

## Working Paper

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### Exceptional Boards: Environmental Experience and Positive Deviance from Institutional Norms

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DEVIANCE FROM INSTITUTIONAL NORMS**

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# **EXCEPTIONAL BOARDS: ENVIRONMENTAL EXPERIENCE AND POSITIVE DEVIANCE FROM INSTITUTIONAL NORMS**

## **ABSTRACT**

This paper explores the phenomenon of positive organizational deviance from institutional norms by establishing practices that protect or enhance the natural environment. Seeking to explain why some organizations practice positive environmental deviance while others do not, we locate our inquiry on the board of directors - the organizational body that interprets external issues and guides organizational response. We find a strong correlation between positive deviance and the past environmental experience of board directors and the centrality of the organization within field-level networks. Organizations located on the periphery of the network and whose board possess a high level of environmental experience are more likely to deviate in positive ways. Our conclusions contribute to multiple literatures in behavioral and environmental governance, the role of filtering and enactment in the process of institutional conformity and change, and the mechanisms behind proactive environmental protection strategies within business.

## INTRODUCTION

Since the 1960s, organizations have found themselves under increasing institutional pressure to attend to environmental sustainability as part of their corporate agenda (Hoffman, 2001a). Many organizations respond to these pressures by adhering to accepted and legitimated environmental standards. But some proactively adopt environmental practices that go beyond those regulative and normative expectations to offer broad social benefits (Hoffman & Woody, 2008; Hart, 1995). This type of positive organizational deviance – the intentional departure from institutional norms (Baron, 2006; Spreitzer & Sonenshein, 2004) – is particularly compelling as an area of study. Because environmental issues are complex and have unclear solutions, external contextual factors tend to lead to conformity of organizational action (Bansal & Clelland, 2004; March & Olsen, 1976) rather than positive organizational deviance. Something internal to the firm, rather than institutional context, must therefore determine differences in organizational response. This paper seeks to explain this phenomenon.

Institutional expectations for engagement on issues such as environmental sustainability come from sources of coercive, normative and cognitive influence that originate within organizational fields, whose constituencies include the government, shareholders, value chain members, trade associations, public opinion, and others (Hoffman, 2001b; McDonough, Ventresca & Outcalt, 2000; Scott, 1995). While this pressure impacts organizations in multiple ways, and through multiple channels (Aldrich & Herker, 1977; Tushman & Scanlon, 1981), our paper locates its inquiry into the sources of positive deviance at the level of corporate environmental governance.

We take a behavioral governance approach (Hambrick, v. Werder & Zajac, 2008) to examine how the board of directors' experience and networks help shape an organization's response to institutional pressures. Increasingly, boards are mandated to attend to their fiduciary responsibilities and engage with stakeholders to mediate conflicting interests (Blesener, et al, 2009; Lan & Heracleous, 2010; White, 2006). This includes addressing issues of corporate social responsibility (CSR) and sustainability, by adhering to programmatic standards such as the UN Global Compact (Escudero et al, 2009; Mackenzie & Hodgsons, 2005; Tonello, 2010). Roughly 60% of public companies have set up dedicated board committees to oversee issues related to sustainability (Hall & Cruse, 2011). And yet, despite the normative development of such boards, we still observe a variance in the extent to which these companies adopt baseline environmental practices or deviate positively.

We propose that the variance in organizational actions towards environmental sustainability depends, in large part, on the direction given by the board of directors. The ways in which this organizational body recognizes, frames, and interprets environmental issues influences how the organization acts on them (Dutton & Duckerich, 1991; Hoffman & Ocasio, 2001; Hoffman & Ventresca, 2002; Scott, 1995). The board interprets the institutional pressures based on the skills and experience of its members and shapes an organizational response by providing strategic direction based on that interpretation (Dacin, Goodstein & Scott, 2002; Hillman & Dalziel, 2003). Yet, such actions do not take place in a vacuum. Organizational environmental response also depends on the strength of pressures to conform to institutional norms and the corresponding need to gain legitimacy (Bansal & Clelland, 2004). We propose that these

two forces and their interaction explain why some organizations practice positive deviance in the context of environmental practices and others do not.

In examining this phenomenon, our work contributes to several streams of literature. First, we contribute to an emerging stream of work on behavioral governance by considering the roles of board experience and networks as mechanisms of governance that go beyond traditional agency theory considerations (Hambrick et al, 2008). In doing so, we capture the complexity of governance in real-world organizations (Lubatkin, 2007) by applying a behavioral lens of governance for sustainability-oriented outcomes. A second contribution of our work is to the developing area of environmental governance that has uncovered a need to understand the complex role boards play for environmental and social outcomes of firms that may conflict with corporate financial goals and agency theory predictions (Walls, Berrone & Phan, 2012). Third, we provide insight into the underlying mechanisms of institutional change by recognizing the role of cognitive and contextual influences in the interpretation of institutional pressures and their subsequent implications for organizational agency (or deviance) – mechanisms that have not been extensively studied (DiMaggio & Powell, 1991; Milstein, Hart & York, 2002). Finally, we offer new perspectives on how organizations become “more sustainable” and engage in proactive environmental practices, areas open to research in both the positive organizational scholarship (Hoffman, Badiane & Haigh, 2011) and environmental management literatures (Ehrenfeld, 2008; Hart, 1995).

**POSITIVE ENVIRONMENTAL DEVIANCE WITHIN INSTITUTIONAL CONTEXTS**

Positive organizational deviance is notably relevant in the context of environmental sustainability. When organizations mitigate the impact of their activities on the natural environment through their products, processes and policies (Bansal & Roth, 2000) in ways that go beyond what is required by regulation, they are practicing positive organizational deviance that has benefits that accrue to society and not just to the organization (Aragón-Correa, 1998; Russo & Fouts, 1997; Walls, Phan & Berrone, 2011). Within the sustainability literature, this kind of deviance is critical for the establishment of innovative practices that lead to the broad scale institutional change necessary to achieve corporate sustainability.

The institutional literature has sought to explain these institutional change processes more fully by devoting increased attention to active agency within organizational fields (Covaleski & Dirsmith, 1998; DiMaggio, 1988; Hoffman & Ventresca, 2002). Rather than a more traditional focus on isomorphism, more recent institutional analysis has paid greater attention to the ability of individual organizations to respond in a variety of ways to institutional demands (Oliver, 1991), or even influence change at the level of the institutional field (Lawrence, 1999).

At the most fundamental level, the institutional context limits the extent to which decision-makers within organizations rationalize their actions by creating cognitive constraints and boundaries on their interaction with the larger environment (Jennings & Greenwood, 2003; Lounsbury & Glynn, 2001; Weber & Glynn, 2006; Weick, 1995). For instance, the organization's network or ties to other organizations determines how particular practices and related information are diffused (Brass et al, 2004). Such inter-organizational network ties are particularly effective at pressuring firms towards social

cohesiveness and conformity of action (Burt, 1987; Fligstein, 1985; Galaskiewicz & Wasserman, 1989; Westphal, Gulati & Shortell, 1997).

But the fact remains that not all organizations accede to institutional demands. To account for such deviance, neo-institutionalism acknowledges organizational actions that depart from social norms in specific and directed ways (Lawrence, 1999; Oliver, 1991). However, identifying specific factors that lead to this outcome have not been extensively studied (DiMaggio & Powell, 1991; see Johnson, Smith & Codling, 2000; Bansal & Penner, 2002 for exceptions). In this paper, we explore the ways in which agency and enactment (Weick, Sutcliffe & Obstfeld, 2005) play a role in organizational deviance within institutional contexts (Powell & Colyvas, 2008) through internal, behavioral aspects of the organization.

Agency and enactment take place when organizational decision-makers interpret, construct and enact the organization's external institutional context (George et al, 2006; Karnoe, 1997; Zilber, 2002) by paying selective attention to particular issues (Dutton & Duckerich, 1991; Hoffman & Ocasio, 2001), interpreting them and then constructing a legitimate repertoire of possible responses (Daft & Weick, 1984; Kauer, 2008; Maitlis, 2005). All of these actions are influenced by the filters of the decision-makers' prior experience, context and social interactions (Snook, 2000). This interpretation for enactment takes place within many boundary spanning functions within the organization (e.g. the senior management team, stakeholder engagement functions, or operational management) that are in contact with and receptive to specific constituencies and norms within the organizational field (Aldrich & Herker, 1977; Tushman & Scanlon, 1981). Each function occupies a specific location within the organization and is tasked with



different roles and power. However, one function that is particularly significant for understanding the connection of the organizational field to the firm's internal governance is the board of directors.

## THE BOARD OF DIRECTORS AND POSITIVE ENVIRONMENTAL DEVIANCE

The board of directors is a key governance function that links the organization to its institutional context. Boards transcend and span organizational boundaries by providing access to external resources, information and demands (Hillman & Dalziel, 2003; Johnson, Daily & Elstrand, 1996; Zahra & Pearce, 1989). Boards also maintain the ultimate level of control over organizational actions by setting the limits within which managers may act (Mizruchi, 1983) and often influence corporate strategic directions (Judge & Zeithaml, 1992; Westphal & Zajac, 1997). When the board allocates time and attention to issues, they are prioritizing those issues in the organizational agenda (Dutton & Jackson, 1987; Ocasio, 1997).

In the past, many have argued that the board's role has been passive, merely functioning as a "rubber-stamp" (e.g. Fama & Jensen, 1983). But recent corporate governance scandals and initiatives such as the Sarbanes-Oxley Act have focused attention on boards and forced their increasingly active roles. This is especially noticeable in the case of corporate social and sustainability goals, where board directors can be held personally liable for failing to adhere to environmental regulation (Schultz, 2001) or subject to shareholder lawsuits for failing to recognize material implications of organizational environmental actions. Moreover, many voluntary initiatives have encouraged companies to adopt environmental, social and governance structures and

performance measures as an integral part of their strategy, with corresponding oversight by the board of directors (Blesener *et al.*, 2009; Escudero *et al.*, 2010; Mackenzie & Hodgson, 2005; Tonello, 2010; White, 2006).

The board's involvement in decisions on sustainability is fitting because monitoring and attention of boards is particularly salient when practices require significant capital investments and have uncertain outcomes (e.g. Daily & Dalton, 1994; Ledgerwood, 1997). These characteristics can be emblematic of environmental issues, which are often institutionally complex (Hoffman, 2001b), have long-term implications (Roome, 1992), require substantial investment (UNPRI, 2010), and can be inherently risky (Kassinis & Vafeas, 2002; McKendall, Sánchez & Sicilian, 1999). In fashioning a strategic response, firms need to extend beyond organizational boundaries to acquire necessary resources and gain social legitimacy (Walls, Phan & Berrone, 2011). Since organizations tend to model or even imitate their environmental response after those of other organizations (Bansal & Clelland, 2004), however, exceptional deviant responses must rest on particular aspects of the organization's board.

From a behavioral perspective (Hambrick et al, 2008), two aspects of the board of directors are relevant in determining how organizations react to institutional pressure: structural elements and intra-organizational factors (Greenwood et al, 2008). *Structural elements* acknowledge the extent to which organizations exist within a larger context via interlocking directorship or network ties. *Intra-organizational factors* recognize the influence of experience and skills of board members in filtering information retrieval and interpretation. Together, the presence and interaction of these two factors determines the extent to which an organization will conform or deviate positively in its action from peers

in the institutional field. In the following section, we develop hypotheses to elaborate and specify these influences.

### **Structural Elements: Board Networks**

Networks are essential components of organizational fields (DiMaggio & Powell, 1983; Owen-Smith & Powell, 2004) creating connectedness and common sets of linkages (structural equivalence) between organizations (Laumann, Galaskiewicz & Marsden, 1978; White, Boorman & Breiger, 1976). Interlocking directorships create networks that tie organizations together, functioning as a key channel to collect information (Pfeffer & Salancik, 1978; Salman & Saives, 2005) and disperse organizational practices (Haunschild & Beckman, 1998). Hence, these board networks act as prisms through which members of a firm interpret the institutional logics of the field they occupy (Owen-Smith & Powell, 2008).

For example, board networks allow organizations to gain access to strategic advice, counsel and expertise (Baysinger & Hoskisson, 1990; Carpenter & Westphal, 2001; Westphal, 1999), create linkages to important stakeholders (Burt, 1980), and safeguard their reputation and legitimacy (Bazerman & Schoorman, 1983; Pfeffer & Salancik, 1978). In this manner, networks create a shared social environment (Weick & Roberts, 1993) where organizations convey the value of certain practices to others in the network (Hillman, Shropshire & Canella, 2007) regardless of whether the practices enhance or diminish social or environmental welfare (Kang, 2008; Pfarrer et al, 2008).

Networks, essentially, function as lubricants of normative organizational behavior that encourage those within the institutional field to imitate each other's processes and

practices (Westphal, et al, 1997; Westphal, Seidel & Stewart, 2001). Organizations are inclined to adopt practices conveyed through board networks because the information is trusted (Davis, 1991) and more up-to-date and timely than information received from secondary sources (Kahneman, Slovic & Tversky, 1982).

But the extent to which an organization adopts the normative practices of its institutional field depends on its position in the network (Owen-Smith & Powell, 2008). The more centrally the organization is located, the more access it has to information and resources in the network, and the stronger the pressure to conform to the social norms (Grannovetter, 1973; Ibarra & Andrews, 1993; Salman & Saives, 2005). Organizations that operate at the center of the network therefore find it difficult to deviate from normative practices (Freeman, 1978/79). In contrast, those that are located at the periphery of the network can challenge existing institutional norms (Clemens & Cook, 1999) because these organizations are largely excluded from the network (Phillips & Zuckerman, 2001) and face weaker institutional pressures. Since they are less embedded in the network, peripheral organizations are therefore more often exposed to alternative practices (Weimann, 1982).

In the context of environmental issues, organizations on the periphery of the network can deviate positively because they exist in more distant and less restrictive institutional setting (Clemens & Cook, 1999) and are enabled by outside groups within that space to oppose the dominant institutional logics (Greenwood & Hinings, 1996). For example, many special interest groups such as non-government organizations, activist shareholders, consumers, and others, encourage organizations to adopt above-and-beyond environmental practices, and the adoption of these practices are voluntary rather than

legally mandated. Targets of these actions are typically identified as organizations that develop practices and positions on environmental issues that are peripheral to mainstream behaviors. In short, positive organizational deviance for environmental practices is more likely to occur in firms that are on the periphery of the network than those that are central. Therefore, the more centrally located an organization is in the network, the less likely that it will deviate positively in its environmental actions.

*H1: An organization's network centrality is negatively associated with positive environmental deviance.*

### **Intra-Organizational Factors: Board Experience**

The human capital that board directors provide in the form of knowledge, skills and experiences is beneficial for organizations (Kor & Sundaramurthy, 2009). Increasingly, boards play an active role in formulating organizational strategy and disseminating information and advice to managers (Carpenter & Westphal, 2001; Daily, Dalton & Cannella, 2003; Judge & Zeithaml, 1992; Westphal & Zajac, 1997). Since information that enters the firm via this network is screened and filtered by board members (Salman & Saives, 2005) and subject to processes that lead to bounded rationality, it is important to consider how characteristics of these directors could impact the organizational interpretation and response to institutional pressures.

Past experience is a key cognitive filter through which information is processed and understood (Hambrick, 2007; Starbuck & Milliken, 1988; Walsh, 1988). Past experience can come in the form of occupational backgrounds (Golden & Zajac, 2001; Kroll, Walters & Wright, 2008; Stearn & Mizruchi, 1993; Westphal & Frederickson, 2001), for instance, or appointments on other boards (Carpenter & Westphal, 2001). In

contrast, when information or knowledge is outside the board's expertise, it can hinder problem solving and the ability to consider alternative approaches (Dutton & Duncan, 1987; Ocasio, 1997). Thus, past experience is an important characteristic that helps directors to determine what specific issues to attend to in the boardroom (Tuggle, Schnatterly & Johnson, 2010).

From an institutional perspective, specialized and innovative knowledge and background experience among key members allows organizations to break away from established field norms (Battilana, 2006; Sewell, 1992). The skills and experiences of organizational actors such as board directors allow organizations to deviate in their response, even when institutional settings are commonly shared among multiple organizations (Colomy, 1998). When the past experience of numerous board members is similar and abundant, information can be processed more efficiently because knowledge structures are more developed (Carpenter & Westphal, 2001; Day & Lord, 1992; Shropshire, 2010). Therefore, the greater the collective experience of board members in dealing with environmental sustainability issues, the more robust their decision making process regarding such practices will be. An organization that has a high level of environmental experience on its board is able to deviate positively from the dominant institutional norms.

*H2: The amount of environmental experience of an organization's board of directors is positively associated with positive environmental deviance.*

### **Interaction Effect of Board Networks and Experience**

While agency and enactment occur when key members of the organization interpret external information in a specific manner, the organization remains subject to

the constraints of its institutional environment, especially the normative influences of inter-organizational networks. This points to a tension between structural elements and intra-organizational factors. On the one hand, networks create pressure on organizations to conform to institutional norms. On the other hand, board directors with extensive environmental experience place pressure on the organization to deviate positively from such norms. An interaction effect between board networks and board experience therefore exists.

While the organization may be better able to deviate positively in their response when they are far from the center of the network, this type of organizational action still requires human agency. Therefore, the combination of network position with background experience of board directors is a powerful predictor of positive organizational deviance (Battilana, 2006; Sewell, 1992). We propose that this interaction is important. On the one hand, organizations are more likely to deviate when they are less centrally placed in the network. However, an organization that has extensive environmental experience is also able to challenge institutional norms, even when a firm is very central in the network.

*H3: Environmental experience positively moderates the relationship between network centrality and positive environmental deviance.*

## METHODOLOGY

Our sample consisted of an unbalanced panel data set of 294 U.S. listed firms from 2000-2008 resulting in a total of 1,881 firm-year observations. The average firm panel was 6.4 years. The sample was restricted to organizations in the S&P500 index from primary and manufacturing industries as they are most affected by environmental issues (Hart & Ahuja, 1996). The data covered 31 different industries by 2-digit SIC

code; the largest representatives were food (8.2% of firms), chemicals (14.0%), industrial machinery (7.8%), electronics (10.4%), instruments (9.5%) and utility (12.7%) industries.

### **Dependent Variable**

We measured “positive environmental deviance” in terms of corporate environmental practices that go above-and-beyond the minimal normative expectations that offer broad social benefits and deviate from others within the institutional field (Baron, 2006; Hoffman & Woody, 2008; Spreitzer & Sonenshein, 2004). We used data from Kinder, Lydenberg and Domini (KLD) to capture such activities that mitigate the organization’s impact on the natural environment through products, processes and policies (Bansal & Roth, 2000). KLD’s data is used extensively in academic research and is considered the standard for environmental and social performance (Chen & Delmas, 2010; Waddock, 2003). In particular, the KLD “environmental strengths” data consists of six categories that capture environmental practices of a positive nature in the sense that they go beyond minimal compliance requirements and offer broad social benefits. The categories include: products and services that promote efficient use of energy or have environmental benefits, pollution prevention programs that reduce emissions and toxic use, using recycled materials in the manufacturing process, use of alternative fuels such as natural gas, wind and solar energy or a commitment to energy efficiency programs, adopting environmental reporting or similar environmental communication practices and other strong environmental attributes not capture in prior categories. These categories were summed to provide each organization with a total “positive environmental practice” score from 2001 to 2008 (given the one year lead of the dependent variable). In our



sample, the highest environmental practice score was four (out of a possible six) by firms in lumber and wood, chemicals, industrial machinery and instruments industries.

Next, we assessed whether organizations deviated in this score from others in the broader institutional field to measure *positive environmental deviance*. Institutional theorists often study inter-organizational fields in the context of industries; examples are institutional field studies in the radio (Leblebici et al, 1991), biotechnology (Zucker & Darby, 1996), thrift (Haveman & Rao, 1997), chemicals (Hoffman, 1999), finance (Lounsbury, 2002), recycling (Lounsbury, Ventresca & Hirsch, 2003), sports (Washington, 2004), photography (Munir, 2005), and wine (Marshall, Cordano & Silverman, 2005). We therefore operationalized an organization's institutional field based on its industry by 2-digit SIC code. We calculated positive environmental deviance by subtracting the mean score of the industry from the organization's positive environmental practice score. For example, if a firm's positive environmental practice score was 3.00 and the industry's mean score was 1.71, then the organization would have a positive environmental deviance score of 1.29. On the other hand, if the firm's score was 1.00 and the industry's mean score was 1.32, the organizational positive environmental deviance score would be below average at -0.32.

### **Independent Variables**

We lagged independent variables by one year, to allow for changes in environmental practices to take place based on the organizational characteristics in the previous year. Data on board members was aggregated to the level of the firm, making an implicit assumption that the "environmental experience" construct is a collective phenomenon of individual-level board data (Klein & Kozlowski, 2000). We assumed that

our data are configurational and also pooled, but unconstrained (Klein & Kozlowski, 2000). That is, we had no a priori expectation that experiences of directors automatically converge. Although there are significant differences among board members in regards to their environmental experiences, the contribution of one individual can have a substantial impact on organizational practices (Shropshire, 2010). Therefore, we aggregated the individual board data linearly at firm level by taking a sum (Klein & Kozlowski, 2000).

Data on board directors came from BoardEx (Management Diagnostics Limited). The database tracks historical information dating back to the year 2000 on board directors of public and private corporations worldwide. The data contains biographical information on individuals who sit on boards, such as their age, gender, nationality, employment history, current and past board positions, educational background, professional achievements, and so on. We used this data to operationalize two key independent variables for each firm from 2000-2007 (given the one year lag of independent variables): network centrality and environmental experience.

Our purpose for using network effects was to capture influencing social factors of attitudes about environmental strategies. These social influences can be transferred to many recipients in the network at the same time (Borgatti, 2005). Specifically, we captured this process via firms' ties to other firms through interlocking directorships of its board members. This way, we were able to calculate the *degree centrality* and *eigenvector centrality* of a firm. Degree centrality is the number of ties or paths that emanate from one node (Borgatti, 2005) and it defines how much the firm serves as a channel of information (Freeman, 1978/79), capturing short-term influencing effects (Borgatti, 2005). Eigenvector centrality is the score of a node by the score of adjacent

notes (Borgatti, 2005). Eigenvector centrality is a measure of friends-of-friends influences (Scott & Davis, 2007) by looking at ties that are one step removed from the focal firm and captures longer-term influences in the social network (Borgatti, 2005). Using UCINET (Borgatti, Everett & Freeman, 2002) we calculated normalized degree and eigenvector centrality, by year, for each firm. The scores were then centered for the purpose of calculating interaction effects (Aiken & West, 1991).

*Environmental experience* was calculated using BoardEx data on directors' past employment history, board and other positions held, awards and honors received, and other activities. We coded any information that was relevant to environmental experience, following a system of key words similar to that used in other studies assessing environmental information of boards (Berrone & Gomez-Mejia, 2009). First, we searched for key environmental words in the role description of prior positions directors held. Key words include "environment", "ecology", "nature", "sustainable", "remediation", "renewable", "pollution" and "energy". We also searched for variations of these words, for example "ecological" was a variation of "ecology". We then checked the context of role descriptions that were tagged for misrepresentation. For instance, we eliminated all "energy" positions that were not indicative of jobs related to environmental sustainability such as roles in "energy transmission", "energy delivery", "energy systems engineer", or "energy production", etc. Similarly, we eliminated positions to do with "natural gas" that were tagged by searching for "natural". By director and year, we calculated the number of years of work experience in environmental-related roles<sup>1</sup>. Second, we coded awards

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<sup>1</sup> About 30% of roles tagged for "environmental experience" were missing either a start date or end date, or both. We assigned 1 year of experience to these roles to ensure that environmental experience was minimally represented for that director. Thus, our final calculations are likely a conservative account of the actual amount of environmental experience.

and honors directors received using the same key word searches to calculate the total number of environmental awards a director had received. Third, we coded directors' membership, advisory or management role of environmental activities in local community events, foundations, and institutions such as non-government organizations. We calculated the total number of environmental activities in which a director was involved. Fourth, we used the information on director's historical board positions to identify if directors had been members of a board's sub-committee with environmental goals. Dedicated environmental committees not only encourage directors to be extra vigilant (Kassinis & Vafeas, 2002) but sub-committees are also a source of building domain-specific knowledge (Kriger, 1998; Leksell & Lindgren, 1982). Moreover, the influence of individual directors to transfer knowledge may be stronger when directors sit on relevant sub-committees (Shropshire, 2010). We calculated the number of years of experience directors had on environmental sub-committees. The final environmental experience measure was then aggregated to firm-level, for each year of data, by summing all four types of environmental experience.

Various organizational control variables were added to account for firm-specific factors that could affect environmental practices (King & Lenox, 2002): firm performance (Tobin's Q), firm size (number of employees), sales growth (change of sales over the previous year), capital expenditure (logged), leverage (debt/assets), and R&D intensity (R&D expenses/sales). We also included advertising intensity (advertising expenses/sales) since prior work has shown its influence on corporate social

responsibility outcomes (McWilliams & Siegel, 2000)<sup>2</sup>. We further added board controls, at firm-level, that could affect board group dynamics and subsequent decisions made over environmental practices. We controlled for board size since larger boards tend to have more network ties (Goodstein, Gautam & Boeker, 1994) and be less effective at decision making and monitoring (Dalton et al, 1999; Judge & Zeithaml, 1992). We also accounted for CEO duality since such powerful CEOs potentially influence board decisions, although this was not found to be relevant to environmental practices in prior studies (Berrone & Gomez-Mejia, 2009; McKendall, Sanchez & Sicilian, 1999; Post, Rahman & Rubow, 2010). We added board independence, measured as the proportion of outside directors, since more independent boards tend to be more concerned with proactive environmental practices (Post et al, 2011). We further controlled for mean board tenure since boards with longer tenures tend to be more dedicated to standard company practices, rely more heavily on traditions and tend to conform towards values of the leaders (c.f. Kosnik, 1991). Finally, we added year dummies to control for annual differences in environmental practices such as regulations coming into place or economic downturns.

### **Estimation Techniques**

The purpose of our study was to assess main and interaction effects of board characteristics and network effects on positive environmental deviance. Since our dependent variable was a continuous and normally distributed measure, we used least square techniques for estimation for panel data. A Hausman test indicated that fixed effects models were more appropriate (Hausman, Hall & Griliches, 1984). This technique accounts for firm-fixed effects and we therefore did not control for industry differences

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<sup>2</sup> R&D and advertising expenses were missing for many firms. Since such figures are typically disclosed when material, we assumed these expenses were zero if data were missing, and checked the robustness of these results using dummies for missing observations. Results were consistent across all models.

as the model captured these. We conducted several robustness tests to account for the possibility of heteroskedasticity and serial correlation by using robust standard errors and dynamic models that included lags of the dependent variable in the equation. Models that corrected for these issues showed similar results, indicating that our analyses were robust. To interpret and plot the interaction effects, we centered the relevant variables (degree centrality, eigenvector centrality, and environmental experience) prior to including them in the regression (Aiken & West, 1991).

## RESULTS

Table 1 provides an overview of our descriptive statistics. Firm size correlates moderately with capital expenditure and both measures of centrality. In addition, capital expenditure correlates moderately with board size and the centrality measures, and board size correlates moderately with centrality. Larger boards also correlate with more environmental experience. These correlations were anticipated since larger firms tend to have more capital, larger boards and larger networks.

Positive environmental deviance ranged from -1.50 to 3.17, with a mean score of 0.01. Roughly one third of firms had a score above zero, and about eight percent of firms scored higher than one. Thus, we were confident that higher positive environmental deviance was indeed a stronger above-and-beyond practice than the field's (industry) norm. In general, firms in all industries followed this overall pattern<sup>3</sup>.

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<sup>3</sup> Exceptions were the publishing/printing and the railroad industries. In these industries, one firm deviated highly positively compared to the rest of the firms.

Environmental experience of boards ranged from 0-85, and represented a sum of the number of environmental activities (0-21), number of awards (0-5), years of job experience (0-29) and years of serving on dedicated board committees (0-67).

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Insert Table 1 about here  
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We ran our regressions in stages (Table 2). Model 1 represents the base model with only control variables and shows that capital expenditure and board size are significantly negatively associated with positive environmental deviance. Year dummies were not statistically significant in most models, except for the year 2000.

Subsequent models include the direct and interaction effects of the variables of interest. Model 2 shows that degree centrality is negatively associated with positive environmental deviance. This indicates support for Hypothesis 1 that more central firms in the network are less likely to deviate positively from norm environmental practices in the institutional field. In contrast, environmental experience was positively and significantly associated with positive environmental deviance, in support of Hypothesis 2. This suggests that boards with environmental experience are more likely to engage in beyond-compliance environmental practices. These centrality and experience effects are replicated in Model 4 when eigenvector centrality is used. In both cases, the models increase in variance explained over the base model from 2.2% to 7.3% in Model 2 and 6.4% in Model 4.

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Insert Table 2 about here  
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Models 3 and 5 show that the interaction effect between centrality and environmental experience is positive and statistically significant, in support of Hypothesis 3. The interaction effect explains additional variance, increasing the R-square to 7.5% in Model 3 and 7.0% in Model 5. We plotted the interaction effects of both degree and eigenvector centrality with environmental experience (Figures 1 and 2) using one standard deviation from the mean for “low” and “high” values of centrality and experience. The plots show that firms who are more highly centralized, whether captured as an immediate or long-term social network effect, deviate less positively than firms on the periphery of the network. However, when boards have increased environmental experience the firm has a higher level of positive deviation than when environmental experience is low, even when network centrality is high. In contrast, firms with low environmental experience on their boards have much lower positive environmental deviance in the context of high degree and eigenvector centrality. A test of the simple slopes (Aiken & West, 1991) confirms these results. Thus, our results find support for all three hypotheses.

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Insert Figures 1 & 2 about here  
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## DISCUSSION

This work explored the extent to which the board of directors, as a boundary spanning and central governance function of the organization, acts as an agentic body to resist institutional pressures that lead to organizational conformity. We found that the past environmental experience of the board plays a critical role in allowing organizations



to deviate positively in their environmental practices, whereas the centrality of an organization's location in the institutional network, through the interlocking directorships of its board members, increases conformity. Yet, even when network pressures to conform were strong, a board with high experience could incite a company to deviate positively from its peers. This behavioral role of the board appears to be critical in understanding corporate environmental behavior, while many structural elements of boards, such as CEO duality, board independence, and board tenure, were not found to be significant in our work. Thus, while organizational behavior is certainly affected by the institutional environment (Bansal & Penner, 2002), the framing, interpretation, attention, and sensemaking of issues within organizational bodies (Dutton & Duckerich, 1991; Hoffman & Ocasio, 2001; Hoffman & Ventresca, 2002; Scott, 1995) matters significantly.

Our findings support previous theoretical work that discusses the importance of the board's mediating role for corporate governance and environmental performance that goes beyond a strictly principal-agency relationship (Lan & Heracleous, 2010; Walls et al, 2012). By adopting a behavioral governance lens, we were able to determine that past experience and networks of boards are important socio-psychological considerations in capturing the real-world corporate governance complexities (Hambrick et al, 2008; Lubatkin, 2007). In recognizing that cognitive influences affect organizational interpretations of field pressures, our findings provide deeper insights into heterogeneous organizational responses in similar institutional contexts (DiMaggio & Powell, 1991; Milstein et al, 2002).

Understanding how organizations become "more sustainable" has important theoretical and practical implications. Theoretically, we add to research in environmental

management (Ehrenfeld, 2008; Hart, 1995) and positive organizational scholarship (Hoffman et al, 2011). Practically, our work provides insight into why some organizations adopt above-and-beyond environmental practices and others do not, even when most organizations now have designed board committees to oversee strategic and advanced sustainability initiatives. Our paper offers some clues as to when such actions are substantive rather than symbolic: appointing directors that have environmental experience is necessary if firms truly wish to deviate positively from normative environmental standards and critical if the organization is deeply embedded in the network field. More generally, as recent social movements such as Occupy Wall Street have elevated social responsibility and “good” corporate governance in the corporate agenda, our work points out that the composite experience of the elite group of people who sit on boards can decide the organization’s accountability and posture on social and environmental issues.

We acknowledge that our work has several limitations. Our study analyzes large, U.S. firms in “dirty” industries. Extrapolation of the results to small and medium sized enterprises, service industries, and firms in other institutional settings may not be meaningful. A second limitation is that we did not measure group dynamics of boards. We made an explicit assumption that the individual experiences of board members would have a cumulative effect at the organizational level (Klein & Kozlowski, 2000; Shropshire, 2010) and that boards would collectively interpret information from the external environment and make decisions jointly. Inter-personal dynamics must certainly be accounted in future studies. Third, our data did not lend itself to analyzing underlying micro-processes of interpretation, or sensemaking of individuals and/or organizational

groups (Daft & Weick, 1984; Maitlis, 2005; Powell & Colyvas, 2008; Weick, 1979; 1995). While we can say something about how the collective environmental experience of the board of directors is associated with organizational environmental deviance, we stop short of investigating more refined interactions between micro- and macro-level processes.

Future research could further explore the role of board experience, not only by developing a cognitive understanding of the organization's internal and external environments (sensemaking), but also through "sensegiving" by disseminating that re-interpreted institutional environment to stakeholders and influencing organizational action (Gioia & Chittipeddi, 1991). Prior research has established that the role of directors is important in sensegiving activities such as raising issues, questioning assumptions, testing ideas, advising caution, and offering encouragement (McNulty & Pettigrew, 1999). In the context of environmental sustainability, the level of ecological expertise crucially determines noticing, bracketing, understanding and acting on complex ecological processes that cross space and time (Whiteman & Cooper, 2011) such as climate change or ecosystem destruction. Our work focused on the experience of board directors, but the ecological embedded knowledge of other organizational bodies such as senior management, functions responsible for supply chain relations or operational management might also aid organizations to deviate positively in their actions.

Our work is but a first step towards furthering the field of behavioral governance. Hambrick and colleagues (2008) suggest many avenues of research in this direction that are well beyond the scope of our work. For instance, it would be interesting to consider the interactions of a director's experience and his or her influence or power over the

board and top management team. In other words, can one individual with enough experience and power sway the entire organization into a particular direction? And what other moderating or mediating effects exist? Recent work suggests that even the context of the board meetings could play an important role in how much attention is paid to particular issues (Tuggle et al, 2010).

Other board characteristics, such as members' attitudes towards the environment, may also be relevant. These could be measured via survey-techniques using environmental attitude scales such as the "New Ecological Paradigm" (e.g. Dunlap et al, 2000) or underlying values orientations (e.g. Stern, Dietz & Kalof, 1993). We suspect that firms whose boards have stronger pro-environmental attitudes would be more likely to deviate positively in terms of environmental practices, and that the centrality and interaction effects would behave similarly as our findings for environmental experience.

Finally, this paper focuses on positive organizational deviance because we were interested in understanding the intra-organizational and contextual factors that enable companies to "do well by doing good". But it may be equally interesting to assess what spurs companies to behave environmentally "worse" than others. Deviance can be both negative and positive and there is no reason to assume that the mechanisms in one domain will also be present in the converse domain. We believe that a behavioral governance perspective could be equally relevant for explaining negative organizational deviance, in that board directors with certain types of experience might interpret information differently and rationalize such organizational behavior, beyond what institutional pressures can explain.

## CONCLUSION

The institutional literature has often been criticized for being under-socialized; paying insufficient attention to the role of agency (or deviance) and the role of filtering processes among organizational decision-makers. This study seeks to bring people back in (Hirsch & Lounsbury, 1997), offering an explanation for positive deviance from institutional norms that is driven by powerful members of the organization, those that reside within leadership roles in the board of directors. These members, and the networks of which they are part, determine which institutional norms are attended to, interpreted and acted upon. In this way, institutional norms, at times seen as creating isomorphism, can in fact be interpreted in different ways by different constituents across the field. By ignoring the role that organizational bodies play in this interpretation process and the distinct aspects by which they play them, we fail to recognize the determinants of positive deviants in any community. These deviants are often the source of innovation, energy and change within institutional fields.

This insight is particularly important for those that study institutional change around environmental sustainability. Corporations are the most powerful entities in today's market, political and social environments. Solutions to contemporary environmental issues (e.g. climate change, water scarcity, species extinction, ecosystem destruction) can only be found and implemented through the actions of those within the corporate sector. Seeking strictly policy approaches for stimulating pro-environmental behavior within this population of organizations focuses attention on the lowest common denominator for establishing standards for motivating positive deviance. This paper draws attention to the behavior of more innovative organizations – those that seek to go

beyond such institutionalized policy pressures to engage in new practices that meet today's pressing environmental problems. Indeed, the actions of these kinds of positive deviants is arguably the only way we will make advances in environmental sustainability, moving away from incremental approaches for being "less unsustainable" and towards more radical approaches to being "more sustainable" (Ehrenfeld, 2008).

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Table 1: Correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Positive Env'tal Deviance	0.01	0.74												
2 Tobin's Q	1.49	1.52	-0.07											
3 Firm Size	36.79	46.65	0.21	-0.03										
4 Sales Growth	10.84	28.65	-0.05	0.19	-0.05									
5 Capital Expenditure	5.94	1.38	0.27	-0.15	0.45	0.01								
6 Leverage	0.27	0.14	-0.04	-0.31	-0.10	-0.03	0.06							
7 Board Size	11.03	2.31	0.18	-0.10	0.34	-0.04	0.42	0.09						
8 CEO duality	0.74	0.44	0.04	-0.04	0.11	-0.01	0.11	0.04	0.02					
9 Board Independence	0.85	0.08	0.05	-0.18	-0.02	-0.06	0.12	0.13	0.15	0.10				
10 Board Tenure	7.80	3.34	0.08	0.13	-0.01	-0.07	-0.09	-0.10	-0.01	-0.01	-0.20			
11 Degree Cent	0.00	0.93	0.26	-0.01	0.47	-0.10	0.39	0.01	0.46	0.17	0.15	-0.04		
12 Eigenvector Cent	0.00	4.94	0.28	0.03	0.49	-0.07	0.41	-0.02	0.40	0.14	0.12	-0.04	0.92	
13 Environmental Experience	0.00	13.09	0.25	-0.14	0.16	0.00	0.37	0.07	0.37	0.09	0.23	-0.06	0.37	0.40

n = 1,881

Correlations of 0.04 and above are significant at  $p < 0.05$

Table 2: Fixed Effects Regression Models for Positive Environmental Deviance

	Model 1	Model 2	Model 3	Model 4	Model 5
Tobin's Q	-0.015	-0.018	-0.016	-0.019	-0.016
(s.e.)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Firm Size	0.002	0.002†	0.002	0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sales Growth	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Capital Expenditure	-0.115**	-0.117**	-0.111**	-0.118**	-0.109**
	(0.032)	(0.031)	(0.031)	(0.031)	(0.031)
Leverage	-0.286†	-0.196	-0.206	-0.185	-0.190
	(0.167)	(0.163)	(0.163)	(0.164)	(0.164)
Year Dummies	Incl.	Incl.	Incl.	Incl.	Incl.
Board Size	-0.022*	-0.018†	-0.017†	-0.026**	-0.023*
	(0.009)	(0.010)	(0.010)	(0.009)	(0.009)
CEO duality	0.032	0.014	0.015	0.018	0.018
	(0.034)	(0.033)	(0.033)	(0.034)	(0.034)
Board Independence	0.207	0.235	0.246	0.210	0.235
	(0.258)	(0.252)	(0.252)	(0.253)	(0.252)
Board Tenure	0.003	-0.007	-0.007	-0.006	-0.007
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Degree Centrality		-0.143**	-0.145**		
		(0.031)	(0.031)		
Environmental Experience		0.016**	0.015**		
		(0.002)	(0.002)		
Degree*Experience			0.003*		
			(0.002)		
Eigenvector Centrality				-0.015*	-0.020**
				(0.006)	(0.006)
Environmental Experience				0.017**	0.014**
				(0.002)	(0.002)
Eigenvector*Experience					0.001**
					(0.000)
Constant	0.815*	0.725*	0.674*	0.852**	0.753*
	(0.317)	(0.313)	(0.313)	(0.313)	(0.313)
R-Square	0.022	0.073	0.075	0.064	0.070

n = 1,881

Two-tailed t-tests: † p<0.10, \* p<0.05, \*\* p<0.01