Scrutiny, Norms, and Selective Disclosure:
A Global Study of Greenwashing

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Under increased pressure to report environmental impacts, some firms selectively disclose relatively benign impacts, creating an impression of transparency while masking their true performance. What deters selective disclosure and leads firms to instead make disclosures more representative of their environmental performance? We identify key company- and country-level factors that, by intensifying scrutiny on firms and diffusing global norms to their headquarters countries, limit firms' use of selective disclosure. We test our hypotheses using a novel panel dataset of 4,750 public companies across many industries and headquartered in 45 countries during 2004-2007, when the practice of environmental disclosure increased among many global corporations. Our results show that firms that are more environmentally damaging, particularly those in countries where they are more exposed to scrutiny and global norms, are less likely to engage in selective disclosure. We contribute to institutional theory by identifying selective disclosure as a corporate symbolic strategy and by revealing how scrutiny and norms limit this symbolic behavior.

Distinguishing organizations' responses to institutional demands as being substantive or symbolic is a classic topic in organizational theory (Meyer & Rowan, 1977). For example, studies have revealed many instances of decoupling, where corporations publicly announce—yet do not actually implement—activities demanded by stakeholders (Westphal & Zajac, 1994, 1995, 2001). Companies have also symbolically responded to institutional demands by creating their own corporate governance standards, developing voluntary self-regulation programs, and bolstering their social image (McDonnell & King, 2013; Okhmatovskiy & David, 2012; Sasser et al., 2006). Yet despite much evidence that firms engage in symbolic behavior, there are persistent calls for a "richer conceptual understanding of how, when, and why" firms engage in this behavior (Bromley & Powell, 2012: 485; Scott, 2001).

In this paper, we examine two important and relatively unstudied aspects of organizational symbolism. First, we introduce the concept of *selective disclosure* as a form of symbolic behavior whereby firms seek to gain or maintain legitimacy by disproportionately

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revealing beneficial or relatively benign performance indicators to obscure their less impressive overall performance. While some prior work suggests that organizations may seek to attain legitimacy by strategically revealing positive information and concealing negative information (Abrahamson & Park, 1994; Oliver, 1991; Pfeffer, 1981), little is known about selective disclosure as a practice more generally. We examine an important type of selective disclosure often referred to as "greenwashing," a symbolic action whereby companies promote "environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savory activities" (Webster's New Millennium Dictionary of English, 2009). We consider greenwashing to be a type of selective disclosure because it entails revealing positive environmental actions while concealing negative ones to create a misleadingly positive impression of overall environmental performance (Delmas & Burbano, 2011).

Second, we analyze how symbolic behavior is tempered by multi-level institutional processes associated with organizations' activities and with key civil society attributes. As Scott (2001) notes, while there are many studies revealing the presence of symbolic action, few have explored the conditions under which organizations engage in such activities. At the organizational level, we describe how particular organizational characteristics such as environmental performance and foreign exposure are likely to expose the company to greater scrutiny and global norms on transparency and thus influence its responsiveness to civil society pressure. We also hypothesize that companies will be dissuaded from engaging in selective disclosure in countries where activism is more feasible and where there is more normative pressure resulting from greater diffusion of environmental information. Furthermore, we predict that a company's poor environmental performance will accentuate the deterrence effect of these institutional characteristics. We test our hypotheses using company- and country-level data to

analyze the environmental reporting practices of 4,750 large publicly traded companies headquartered in 45 countries during the years 2004-2007, a period when firms faced increasing pressure to report their environmental impacts (KPMG, 2008). We find empirical evidence to support most of our hypotheses.

Understanding how organizational factors, institutional pressures, and interactions between them affect selective disclosure has important implications for several literatures. Theoretically, our results enable researchers to build a more complete and generalizable model of organizational symbolic processes, addressing Scott's (2001) call for a greater understanding of the determinants of organizational symbolism. Our identifying selective disclosure as a corporate strategy is particularly timely and important given Bromley and Powell's (2012) assertion that the recent transparency and accountability movements have led to organizational symbolism being more widely deployed today than at any time in the past. Our research also contributes to the literature on information disclosure that has mainly focused on the decision of whether to voluntarily disclose rather than on how accurately the disclosed information conveys overall performance (Jira & Toffel, 2013; Kolk, 2004; Short & Toffel 2008). Our empirically examining the representativeness of firms' environmental reporting also advances the largely theoretical literature on greenwashing (e.g., Delmas & Burbano, 2011; Lyon & Maxwell, 2011). Finally, given growing managerial and governmental interest in understanding companies' environmental practices and performance, our findings also have important implications for practice.

SELECTIVE DISCLOSURE IN ENVIRONMENTAL REPORTING

Companies have faced growing pressure over the past decade to be more transparent in reporting their environmental impacts. A growing number of stakeholders—including investors, consumers, governments, and corporate customers—are concerned that assessing organizational

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performance requires a more holistic picture than financial indicators can provide, and have increasingly sought to convince companies to disclose information about their environmental and social performance (Eccles & Krzus, 2010; Elkington, 1998; Jira & Toffel 2013). As a result of this trend, the number of companies worldwide that have voluntarily issued corporate environmental or sustainability reports has increased dramatically since such reports first appeared in 1989. Yet, the pace of growth has varied substantially across countries, resulting in nearly all of the 100 largest companies in Japan and the United Kingdom having issued environmental reports by 2008, more than 75 percent of such companies in the United States having done so, and much lower figures in many other countries (Kolk, 2004; KPMG, 2002, 2005, 2008).

An important unresolved question of theoretical and practical importance is whether the increasing prevalence of environmental information disclosure implies an increase in actual corporate transparency and accountability or merely in symbolic actions. Research several decades ago theorized that the corporate practice of keeping "secret the information that might be necessary or useful for evaluating organizational results" was commonplace (Oliver, 1991; Pfeffer, 1981: 30). For example, Abrahamson and Park (1994) found that corporations avoid disclosing negative financial information unless they are actively monitored by their boards and investors.   More recently, however, Bromley and Powell's (2012: 483) review of firm symbolic strategies concluded that "[t]he pervasive spread of rationalizing trends in society, such as the ... increasing emphases on accountability and transparency, has [led to] growing pressure on organizations to align their policies and practices, and to conform to pressures in an expanding array of domains." Yet substantial variation persists in the content and comprehensiveness of corporate environmental reports (Kolk, 2004; Marquis & Qian, 2013) and prior research suggests

that firms' social and environmental actions are frequent areas of symbolic action. For instance, products alleged to cause breast cancer have nonetheless been labeled with pink ribbons to convey their manufacturers' support for breast cancer research (Breast Cancer Action, 2011). And some companies participating in the United Nations Global Compact have been accused of "bluewashing" by affiliating with the United Nations brand and the Compact's lofty principles in order to deflect attention from less savory management practices (Deva, 2006; Williams, 2004). In addition, greenwashing, the focus of our study, is portrayed as a common type of selective disclosure whereby firms "mislead consumers about their [actual] environmental performance" (Delmas & Burbano, 2011: 64) to create a false impression of transparency and accountability. But it still remains an open question whether the increasingly pervasive environmental reporting represents greater accountability or greater symbolic action in the form of greenwashing.

THEORY AND HYPOTHESES: ORGANIZATIONAL AND INSTITUTIONAL FACTORS THAT DETER SELECTIVE DISCLOSURE

To understand the organizational processes underlying the extent to which corporate environmental information disclosures represent authentic or selective disclosure, we hypothesize a set of factors that heighten companies' exposure to scrutiny and global environmental norms, both of which we theorize lessen firms' propensity for selective disclosure. While prior research has focused on how governmental attention may reduce firms' symbolic action (e.g., Marquis & Qian, 2013; Short & Toffel, 2010), no prior work, to the best of our knowledge, has examined the effects of firms' more general institutional environments— including civil society—on the likelihood of firms engaging in organizational symbolism.

Building on prior research on institutional and activist pressure on organizations (e.g., Bartley & Child, 2011; King, 2008; Reid & Toffel, 2011), our theory and hypotheses identify

two distinct mechanisms—scrutiny and diffusion of global norms—that limit firms' symbolic activity. In our theory below, we argue that firms' characteristics increase the likelihood they are exposed to these mechanisms. For example, environmentally damaging firms will attract more scrutiny, which then limits their selective disclosure. Furthermore, we examine how these effects of companies' characteristics may vary depending on civil society processes in firms' headquarters countries that make it more likely they will experience scrutiny and be exposed to new global norms, making these issues more salient for corporate leaders. We focus on the countries of firms' corporate headquarters because this is the institutional environment not only of most senior manager decision-makers, but also of board members and shareholders who attend annual meetings. Thus, headquarters location is likely the institutional environment with the most influence on corporate decisions (Guler, Guillén, & Macpherson, 2002).

Scrutiny and Selective Disclosure

Researchers have offered conflicting theory and predictions on whether firms with strong environmental performance are more or less prone to engage in selective disclosure than weak performers. On the one hand, higher-performing firms might be less likely to engage in selective disclosure because they have less to hide. Instead, comprehensively disclosing their environmental performance can legitimately convey their superior environmental position to stakeholders. Supporting this argument, the accounting literature suggests that firms are motivated to voluntarily disclose only information that bolsters their reputations, a notion that Dye (2001: 184) describes as the central premise of "the theory of voluntary disclosures." Pursuant to this theory, poorly performing firms would engage in selective disclosure by disclosing only those environmental indicators that enhanced their reputations while cloaking the others. As a result, the selective information disclosed would paint a more positive picture than

would emerge if more comprehensive information were disclosed.

On the other hand, research suggests that firms with lower environmental performance are subjected to greater scrutiny, which we assert would dissuade them from engaging in selective disclosure. Several studies have shown that organizations' greater visibility leads them to comply with institutional demands because they are likely to receive more attention and hence pressure from a variety of external sources (Bansal & Roth, 2000; den Hond & de Bakker, 2007; King, 2008; King & Soule, 2007; Rehbein, Waddock, & Graves, 2004). For example, oil companies with low corporate social responsibility (CSR) ratings attracted more attention when oil spills occurred, perhaps because their low performance made them more visible and thus their negative events more newsworthy (Luo, Meier, & Oberholzer-Gee, 2012). The corporate environmental disclosure literature suggests that companies with lower environmental performance are subjected to greater external pressure and are more likely to comply with institutional pressures to voluntarily disclose environmental information (Alnajjar, 2000; Berthelot, Cormier, & Magnan, 2003; Cho & Roberts, 2010; Short & Toffel 2008).

Such scrutiny dissuades companies from selective disclosure because getting caught at such misrepresentation can significantly damage their reputations (Lyon & Maxwell, 2011). Thus, because firms with worse environmental performance will be subjected to—or fear being subjected to—greater scrutiny from civil society, we hypothesize that such firms will be more likely to fully and accurately disclose their environmental impacts and thus less likely to engage in selective disclosure.

Hypothesis 1 (H1): Companies with worse environmental performance will exhibit less selective disclosure.

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The institutions in which firms are situated can also exert scrutiny that deters them from engaging in selective disclosure. Institutions that mobilize action and the ability of actors to speak up pose fairly immediate threats to the legitimacy of firms that seek to engage in selective disclosure. In our context, examples abound of such scrutiny; for instance, when countries and NGOs organize to address global environmental issues, such as United Nations conventions that protect stratospheric ozone and international fisheries and seek to prevent climate change.

While prior approaches have mainly focused on measuring activism directly (e.g., King, 2008), we hypothesize that country-level institutional features will bolster civil society pressure on firms to disclose more comprehensive environmental information and thereby refrain from selective disclosure. The key features we examine include the presence of activists and legal protections afforded to civil and political rights. We also hypothesize that each of these institutional features will accentuate the tendency for more visible firms—in our context, those with poor environmental performance—to avoid engaging in selective disclosure.

Civil society's ability to mobilize. Significant research has shown that social activists' influence on corporate behavior relies ultimately on collective action and engagement, citizen pressure, and sometimes consumer boycotts (King & Pearce, 2010). Evidence indicates that companies' strategies and management practices are influenced by a wide array of collective action by activists (Eesley & Lenox, 2006; King, 2008; Lenox & Eesley, 2009; O'Mahony & Ferraro, 2007; Reid & Toffel, 2009; Weber, Rao, & Thomas, 2009). Activism focused on companies' environmental issues has been shown to improve environmental performance (e.g., Chatterji & Toffel, 2010; Delmas & Toffel, 2008; Lounsbury, 2001). Similarly, several major global apparel makers, seeking to avoid a "sweatshop stigma" that activists threatened to impose (Bobbin, 1997), adopted voluntary codes of conduct and internal compliance-monitoring

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programs (Bartley, 2007; Chatterji & Levine, 2006).

Crucial to civil society's potential to influence company behavior is the ability to organize "collective vehicles … through which people mobilize and engage in collective action" (McAdam, McCarthy, & Zald, 1996: 3). For many movements, the local presence of NGOs has been shown to be a key organizational mechanism of citizenry mobilization and activism (e.g., Sine & Lee, 2009; Tsutsui & Wotipka, 2004), magnifying individual voices to intensify the pressure on companies. Because citizen mobilization can deter unsavory activities, we hypothesize that a greater presence of environmental NGOs in a country will provide or threaten greater civil society scrutiny over company practices, which will deter companies from engaging in selective disclosure.

Hypothesis 2a (H2a): Companies headquartered in countries with more environmental nongovernmental organizations will exhibit less selective disclosure.

Activists are more likely to influence company behavior when they attract media attention to their cause because media coverage intensifies societal attention (Briscoe & Murphy, 2012; King, 2008). This often leads activists to consider potential media coverage when they select which companies to target for scrutiny, which often leads them to select the most visible companies as well as those struggling with the issues the activists are concerned about (Rehbein, Waddock, & Graves, 2004). This would lead environmental activists to target for scrutiny those companies with poor environmental performance. Institutional settings possessing strong civil society defenders of particular norms pose a particular threat to firms whose behaviors already stretch the boundaries of legitimacy. In our context, this suggests that institutional settings with strong environmental activist pressures, such as those with many environmental NGOs, compound the risk of scrutiny over companies with poor environmental performance. This

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makes such companies even more likely to avoid engaging in selective disclosure regarding their environmental performance.

Hypothesis 2b (H2b): Companies with worse environmental performance will exhibit particularly low levels of selective disclosure when headquartered in countries with environmental nongovernmental organizations.

Civil society's ability to speak up. We propose that strong civil liberties and political rights are critical components that enable civil society scrutiny to influence companies to avoid engaging in selective disclosure regarding environmental performance. Actors seeking to enforce global norms of accountability and environmental transparency rely on the ability to speak up in order to pressure companies to conform. Most prior studies have examined the effects of speech on action in settings with strong institutions that protect those seeking to engage in collective action and where the ability to speak up is taken for granted (King & Pearce, 2010). Strong civil liberties and political rights secure the ability of civil society actors to voice criticism based on their scrutiny of corporate behavior, to take social action, and to lobby for political support when companies violate global norms. Such ability to criticize and take meaningful social and political action is far less secure in regimes that do not afford these rights. Discussing "civic environmentalism," Steinberg (2002: 26) argued that the "challenges of sustained collective action are compounded when … the expression of dissenting views [is] considered a threat by state authorities." Because the extent of civil liberties and political rights afforded to civil society actors affects their ability to scrutinize corporate action, these institutional features will also affect the extent to which companies will engage in selective disclosure.

Hypothesis 3a (H3a): Companies headquartered in countries with strong civil liberties and political rights will exhibit less selective disclosure.

In settings where greater civil liberties and political rights facilitate the ability to speak up, corporate leaders of companies with worse environmental performance will be especially

concerned that selective disclosure would be exposed by the local press or civil society actors (Campbell, 2005; King, 2008). The environmental activities of firms with poor environmental performance are likely to be especially salient to civil society actors (Lyon & Maxwell, 2011). Because the scrutiny that civil society actors impose on low-performing firms is particularly acute in such settings, such firms will be keen to avoid reporting their environmental activities in a potentially misleading manner.   Thus, we propose that firms with poor environmental performance will be especially unlikely to engage in selective disclosure when headquartered in countries that provide greater civil liberties and political rights.

Hypothesis 3b (H3b): Companies with worse environmental performance will exhibit particularly low levels of selective disclosure when headquartered in countries with strong civil liberties and political rights.

Information Diffusion and Normative Expectations Regarding Selective Disclosure

As the networks linking countries, organizations, and individuals expand and intensify, the global norms of information disclosure and transparency have become more widely disseminated (Drori, Jang, & Meyer, 2006; Ventresca, 1995). We examine two different processes by which firms can be influenced by the diffusion of global norms. First, firms headquartered in domains where civil society is more exposed to global norms face growing pressures to avoid engaging in behaviors that contradict these global norms. While the previously hypothesized activism mechanism relies on coercion through the threat of NGO and political activism, an information diffusion mechanism relies on firms adapting to global norms as they become more aware of these global trends. Second, beyond being situated in institutional contexts well connected to global society, companies also learn about global trends such as environmental disclosure through their business operations that are directly connected to the global society, including foreign financial governance rules and foreign consumers.

Civil society's exposure to global norms. A population's exposure to new ideas and norms from other countries is a complex process that can result from international trade, employment of foreigners, interactions with foreign embassies and consulates, information flows such as Internet access and international telephone traffic, and international tourism.[1] Such information diffusion mechanisms are important to understand because the globalization of societies is "mediated through a variety of flows including people, information and ideas, capital and goods" (Dreher, 2006: 1092). Such exposure brings about a "norm cascade" found in many contexts, whereby a norm diffuses across international borders, becomes taken for granted, and influences the activities of individuals and organizations around the world (Risse-Kappen, Ropp, & Sikkink, 1999; Sunstein, 1997). Research has also shown that the diffusion of global norms is particularly likely among a country's elite, including corporate executives, because of their greater likelihood of being in global networks (Reimann, 2002). Thus, we argue that to the extent that a country's civil society is exposed to global norms, such as the global trend of increasing expectations of corporate accountability and corporate environmental transparency, these issues will become more salient to corporate leaders, resulting in their being more reluctant to engage in selective disclosure.

Hypothesis 4a (H4a): Companies headquartered in countries more connected to global civil society will exhibit less selective disclosure.

Our argument immediately above is based on the idea that access to global information trends affects societal normative expectations of firms (Guler, Guillén, & Macpherson, 2002). Such information will be particularly influential for companies with lower environmental performance because they are likely more aware of their environmental impacts and, in particular,

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[1] To foreshadow our empirical approach, we measure the global exposure of a country's citizenry through a widely used index designed for this purpose (Dreher, 2006).

of the risks of their operations, making them even more likely than the average firm to temper their selective disclosure. Because managers of particularly visible firms are thought to view themselves as being especially vulnerable to future critique (Bartley & Child, 2011), we predict they will be more attuned to environmental issues in global society and be more likely than managers of average organizations to view information about global environmental norms as potentially threatening.

Hypothesis 4b (H4b): Companies with worse environmental performance will exhibit particularly low levels of selective disclosure when headquartered in countries that are more connected to global society.

Corporate internationalization. Another key process that affects a company's recognition of global norms such as environmental disclosure is the extent to which its business operations are directly connected to the global society. In this section, we hypothesize how this information diffusion process influences organizations through two channels: investors and consumers from foreign institutional environments.

A key way companies connect to the global society is to list their shares on foreign stock exchanges. In so doing, they are exposed to more stringent reporting requirements regarding governance and financial matters (Davis & Marquis, 2005). Foreign listings typically require companies to be more transparent about their accounting policies, board and management structure, and ownership structure (Khanna, Palepu, & Srinivasan 2004). These heightened transparency standards, which are audited and legally enforced, require companies to more comprehensively report and accurately convey their financial indicators. Not only do such companies face fewer opportunities to engage in selective disclosure in corporate financial reporting, but they also gain exposure to norms and practices valuing more comprehensive transparency.

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We argue that this exposure to heightened standards and transparency norms will influence managerial decisions well beyond the regulated issues in the issuing locale. In a sense, there will be a spillover effect whereby the company learns that more stringent standards exist and recognizes that it may face more stringent requirements and scrutiny in the future. Davis and Marquis (2005), for instance, showed how such global exposure increased the likelihood that international firms adhered to U.S. practices of voluntarily disclosing some governance information. Through this process, many managers of foreign-listed corporations will come to internalize norms and practices of transparency as a legitimate and appropriate behavior expected of companies, making it less likely for them to engage in selective disclosure.

Hypothesis 5 (H5): Companies listed on foreign stock exchanges will exhibit less selective disclosure.

Customers in different countries often differ in their expectations of what constitutes legitimate corporate behavior. Several studies have suggested that greater exposure to international consumer markets leads firms to become more environmentally and socially responsible. Because of the need to satisfy more diverse stakeholders, companies serving clients in multiple countries engage in more CSR activities than those merely serving their home country (Chapple & Moon, 2005). For instance, Laudel (2011: 240) argues that geographic expansion increases "the risk of a confrontation with NGOs and public institutions in charge of monitoring business practices." Thus, even if such actors are not present in their home country, such experience raises corporate leaders' awareness and so heightens the perceived need to adopt social and environmental activities. Firms with greater exposure to international markets will have greater exposure to global norms about social and environmental activities, which, we argue, will lead them to exhibit lower levels of symbolical transparency.

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Hypothesis 6 (H6): The more dependent companies are on foreign markets for their sales, the less they will exhibit selective disclosure.

DATA AND MEASURES

Sample

To test our hypotheses, we gathered data on 4,750 publicly traded companies, headquartered in 45 countries, listed on the following major stock indices during 2004-2007: ASX 200, FTSE All Share (and subsets including FTSE 100 and FTSE 350), MSCI All World Developed (and subsets including MSCI Europe), MSCI Asia ex Japan, MSCI Emerging Markets, Nikkei 225, Russell 1000, S&P 500, and S&P Emerging Markets. This sampling frame was determined by the coverage of Trucost Plc, an organization from which we purchased data to construct our measures of selective disclosure and environmental performance, as described below. Trucost was established in 2000 to develop a more sophisticated approach to calculating the environmental impacts of company operations, supply chains, and investment portfolios. Trucost sells its analyses to companies, investors, governments, and academics and other researchers. Since its inception, the annual *Newsweek* Green Rankings has used Trucost data to assess companies' environmental impacts.[2]

The distributions of industries and headquarters countries for the companies in our sample are reported in Tables 1 and 2, respectively.

[Insert Tables 1 and 2 about here]

Dependent Variable

Our dependent variable, *selective disclosure magnitude,* represents the extent to which companies risk creating a misleading impression of transparency and accountability by

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[2] For more information on Trucost, see http://www.trucost.com/what-we-do.

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disclosing relatively benign environmental metrics rather than those more representative of their

overall environmental harm. This is a form of greenwashing because it involves a company

conveying accurate but selective environmental information that creates a misleading impression

of its overall environmental performance (Delmas & Burbano, 2011; Lyon & Maxwell, 2011).

Selective disclosure magnitude is calculated as the difference between two ratios that Trucost

developed to assess companies' environmental transparency; that is, *absolute disclosure ratio*

minus *weighted disclosure ratio*.[3] The Appendix describes the construction of *selective*

disclosure magnitude in more detail and further information about Trucost's methodology is

available from Trucost (2008) and SustainAbility (2013).

Briefly, the *absolute disclosure ratio* is the proportion of relevant environmental

indicators for which a company publicly discloses quantitative worldwide figures. The

denominator of this ratio is the number of environmental indicators relevant to a particular

company based on the industries in which it operates. Trucost identifies this relevant set for each

company based on data from pollution release and transfer registries, economic input-output

models, and company reports. This data-driven approach differs substantially from that of most

environmental, social, and governance (ESG) rating agencies, which instead tend to focus on a

subset of indicators that reflect the agency's cultural norms, ideological preferences, and

competitive position vis-à-vis other rating agencies. The *absolute disclosure ratio*'s numerator is

the number of these indicators that the company publicly discloses in, for example, its annual

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[3] This formula results in *selective disclosure magnitude* equaling 0 when a firm's *absolute disclosure ratio* equals its *weighted disclosure ratio*, which occurs when firms disclose no indicators (when both ratios equal 0), all of their indicators (when both ratios equal 1), or when the ratios take on identical intermediate values. Each of these scenarios represents the lack of misrepresentation. Because some might assume stakeholders would make different inferences based on the absence of disclosure compared to full disclosure, as a robustness test we reestimated our models, omitting observations corresponding to the absence of any disclosure (when both ratios equal 0). The results were nearly identical and supported the same hypotheses as our primary results, with one exception: The marginally significant primary result supporting H3c was no longer statistically significant.

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reports, regulatory filings, and corporate website.

The *weighted disclosure ratio* takes this concept a step further by incorporating the extent of environmental impact associated with each environmental indicator. Suppose Companies A and B are otherwise identical, but Company A discloses only the 10 least damaging indicators out of 20 and Company B discloses only the 10 most damaging out of 20. They will share the identical *absolute disclosure ratio* but Company B's *weighted disclosure ratio* will be higher than that of Company A, reflecting that Company B is disclosing more important information. In short, the *absolute disclosure ratio* reflects how many of the relevant environmental indicators were disclosed—regardless of their relative importance—and the *weighted disclosure ratio* shows how much of the most important information was disclosed.

When a company's *absolute disclosure ratio* exceeds its *weighted disclosure ratio*, *selective disclosure magnitude* is a positive value, which indicates that the company disclosed relatively less harmful indicators; that is, it is engaging in more selective disclosure.[4] Selective disclosure *magnitude* approaches its maximum value of 1 when a company discloses many of its less harmful indicators but few if any of its more harmful indicators. Such a company could easily create the impression of transparency while in fact hiding quite a lot. In contrast, a company disclosing just a few indicators that matter most in terms of environmental harm will have a *selective disclosure magnitude* tending toward the minimum value of -1.

A brief example is illustrative. Consider a railroad company whose activities, according

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[4] For example, a steel manufacturer or cement producer that discloses only its greenhouse gas emissions—the dominant environmental impact in those highly energy-intensive industries—is likely to have a low *absolute disclosure ratio* but a high *weighted disclosure ratio*, resulting in a low *selective disclosure magnitude*. It is keeping a lot undisclosed, but is disclosing the most damaging indicator. In contrast, a mining company that discloses most of its pollution release into the air, water, and land but omits some or all of the most environmentally burdensome pollutants in that industry (such as ammonia, arsenic, and cyanide) will have a high *absolute disclosure ratio* but a lower *weighted disclosure ratio*, resulting in a low *selective disclosure magnitude*. It is disclosing a many indicators, but keeping the most important ones undisclosed.

to Trucost's sophisticated model, resulted in 27 pollutants. Suppose Trucost researchers determined that the company publicly disclosed worldwide quantitative figures for 22 of these 27 indicators. This results in the company's *absolute disclosure ratio* being 0.81 (calculated as 22/27), a high value that suggests a great deal of environmental transparency. Suppose further that Trucost's model determined that the environmental damage associated with these 22 indicators constitutes just 51% of the company's overall environmental damage (that is, the company's *weighted disclosure ratio* is 0.51) and that the remaining 49% derives from the five relevant indicators the company failed to disclose, which could be ammonia, nitrous oxide, HFCs, methane, and total VOCs. The company's *selective disclosure magnitude* is 0.3, calculated as *absolute disclosure ratio* minus *weighted disclosure ratio* (that is, 0.81 – 0.51). This positive value indicates that the company selectively disclosed in a manner that risks exaggerating its environmental transparency because its disclosures focused on its relatively benign environmental impacts.

Independent Variables

We measure a firm's *environmental performance* based on the extent to which its operations impact the environment. We use Trucost's estimate of an organization's environmental impact, which is based on the following process (Thomas, Repetto, & Dias, 2007; Trucost Plc, 2008). First, Trucost allocates each company's annual revenues to a standardized set of 464 industries (typically one to a few dozen industries for each company), based on data from the FactSet Fundamentals database, corporate annual reports, corporate regulatory filings, and feedback from the company. Second, Trucost's model estimates the company's total annual tonnage of emissions released (various pollutants to air, land, and water) and resources consumed (such as metals, water, oil, natural gas, and mined materials), based on the company's

revenues from each industry. These calculations are based on environmental factors derived from several pollution release and transfer registries (national databases with inventories of natural resources and pollutants associated with many establishments in various industries)[5] and economic input-output models (which model trade between suppliers and producers). Third, these physical quantities are multiplied by their respective environmental damage cost factors, which are drawn from academic research on the pricing of environmental externalities and refer to costs "borne by society through the degradation of the environment but which [are] not borne by the firm that uses the resource or emits the pollutant" (Trucost Plc, 2008: 4).[6] The total represents the cost of the environmental damage created by each company in millions of U.S. dollars. To measure a firm's annual *environmental performance*, we log the environmental damage cost to accommodate its skewed distribution and then multiply it by -1 so that higher values refer to better environmental performance (less environmental damage).

We measured three aspects of the civil society institutions of each company's headquarters country.[7] We measure the density of environmental nongovernmental organizations in each company's headquarters country as the number of *environmental NGOs per million population* (Esty et al., 2005). Specifically, we divide the number of the International Union for Conservation of Nature (IUCN) member organizations in 2003, the year before our sample period, by the country's population in 2004 (measured in millions). IUCN is an international environmental organization with more than 1,000 member organizations, including the most

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[5] These include the U.S.' Toxic Release Inventory, the Federal Statistics Office of Germany (Destatis), the UK Environmental Accounts, Japan's Pollutant Release and Transfer Register, Australia's National Pollution Inventory, and Canada's National Pollutant Release Inventory.

[6] In other words, they represent the externalized costs of the environmental degradation associated with each ton of natural resource consumed and pollutant emitted. For example, Trucost uses $31 as the environmental impact per ton of greenhouse gas emitted (Trucost Plc, 2008: 5).

[7] We also attempted to develop measures in other relevant institutional environments, such as the countries each company was mostly reliant upon for sales, but were thwarted by data unavailability. We therefore leave this to future research in contexts where such measures exist.

significant international environmental NGOs, such as Conservation International, the National Geographic Society, and the Sierra Club. The presence of such NGOs has frequently been used in the organizational and sociology literatures to proxy local social movement processes (e.g., Hafner-Burton & Tsutsui, 2005; Sine & Lee, 2009; Tsutsui & Wotipka, 2004).

We measure a country's *civil liberties and political rights* based on data from annual Freedom in the World reports (Freedom House, 2010), which assess civil liberties (such as freedom of expression and assembly) and political rights (such as free elections). We used the annual national averages of political rights and civil liberties scores—an approach used by others (e.g., Chong, Guillen, & Riano, 2010; Longhofer & Schofer, 2010; Vaaler, 2008)—and reverse-coded the results so that higher values reflect more rights and liberties.

Based on a general logic of diffusion (e.g., Rogers, 1995), we measure the extent to which a country is exposed to global norms using a *globalization index* called the "KOF Index of Globalization." Developed by Dreher and colleagues (Dreher, 2006; Dreher, Gaston, & Martens, 2008; available in ETH Zürich, 2010) and used by many scholars of globalization (e.g., Fischer, 2008; Potrafke, 2009; Sapkota, 2009; Vujakovic, 2009), this index is calculated annually for 208 countries and incorporates a country's social, economic, and political integration with other countries (Keohane & Nye, 2000). A country's social integration—the flow of international information and norms—is reflected in the KOF index by measures of personal contacts (such as telephone traffic, international tourism, and the proportion of population that are foreigners), information flows (such as the prevalence of Internet access), and cultural affinity (such as the import and export of books as a percent of GDP). Economic integration is measured by trade flow indicators (such as the value of international trade and foreign direct investment, each normalized as percentages of the country's gross domestic product) and trade restrictions (such

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as import barriers and tariffs). Political integration is represented by measures such as the number of foreign embassies in the country and the number of UN peace missions in which the country has participated.

We created a dichotomous variable that indicates whether the company was *listed on a foreign stock exchange*. Using stock exchange listings data from Datastream, we coded this variable 1 for companies that listed their stock on an exchange outside their headquarters country and 0 otherwise. We measure *percentage of sales to foreign countries*—that is, nonheadquarters countries—using data from Worldscope.

Control Variables

Because establishing or maintaining a company's reputation affects communication patterns about firms social responsibility (McDonnell & King, 2013), we included whether a company has a *high reputation* in a given year if the corporation or any of its subsidiaries were included that year in any of the Reputation Institute's 116 high-reputation lists, which are compiled primarily by *Fortune*, Hewitt, Interbrand, and the Reputation Institute. Examples include country-specific lists, such as *Fortune*'s U.S.-oriented "100 Best Companies to Work For" and Interbrand's "Best Chinese Brands," and global lists such as *Business Week*'s "Top Innovative Companies in the World." *High reputation* is a dichotomous variable coded 1 for corporations listed on any of these lists and 0 otherwise.

We control for an organization's size using the log of *sales*, an approach used in many studies of corporate environmental and social disclosure (e.g., Cho & Patten, 2007; Elsayed & Hoque, 2010; Hackston & Milne, 1996; Patten, 2002; Reid & Toffel, 2009). We obtained annual corporate-wide sales data reported in millions of U.S. dollars from Compustat and used log values in our models to accommodate the skewed distribution of sales.

Because prior studies have argued and shown that an organization's financial performance influences its environmental disclosure (Barth, McNichols, & Wilson, 1997; Neu, Warsame, & Pedwell, 1998), we control for an organization's financial performance using *return on assets*, calculated as net income divided by starting-year assets, both of which we obtained from Compustat. To avoid the undue influence of a few outliers, we winsorized this ratio by recoding values below the 0.1 percentile and values above the 99.9 percentile to those values, respectively.

We control for each company's annual employment because employees are a powerful group of stakeholders in many societies (Barnett, 2007) and large employers may hold disproportionate political power in a country.[8] We measure a company's *employment* based on annual corporate-wide employment data from Worldscope. Because average company employment differs substantially across countries, we standardized this measure by country.

Research reveals very different levels of environmental and social disclosure for companies in different industries (Cho & Patten, 2007; Newson & Deegan, 2002; Reid & Toffel, 2009; Roberts, 1992). We therefore controlled for such differences by using *industry* dummy variables to account for each company's primary two-digit SIC code, obtained from Compustat.

Because prior research has shown the importance of a country's commitment to engage in global environmental governance to the adoption of environmental practices (Frank et al., 2000), we control for this with *intergovernmental environmental organizations,* the number of memberships each country held in 100 major environmental intergovernmental organizations. We obtained these data from the 2001 Environmental Sustainability Index (World Economic Forum et al., 2001: 244), which standardized these values to a mean of 0 and standard deviation

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[8] Because employment could also be viewed as an additional proxy for generic visibility, we also estimated our models without controlling for employment, which yielded results nearly identical to our primary results.

of 1 based on the raw values from 122 countries.

We control for media attention, which has been shown to be an important mechanism of institutional compliance (King & Soule, 2007). We measure each country's *press freedom* using that country's score on the World Press Freedom Index, produced annually by Reporters without Borders (Faccio, 2006; Libby, 2011). This index reflects (a) the freedom that journalists and the news media actually possess and (b) government efforts to respect that freedom, based on surveys on harms and threats to individual journalists (such as murders, imprisonment, and physical attacks) and to the news media (such as censorship and harassment). We multiplied World Press Freedom Index values by -1 so that higher values of *press freedom* reflect greater freedom.

To control for general levels of transparency in a society, we measured each country's *corruption* level each year based on Transparency International's annual Corruption Perceptions Index. Transparency International's mission is to "stop corruption and promote transparency, accountability and integrity at all levels and across all sectors of society" and its Corruption Perceptions Index measures the "overall extent of corruption (frequency and/or size of bribes) in the public and political sectors," based on several independent institutions.[9] We reverse-coded the Corruption Perceptions Index values so that increasing values reflect greater corruption.

Because a country's economic development can affect the diffusion rates of

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[9] The mission is quoted from Transparency International. "Mission, Vision and Values," available at http://www.transparency.org/whoweare/organisation/mission_vision_and_values (accessed August 29, 2013). The index description is quoted from Transparency International. *A short methodological note: Transparency International Corruption Perceptions Index (CPI) 2008*, available at http://www.transparency.org/policy_research/surveys_indices/cpi/2008 (accessed March 12, 2010). The Corruption Perceptions Index values are available at http://www.transparency.org/policy_research/surveys_indices/cpi/2009 (accessed March 12, 2010). The 2008 Corruption Perceptions Index values, for example, are based on input from the Asian Development Bank, African Development Bank, Bertelsmann Transformation Index, Country Policy and Institutional Assessment, The Economist Intelligence Unit, Freedom House, Global Insight and Merchant International Group, IMD, Political and Economic Risk Consultancy, and the World Economic Forum.

organizational practices (Guler, Guillén, & Macpherson, 2002) and can affect environmental practices more generally (Inglehart, 1990), we control for each country's *per capita gross domestic product* in a given year. We obtained country-level data on annual gross domestic product, reported in 2005 U.S. dollars, from the World Bank and annual population data from the U.S. Census Bureau, compiled by the U.S. Department of Agriculture's Economic Research Service (U.S. Department of Agriculture, 2010). To reduce skew, we use logged ratios in our models.

Because stringent accounting standards might decrease the likelihood of selective disclosure, we obtained data on a country's *accounting standards stringency* from La Porta et al. (1998), which was based on the comprehensiveness of financial statements from a sample of corporate annual reports. Higher index values indicate more stringent accounting standards. We rescaled the raw index values to range from 0 to 1.

Many companies were headquartered in countries engaged in the Kyoto Protocol and thus were (or might be) required to calculate and disclose greenhouse gas emissions, which would influence their disclosure practices. We control for this actual or potential regulatory pressure by creating an annual country-level dichotomous variable, *Kyoto Protocol ratified.* We coded this variable 1 starting in the year when the Protocol was ratified (or accepted or accessed) and entered into force in that country and 0 in the preceding years. We coded this variable 0 for all years for countries, such as the United States, in which the Protocol had not entered force during our sample period. We distinguished ratifying countries that were required to reduce emissions as part of their Kyoto obligations—all those listed in "Annex 1," such as the United Kingdom— by creating a dichotomous variable *Kyoto Protocol bound,* coded 1 for such countries in the years since the Protocol entered force. We coded this variable 0 for all other countries, including

those that ratified the protocol but which lacked such obligations (such as Thailand) as well as countries that did not ratify the protocol. We obtained these data from the United Nations Framework Convention on Climate Change (2009).[10]

Companies headquartered in countries with poor environmental quality might face particularly high demands for environmental disclosure, which may lead to disproportionate pressure for selective disclosure. We controlled for environmental quality in each country using a composite indicator from the 2002 Environmental Sustainability Index (World Economic Forum, Yale Center for Environmental Law and Policy, and Center for International Earth Science Information Network, 2002). A country's *environmental stress* refers to the extent to which pollution and resource consumption are stressing the country's environmental systems. This measure incorporates emissions and the use of fertilizers and pesticides (all normalized by land area), change in forest cover, per capita natural resource consumption, and projected population growth rates (World Economic Forum, Yale Center for Environmental Law and Policy, and Center for International Earth Science Information Network, 2002: 7).

Table 3 reports summary statistics and correlations of all variables.

[Insert Table 3 about here]

EMPIRICAL ANALYSIS

Our models predict *selective disclosure magnitude* based on all of the independent

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[10] To account for the possibility that a country's progress toward meeting its Kyoto Protocol target might influence selective disclosure practices, we conducted robustness tests in which we reestimated our models by also controlling either for *Kyoto progress* or for *Ahead of Kyoto*, which yielded results nearly identical to those of our primary model. We created *Kyoto progress* as a country-level variable calculated as the difference between a Kyoto "Annex I" country's actual emissions reduction rate as of 2008 and the average annual reduction rate required to meet its Kyoto target, coded with that value for all years since the Protocol entered force, and coded 0 otherwise. Among the countries in our sample, this ranged from Spain exhibiting the largest shortfall (-21.8%) to Norway exhibiting the largest surplus beyond its target (17.6%). We created *Ahead of Kyoto* as a dichotomous variable, coded 1 if the country was ahead of its target in the years after it was bound by its Kyoto commitment, and 0 otherwise. We obtained data for these two variables from European Environment Agency (2010).

variables and control variables described above. We also include a full set of year dummies to control for overall temporal trends. To facilitate interpretation, we standardize the four variables included in interaction terms: *environmental performance, environmental NGOs per million population, civil liberties and political rights,* and *globalization index.* To address concerns associated with multicollinearity, we test each moderated relationship by including each interaction term in a distinct model.

For each of the variables for which we recoded missing values to 0, we included a corresponding dichotomous variable coded 1 to denote observations which had been recoded and 0 otherwise (Greene, 2007: 62; Maddala, 1977: 202).[11] This approach, common in econometric analysis, is algebraically equivalent to recoding missing values with the variable's mean (Greene, 2007: 62). Nearly identical coefficient magnitudes and standard errors resulted from two alternative approaches to accommodate missing values: (1) using multiple imputation with our primary hierarchical linear model estimation approach and (2) using structural equation modeling with full information maximum likelihood (Enders & Bandalos, 2001).[12]

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[11] Among our hypothesized country-level variables, our dataset had missing values for *globalization index* for 3 countries (N=845firm-year observations: 387 in Taiwan, 381 in Hong Kong, and 77 in Bermuda), for *civil liberties and political rights* for 3 countries (N=808: Hong Kong [381], South Korea [350], and Bermuda [77]), and for *environmental NGOs per million population* for 4 countries (N=924: Taiwan [387], Hong Kong [381], Indonesia [79], and Bermuda [77]). Among our hypothesized firm-level variables, our dataset had missing values of foreign sales for 3,224 firms (N=9,608). Among our country-level control variables, our dataset had missing values for *intergovernmental environmental organizations* for 5 countries (N=929: Taiwan [387], Hong Kong [381], Bermuda [77], Luxembourg [45], and Russia [39]), for *press freedom* for 2 countries (Bermuda [77] and Luxembourg [45]), for *per capita GDP* for South Africa [74], for *accounting standards stringency* for 9 countries (N=652: China [255], Ireland [90], Indonesia [79], Bermuda [77], Luxembourg [45], Pakistan [42], Russia [39], Poland [14], and Hungary [11]), and for *environmental stress* for 5 countries (N=1052: Taiwan [387], Hong Kong [381], Singapore [162], Bermuda [77], and Luxembourg [45]). Among our firm-level control variables, our dataset had missing values of *employment* for 1,219 firm-year observations pertaining to 656 firms, missing values of *sales* for 231 firm-year observations (172 firms), and missing values of *return on assets* for 218 firm-year observations (164 firms).

[12] The one substantive difference is that the structural equation modeling with full information maximum likelihood yielded non-significant results on the globalization index coefficient, calling into some question the robustness of our primary results that find a significant negative effect of globalization on selective disclosure, although we note that this alternative approach does not account for the nested nature of our dataset, whereas our primary approach does.

Regression Results

We estimate our models using a hierarchical linear model (HLM, also referred to as a two-level mixed model with two nested levels) that accounts for the nested panel structure of our data, with companies nested within countries. Applying the Wooldridge (2002) test for autocorrelation in panel data—as implemented by Drukker (2003)—to our model, the null hypothesis of no serial correlation is strongly rejected ($F = 49.9$, $p < 0.01$), indicating the need to cluster standard errors. We report standard errors clustered by country, which accommodates potential correlation (including serial correlation) between countries and within countries.

[Insert Table 4 about here]

Table 4 presents our results. Model 1 includes only direct effects. A likelihood ratio test comparing the fitted mixed model to standard regression with no group-level random effects rejects the null that all random-effects parameters of the mixed model are simultaneously zero ($\chi^2=4756.1$, $p < 0.01$).

The significant positive coefficient on *environmental performance* in Model 1 indicates that organizations with worse environmental performance exhibit less selective disclosure, which supports H1. The coefficient on this standardized variable ($b=0.101$) implies that a one-standard-deviation decrease in *environmental performance* is associated with a 0.11 decline in selective disclosure, the equivalent of nearly one-half a standard deviation (calculated as $b_{\text{environmental performance}} \div SD_{\text{selective disclosure magnitude}} = 0.101 \div 0.23 = 0.44$).

The near-zero, non-significant coefficient fails to identify any overall relationship between *environmental NGOs per million population* and selective disclosure, which fails to support H2a. However, the significant positive coefficient on the interaction term between this institutional attribute and *environmental performance* in Model 2 indicates that a greater NGO

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presence renders companies with worse environmental performance less prone to engage in selective disclosure, supporting H2b. Figure 1 depicts average predicted values of *selective disclosure magnitude* from this model, estimated at varying levels of *environmental performance*. The two lines indicate estimates made at the 5th percentile of *environmental NGOs per million population* —that is, for institutional environments with a low density of environmental activists—and at the 95th percentile—that is, for institutional environments featuring a high density of environmental activists. Average predicted values depicted in Figure 1 illustrate that firms with worse environmental performance engage in less selective disclosure and that this relationship is especially pronounced in countries with more environmental NGOs per capita.

Whereas the near-zero, non-significant coefficient on *civil liberties and political rights* yields no support that this institutional feature directly influences selective disclosure (H3a), the statistically significant positive coefficient on the interaction term in Model 3 indicates that companies with low *environmental performance* are especially disinclined to engage in selective disclosure in countries featuring more *civil liberties and political rights*. This finding supports H3b. Average predicted values in Figure 2 illustrate how *selective disclosure magnitude* declines as *environmental performance* decreases and show that a higher level of *civil liberties and political rights* significantly accentuates the decline. This relationship supports our theory that it is scrutiny that affects firms' likelihood of engaging in selective disclosure. These results show that not only do firms with lower environmental performance eschew selective disclosure, but they are increasingly more likely to do so in settings where they are more likely to experience scrutiny.

The significant negative coefficient on *globalization index* indicates that there is less

selective disclosure among companies headquartered in countries more connected to global civil society, which supports H4a. The coefficient on this standardized variable implies that a one-standard-deviation increase in *globalization index* is associated with nearly one-half a standard deviation decline in selective disclosure (calculated as $\beta_{\text{globalization index}} \div \text{SD}_{\text{selective disclosure magnitude}} = -0.105 \div 0.23 = -0.46$). In addition, the significant positive coefficient on the interaction term between *environmental performance* and *globalization index* in Model 4 indicates that worse environmental performance reduces selective disclosure to a significantly greater extent in highly globalized countries, lending support for H4b. As depicted in Figure 3, the average predicted values of *selective disclosure magnitude* decline as *environmental performance* decreases and the decline is significantly more rapid among companies headquartered in high-globalization countries.

The consistently significant negative coefficient on *listed on a foreign stock exchange* indicates that such companies engage in less selective disclosure, lending support for H5. Average marginal effects indicate that firms not listed on a foreign stock exchange engage in selective disclosure nearly twice as much as firms listed on a foreign stock exchange do (selective disclosure levels of -0.051 versus -0.106, respectively). Similarly, the negative coefficient on *percentage of sales to foreign countries* at marginal significance levels ($\beta = -0.019$, SE = 0.010, p = 0.06) provides some indication that companies more reliant on foreign sales engage in less selective disclosure, lending some support for H6. A one-standard-deviation increase in *percentage of sales to foreign countries* is associated with a 4.8% decline in selective disclosure (calculated as [SD $_{\text{foreign sales}}$ * β $_{\text{foreign sales}}$] / X-bar $_{\text{selective disclosure}}$ = [0.25 * -0.019] / 0.10). This set of findings just discussed supports our theory on how exposure to global norms of information transparency through both home country characteristics and firm attributes

influences firms' selective disclosure. We discuss the broader theoretical implications of our findings below.

DISCUSSION AND CONCLUSION

Our study hypothesized that a set of organizational factors and country-level institutions would affect both scrutiny and normative pressures on firms and thus the extent to which they engaged in selective disclosure. Despite prior research that suggests the opposite may be true, our analysis of the symbolic environmental transparency practices of thousands of global firms across 45 countries revealed that those with poor environmental performance were particularly likely to eschew selective disclosure. Building on prior research indicating that poor environmental performance makes firms more visible to stakeholders with environmental concerns, our theory focuses on how this characteristic exposes firms to greater scrutiny, which leads them to engage in less selective disclosure. Our interaction results provide further evidence to support our proposition that scrutiny and norms drive this relationship. Specifically, we hypothesized and found that civil society's activism and information access had especially pronounced effects reducing the selective disclosure exhibited by firms with poor environmental performance. We also hypothesized and found less selective disclosure by firms subjected to information disclosure norms through their greater exposure to global consumers or foreign investors.

Below, we describe how our research contributes to institutional theory by focusing on the practice of selective disclosure as a symbolic strategy and on how firm characteristics and institutional environments influence the effects of both scrutiny and diffusion of norms on firms. Also discussed are contributions to the literature on

information disclosure, several implications for practice, and the boundaries and limitations of our research.

Contributions to Institutional Theory

The prior literature on institutional influences on organizations is rich and has revealed many influence mechanisms and types of organizational response (Greenwood et al., 2011). Our multi-level theory and findings advance this literature in several important ways.

First, our work contributes to understanding corporate symbolic responses to institutional pressures. Our focus on selective disclosure adds an important tactic to the institutional literature that has examined other forms of symbolic approaches firms use to merely appear to comply with institutional demands (Meyer & Rowan, 1977; Tilcsik, 2010; Zajac & Westphal, 2004). Selective disclosure's emphasis on strategic information presentation differs from other symbolic approaches, such as developing weaker alternative standards (Okhmatovskiy & David, 2012) and bolstering social image to deflect attention from illegitimate activities (McDonnell & King, 2013). As the global movements for accountability and transparency have led to the development of an "audit society" (Power, 1994) and "audit culture" (Strathern, 2000), organizational reporting and monitoring is increasingly commonplace. Understanding newly identified practices such as "bluewashing," "pinkwashing," and—our empirical focus— greenwashing is important if organization theory is to keep pace with changes in the broader world, mapping companies' new strategies to symbolically comply with rising information demands. More generally, as suggested by earlier theory and research on how companies strategically reveal positive information while concealing negative information (e.g., Abrahamson & Park, 1994; Pfeffer, 1981), our findings also likely apply to other types of information disclosure such as marketing communications and financial and accounting

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information. As such, we encourage more research to study selective disclosure in these and other empirical domains to understand the generalizability of the antecedents we propose and to identify additional ones. We also encourage future research to identify other symbolic strategies that firms are enacting as they encounter institutional pressures.

Second, we identify several factors that temper the extent to which firms deploy selective disclosure. Our key contribution here is promoting a deeper understanding of the multilevel factors that have an institutional influence on firms. Whereas prior research has offered conflicting views as to whether greater visibility is associated with more or less institutional compliance (Greenwood et al., 2011), our investigation sought to theorize specific mechanisms associated with compliance and to develop multilevel tests to better identify these mechanisms. Our investigation of the effects of scrutiny and global norms on selective disclosure examined not only firm characteristics likely to be associated with these mechanisms, but also the institutional environments that lead to greater scrutiny and normative pressure on firms. By examining these relationships at different levels of analysis and by exploring the interactions between them, we can be more confident than prior research was that our theorized processes—scrutiny and global norms—lead firms to temper their selective disclosure.

Third, our multilevel investigation also enables us to theoretically and empirically distinguish scrutiny and norm diffusion mechanisms, which have seldom been differentiated. For instance, prior research examining country-level institutional environments has stressed the importance of each of these mechanisms but typically measured their aggregate effect via International non-governmental organizations (INGO) or intergovernmental organization (IGO) presence (Tsutsui & Wotipka, 2004). In contrast, our study distinguished scrutiny and normative mechanisms both theoretically and empirically. We hypothesized and tested several factors that

increase scrutiny on firms' environmental transparency, including a firm's environmental performance as well as the environmental NGO presence and civil liberties and political rights in its headquarters country. We also hypothesized and tested several factors that convey transparency norms that lead firms to temper selective disclosure. These factors include civil society's exposure to global information in the headquarters country as well as a firm's direct exposure to strong transparency norms through its foreign sales and foreign stock exchange listing. By emphasizing several simultaneous mechanisms and processes that temper selective disclosure, our approach contributes to the institutional literature by providing a more nuanced distinction between the different institutional pressures that affect firms' symbolic activities.

Contributions to Research on Information Disclosure

In addition to these contributions to understanding selective disclosure as a symbolic strategy, our research also advances the more general research on information disclosure. This growing literature has examined many important aspects of information disclosure, including the circumstances under which companies voluntarily disclose environmental information (e.g., Dawkins & Fraas, 2011; Jira & Toffel, 2013; Kolk, 2004; Lewis, Walls, & Dowell, 2013) and the need for standards and third-party verification to guide companies on how and what environmental indicators and issues they should report (Eccles & Krzus, 2010). Our paper adds an important dimension to this literature by revealing the extent to which reported information is likely to be representative of companies' underlying environmental impacts. Thus, we shift the conversation to a deeper understanding of companies' voluntary communication strategies and encourage future research along these lines to further unpack information disclosure practices.

Implications for Practice

The extent to which corporations accurately disclose their social and environmental performance has important practical implications for stakeholders interested in these corporate performance dimensions and for those seeking to increase the comprehensiveness of this information to gain a more accurate picture of performance. Many market and nonmarket constituencies rely on corporate environmental reporting and transparency as a means to assess organizations' environmental performance. These range from corporate customers (Jira & Toffel, 2013) to investors (Eccles & Krzus, 2010) to NGOs and intergovernmental agencies such as the United Nations (Frank et al., 2000). Our work reveals to these myriad stakeholders a constellation of organizational characteristics and institutional features that predict when disclosed information is more likely to be symbolic or substantive. These practitioners can put these results to use in several ways.

Practitioners can use our results to better understand which information is more trustworthy and make decisions accordingly. In circumstances where disclosed information tends to be more symbolic, customers seeking information about their existing and potential suppliers and asset managers seeking information about companies in which they are considering investing can bolster the credibility of such information by requiring independent third-party validation. This can prompt companies to convey more comprehensive information and to seek third-parry validation to demonstrate the substantive nature of their disclosures. Importantly, the failure to provide third-party-validated information in such circumstances would signal that their disclosures were more likely to be symbolic. While scholars have described the general merits of third-party validation of corporate environmental and social reports (Dando & Swift, 2003; Moroney, Windsor, & Aw, 2012), our work is, to our knowledge, among the first to identify circumstances under which deploying this practice would add the most value.

Understanding key levers that can promote more substantive disclosure is also important for domestic and international actors such as activists and NGOs seeking to influence corporate environmentalism. By better understanding which corporate environmental reports are more likely to be symbolic, programs that guide and encourage environmental disclosure, such as the Global Reporting Initiative and the United Nations Global Compact, can impose cost-effective requirements to preserve the integrity of their programs. For example, they could impose strong validation requirements but exempt companies that list their shares on exchanges with strong transparency requirements or that are headquartered in countries more connected to global civil society. For social movement organizations, our environmental performance and foreign exposure findings suggest that certain corporations may be more responsive to institutional pressures, which would help identify which companies to target.

Boundaries and Limitations

Many of our study's limitations stem from our global context. Given the difficulty of collecting reliable and consistent firm-level variables for over 4,000 firms across over 45 different countries, some of our measures are more coarse than they would be if we were examining a smaller set of firms headquartered in a single country. For example, ideally we would have been able to collect data on the value of firms' sales to each country. These more nuanced data might have made our estimates more precise and hence possibly more reliable. We encourage future research to explore whether such additional variables affect symbolic disclosure.

While relying on archival data provides many advantages, one disadvantage is that we cannot observe the motivations that lead to firms' environmental reporting practices. While our measure of selective disclosure emphasizes firms' disproportionately disclosing their less-

damaging environmental impacts, we acknowledge this activity may not always be intentional. While selective disclosure may sometimes be inadvertent due to limited management attention, the scrutiny and normative pressures we describe ought to heighten management attention. Further research based on qualitative methods or on survey data is needed to distinguish the motives underlying firms' symbolic practices.

We also acknowledge the limitation of focusing on the institutional features only of firms' headquarters countries. While our doing so is consistent with much of the literature that explores institutional influences on multinational corporations' decision making, we acknowledge that the institutional features of other contexts—such as the countries to which firms sell the most— might also be influential. We encourage future research to identify the types of managerial decision that are influenced by firms' various institutional contexts.

Conclusion

This study examines the extent to which characteristics that enhance scrutiny and exposure to international norms influence the selective disclosure of thousands of corporations across the institutional environments of 45 nations. Our findings (a) suggest that the global environmental movement affects corporate environmental management practices and (b) highlight several levers available to corporate customers, investors, activists, and policymakers to promote their objective of improving environmental performance. We described theoretically how selective disclosure can be influenced both by scrutiny and by diffusion of global norms and how these processes operate through particular characteristics of organizations and their institutional environments. In doing so, our approach highlights the importance of considering multiple levels with large-scale organizational data to examine how institutional processes operate.

REFERENCES

Abrahamson, E. & Park, C. 1994. Concealment of negative organizational outcomes: An agency theory perspective. *Academy of Management Journal*, 37(5): 1302-1334.

Alnajjar, F. K. 2000. Determinants of social responsibility disclosures of U.S. Fortune 500 firms: An application of content analysis. *Advances in Environmental Accounting & Management*: 163-200.

Bansal, P. & Roth, K. 2000. Why companies go green: A model of ecological responsiveness. *Academy of Management Journal*, 43(4): 717-736.

Barnett, M. L. 2007. Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review*, 32(3): 794-816.

Barth, M. E., McNichols, M. F., & Wilson, G. P. 1997. Factors influencing firms' disclosures about environmental liabilities. *Review of Accounting Studies*, 2(1): 35-64.

Bartley, T. 2007. How foundations shape social movements: The Construction of an organizational field and the rise of forest certification. *Social Problems*, 54(3): 229-255.

Bartley, T. & Child, C. 2011. Movements, markets and fields: The effects of anti-sweatshop campaigns on U.S. firms, 1993-2000. *Social Forces*, 90(2): 425-451.

Berthelot, S., Cormier, D., & Magnan, M. 2003. Environmental disclosure research: Review and synthesis. *Journal of Accounting Literature*, 22: 1-44.

Bobbin. 1997. Manufacturers take note: How to avoid sweatshop stigma: *Bobbin*, Nov. 11.

Breast Cancer Action; Think before you pink: Before you buy pink; http://thinkbeforeyoupink.org/?page_id=13; February 2011.

Briscoe, F. & Murphy, C. 2012. Sleight of hand? Practice opacity, third-party responses, and the interorganizational diffusion of controversial practices. *Administrative Science Quarterly*, 57(4): 553-584.

Bromley, P. & Powell, W. W. 2012. From smoke and mirrors to walking the talk: Decoupling in the contemporary world. *Academy of Management Annals*, 6(1): 483-530.

Campbell, J. L. 2005. Where do we stand? Common mechanisms in organizations and social movements research. In G. F. Davis & D. McAdam & W. R. Scott & M. N. Zald (Eds.), *Social movements and organization theory*: 41-68. New York: Cambridge University Press.

Chapple, W. & Moon, J. 2005. Corporate social responsibility (CSR) in Asia: A seven-country study of CSR web site reporting. *Business & Society*, 44(4): 415-441.

Chatterji, A. & Levine, D. 2006. Breaking down the wall of codes: Evaluating non-financial performance measurement. *California Management Review*, 48(2): 29-51.

Chatterji, A. K. & Toffel, M. W. 2010. How firms respond to being rated. *Strategic Management Journal*, 31(9): 917-945.

Cho, C. H. & Patten, D. M. 2007. The Role of Environmental Disclosures as Tools of Legitimacy: A Research Note. *Accounting, Organizations and Society*, 32(7-8): 639-647.

Cho, C. H. & Roberts, R. W. 2010. Environmental Reporting on the Internet by America's Toxic 100: Legitimacy and Self-presentation? *International Journal of Accounting Information Systems*, 11(1): 1-16.

Chong, A., Guillen, J., & Riano, A. 2010. Political and institutional environment and privatization prices. *Public Choice*, 142(1): 91-110.

Dando, N. & Swift, T. 2003. Transparency and assurance: Minding the credibility gap. *Journal of Business Ethics*, 44(2/3): 195-200.

Davis, G. F. & Marquis, C. 2005. Prospects for theory about organizations in the early 21st

Century: institutional fields and mechanisms. *Organization Science*, 16(4): 332-343.

Delmas, M. A. & Toffel, M. W. 2008. Organizational responses to environmental demands: Opening the black box. *Strategic Management Journal*, 29(10): 1027-1055.

Delmas, M. A. & Burbano, V. C. 2011. The Drivers of greenwashing. *California Management Review*, 54(1): 64-87.

den Hond, F. & de Bakker, F. G. A. 2007. Ideologically motivated activism: How activist groups influence corporate social change activities. *Academy of Management Review*, 32(3): 901-924.

Deva, S. 2006. Global Compact: A critique of the U.N.'s 'public-private' partnership for promoting corporate citizenship. *Syracuse Journal of International Law & Commerce*, 34(1): 107-151.

Dreher, A. 2006. Does globalization affect growth? Evidence from a new index of globalization. *Applied Economics*, 38(10): 1091-1110.

Dreher, A., Gaston, N., & Martens, P. 2008. *Measuring globalisation: Gauging its consequences*. New York: Springer.

Drori, G. S., Suk Jang, Y., & Meyer, J. W. 2006. Sources of rationalized governance: Cross-national longitudinal analyses, 1985-2002. *Administrative Science Quarterly*, 51(2): 205-229.

Drukker, D. M. 2003. Testing for serial correlation in linear panel-data models. *Stata Journal* 3(2): 168-177.

Dye, R. A. 2001. An evaluation of "essays on disclosure" and the disclosure literature in accounting. *Journal of Accounting and Economics*, 32(1-3): 181-235.

Eccles, R. G. & Krzus, M. P. 2010. *One report: Integrated reporting for a sustainable strategy*. New York: John Wiley & Sons, Inc.

Eesley, C. & Lenox, M. J. 2006. Firm responses to secondary stakeholder action. *Strategic Management Journal*, 27(8): 765-781.

Elkington, J. 1998. *Cannibals with forks: The triple bottom line of 21st century business*. Stony Creek, CT: New Society Publishers.

Elsayed, M. O. & Hoque, Z. 2010. Perceived international environmental factors and corporate voluntary disclosure practices: An empirical study. *British Accounting Review*, 42(1): 17-35.

Enders, C. K. & Bandalos, D., L. 2001. The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, 8(3): 430-457.

Esty, D. C., Levy, M., Srebotnjak, T., & de Sherbinin, A. 2005. *2005 Environmental Sustainability Index: Benchmarking national environmental stewardship*. New Haven: Yale Center for Environmental Law and Policy.

ETH Zürich; KOF Index of Globalization. (Swiss Federal Institute of Technology Zurich website); http://globalization.kof.ethz.ch/; March 2010.

European Environment Agency. 2010. Tracking progress towards Kyoto and 2020 targets in Europe (EEA Report No 7/2010). Luxembourg: Office for Official Publications of the European Union.

Faccio, M. 2006. Politically connected firms. *American Economic Review*, 96(1): 369-386.

Fischer, J. A. V. 2008. Is competition good for trust? Cross-country evidence using micro-data. *Economics Letters*, 100(1): 56-59.

Frank, D. J., Hironaka, A., & Schofer, E. 2000. The nation-state and the natural environment over the Twentieth Century. *American Sociological Review*, 65(1): 96-116.

Freedom House; Freedom in the world; http://www.freedomhouse.org/report-types/freedom-world; March 12, 2010.

Greene, W. H. 2007. *Econometric analysis* (6th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.

Greenwood, R., Raynard, M., Kodeih, F., Micelotta, E. R., & Lounsbury, M. 2011. Institutional complexity and organizational responses. *Academy of Management Annals*, 5(1): 317-371.

Guler, I., Guillén, M. F., & Macpherson, J. M. 2002. Global competition, institutions, and the diffusion of organizational practices: The international spread of ISO 9000 Quality Certificates. *Administrative Science Quarterly*, 47(2): 207-232.

Guler, I. & Guillén, M. F. 2010. Home country networks and foreign expansion: Evidence from the venture capital industry. *Academy of Management Journal*, 53(2): 390-410.

Hackston, D. & Milne, M. J. 1996. Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal*, 9(1): 77-108.

Hafner-Burton, E. M. & Tsutsui, K. 2005. Human rights in a globalizing world: The Paradox of empty promises. *American Journal of Sociology*, 110(5): 1373-1411.

Inglehart, R. 1990. *Culture shift in advanced industrial society*. Princeton, N.J.: Princeton University Press.

Jira, C. F. & Toffel, M. W. 2013. Engaging supply chains in climate change. *Manufacturing & Service Operations Management* 15(4): 559-577.

Keohane, R. O. & Nye Jr., J. S. 2000. Introduction. In J. S. Nye & J. D. Donahue (Eds.), *Governance in a globalizing world*: 1-44. Washington, D.C.: Brookings Institution Press.

Khanna, T., Palepu, K. G., & Srinivasan, S. 2004. Disclosure practices of foreign companies interacting with U.S. markets. *Journal of Accounting Research*, 42(2): 475-508.

King, B. G. & Soule, S. A. 2007. Social movements as extra-institutional entrepreneurs: The effect of protests on stock price returns. *Administrative Science Quarterly*, 52(3): 413-442.

King, B. G. 2008. A political mediation model of corporate response to social movement activism. *Administrative Science Quarterly*, 53(3): 395-421.

King, B. G. & Pearce, N. A. 2010. The contentiousness of markets: Politics, social movements, and institutional change in markets. *Annual Review of Sociology*, 36: 249-267.

Kolk, A. 2004. A decade of sustainability reporting: Developments and significance. *International Journal of Environment and Sustainable Development* 3(1): 51-64.

KPMG. 2002. *KPMG International survey of corporate responsibility reporting 2002*. KPMG International.

KPMG. 2005. *KPMG International survey of corporate responsibility reporting 2005*. KPMG International.

KPMG. 2008. *KPMG International survey of corporate responsibility reporting 2008*. KPMG International.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. 1998. Law and finance. *Journal of Political Economy*, 106(6): 1113-1155.

Laudal, T. 2011. Drivers and barriers of CSR and the size and internationalization of firms. *Social Responsibility Journal*, 7(2): 234-256.

Lenox, M. J. & Eesley, C. E. 2009. Private environmental activism and the selection and response of firm targets. *Journal of Economics & Management Strategy*, 18(1): 45-73.

Libby, S. 2011. The art of censorship in Vietnam. *Journal of International Affairs*, 65(1): 209-218.

Longhofer, W. & Schofer, E. 2010. National and global origins of environmental association.

American Sociological Review, 75(4): 505-533.

Lounsbury, M. 2001. Institutional sources of practice variation: Staffing college and university recycling programs. *Administrative Science Quarterly*, 46(1): 29-56.

Luo, J., Meier, S., & Oberholzer-Gee, F. 2012. No news is good news: CSR strategy and newspaper coverage of negative firm events. Harvard Business School Working Paper 12-091.

Lyon, T. P. & Maxwell, J. W. 2011. Greenwash: Environmental disclosure under threat of audit. *Journal of Economics and Management Strategy*, 20(1): 3-41.

Maddala, G. S. 1977. *Econometrics*. New York: McGraw-Hill.

Marquis, C. & Qian, C. 2013. Corporate social responsibility reporting in China: Symbol or substance? *Organization Science,* forthcoming.

McAdam, D., McCarthy, J. D., & Zald, M. N. 1996. Introduction: Opportunities, mobilizing structures, and framing processes - Toward a synthetic, comparative perspective on social movements. In D. McAdam & J. D. McCarthy & M. N. Zald (Eds.), *Comparative Perspectives on Social Movements*: 1-20. New York: Cambridge University Press.

McDonnell, M.-H. & King, B. G. 2013. Keeping up appearances: Reputation threat and prosocial responses to social movement boycotts. *Administrative Science Quarterly* 58(3): 387-419.

Meyer, J. W. & Rowan, B. 1977. Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83(2): 340-363.

Moroney, R., Windsor, C., & Aw, Y. T. 2012. Evidence of assurance enhancing the quality of voluntary environmental disclosures: an empirical analysis. *Accounting & Finance*, 52(3): 903-939.

Neu, D., Warsame, H., & Pedwell, K. 1998. Managing public impressions: environmental disclosures in annual reports. *Accounting, Organizations and Society*, 23(3): 265-282.

Newson, M. & Deegan, C. 2002. Global expectations and their association with corporate social disclosure practices in Australia, Singapore, and South Korea. *International Journal of Accounting*, 37(2): 183-213.

Okhmatovskiy, I. & David, R. J. 2012. Setting your own standards: Internal corporate governance codes as a response to institutional pressure. *Organization Science*, 23(1): 155-176.

Oliver, C. 1991. Strategic responses to institutional processes. *Academy of Management Review*, 16(1): 145-179.

O'Mahony, S. & Ferraro, F. 2007. The emergence of governance in an open source community. *Academy of Management Journal*, 50(5): 1079-1106.

Patten, D. M. 2002. The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organizations and Society*, 27(8): 763-773.

Pfeffer, J. 1981. Management as symbolic action: The creation and maintenance of organizational paradigms. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior*, Vol. 3: 1-52. Greenwich, CT: JAI Press.

Potrafke, N. 2009. Did globalization restrict partisan politics? An empirical evaluation of social expenditures in a panel of OECD countries. *Public Choice*, 140(1-2): 105–124.

Power, M. 1994. *The audit explosion*. London: Demos.

Rehbein, K., Waddock, S., & Graves, S. B. 2004. Understanding shareholder activism: Which corporations are targeted? *Business & Society*, 43(3): 239-267.

Reid, E. M. & Toffel, M. W. 2009. Responding to public and private politics: Corporate disclosure of climate change strategies. *Strategic Management Journal*, 30(11): 1157-1178.

Reimann, K. D. 2002. Building networks from the outside in: International movements, Japanese NGOs, and the Kyoto climate change conference. In J. Smith & H. Johnston (Eds.), *Globalization and resistance: Transnational dimensions of social movements*. Lanham, MD: Rowman & Littlefield.

Risse-Kappen, T., Ropp, S. C., & Sikkink, K. 1999. *The power of human rights: International norms and domestic change*. Cambridge, UK: Cambridge University Press.

Roberts, R. W. 1992. Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society*, 17(6): 595-612.

Rogers, E. M. 1995. *Diffusion of innovations* (4th ed.). New York: Free Press.

Sapkota, J. B. 2009. Globalization's convergence effect on human quality of life (QOL) in Asia: Evidence from the KOF Index of Globalization. *Asian Regional Integration Review*, 2: 1-28.

Sasser, E. N., Prakash, A., Cashore, B., & Auld, G. 2006. Direct targeting as an NGO political strategy: Examining private authority regimes in the forestry sector. *Business and Politics*, 8(3): 1-32.

Scott, W. R. 2001. *Institutions and Organizations* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Short, J. L. & Toffel, M. W. 2008. Coerced confessions: Self-policing in the shadow of the regulator. *Journal of Law, Economics, and Organization*, 24(1): 45-71.

Short, J. L. & Toffel, M. W. 2010. Making self-regulation more than merely symbolic: The critical role of the legal environment. *Administrative Science Quarterly*, 55(3): 361-396.

Sine, W. D. & Lee, B. H. 2009. Tilting at windmills? The environmental movement and the emergence of the U.S. wind energy sector. *Administrative Science Quarterly*, 54(1): 123-155.

Steinberg, P. F. 2002. Civic environmentalism in developing countries: Opportunities for innovation in state-society relations. *Background paper for the World Bank's World Development Report 2003*.

Strathern, M. 2000. *Audit cultures: Anthropological studies in accountability, ethics and the Academy*. New York: Routledge.

Sunstein, C. R. 1997. *Free markets and social justice*. New York: Oxford University Press.

SustainAbility. Rate the Raters, Phase Five: The Company Perspective. Questionnaire for Raters – Trucost. http://www.sustainability.com/library/the-raters-response, accessed Nov. 2013.

Thomas, S., Repetto, R., & Dias, D. 2007. Integrated environmental and financial performance metrics for investment analysis and portfolio management. *Corporate Governance: An International Review*, 15(3): 421-426.

Tilcsik, A. 2010. From ritual to reality: Demography, ideology, and decoupling in a post-communist government agency. *Academy of Management Journal*, 53(6): 1474-1498.

Transparency International. 2008. A short methodological note: Transparency International Corruption Perceptions Index (CPI) 2008, available at http://www.transparency.org/policy_research/surveys_indices/cpi/2008. (accessed March 12, 2010).

Transparency International. 2013. Mission, vision and values. http://www.transparency.org/whoweare/organisation/mission_vision_and_values, accessed August 2013.

Trucost PLC. 2008. *Trucost methodology overview: Measuring company environmental impacts.* London: Trucost PLC.

Tsutsui, K. & Wotipka, C. M. 2004. Global civil society and the international human rights movement: Citizen participation in human rights international nongovernmental organizations. *Social Forces*, 83(2): 587-620.

U.S. Department of Agriculture. 2010. Real GDP (2005 dollars) historical data set. Washington, D.C.: U.S. Department of Agriculture Economic Research Service. http://www.ers.usda.gov/Data/Macroeconomics/#HistoricalMacroTables.

United Nations Framework Convention on Climate Change. Kyoto Protocol status of ratification. http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php; July 2009.

Vaaler, P. M. 2008. How do MNCS vote in developing country elections? *Academy of Management Journal*, 51(1): 21-43.

Ventresca, M. 1995. *When states count: Institutional and political dynamics in modern census establishment, 1800-1993*. Stanford University Ph.D. Dissertation.

Vujakovic, P. 2009. How to measure globalization? A New Globalisation Index (NGI). Sterreichisches Institut für Wirtschaftsforschung (WIFO) Working Paper No. 343: http://www.wifo.ac.at/wwa/jsp/index.jsp?fid=23923&id=36681&typeid=8&display_mode=2
.

Weber, K., Rao, H., & Thomas, L. G. 2009. From streets to suites: How the anti-biotech movement affected german pharmaceutical firms. *American Sociological Review*, 74(1): 106-127.

Webster's New Millennium Dictionary of English. 2009. Dictionary.com's 21st Century lexicon. *Dictionary.com*. accessed 8/2010: Dictionary.com, LLC.

Westphal, J. D. & Zajac, E. J. 1994. Substance and symbolism in CEOs' long-term incentive plans. *Administrative Science Quarterly*, 39(3): 367-390.

Westphal, J. D. & Zajac, E. J. 1995. Who shall govern? CEO/board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40(1): 60-83.

Westphal, J. D. & Zajac, E. J. 2001. Decoupling policy from practice: The case of stock repurchase programs. *Administrative Science Quarterly*, 46(2): 202-228.

Williams, O. F. 2004. The UN Global Compact: The challenge and the promise. *Business Ethics Quarterly*, 14(4): 755-774.

Wooldridge, J. M. 2002. *Econometric analysis of cross section and panel data*. Cambridge, Mass.: MIT Press.

World Economic Forum, Yale Center for Environmental Law and Policy, and Columbia University Center for International Earth Science Information Network. 2001. 2001 Environmental Sustainability Index (ESI). Palisades, NY: NASA Socioeconomic Data and Applications Center. http://sedac.ciesin.columbia.edu/data/set/esi-environmental-sustainability-index-2001.

World Economic Forum, Yale Center for Environmental Law and Policy, and Columbia University Center for International Earth Science Information Network. 2002. 2002 Environmental Sustainability Index (ESI). Palisades, NY: NASA Socioeconomic Data and Applications Center. http://sedac.ciesin.columbia.edu/data/set/esi-environmental-sustainability-index-2002.

Zajac, E., J. & Westphal, J., D. 2004. The social construction of market value: Institutionalization and learning perspectives on stock market reactions. *American Sociological Review*, 69(3): 433-457.

TABLE 1. Industry Composition of Sample

Industry	Firms
SIC 10. Metal mining	88
SIC 13. Oil and gas extraction	193
SIC 15. Building construction, general contractors, and operative builders	83
SIC 16. Heavy construction other than building construction contractors	43
SIC 20. Food and kindred products	160
SIC 26. Paper and allied products	44
SIC 27. Printing, publishing, and allied industries	64
SIC 28. Chemicals and allied products	308
SIC 29. Petroleum refining and related industries	59
SIC 30. Rubber and miscellaneous plastics products	30
SIC 32. Stone, clay, glass, and concrete products	61
SIC 33. Primary metal industries	98
SIC 34. Fabricated metal products, except machinery and transportation equipment	45
SIC 35. Industrial and commercial machinery and computer equipment	200
SIC 36. Electronic and other electrical equipment and components, except computer equipment	282
SIC 37. Transportation equipment	117
SIC 38. Measuring, analyzing, and controlling instruments; photographic, medical, and optical goods; watches and clocks	125
SIC 44. Water transportation	56
SIC 45. Transportation by air	64
SIC 47. Transportation services	37
SIC 48. Communications	200
SIC 49. Electric, gas, and sanitary services	232
SIC 50. Wholesale trade—durable goods	109
SIC 51. Wholesale trade—non-durable goods	77
SIC 53. General merchandise stores	55
SIC 54. Food stores	35
SIC 56. Apparel and accessory stores	30
SIC 58. Eating and drinking places	30
SIC 59. Miscellaneous retail	44
SIC 60. Depository institutions	292
SIC 61. Non-depository credit institutions	44
SIC 62. Security and commodity brokers, dealers, exchanges, and services	109
SIC 63. Insurance carriers	162
SIC 65. Real estate	146
SIC 67. Holding and other investment offices	145
SIC 70. Hotels, rooming houses, camps, and other lodging places	31
SIC 73. Business services	324
SIC 79. Amusement and recreation services	43
SIC 87. Engineering, accounting, research, management, and related services	92
Other industries (fewer than 30 companies per industry)	393
Total firms	**4,750**

TABLE 2. Headquarters Composition of Sample

HQ country	Firms	HQ country	Firms	HQ country	Firms
Australia	239	India	92	Poland	9
Austria	25	Indonesia	27	Portugal	13
Belgium	29	Ireland	27	Russia	20
Bermuda	25	Israel	24	Singapore	48
Brazil	52	Italy	70	South Africa	33
Canada	146	Japan	495	South Korea	116
Chile	9	Luxembourg	12	Spain	55
China (incl. Hong Kong)	205	Malaysia	67	Sweden	87
Colombia	5	Mexico	23	Switzerland	66
Denmark	38	Netherlands	66	Taiwan	131
Finland	48	New Zealand	14	Thailand	38
France	104	Norway	69	Turkey	14
Germany	106	Pakistan	16	United Kingdom	750
Greece	28	Peru	2	United States	1,283
Hungary	4	Philippines	20		
				Total firms	**4,750**

TABLE 3. Descriptive Statistics

	Summary statistics				Correlations																			
	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Selective disclosure magnitude	-0.10	0.23	-0.94	0.63	1.00																			
(2) Environmental performance	-2.13	2.10	-9.36	0.00	0.44	1.00																		
(3) Environmental NGOs per million population	0.54	0.53	0.00	4.50	-0.07	0.11	1.00																	
(4) Civil liberties and political rights	5.33	1.60	0.00	6.00	-0.08	0.04	0.33	1.00																
(5) Globalization index	0.73	0.20	0.00	0.93	-0.09	0.01	0.49	0.56	1.00															
(6) Listed on a foreign stock exchange	0.72	0.45	0.00	1.00	-0.10	-0.11	0.04	0.06	0.16	1.00														
(7) Percentage of sales to foreign countries	0.12	0.25	0.00	1.00	-0.13	-0.12	0.14	-0.03	0.01	0.04	1.00													
(8) High reputation	0.13	0.34	0.00	1.00	-0.10	-0.19	-0.10	0.10	0.07	0.15	-0.04	1.00												
(9) Sales	7.38	2.03	0.00	12.83	-0.24	-0.45	-0.21	0.05	0.03	0.23	0.12	0.33	1.00											
(10) Return on assets	0.07	0.15	-2.71	1.36	0.00	-0.05	0.01	-0.05	-0.04	0.01	0.00	-0.01	0.07	1.00										
(11) Employment	0.05	1.02	-1.43	29.48	-0.15	-0.23	0.01	0.00	0.00	0.10	0.09	0.21	0.39	-0.02	1.00									
(12) Intergovernmental environmental organizations	1.42	0.77	-0.88	2.54	-0.11	0.06	0.19	0.64	0.53	0.01	-0.01	0.06	0.06	-0.07	0.00	1.00								
(13) Press freedom	0.87	0.16	0.00	1.00	-0.07	0.05	0.17	0.57	0.28	0.06	0.06	0.03	0.03	-0.05	0.00	0.54	1.00							
(14) Corruption	2.61	1.54	0.00	8.00	0.05	-0.12	-0.56	-0.41	-0.32	-0.16	-0.07	0.00	0.10	0.06	0.00	-0.40	-0.46	1.00						
(15) Per capita gross domestic product	10.22	1.09	0.00	11.31	-0.01	0.06	0.25	0.38	0.28	0.18	0.01	0.08	0.05	-0.08	-0.01	0.41	0.43	-0.68	1.00					
(16) Accounting standards stringency	0.67	0.16	0.00	0.83	-0.03	0.09	0.19	0.44	0.25	0.02	-0.06	0.05	-0.06	-0.02	0.00	0.41	0.68	-0.54	0.38	1.00				
(17) Kyoto Protocol ratified	0.47	0.50	0.00	1.00	-0.12	0.01	0.16	-0.07	0.17	-0.15	0.19	-0.16	-0.04	-0.01	0.01	0.19	-0.05	0.08	-0.19	-0.14	1.00			
(18) Kyoto Protocol bound	0.26	0.44	0.00	1.00	-0.10	0.11	0.42	0.24	0.33	-0.06	0.12	-0.10	-0.09	-0.02	0.01	0.54	0.23	-0.30	0.17	0.10	0.62	1.00		
(19) Environmental stress	0.30	0.15	0.00	0.65	-0.06	-0.12	0.01	0.12	0.36	0.11	0.12	0.03	0.08	0.06	0.01	-0.10	-0.13	0.39	-0.36	-0.25	0.10	-0.15	1.00	
(20) Kyoto progress	1.46	5.94	-25.80	32.50	-0.01	0.12	0.08	0.10	0.09	-0.15	-0.10	-0.06	-0.17	0.00	0.00	0.33	0.16	-0.22	0.07	0.28	0.26	0.42	-0.25	1.00
(21) Ahead of Kyoto	0.20	0.40	0.00	1.00	-0.07	0.12	0.26	0.20	0.24	-0.13	0.03	-0.09	-0.13	-0.01	0.01	0.52	0.21	-0.30	0.14	0.23	0.52	0.84	-0.23	0.78

N=15,037 firm-year observations pertaining to 4,750 firms headquartered in 45 countries. The standardized variables in the regression have mean of 0, standard deviation of 1, and the following minimum and maximum values: *environmental performance* (-3.44, 1.02), *environmental NGOs per million population* (-1.02, 7.43), *civil liberties and political rights* (-3.33, 0.42), and *globalization index* (-3.69, 1.03).

TABLE 4. Regression Results

Dependent variable is *selective disclosure magnitude*

		(1)	(2)	(3)	(4)
H1	Environmental performance ◊	0.101**	0.103**	0.103**	0.102**
		[0.009]	[0.009]	[0.008]	[0.008]
H2a	Environmental NGOs per million population ◊	0.003	0.002	0.002	0.001
		[0.011]	[0.011]	[0.011]	[0.011]
H2b	Environmental NGOs per million population ◊		0.016*		
	× Environmental performance ◊		[0.007]		
H3a	Civil liberties and political rights ◊	0.001	0.003	0.003	0.003
		[0.015]	[0.014]	[0.015]	[0.014]
H3b	Civil liberties and political rights ◊			0.012**	
	× Environmental performance ◊			[0.003]	
H4a	Globalization index ◊	-0.105**	-0.104**	-0.103**	-0.102**
		[0.014]	[0.014]	[0.014]	[0.014]
H4b	Globalization index ◊				0.018**
	× Environmental performance ◊				[0.005]
H5	Listed on a foreign stock exchange	-0.027**	-0.027**	-0.026**	-0.027**
		[0.004]	[0.005]	[0.004]	[0.004]
H6	Percentage of sales to foreign countries	-0.019+	-0.017+	-0.018+	-0.016
		[0.010]	[0.010]	[0.010]	[0.010]
Firm-level controls	High reputation	-0.013	-0.014+	-0.013	-0.013
		[0.008]	[0.008]	[0.008]	[0.008]
	Sales	-0.005	-0.005	-0.005	-0.005
		[0.005]	[0.005]	[0.005]	[0.005]
	Return on assets	0.000	0.002	0.001	0.001
		[0.005]	[0.005]	[0.005]	[0.005]
	Employment	-0.003	-0.003	-0.003	-0.003
		[0.003]	[0.003]	[0.003]	[0.003]
Country-level controls	Intergovernmental environmental organizations	-0.029**	-0.029**	-0.030**	-0.030**
		[0.010]	[0.010]	[0.010]	[0.010]
	Press freedom	-0.069	-0.064	-0.061	-0.072
		[0.054]	[0.051]	[0.054]	[0.049]
	Corruption	0.012	0.012	0.012	0.012
		[0.009]	[0.009]	[0.009]	[0.009]
	Per capita gross domestic product	0.069**	0.067**	0.065**	0.067**
		[0.011]	[0.011]	[0.011]	[0.011]
	Accounting standards stringency	0.038	0.045	0.044	0.042
		[0.128]	[0.126]	[0.129]	[0.127]
	Kyoto Protocol ratified	0.002	0.002	0.001	0.003
		[0.009]	[0.009]	[0.009]	[0.009]
	Kyoto Protocol bound	-0.005	-0.005	-0.005	-0.006
		[0.007]	[0.007]	[0.007]	[0.007]
	Environmental stress	0.008	0.007	0.008	0.004
		[0.068]	[0.070]	[0.068]	[0.068]
	Year dummies	Included	Included	Included	Included
	Industry dummies	Included	Included	Included	Included

Hierarchical Linear Model (two-level mixed model) regression coefficients; brackets contain standard errors clustered by country.
** p<0.01; * p<0.05; + p<0.10. N=15,037 firm-year observations pertaining to 4,750 firms headquartered in 45 countries.
◊ denotes standardized variables.
All models also include year dummies, industry dummies, and dummy variables denoting instances where missing values of the following variables were recoded to 0: the country's *globalization index*, *civil liberties and political rights*, *environmental NGOs per million population*, *accounting standards stringency*, and *environmental stress* and its engagement in *intergovernmental environmental organizations*, the organization's *percentage of sales to foreign countries* and *employment*.

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Figure 1. Worse environmental performing companies exhibit particularly low levels of selective disclosure when headquartered in countries with higher scrutiny as indicated by more environmental nongovernmental organizations.
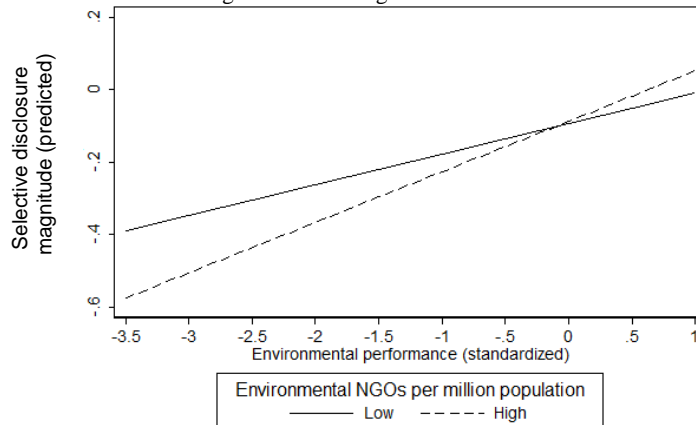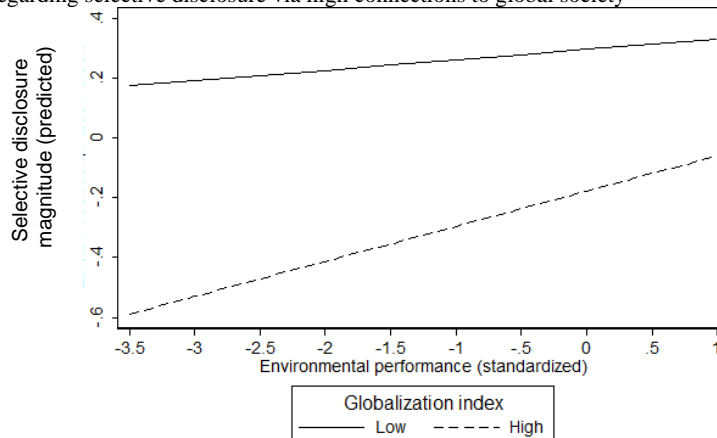

This figure depicts average predicted values generated from Model 2 of Table 4. The lines represent the average predicted values generated by each observation's actual values except *environmental performance* is estimated at each labeled value and *environmental NGOs per million population* is estimated at its 5th percentile (low) and 95th percentile (high) of the sample.

Figure 2. Worse environmental performing companies exhibit particularly low levels of selective disclosure when headquartered in countries with higher potential for scrutiny as indicated by high levels of civil liberties and political rights.
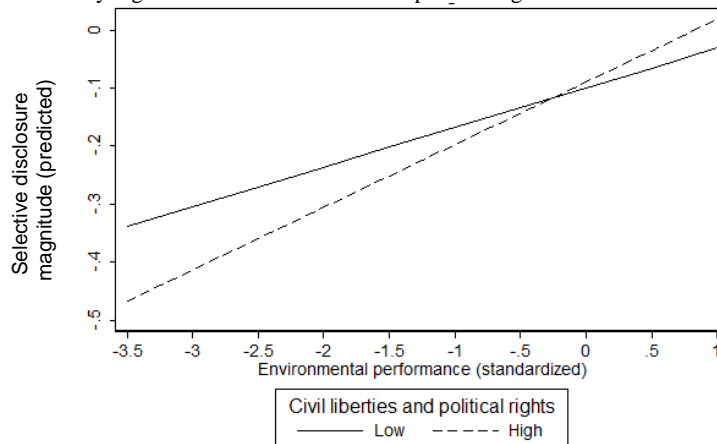
This figure depicts average predicted values generated from Model 3 of Table 4. The lines represent the average predicted values generated by each observation's actual values except *environmental performance* is estimated at each labeled value and *civil liberties and political rights* is estimated at its 5th percentile (low) and 95th percentile (high) of the sample.

Figure 3. Worse environmental performing companies exhibit particularly low levels of selective disclosure when headquartered in countries with higher normative expectations regarding selective disclosure via high connections to global society

This figure depicts average predicted values generated from Model 4 of Table 4. The lines represent the average predicted values generated by each observation's actual values except *environmental performance* is estimated at each labeled value and *globalization index* is estimated at its 5th percentile (low) and 95th percentile (high) of the sample.

<h2 style="text-align:center">APPENDIX. Detailed Description of *Selective Disclosure Magnitude*</h2>

This appendix provides a detailed description of the components used to calculate *selective disclosure magnitude*, which equals *absolute disclosure ratio* minus *weighted disclosure ratio*.

Absolute Disclosure Ratio measures the proportion of a company's relevant environmental indicators that it publicly discloses in a given year. It is calculated as follows:

1) Trucost allocates the company's annual revenues amongst the various industries in which it operated that year (typically from one to a few dozen of a set of 464 industries), using segment-based revenues data from the FactSet Fundamentals database as well as corporate annual reports and regulatory filings such as Form 10-K. Trucost shares these allocations with the companies it profiles; some companies then provide additional segmentation data, which Trucost incorporates into its database.

2) Trucost identifies the relevant environmental indicators associated with each of these industries, relying on several pollution release and transfer registries—national databases with inventories of natural resources and/or pollutants from many establishments in various industries (Trucost Plc, 2008). These registries include the U.S.' Toxic Release Inventory, the Federal Statistics Office of Germany (Destatis), the UK Environmental Accounts, Japan's Pollutant Release and Transfer Register, Australia's National Pollution Inventory, and Canada's National Pollutant Release Inventory. The environmental indicators associated with each company are selected from the more than 700 that Trucost tracks, including consumption of natural resources (such as water, oil, natural gas, mined materials, and various metals) and emissions of various pollutants to air, land, and water. The number of such environmental indicators relevant to a particular company is the denominator of its *absolute disclosure ratio*.

3) Trucost counts the number of such indicators that the company publicly disclosed that year, using each company's annual report, environmental or sustainability report, corporate social responsibility report, website, and other publicly disclosed data. Trucost considers only disclosures that refer to the firm's worldwide operations and are quantitative; for example, specifying how many tons of carbon dioxide emissions result from the company's global operations. The number of such disclosed indicators is the numerator of the company's *absolute disclosure ratio*.

4) The *absolute disclosure ratio* is the number of disclosed environmental indicators (from step 3) divided by the number of environmental indicators relevant to the firm's operations (step 2). That is, of the number of environmental indicators the firm could have disclosed, how many did it disclose?

Weighted Disclosure Ratio takes *absolute disclosure ratio* a step further, incorporating the materiality of these disclosures by factoring in financial estimates of the environmental harm associated with each environmental indicator. It is calculated as follows:

1) For every dollar of economic output associated with each industrial sector, Trucost estimates the emissions released and natural resources consumed for each environmental indicator, based on the pollution release and transfer registries described above. In other words, how many tons of carbon dioxide are emitted per dollar of activity in the automotive assembly sector? How many liters of water are used per dollar of activity in the agricultural sector? Multiplying each physical-factor-per-unit-revenue in each industry by the company's revenues in that industry yields an estimate of the company's total amount of each emission released and each natural resource consumed that year.

2) These physical quantities are then multiplied by *environmental damage cost factors*; for example, $31 of environmental impact per ton of greenhouse gas emitted (Trucost Plc, 2008: 5). These damage cost factors are drawn from academic research on the pricing of environmental externalities. This weighted sum is the denominator of *weighted disclosure ratio*.

3) The numerator of *weighted disclosure ratio* reflects a company's observed behavior and is the sum of the products of the quantity and the environmental cost factor of each disclosed indicator.

4) The *weighted disclosure ratio* is calculated as the proportion of the firm's *environmental damage cost*

(step 2) for which the company disclosed quantitative global figures (step 3); that is, the weighted sum of the disclosed environmental indicators divided by the weighted sum of all environmental indicators the company could have disclosed.

Selective Disclosure Example 1

Suppose a company's revenues from various sectors in a given year indicate that the company has only two relevant environmental indicators: greenhouse gas emissions and releases of arsenic to waterways. Further suppose that the company that year publicly discloses its tons of global greenhouse gas emissions but not its tons of arsenic released to waterways.

1) *Absolute disclosure ratio*: The denominator of *absolute disclosure ratio* would be 2 because the company has two relevant environmental indicators. The numerator of *absolute disclosure ratio* would be 1, because it disclosed one of those two indicators. Thus, *absolute disclosure ratio* for that company-year would be 0.5, indicating that the company had disclosed worldwide quantitative figures for 50 percent of its relevant environmental indicators. Had the company also disclosed that it released arsenic into waterways, but not how much, the ratio would be the same because a nonquantitative disclosure would not count as a disclosure.

2) *Weighted disclosure ratio*: For the same hypothetical company, suppose Trucost estimated the company's total environmental damage cost that year to be $1 million, the sum of $700,000 from releases of arsenic to waterways and $300,000 from greenhouse gas emissions. Because the company disclosed quantitative figures for its worldwide greenhouse gas emissions but not for its arsenic releases, its weighted disclosure ratio would be 0.3 (calculated as $300,000 ÷ $1,000,000), implying that its disclosures accounted for 30 percent of its environmental damage cost that year. Had the company disclosed its arsenic release but not its greenhouse gas release, its absolute disclosure ratio would still be 0.5 (one of two indicators disclosed) but its weighted disclosure ratio would be 0.7.

3) *Selective disclosure magnitude*: This equals *absolute disclosure ratio* minus *weighted disclosure ratio.* In this example, if the company disclosed its greenhouse gas emissions but not its arsenic release, *selective disclosure magnitude* would equal 0.2, calculated as 0.5 minus 0.3. If it disclosed its arsenic release but not its greenhouse gas emissions, *selective disclosure magnitude* would equal -0.2, calculated as 0.5 minus 0.7. The lower (negative) number indicates less selective disclosure; that is, the company still disclosed one indicator and withheld another, but it disclosed the more important one rather than the less important one.

Selective Disclosure Examples 2 and 3: Extreme Cases

As an extreme example, suppose there are 100 environmental indicators relevant to the industries in which a company operates and that this company discloses 99 of them. Suppose further that the environmental damage cost associated with the one undisclosed indicator is 10,000 times the cost associated with each of the 99 that were disclosed.

1) *Absolute disclosure ratio* would be a (deceptively) impressive 0.99, calculated as 99÷100. The company would appear to have disclosed practically everything.

2) *Weighted disclosure ratio* would be a most unimpressive 0.01, calculated as ([99×1] ÷ [(99×1)+(1×10,000)]). The company disclosed many numbers but very little of the environmental impact it had actually caused.

3) *Selective disclosure magnitude* would be the extremely high value of 0.98 (0.99 – 0.01), nearly the maximum possible value of +1.

If, instead, the company disclosed the one really damaging indicator but not the other 99, its *absolute disclosure ratio* would be 0.01, calculated as 1÷100, but its *weighted disclosure ratio* would be 0.99, calculated as ([1×10,000]] ÷ [(99×1)+(1×10,000)]). Thus, its selective disclosure magnitude would be -0.98 (calculated as 0.01 – 0.99), nearly the minimum possible value of -1. This scenario reflects a company disclosing the sole indicator that mattered most in terms of environmental harm.