas, 2002). Nor is there a link between number of staff in US environmental regulation agencies and pollution prevention (Kassinis & Vafeas, 2006). However, in contexts where company

officers and directors bear personal liability for environmental violations (such as Canada), regulation is a very influential driver for improving environmental practices (Sharma & Henriques, 2005).

In general, regulation is seen to be a driver for environmentally-positive innovation (Majumdar & Marcus, 2001; Porter & van der Linde, 1995a), especially when the regulation is focused on process, rather than product (Foster & Green, 2000). Effective regulation should, among other things, be strict, stable and predictable; should focus on outcomes rather then means; and should incorporate industry participation during the design process (Porter & van der Linde, 1995a). In many real-life cases, however, regulation is segmented - technically and conceptually distinct from other aspects of organizational performance - and thus addressed by specialized professionals that find it difficult to communicate with and increase the awareness of other organizational units (Hoffman & Ventresca, 1999). This form of regulation stifles innovation (Mylonadis, 2002).

Consumers. Since consumers directly determine a firm's economic performance, firms are very sensitive to the way buyers (or markets) perceive them (Banerjee, 2001; Henriques & Sadorsky, 1996; Jiang & Bansal, 2003). Consumers may act directly to curtail organizational activities perceived as damaging, or, indirectly, by rallying allies to action (Frooman, 1999). While the customer is generally seen to be a key actor, firms might assume that in many cases consumers actually have very little knowledge about environmental issues, as well as low awareness or low level of prioritization (Fineman & Clarke, 1996; Foster & Green, 2000), so that "playing the environment card" might not be an effective marketing strategy. The "green consumer" remains an elusive demographic, if indeed such a demographic even exists (Pedersen & Neergaard, 2006). Multinational

corporations tend to respond to perceived customer pressures with public relations strategies and standardization of their environmental communication rather than by self-regulating their environmental conduct (Christmann, 2004), suggesting that consumers are indeed not very knowledgeable, and are prone to have their perceptions manipulated.

The media. General public awareness of an environmental issue is typically inferred through coverage in mainstream media outlets (Hoffman & Ocasio, 2001). Media coverage can generate coercive forces which have a significant effect especially upon companies who are not very advanced in adoption of sustainable strategy and practices (Bansal, 2005; Darnall, 2003). The effect of media attention, as perceived by managers, seems to be especially worrisome for companies adopting a reactive (as opposed to proactive) environmental stance (Henriques & Sadorsky, 1996). In other words, companies that are proactive generally need to pay less heed to potentially damaging media coverage.

Investors. Investor influence varies with the type of investor, or more accurately, with the investor's goals. Pension funds, for example, tend to take longer-term perspectives and do not shift positions as rapidly as other investors. If pension funds are heavily invested in a firm, then it will generally have longer horizons and more emphasis on social and environmental issues (Johnson & Greening, 1999; Taylor, 2005). It seems, however, that capital markets do not yet comprehend how to value environmentally inclined performance (Guenster, Derwall, Bauer & Koedijk, 2005). Valuation may be asymmetrical - the market does not seem to reward firms that are performing well on the environmental front, but it does punish poorly performing firms (Derwall, Guenster, Bauer & Koedijk, 2005), requiring them to take tangible steps to improve their performance (Khanna & Anton, 2002).

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Activists. As in other ideologically fuelled debates, activists are an influential presence in the environmental arena (Thornton, et al., 2003). Activists can be typified as persons lobbying for change "based on value objectives rather than strict material interests" (Wade-Benzoni, et al., 2002: 46), connecting the values of their cause with their self-identity. Since businesses and activists have very different basic beliefs, and participate in generally divergent discourses, communication between the groups may be especially difficult, and compromise hard to reach.

Activist organizations will tend to be adversarial towards firms that are perceived as hostile and disaffected, but will seek cooperative relationships with firms that are proactive (Hendry, 2006). In furthering their agenda, effective NGOs engage not only the corporations that they target but also attempt to influence government and public opinion (Doh & Guay, 2006). NGOs that manage to garner public support for their campaigns are more likely to succeed in changing corporate behavior (Eesley & Lenox, 2006). When activists do manage to change corporate behavior, the change tends to be radical, rather than incremental (Fineman & Clarke, 1996).

From an economic perspective, it seems that firms become increasingly responsive to activist pressures when the costs of activist influence are low, when firms have relatively low abatement costs, and when the public values abatement highly (Maxwell, Lyon & Hackett, 2000). When such an alignment occurs, the risk of activists lobbying and achieving strict regulatory enforcement is high, so firms are economically better off making significant strides voluntarily.

Boards of Directors. While Boards of Directors seem to have an influence in encouraging businesses to adopt a more progressive environmental stance (Ricart,

Rodríguez & Sánchez, 2005) it is unclear whether Boards are an effective mechanism for transferring stakeholder concerns into managerial action (Hillman, Keim & Luce, 2001). For example, in setting CEO compensation, it seems that Boards do not reward CEOs for effective stakeholder management (Coombs & Gilley, 2005). Very few persons that clearly represent environmental interests serve on corporate Boards (Prasad & Elmes, 2005), making it unlikely that divergent and possibly uncomfortable points of view are actually presented. Paying specific attention to a Board's fiduciary role, Kassinis and Vafeas (2002) found that larger boards are less effective in preventing behavior that leads to environmentally based lawsuits than smaller ones; that the likelihood of a lawsuit increases with the fraction of directors in peer firms; and that the likelihood of a lawsuit decreases with the number of directorships held by outside directors.

Construction of the Organizational Environment

As neo-institutional theory would predict, structures and processes that companies develop for compliance purposes are often created to buffer the organization from pressures of the organizational environment (Maxwell, et al., 1997; Ramus & Montiel, 2005). Organizational response to pressure may be decoupled from the main problems being created by the organization. For example, use of an Environmental Management System such as ISO 14000 (Bansal & Hunter, 2003; Darnall, 2003), or participation in an industry association (King & Lenox, 2000) may not lead to substantial change in an organization's environmental performance. This occurs since cognitively, more weight is attached by organizations to standards (means) than environmental protection itself (ends) (Tenbrunsel, Wade-Benzoni, Messick & Bazerman, 2000). Furthermore, a firm might attempt to attain an environmental objective with high visual impact, in order to gain public support, rather

than address costlier, but perhaps more significant, environmental challenges (Bowen, 2000). Nonetheless, even lackadaisical environmental activities may, over time, gather steam and lead to adoption of the natural environment as a significant organizational value (Forbes & Jermier, 2002; Henriques & Sadorsky, 1999; Hironaka & Schofer, 2002; Levy, 1997; Mendel, 2002).

In other words, the organizational environment itself is not constant, and firms play a role in constructing it. Firms may take a proactive approach not just toward improving environmental performance, but also to influencing the institutional setting in which they operate. For example, both leading and lagging firms (in terms of environmental performance) share the goal of participating in regulatory decision-making (Henriques & Sadorsky, 1999); leading firms aim to increase their competitive advantage, lagging firms attempt to reduce it. Environmentally oriented organizations like The Body Shop and Patagonia don't just respond to the environment – they attempt to change the marketplace and the entire socio-political landscape surrounding business (Mirvis, 1994). Other forms of influence are not as admirable: political corporate responses such as increasing campaign contributions and lobbying against environmental legislation; alliances and partnerships with mainstream environmental organizations as well as government agencies leading to cooptation; artificially induced grass-roots activism ("Astroturf"); and PR-like production of environmental education kits for children are some examples of corporate attempts to actively influence the organizational environment (Levy, 1997).

However, in the long-term, it seems that only firms that demonstrate respect for fellow citizens and real commitment to the community are given a legitimate decision making role through civic engagement. To ensure long-term viability, a corporation must proactively seek out those places where it can make a substantive commitment to the

community, and engage its stakeholders in authentic discourse, thus committing itself and accepting the possibility of being transformed through such exposure (Saiia & Cyphert, 2003).

Summary

The environmental arena is one which engages a wide array of stakeholders, with very divergent perspectives and priorities. These pressures are quite difficult to predict and may not be very malleable. Indeed the practice of "stakeholder management" may not be useful for a firm to implement; openness and dialogue are likely to be more effective in the long run.

Moreover, the influence of entities external to the firm is not as straightforward as might be expected. Consumers tend not to differentiate firms very rationally based on environmental performance, but on occasion can react very strongly to specific issues – the Toyota Prius is a positive example, unrest about genetically modified organisms (especially in Europe) is a negative one. Regulatory influence, somewhat surprisingly, seems to be quite effective when applied via indirect paths, unrelated to specific environmental outcomes. Like the TRI in the US, the upcoming European legislation on Registration, Evaluation, Authorisation and Restrictions of Chemicals (REACH), seems to indicate that disclosure can be an extremely powerful mechanism for influencing firm behavior.

Environmental issues seem to be a fertile arena for assessing the interactions between firms and the various audiences external to the organization - consumers, activists and "the silent majority". Whereas many attributes of firm structure and "rights" (i.e. modes of governance, potentially unlimited lifespan, corporate ownership of property) are taken for granted, issues relating to environmental performance have not yet reached

unanimity of opinion, giving researchers an opportunity to study events as they unfold. With such a vibrant setting for their work, researchers focusing on this agenda can both contribute to organizational theory and to normative discourse relevant for the public at large.

DISCUSSION

Like organizational research in general, research on environmental issues has failed to yield simple generalizable "truths". As more and more knowledge becomes available, it seems that the complexity of issues becomes correspondingly greater, and closure more difficult to attain. This is not surprising when we consider that research on environmental issues emanates from distinct sub-fields like strategy, organizational behavior, organization theory, marketing, and others, which tend to have different conceptual bases. Theory developed separately in each of these sub-fields is not readily integrable. Other shortcomings of research to date include what might be described as an overly narrow focus on for-profit industrial organizations, to the virtual exclusion of the service sector and public and governmental agencies (Starik & Marcus, 2000). Moreover, as can perhaps be expected, most research published in the English language has centered on the United States, and very few studies have, until recently, considered non-developed countries.

While many limitations can no doubt be identified, two deserve greater attention, one pragmatic and the other conceptual. The pragmatic limitation centers on the scarcity of good data, which hinders development of broad overarching research designs with results that will be widely applicable. The conceptual limitation stems from the fact that environmental issues have great implications for our well being, but there is great variety in the degree to which these issues influence (or do not influence) the framing of research.

Data

Research on environmental performance is plagued by insufficient data. Perhaps the most quantifiable proxy for environmental performance is the amount of wastes a company generates (Sharma & Henriques, 2005). It seems that the most widely used source of quantitative data for environmental research is the US Toxics Release Inventory (TRI) program (Arora & Cason, 1996; Dooley & Fryxell, 1999; Kassinis & Vafeas, 2006; King & Lenox, 2000, 2001, 2002; King, Lenox & Terlaak, 2005; King & Shaver, 2001; Klassen & Whybark, 1999; Konar & Cohen, 1997; Lenox & King, 2004; Lenox & Nash, 2003; Maxwell, et al., 2000; Russo & Harrison, 2006). While the distinct advantage of this data set is its accuracy and its focus on tangible impacts on the natural environment, it (and others like it) provide only a limited perspective on an organization's environmental performance – it accounts only for manufacturing processes rather than the entire life-cycle of the product; it does not account for greenhouse gases nor "environmental footprint"; and it entirely ignores issues like bio-diversity and habitat protection. Other data sources, such as those developed by entities in the financial sector, (e.g. KLD [Coombs & Gilley, 2005; Hillman & Keim, 2001; Johnson & Greening, 1999; Mattingly & Berman, 2006; McWilliams & Siegel, 2000; Waddock & Graves, 1997]) use a much broader range of metrics, but are more subjective in assigning weights to specific impacts (see Chatterji & Levine (2006) for a discussion). The lack of rich data bases leads many researchers to employ surveys and conduct case studies, with all the limitations that these methods entail.

Only recently has research began to integrate fundamentally different data sources such as environmental reports (Sastry, Bernicke & Hart, 2002; Sharma & Henriques, 2005) and articles from the media (Bansal & Clelland, 2004; Bansal & Hunter, 2003; Hoffman & Ocasio, 2001). It may be useful to for researchers to consider additional sources for data,

such as NGOs, environmentally oriented venture capital funds and socially responsible investment (SRI) funds.

Normative vs. Descriptive Approaches

Both normative and descriptive research paradigms can be found in the literature on business. Strategy research is essentially normative, with a clear goal to yield insights which can allow a firm to perform better than its competitors over time. The message is an optimistic one, implying that if managers take the time to analyze their situation clearly and build upon academic research, they can indeed improve their performance. Most studies frame the environmental issue as one which is becoming increasingly well understood by businesses, and which will thus be increasingly manageable (Prasad & Elmes, 2005).

Much sociological literature, in contrast, is descriptive, identifying mechanisms at play in the interaction between organizations and individuals, as well as between organizations and other organizations. The approach is more clinical and detached, as well as less prescriptive than that found in strategy theory.

My review of the literature would seem to indicate that the literature on organizations and the environment fits quite well into this pattern. At the level of the organizational environment, most research describes paths of influence and organizational responses. Economic performance is not necessarily the central dependant variable examined, and the scope of issues and relations examined is quite broad. In contrast, in research at the firm level, the prevalent stance is one according to which environmental issues are closely related to economic ones. It is assumed that environmental issues can and should be addressed through markets (Forbes & Jermier, 2002), in a pragmatic, practical

manner, through economic utilitarianism, compromise and collaboration (Prasad & Elmes, 2005).

These two approaches are distinct and researchers do not generally engage in constructive dialog between the two camps. In this regard, the situation again mirrors that of the strategy and organizational theory fields, which tend to be disengaged from each other (Lewin & Koza, 2001). One attempt to bridge the gap has centered on an attempt by some "strategists" to redefine a key concept, namely value. This approach maintains that value is indeed a central issue for business, but that it must be redefined so that it is based not solely on economic logic. The Triple Bottom Line and Blended Value concepts are two prominent examples, both of which define social value and environmental value, as well economic value (Elkington, et al., 2006). However, putting these new concepts into practice remains an elusive goal.

Another attempt to bridge normative and descriptive theory in research on organizations and the environment has been put forth by Margolis and Walsh (2003). They suggest that individuals in organizations intuitively use more than one metric when assigning value to action. Rather than trying to gloss over these different value systems by attempting to "synthetically reconcile" them, Margolis and Walsh suggest that researchers investigate the principles and guidelines that people use for managing tradeoffs. Thorough descriptive research on the objectives, duties and concerns at play in firms can lay a "foundation for the inductive development of a normative theory of the firm" (Margolis & Walsh, 2003: 284). Such an inductive theory would not attempt to resolve the conflict between economic and non-economic values, but will try to "clarify the competing considerations, probe what gives them weight, and explore their relationship." (Margolis & Walsh, 2003: 284).

Finally, some researchers have attempted to broaden the scope of discussion, using both normative and descriptive frames. One such path leads to the concept of "sustainability" a term which has both normative (evoking the concept of "sustainable competitive advantage") and descriptive, systemic connotations (analogous to natural life-cycles and ecosystems).

The broader picture – sustainability

As this review has shown, the issue of organizations and the environment is broad and multi-layered, and has not been exhausted. Research on environmental issues can and should be advanced on its own merit. However, there is no denying that environmental issues are part of the broader theme of sustainability and sustainable development. In the 1990's much of this work was theoretical, and pursued by relatively few researchers, most notably Stuart Hart (Gladwin, Kennelly & Krause, 1995; Hart, 1995, 1997; Hart & Milstein, 1999; Jennings & Zandbergen, 1995; Starik & Rands, 1995). In subsequent years, more researchers began to see environmental issues as one component of a broader theme, that of sustainable development, which incorporates social, environmental *and* economic issues. (Hillman & Keim, 2001; Johnson & Greening, 1999; Russo, 2003). But it is only very recently that researchers have begun conducting more comprehensive and thorough research on this very far-reaching and encompassing concept. To do so, it seems necessary to design research in ways that embrace more varied sources of data, and attempt to examine organizational processes and attributes that have heretofore not been associated with environmental or social issues. Two exemplary studies, providing a great deal of insight for strategic and organizational theory can be mentioned:

Bansal (2005) uses data about capital management experience, slack resources, international experience, previous environmental infractions and media attention to identify the institutional and strategic drivers for adoption of practices related to sustainability. Whereas new practices are usually taken up by pioneering entities due to the technical advantages they confer, and are then diffused through institutional forces such as mimicry, Bansal finds that in the case of corporate sustainable development, institutional forces were dominant mainly in *early* stages. Technological drivers, which were economically rewarding, emerged only at later phases, after norms had been institutionalized. This result has significant ramifications for the neo-institutional paradigm, one of the cornerstones of modern organizational theory.

Sharma and Henriques (2005), using interview data and content analysis of annual reports, environmental reports, public documents, and corporate websites analyze how firms become aware of the long-term consequences of transformations in the strategic landscape, in which technical issues like recycling and efficiency must make way to deeper changes like business redefinition and industrial ecosystems, which challenge accepted ways of thinking. They thus stretch the reach of research to encompass *very long-term* strategic factors which to date have not been a central issue in academic research.

Hopefully, these two studies, which frame research questions in fresh terms and make innovative use of new sources of data, will encourage others to pursue interesting and meaningful topics for study, in what will definitely be a crucial topic for research, not only for academics, but for all of society.

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FOOTNOTE

[1] It was in 1994 that the Academy of Management established its "Organizations and the Natural Environment" interest group and in 1995 that a special issue of the Academy of Management Review was devoted to research on sustainable development. Both were watershed events for academic interest in business and the environment.

BIOGRAPHY

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