LAW & POLICY UNIVERSITY OF DENVER

Examining Procedural Justice and Legitimacy in Corporate Offending and Beyond-Compliance Behavior: The Efficacy of Direct and Indirect Regulatory Interactions

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Tom Tyler's Procedural Justice Theory has received support in a variety of studies using criminal justice authorities as the research focus. To date, the theory has not been empirically tested using corporate malfeasance as an outcome, despite evidence that procedural justice is important in achieving regulatory compliance. This study uses factorial survey methods to examine whether corporate behavior is predicted by professionals' perceptions of procedural justice and legal legitimacy. We find that procedural justice and legitimacy considerations are salient only when managers have direct contact with regulatory authorities. This supports John Braithwaite's argument that effective regulation is enhanced by microlevel interactions in which procedural justice can be effectively leveraged to promote compliance.

I. INTRODUCTION

The large-scale physical and financial consequences of corporate environmental violations are undeniable. In 2015, for instance, Volkswagen was found to have installed software on some of its diesel models that allowed the cars to pass emissions tests while producing up to forty times more emissions than allowed. Aside from the obvious use of deceptive advertising and the financial harm suffered by Volkswagen investors and car owners (Chew 2015; Greene and Foley 2015; Shah 2015), it has been estimated that these actions will cause sixty premature deaths, thirty-one cases of chronic bronchitis, and thirty-four other cases of serious cardiac and respiratory illness in the United States (Chu 2015). Volkswagen's actions are not an isolated incident. On April 20, 2016, for instance, Mitsubishi Motors announced that it too had supplied inaccurate fuel consumption test data on 625,000 of its automobiles (Onyanga-Omara 2016). According to media accounts, tests on many other diesel car models demonstrated that many manufacturers had understated vehicle emissions (e.g., Carrington 2015). Cases like these are clear examples of corporate environmental noncompliance and remind us of how little scholars know about corporate motivations and environmental offending.

The authors gratefully acknowledge the anonymous reviewers of *Law & Policy*, previous reviewers, and participants in the panel presentation of this research at the 2016 American Society of Criminology's Annual Meeting in New Orleans, LA. All reviewers provided insightful comments that improved the article tremendously. All errors, of course, remain our own.

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LAW & POLICY, Vol. 40, No. 2, April 2018 ISSN 0265-8240

doi: 10.1111/lapo.12100

A common theory of compliance argues that law enforcement authorities can motivate compliance by using fair procedures when dealing with offenders. Treating offenders in a "procedurally just" manner imbues violators with a sense that authorities and the law are legitimate and that compliance is normatively desirable. Tyler (2006), in his well-regarded monograph *Why People Obey the Law*, suggests that people often comply with the law because they believe it is the proper thing to do. Offenders evaluate the justice (or injustice) of their law enforcement encounters by taking into consideration factors unrelated to legal outcomes per se (e.g., being fined or arrested), including whether they are given the chance to state their case and whether they are treated with dignity and respect by legal authorities. Procedural Justice Theory has received much empirical support in traditional criminological studies—that is, studies of crimes involving individual offenders, a formal police response, and (often) nonfinancial motivations—but there have been far fewer attempts to use this approach to explain why corporations and their employees obey the law (see, e.g., Tyler 2009, 2014; Tyler and Blader 2005) or take actions that far exceed regulatory requirements (referred to in the literature as "overcompliance" or "beyond-compliance behavior").[1]

In this study, we test whether procedural justice and legal legitimacy predict corporate environmental behavior. Specifically, we examine noncompliance ("offending") as well as beyond-compliance behavior. Consistent with Procedural Justice Theory, we argue that regulators, similar to their law enforcement counterparts, may leverage their contact with offenders and potential offenders to motivate compliance in a variety of situations.

II. REVIEW OF THE LITERATURE

A. AN OVERVIEW OF PROCEDURAL JUSTICE

According to Tyler's (2006; see also Tyler 2014) conceptualization of procedural justice, people obey the law for two reasons. First, people view legal authorities (both legislative institutions and actual law enforcers) as deserving of the power to dictate behavior (i.e., as being "legitimate" authorities). Second, they want to behave in line with their own personal morality (see Gezelius and Hauck 2011). Normative issues are the main crux of procedural justice—even when the certainty of detection or sanction is low, people who view the law as legitimate follow its dictates because they consider it their responsibility or obligation to do so.

Considering how constrained law enforcement and regulatory resources are, society must be populated by people who comply with the law willingly—that is, without coercion. Although coercion is certainly important for short-term or situational compliance in some instances, coercion is limited because it *only* promotes compliance in the short term, sends a message of distrust to the parties involved (as well as to the larger community), and depresses informal social control efforts by alienating potential allies in monitoring (Tyler 2014). Thus, enhancing intrinsic motivation for compliance is an important component of social control. One such intrinsic motivation is legitimacy, defined as "the belief that those in power deserve to rule and make decisions influencing the lives of everyone" (ibid., 268–9).[2] When regulated groups confer legitimacy on legal authorities (and the laws those authorities represent), individual members of regulated groups are more likely to monitor and discipline others' violations of norms, as well as obey authorities, because regulatees believe that it is normatively desirable to do so (Tyler 2014; Zelditch 2001; see also Gezelius and Hauck 2011).

How, then, do authorities encourage the impression that the law and government agencies are legitimate and deserving of obedience? Tyler (2006) argues that people come to see the law as legitimate when the law is enforced fairly. Despite common beliefs, however, the *outcome* of law enforcement encounters (e.g., whether one is arrested or not) is not the most important component in perceptions of fairness (but see Johnson, Selenta, and Lord 2006). Rather, the *process* by which the law is enforced is more salient in determinations of legitimacy. In other words, *procedural justice* (feeling that one has been treated fairly) is more important in promoting perceptions of legitimacy (and, in turn, in motivating compliance) than *distributive justice* (the fairness of outcomes). According to Tyler (2006; see also Tyler and Lind 1992; Tyler 1988), perceptions of procedural justice are guided by six factors:

1. *Representation or voice*: whether individuals have a chance to tell their side of the story and have it considered;
2. *Consistency*: whether authority is imposed consistently across people and time;
3. *Impartiality*: the perception that authorities are (or make an effort to be) unbiased—that official decisions are based on facts and not on other factors (e.g., individual characteristics);
4. *Accuracy*: the perception that the procedures used to come to a decision are objective and transparent, and that those procedures make use of the most accurate information possible;
5. *Correctability*: the feeling that there are other authorities to whom one may appeal so that mistakes can be corrected; and
6. *Ethicality* or *Standing*: whether authorities treat the individual with respect (indicating that the individual is a valued member of the community or group).

One's evaluation of the fairness of proceedings has an influence on one's attitudes about authorities as well as about future behaviors. When decisions are made based on a fair process, individuals perceive that they are being listened to and actively involved in the groups' procedures, affirming their status as members of the larger group or society. In turn, they are more inclined to conform to group expectations (Tyler and Blader 2003). Many studies in criminology and criminal justice empirically support the tenets of procedural justice. For example, efforts to use just procedures have been found to promote compliance among Chicago residents (Tyler 2006), domestic violence arrestees in Milwaukee (Paternoster et al. 1997), drunk drivers in Australia (Tyler et al. 2007), and in a randomized field study of Queensland police traffic stops (Mazerolle et al. 2013). In the current study, we determine whether procedural justice and legitimacy considerations predict business professionals' compliance with environmental law.

B. PROCEDURAL JUSTICE AND ENVIRONMENTAL REGULATORY ENFORCEMENT

Corporate Environmental Offending

Corporate crime is a specific type of white-collar crime committed by representatives of a corporation (see Rorie et al. 2018; Braithwaite 1984), and environmental crime is a narrower subset of corporate noncompliance concerning environmental laws. Corporate crime can be distinguished from other types of white-collar crime in that the former primarily benefits the company while the latter typically benefits individual offenders (Braithwaite 1984; Clinard and Yeager 1980; for a review of definitional issues in white-collar crime, see Rorie et al. 2018; Simpson 2013). The majority of corporate offenses are

(at least initially) handled by regulatory agencies like the Environmental Protection Agency (EPA; Ross 2013; Clifford and Edwards 2012). As such, we take the EPA definition of environmental crime as our starting point:

> Generally speaking, an environmental crime is a negligent, knowing or willful violation of a federal [or state] environmental law. "Knowing" violations are those that are deliberate and not the product of an accident or mistake. (US EPA 2013, para. 3)

Many people assume that fear of detection by enforcement agencies and consequent formal (or informal) punishments are the most important factors encouraging environmental compliance. However, this assumption is questionable since detection is relatively unlikely and formal punishments tend not to be severe (see, e.g., Office of the Inspector General 1998). In many countries, the responsibility for environmental regulation is delegated to local authorities who may be less inclined to punish businesses that contribute to the local economy, opting to take a cooperative approach instead. Local politics also plays a role in determining available resources for environmental enforcement, which influences agencies' abilities to detect infractions (Yeager and Simpson 2009). Furthermore, enforcement efforts have focused principally on large manufacturers and industrial facilities (Farber 2005; Vandenbergh 2004), and social norms often follow suit, assigning responsibility for pollution to large firms rather than to small businesses or households (Vandenbergh 2001, 2004). Although this strategy has resulted in pollution reductions over time, smaller businesses and polluting individuals are substantial sources of some environmental pollutants but are not often subject to legal sanctions (Farber 2005; Vandenbergh 2001, 2004). Moreover, it is more difficult to implement formal enforcement mechanisms against the far more numerous group of small business owners and individuals (Farber 2005). Small business owners may not believe they are subject to sanctions, and thus a significant source of pollution remains unchecked. Given that large and small companies (and the individuals within them) do not face particularly certain or severe formal punishment, fear of regulatory agency action may not be an adequate or even a strong explanation for environmental compliance.

Empirical research findings on the subject of large firm corporate environmental compliance are inconsistent. Some studies show that regulatory activity (such as monitoring and inspections) reduces corporate environmental noncompliance (see, e.g., Simpson et al. 2013; Simpson 2002; Cohen 2000; Nadeau 1997; Gray and Deily 1996; Paternoster and Simpson 1996; Magat and Viscusi 1990), but others fail to find a deterrent effect (see, e.g., Simpson, Garner, and Gibbs 2007) or find that deterrence matters only in certain settings (see, e.g., Gezelius and Hauck 2011; May 2005; Axelrad 2000; May and Winter 1999).

As such, it seems likely that at least some of the influence of formal sanctions arises not from the fear of sanctions but for other reasons (Gezelius and Hauck 2011; Braithwaite, Coglianese, and Levi-Faur 2007; May 2005; Thornton, Gunningham, and Kagan 2005; Gunningham, Kagan, and Thornton 2004). Enforcement activities remind managers to check their policies and equipment for compliance and/or reassure compliant managers that obeying regulations is the correct behavioral choice because the alternative can have undesirable consequences (even if those consequences are not severe). The use of formal sanctions against offending companies also restores industry participants' confidence that deceit fails to provide an advantage in the competitive market (Thornton, Gunningham, and Kagan 2005; Gunningham, Kagan, and Thornton 2004; National Research Centre for OHS Regulation 2004). Additionally, regulations and enforcement behavior (e.g., inspections) create or support social norms surrounding the immorality of pollution behaviors (Vandenbergh 2001, 2004) and lead to "cultures of compliance" characterized

by institutionalized policies within corporations (Thornton, Gunningham, and Kagan 2005; Gunningham, Kagan, and Thornton 2004; National Research Centre for OHS Regulation 2004).

Importantly, regulatory agencies and their agents are not necessarily adversaries of the corporations being regulated. Although early research on the enforcement styles of regulators noted the presence of a formal, deterrence-based approach, much research has also demonstrated that regulators are equally likely to be flexible and accommodative, depending on the situation (Simpson, Garner, and Gibbs 2007; May and Burby 1998; Gormley 1997; Hutter 1988, 1989; Braithwaite, Walker, and Grabosky 1987; Shover et al. 1984; Bardach and Kagan 1982).[3] This is because both regulators and regulatees are responsible for environmental compliance; due to the complexity of regulations and the lack of resources available to regulators, these parties must rely on each other to achieve corporate compliance. Regulators help interpret regulations and provide technical assistance for achieving compliance while the regulated facilities educate regulators about the industry and the specific facility, in addition to providing requested data (McCaffrey et al. 2007; Hutter 1997; Hawkins 1984). This interdependence has been found to enhance relationships that evolve through repeated interactions and frequent communications. In fact, recent research finds high levels of trust, positivity, respect, and cooperation between environmental regulators and their regulated counterparts (Pautz and Rinfret 2013; Pautz 2009; Glicksman and Earnhart 2006).

Such cooperation may promote compliance for a multitude of reasons, including reduced resistance to authority (Sherman 1993), improved communication resulting in a better understanding of how to be compliant, and/or increased trust among parties resulting in more collaboration (Kagan 2004; Potoski and Prakash 2004; Levi 1998; Ayres and Braithwaite 1992; Scholz 1991; Bardach and Kagan 1982). It might also be the case that cooperation is an indication (or outcome) of practices that improve procedural justice (e.g., regulators taking the time to hear violators' defenses, making more of an effort to make regulatees feel like part of a compliance team, and using fairer, more objective, and more transparent procedures).

According to Procedural Justice Theory (Tyler 2006; Lind and Tyler 1988), the use of fair procedures will cultivate legitimate authority (which then motivates compliance) among the corporations being regulated. If the regulated corporations see that regulations are fairly enforced and that regulatory authorities take the corporations' perspectives into account, corporate managers will come to see the law and its agents as legitimate and thus feel a moral obligation to obey the law.[4] Procedural justice thus has important implications for improving regulatory processes to promote environmental compliance. In fact, we see parallels between Tyler's work and the tenets of Ayres and Braithwaite's (1992) "Responsive Regulation" (see also Tyler 2014). Responsive Regulation (Ayres and Braithwaite 1992) incorporates legitimacy concerns into its prescriptions for regulatory policy. Different corporate managers have different reasons to obey the law (or one manager may have multiple factors to consider), implying that regulatory strategies should often include both cooperative and punitive components in order to be "effective, efficient, and legitimate" (Nielsen and Parker 2009, 376). With cooperation and dialogue, regulated entities have more favorable perceptions of the regulatory process (e.g., perceiving the process to be legitimate and procedures to be fair) and are more motivated to voluntarily comply (Braithwaite 2002). However, cooperation must be backed by the possibility of punitive sanctions in case the corporation does not respond to cooperation alone (Ayres and Braithwaite 1992; see also Nielsen and Parker 2009). The need to incorporate cooperative as well as punitive responses to promote compliance has been supported by previous research (e.g., Braithwaite, Makkai, and Braithwaite 2007;

Braithwaite 2002; Winter and May 2001; Gunningham, Grabosky, and Sinclair 1998; Burby and Paterson 1993; Scholz 1984), but it remains unclear (and generally untested) whether formal justice efforts to respond to corporate crime have an indirect effect on compliance through their influence on normative considerations at the individual or corporate level. We examine how procedural justice and legitimacy considerations affect offending intentions, hypothesizing that

H1: *Decision makers who value procedural justice will be less willing to engage in environmental offending.*

H2: *Decision makers who perceive the law as legitimate will be less willing to engage in environmental offending.*

Beyond-Compliance Behaviors

Compared to corporate offending, corporate beyond-compliance behavior—defined as corporate behaviors exceeding regulatory requirements—receives scant attention in the criminological literature, although it has been examined in economic and corporate strategy research. Some companies and managers voluntarily take action to safeguard the environment absent regulatory requirements, while others have an environmental record that far exceeds what is required by existing regulations. For example, some companies and facilities reduce pollution discharges to levels far lower than the legal limit (Shimshack and Ward 2008; McClelland and Horowitz 1999). Others voluntarily reduce nonregulated pollution sources by enrolling in programs sponsored by the EPA such as Green Lights (which later partnered with the Energy Star Buildings Program), the 33/50 Program for toxic chemicals, and Wastewise. The studies cited above have mainly focused on firms or corporations; relatively few studies have examined why individuals within a firm adopt these types of behaviors, and none have examined how procedural justice considerations may promote such forms of beyond-compliance behavior.

Beyond compliance is an important subject for criminological study because there is no legal necessity for the behavior, yet many firms either comply or do far more than regulations require to protect the environment and the public, taking actions that are not necessarily linked to a desire to avoid sanctions. We suspect that corporations voluntarily engaging in proenvironmental behaviors (particularly those operating in the absence of regulatory standards) may be doing so in part for normative reasons (i.e., because firm managers see it as the "right thing to do"; see Rorie 2015). Kagan, Gunningham, and Thornton's research (2003) suggests that a strong moral environmental commitment by company managers induces manufacturing plants to do more than merely comply, which, in turn, encourages a strong environmental management system. The role of corporate culture may also be important—beyond-compliance behaviors are more likely when the acceptability of such behavior is communicated by top management, when such behavior is seen as ethical, and when administrators plan to stay in their current positions for a long time (Wu 2009; Simpson, Garner, and Gibbs 2007). As such, compared to noncompliance, corporate beyond-compliance behavior may be even more strongly influenced by procedural justice and legitimacy considerations.

On the other hand, corporations may exceed existing compliance standards for instrumental reasons (Aguilera et al. 2007). Here it is worth noting that environmental corporate behaviors cannot be explained simply by a "comply/not comply" dichotomy. The labeling of a corporation as an offender is often a matter of negotiation between the state and the corporate actor—overcompliers may gain a competitive advantage over market

opponents. Initial industry overcompliers ("early movers"), for example, may be able to encourage stricter regulations that increase strain on those competitors less able to meet regulatory standards (Delmas and Terlaak 2001). In other words, beyond-compliance behavior can be a preemptive form of compliance. Research supports the contention that companies exceed compliance requirements because they anticipate stricter regulations in the future (Wu 2009; Gunningham, Kagan, and Thornton 2003; Arora and Cason 1996). Firms might also do more than merely comply as a way to signal to regulatory agencies that they are acting in good faith in the event of a future regulatory violation or as a way to improve corporate reputation among consumers, employees, and/or the public (see e.g., Kitzmueller and Shimshack 2012; Turban and Greening 1996).

Another competitive advantage for early movers is that potential consumers may prefer their products because the firms are seen as "green"-leading, thereby increasing profits and market share (Porter and van der Linde 1995a, 1995b). Studies suggest that some firms consider consumer willingness to pay for environmentally friendly products and choose to do more than simply comply in order to establish an environmental reputation (Wu 2009; Arora and Cason 1995, 1996; Arora and Gangopadhyay 1995). Generally, if beyond-compliance behavior is a consequence of calculated self-interest, regulators may be unable to rely on these firms to "police" themselves whenever beyond-compliance behavior fails to provide adequate reputational or financial benefits (Simpson, Gibbs, and Slocum 2008).

Also of interest is whether motivations for noncompliance and beyond-compliance behavior differ. Two studies have directly compared motivations for offending with motivations for beyond-compliance behaviors. Wu (2009) found that, in Oregon firms, both offending and beyond-compliance behavior are motivated by competitive pressures as well as the costs of adopting environmental practices. Rorie's (2015) study of individual environmental professionals found that both types of behavior were motivated by potential career benefits, internal moral judgments about the behavior, whether engaging in the behavior would be a "thrill," and potential reputational impacts on the corporation itself (but not on the individual). In addition, both types of behavior were more likely when a supervisor ordered the action.

However, these studies also found differences in the factors that affect offending and beyond-compliance decisions. Wu (2009) found that beyond-compliance behavior resulted from more proenvironmental values held by top managers and (marginally) from regulatory pressures. Violations, on the other hand, were uniquely affected by the size of the company and by whether or not the company was publicly held (with smaller and publicly held companies being more likely to offend). Rorie (2015) demonstrated that indicators of an internal corporate culture of compliance played a role in promoting beyond-compliance behavior but did not have a statistically significant effect on offending.

We are unaware of any research to date that has examined whether perceptions of legal authorities or the law affect beyond-compliance behavior, although it seems reasonable to expect that legitimacy and procedural justice would be influential. The literature notes that corporate beyond-compliance behavior often results from the attitudes of top managers, and the attitudes of top managers toward regulators (as well as others in their industry) can be improved when authorities act in a procedurally just manner. Procedural justice and legitimacy might not only promote perceived moral obligations to obey the law but might also motivate perceived obligations to do more than merely comply. This study provides a test of these relationships, as we hypothesize that

> H3: *Decision makers who value procedural justice will be more likely to go beyond compliance with environmental regulations.*

H4: *Decision makers who perceive the law as legitimate will be more likely to go beyond compliance with environmental regulations.*

To inform regulatory policy, research must further elucidate how regulatory procedures affect corporate compliance. The current study examines whether procedural justice and legitimacy considerations affect corporate environmental offending and beyond-compliance behavior using a nationwide sample of environmental business professionals working in a variety of different occupational locations. Furthermore, we employ a factorial survey design to obtain a more direct and complete assessment of individuals' opinions of authorities and law (as opposed to using official data).

III. METHODS

A. FACTORIAL SURVEY

Factorial surveys combine experimentally manipulated hypothetical scenarios (vignettes) with survey questions to measure respondent intentions, decisions, attitudes, or judgments (Rossi and Nock 1982). With such a design, researchers can randomize various elements in a hypothetical scenario and then inquire about the individuals' attitudes, perceptions, or likely behavior under various circumstances. This allows researchers to examine more complex and nuanced situations while maintaining a strong research design (Weber, Sellers, and Rossi 1988). Unlike other research designs, which are limited by causality concerns (e.g., temporal ordering) as well as fluctuating individual perceptions and opinions, factorial designs allow us to measure offending decisions at the same time that relevant circumstances are presented (Paternoster et al. 1982; Saltzman et al. 1982).

To create hypothetical scenarios, the researcher must first determine the relevant "dimensions" likely to influence decision making. For example, we may think that economic constraints on the company will affect the respondent's decision to offend or to go beyond complying with environmental laws. To assess the role of economic constraints, we would then include a sentence within the scenario that presents the company as either (1) suffering from declining profits, (2) economically healthy, or (3) experiencing profit growth from year to year. One-third of respondents would see a scenario with the first "level" (depicting declining profits), another third the second level (economically healthy), and another third the last level (profit growth). Who sees which phrase is randomly determined. In corporate crime research, pushes and pulls toward crime can be conceptualized as operating at the individual *and* company level. Factors that affect both are incorporated into the vignette design.

Our survey contains three "offending" vignettes. One vignette describes a failure to comply with an environmental agency's compliance order, another depicts an employee ignoring hazardous waste labeling regulations, and the third depicts a more substantial pollution event (the intentional release of a toxic substance into a local waterway that exceeds permitted levels by 200 percent). The survey also includes two "beyond-compliance" vignettes. The first describes an attempt to keep pollution emissions at 40 percent below the required levels, and the second describes voluntary counterterrorism measures (enhancing security around toxic chemical storage sites). Each survey contains a random selection of two offending scenarios and one beyond-compliance scenario, yielding a total of three scenarios per person. The vignettes are followed by a series of questions that relate to a specific scenario, general

questions that measure respondents' opinions and beliefs, and requests for demographic information about the respondent and her business experience.

B. SAMPLE

To study corporate environmental decision making, we sought to survey a large and diverse group of professionals and managers who were knowledgeable about environmental management issues within their organizations. As such, we purchased a sampling frame from TMone, a company that develops and provides targeted databases of individuals and households. Based on our sampling criteria, we obtained a list of 7,292 individuals identified by TMone as environmental professionals or individuals with some environmental responsibilities within organizations of all sizes and in every industry in the United States.

From December 2008 to March 2009, researchers at Vanderbilt University and the University of Maryland, College Park, sent letters to each individual on the list informing them that they had been selected to participate in a web-based survey. Of the 7,292 contacted, 1,373 letters were returned as undeliverable, leaving us with a potential sample pool of 5,919. To increase response rates, Vanderbilt researchers sent out follow-up postcards about three weeks after the initial letter was sent (from January 2009 to April 2009).

Seven hundred and seventeen individuals logged into the survey site, representing a response rate of about 12 percent.[5] Since the scenario (not the individual) is the unit of analysis for our research, our sample size is actually much larger. Of the 717 respondents, 517 responded to all three scenarios, 63 responded to two scenarios, and 137 responded to one scenario,[6] which equates to a potential sample size of 1,814. However, we dropped all people who did not have data on the dependent variable (behavioral intentions), leaving us with a final sample of 1,465. The final sample includes 879 offending scenarios and 586 beyond-compliance scenarios.[7]

C. MEASURES

Although the vignette dimensions and some follow-up questions are the same in both the offending and beyond-compliance scenarios, there are also variables that are unique to each type of behavior. We specify which measures are appropriate to each outcome when necessary.

Dependent Variable

The dependent variable of interest for both offending and beyond-compliance behavior is the survey taker's willingness to behave the same way as the hypothetical manager given the circumstances described in the vignette. This is measured on an eleven-point scale, where a value of 0 indicates no chance of acting as the manager, a value of 1 indicates a 10 percent chance of acting as the manager, and so forth, with a value of 10 implying a 100 percent chance of behaving as the scenario suggests.

Explanatory Variables

Following Tyler's (2014) definition of legitimacy given above (which emphasizes that laws and authorities are justified in dictating behavior), we use three measures to examine the effect of perceived legitimacy on compliance, including the perceived adequacy of the law governing that behavior,[8] whether an individual should comply with the law (meaning the general concept) *even if* it goes against what that individual thinks is right, and

whether an individual should comply with the law *so long as it does not go* against what that individual thinks is right.[9] We do not include the item assessing the adequacy of the law regarding the specific behavior in our beyond-compliance scenarios because such behaviors are generally not mandated by law. Finally, an overall measure of one's *group engagement* (an outcome of legitimacy) is found in the statement "An individual should act as others do."[10]

We also have measures that represent specific components of Tyler's (2006) Procedural Justice Theory. We assess *voice* using an item stating that regulators should give individuals an opportunity to defend their behavior. *Consistency* is represented by one's opinion about whether an individual should be treated consistently with similarly situated others. *Impartiality* is reflected in two statements: "An individual should be presumed by regulators to act in good faith until events prove otherwise" and "Absent blameworthy activity, an individual should be free from government intervention." The impartiality statements have been used as injunctive norms in previous research (see Vandenbergh 2003). Here, we use them as measures of procedural justice values. Much prior research simply asks respondents about whether authorities are "fair" or "equal" in their treatment of subordinates (see, e.g., Reisig and Mesko 2009; Tankebe 2009) without clarifying what "fair treatment" looks like. In our view, Tyler's (2006) conceptualization of impartiality (authorities are "unbiased") could be expanded beyond treating groups the same. Impartiality could also be described as authorities declining to take action (i.e., sanctioning) until the facts indicate that action is needed. This would be in contrast to biased authority, illustrated by taking actions against individuals or groups because of public opinion or other motivations not associated with the respondents' behavior.

Control Variables

In addition to theoretically relevant variables, we included other factors associated with environmental behavior to prevent biased estimates. To measure formal instrumental factors, we include measures that apply to the individual level as well as to the firm level. The first scale depicts the perceived certainty/chance of formal sanctions such as arrest or civil suits ($\alpha = 0.95$). The second scale measures the perceived severity of formal sanctions ($\alpha = 0.89$). Most of the sanctions that applied to offending behavior did not pertain to beyond-compliance behavior, because such behavior is not subject to punishment. Therefore we do not have appropriate survey items with which to create such scales in the beyond-compliance scenarios.

Also important are the nonlegal aspects of an individual's cost-benefit calculations. We included vignette dimensions measuring whether a hypothetical manager had been reprimanded or fired or whether the firm had taken no action for a similar behavior; whether the action would strengthen or weaken the firm's competitive position; whether the firm was experiencing declining or increasing sales and revenues; whether the firm was losing ground to foreign competitors, was economically healthy, or was economically deteriorating; whether the firm was mandated to release pollution information publicly; whether ethical considerations guide, are distinct from, or are irrelevant to business decisions at the company; whether the hypothetical manager is asked to take action or asks an employee to take action; whether the hypothetical manager is mid-level or upper-level; and scenario type. All of these items are relevant for both types of intentional outcomes (offending and beyond compliance).

In addition to the vignette dimensions, we asked respondents to respond to items that tap into different dimensions of informal sanctions. These items were then scaled to create the following measures: (1) the perceived certainty of informal sanctions ($\alpha = 0.82$); (2)

the perceived severity of informal sanctions ($\alpha = 0.88$); and (3) whether the respondent would feel guilt or shame if she acted illegally ($\alpha = 0.83$). In the two beyond-compliance scenarios, scales measured (1) the likelihood of informal rewards ($\alpha = 0.87$) and (2) the perceived benefit of informal rewards ($\alpha = 0.96$). The informal sanction measures were relevant for the offending conditions only, as were additional survey questions that measured the perceived likelihood that such behavior would endanger human lives and the likelihood that it would endanger wildlife. Across both sets of outcomes, we also measured the desirability of the behavior, business experience of the respondent (in years), whether the respondent felt the scenario was realistic, whether the respondent has ever had personal experience with any of the scenarios presented, and whether the respondent felt that engaging in the behavior would be thrilling.

D. ANALYSIS

Regressions

We conducted all analyses in STATA, using the MICE program to account for multiple imputation (Royston 2009). In examining the distribution of the dependent variable, we found that it was notably skewed in the noncompliance scenario data. Therefore, we dichotomized the offending outcome (0 = no chance of offending and 1 = a 10 percent or greater chance of offending). We then ran logistic regression for these situations.[11] We kept the beyond-compliance measure as an eleven-point scale and used OLS regression.[12] Table 1 provides the descriptives of the imputed data sets; there were no significant differences in the descriptives before and after imputation.

Given that the unit of analysis is the scenario (and not the respondent), it is important to consider clustering effects. Most individual respondents responded to more than one scenario, and therefore those observations are not independent, violating an important assumption of multivariate regression. We thus estimated robust standard errors using the Huber-White/sandwich estimator in STATA.[13]

For both compliance and beyond-compliance behavior, we ran regressions first for the specific scenarios combined (i.e., for beyond-compliance behavior, responses to the enhancing security scenario and the reducing pollution scenario were combined), then examined the effect of these variables on specific types of offending.[14] Standardized coefficients are shown in all analyses to better examine the relative influence of each measure.

IV. RESULTS

Our hypotheses predicted that increased perceived importance of procedural justice and legitimacy would decrease offending intentions (H1 and H2) and promote beyond-compliance behavior (H3 and H4).[15] Examining Table 2, it appears that legitimacy considerations have only a minor effect on offending likelihood. Only one item predicted offending in the overall sample, and this was driven by one specific offense type. Specifically, when individuals feel that there is a moral responsibility to comply with a law despite it going against what one believes is right, they are less likely to ignore a compliance order. However, this belief has no effect on the decision to discharge toxins or to mislabel hazardous waste. A belief that one should comply with the law as long as it does not contradict one's beliefs about right or wrong also predicts a decreased chance of ignoring a compliance order, but it does not significantly predict the other types of offending. No legitimacy considerations predicted beyond-compliance behavior.

Table 1. Summary Statistics for Imputed Data Sets

	Offending Scenarios				Beyond-Compliance Scenarios			
Variable	**Range**	**Obs.**	**Mean**	**Std. Dev.**	**Range**	**Obs.**	**Mean**	**Std. Dev.**
Manager Act	0–1	9669	0.38	0.49	0–10	6446	7.66	2.95
Legitimacy								
Adequate Law	0–10	9652	3.06	2.12				
Comply Even If	0–7	9558	5.45	1.54	0–7	6367	5.55	1.47
Comply So Long As	0–10	9547	4.20	3.77	0–10	6361	3.87	3.68
Act as Others	0–10	9556	1.94	2.08	0–10	6368	1.94	2.07
Procedural Justice								
Voice	0–10	9555	8.55	2.15	0–10	6368	8.40	2.20
Impartial - Good Faith	0–10	9556	7.73	2.55	0–10	6365	7.66	2.62
Impartial - Intervention	0–10	9549	4.66	3.39	0–10	6366	4.80	3.35
Consistent Treatment	0–10	9546	8.36	2.00	0–10	6362	8.29	1.99
Control Variables								
Chance of Formal Sanctions	0–60	9619	30.71	15.45				
Severity of Formal Sanctions	0–50	9640	43.87	7.65				
Reprimanded	0–1	9669	0.34	0.47	0–1	6446	0.36	0.48
Fired	0–1	9669	0.37	0.48	0–1	6446	0.33	0.47
Strengthen Competitiveness	0–1	9669	0.47	0.50	0–1	6446	0.52	0.50
Declining Revenues	0–1	9669	0.53	0.50	0–1	6446	0.46	0.50
Losing to Foreign Comp.	0–1	9669	0.35	0.48	0–1	6446	0.34	0.47
Economically Deteriorating	0–1	9669	0.34	0.47	0–1	6446	0.37	0.48
Mandated Public Info.	0–1	9669	0.48	0.50	0–1	6446	0.45	0.50
Severity of Informal Sanctions	0–61	9605	53.37	9.61				
Likelihood of Informal Sanctions	0–70	9634	43.52	10.94				
Benefits of Informal Rewards					0–60	6422	39.40	15.37
Likelihood of Informal Rewards					0–63	6401	36.11	13.66
Guilt/Shame	0–2	9612	1.00	0.17				
Ethics Guide Decisions	0–1	9669	0.34	0.47	0–1	6446	0.30	0.46
Ethics Are Distinct	0–1	9669	0.32	0.47	0–1	6446	0.34	0.47
Danger to Humans	0–10	9639	6.49	2.63				
Danger to Wildlife	0–10	9645	7.56	2.38				
Asked by Supervisor	0–1	9669	0.50	0.50	0–1	6446	0.50	0.50
Mid-level Manager	0–1	9669	0.52	0.50	0–1	6446	0.45	0.50
Ignore Compliance Order	0–1	9669	0.34	0.47				
Discharge Toxins	0–1	9669	0.34	0.48				
Reduce Pollution					0–1	6446	0.49	0.50
Desirability	0–10	9663	0.75	1.61	0–10	6435	7.05	3.16
Years Business Exp.	N/A	9669	30.40	10.78	N/A	6396	30.21	10.34
Situation Realistic	0–1	9666	0.14	0.35	0–1	6445	0.23	0.42
Personal Exp.	0–2	9606	0.74	0.64	0–2	6399	0.75	0.64
Thrill	0–10	9664	0.61	1.61	0–10	6443	4.16	3.23

Similarly to legitimacy, procedural justice considerations had a minimal effect on both offending (Table 2) and beyond-compliance behavior (Table 3). Only one item predicted offending: a belief in impartiality ("Absent blameworthy activity, an individual should be free from government intervention" [Vandenbergh 2003, 99]) decreased the likelihood that one would offend, but this was only associated with ignoring a compliance order and did not affect other types of offending. A belief in the importance of voice increased the likelihood that one would do more than comply by enhancing security around toxic chemical sites, but it had no effect on decreasing pollution beyond regulatory requirements. Thus, overall, we find only limited support for our hypotheses.

Table 2. Offending Scenarios—Logistic Regression Results (Standardized Coefficients)

	Model 1—All Offending	Model 2—Ignored Comp. Order	Model 3—Discharge Toxins	Model 4—Mislabel Waste
Legitimacy				
Adequate Law	0.098	0.011	0.156	0.141
Comply Even If	−0.542**	−1.184***	−0.443	−0.258
Comply So Long As	−0.265	−0.911***	0.358	−0.344
Act as Others	0.152	0.013	0.268	0.341
Procedural Justice				
Voice	−0.104	−0.117	−0.170	0.106
Impartial—Good Faith	−0.060	0.197	0.030	−0.477
Impartial—Intervention	−0.273	−0.792**	−0.507	0.496
Consistent Treatment	−0.005	−0.016	0.224	−0.269
Control Variables				
Chance of Formal Sanctions	0.202	−0.004	0.634	0.026
Severity of Formal Sanctions	−0.326	0.721	−1.257**	−0.408
Reprimanded	0.159	0.189	0.126	0.063
Fired	0.196	0.710**	−0.042	−0.302
Strengthen Competitiveness	0.274	0.084	0.351	0.596*
Declining Revenues	−0.075	0.268	−0.568	−0.155
Losing to Foreign Comp.	0.195	0.145	0.325	0.253
Economically Deteriorating	0.180	0.334	−0.105	0.215
Mandated Public Info.	0.068	−0.325	0.607*	−0.164
Severity of Informal Sanctions	−0.109	−0.703	0.402	−0.120
Chance of Informal Sanctions	−0.406*	−1.019***	0.008	−0.195
Guilt/Shame	−0.329	−0.178	−0.409	−0.347
Ethics Guide Decisions	0.111	0.513	0.111	−0.143
Ethics Are Distinct	−0.344*	−0.343	−0.605	−0.271
Danger to Humans	−0.637**	−0.823	−0.977*	−0.333
Danger to Wildlife	0.165	0.036	−0.074	0.443
Asked by Supervisor	0.527***	0.806***	0.079	0.728**
Mid-level Manager	0.011	0.112	0.119	−0.088
Ignore Compliance Order	0.559***	–	–	–
Discharge Toxins	−0.443**	–	–	–
Desirability	1.018***	0.788*	0.730*	2.097**
Years Business Exp.	0.024	0.596	−0.038	−0.389
Situation Realistic	−0.245	−0.763**	−0.087	0.122
Personal Exp.	−0.223	−0.701**	−0.010	−0.169
Thrill	0.803***	1.204***	0.917**	0.822*
Pseudo R^2[a]	0.195	0.225	0.229	0.318
Sample Size[a]	587	203	199	185

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

[a]These statistics are unavailable for the imputed database; the reported statistics here represent the pseudo-R^2 and sample size for the same regressions run on the original data set (after listwise deletion). Note that for the imputed database, the minimum number of observations available for the regressions was 879 for Model 1, 301 for Model 2, 303 for Model 3, and 275 for Model 4.

A number of control variables significantly predicted both offending and beyond-compliance intentions, but others had little to no effect. For instance, contrary to empirical results in other studies, formal sanctions had a minimal effect on offending. Typically, research shows that sanction certainty (more than severity) lowers the risk of offending, yet the reverse is found in the present study, although only in the case of discharging toxins into the local waterway. Perhaps our respondents are more "risk averse" than the general population or student samples used in other deterrence studies—risk-averse individuals have been found to be more influenced by sanction severity than certainty

Table 3. Beyond-Compliance Scenarios—OLS Regression Results (Standardized Coefficients)

	Model 1—All Beyond-Compliance	Model 2—Reduced Pollution	Model 3—Enhanced Security
Legitimacy			
Comply Even If	−0.020	−0.070	0.052
Comply So Long As	−0.040	−0.076	0.001
Act as Others	0.007	−0.010	0.019
Procedural Justice			
Voice	0.060	0.037	0.095**
Impartial—Good Faith	−0.032	−0.003	−0.065
Impartial—Intervention	−0.021	0.023	−0.069
Consistent Treatment	0.012	0.003	0.029
Control Variables			
Reprimanded	−0.009	−0.009	−0.017
Fired	0.027	0.026	0.020
Strengthen Competitiveness	−0.038	−0.024	−0.042
Declining Revenues	−0.010	−0.036	0.020
Losing to Foreign Comp.	0.020	−0.018	0.065
Economically Deteriorating	−0.021	−0.004	−0.023
Mandated Public Info.	−0.052	−0.047	−0.041
Benefits of Informal Rewards	0.124**	0.071	0.192***
Likelihood of Informal Rewards	0.199***	0.202**	0.178***
Ethics Guide Decisions	0.029	−0.020	0.088*
Ethics Are Distinct	−0.006	−0.053	0.054
Asked by Supervisor	0.225***	0.242***	0.194***
Mid-level Manager	0.010	−0.003	0.028
Reduce Pollution	−0.138***	–	–
Desirability	0.332***	0.325***	0.361***
Years Business Exp.	0.023	−0.059	0.114**
Situation Realistic	−0.048	−0.063	−0.011
Personal Exp.	0.006	−0.001	0.013
Thrill	0.105***	0.134**	0.060
Pseudo R^2[a]	0.467	0.467	0.529
Sample Size[a]	432	211	221

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

[a]These statistics are unavailable for the imputed database; the reported statistics here represent the pseudo-R^2 and sample size for the same regressions run on the original data set (after listwise deletion). Note that for the imputed database, the minimum number of observations available for the regressions was 596 for Model 1, 285 for Model 2, and 301 for Model 3.

(Engel and Nagin 2015). Or, it might also be that the respondents recognize pollution as an inevitable part of manufacturing and pollution monitoring as omnipresent in this situation. That could produce less variation around the certainty of discovery, while the severity of sanctions is notoriously unpredictable and potentially costly.

Informal sanctions and instrumental considerations had more of an effect on offending behavior, but different considerations affected different behaviors—and sometimes in counterintuitive ways. When the scenario depicted mislabeling hazardous waste as strengthening the firm's competitive position, the individual was more likely to behave unlawfully. A higher perceived certainty of informal sanctions decreased the likelihood of ignoring a compliance order. Both findings are consistent with expectations and extant literature. Contrary to deterrence expectations, however, seeing that the company had fired someone for a similar behavior *increased* the likelihood of ignoring a compliance order. In another counterintuitive finding, when the hypothetical scenario said that the company is mandated to release information about toxins publicly, the individuals were more likely

to discharge toxins. Given that our sample comprises professionals, we may be seeing a "defiance" effect here. That is, after controlling for procedural justice and legitimacy concerns, professionals may be responding to what they perceive as overly harsh regulations with increased offending likelihood—a response not inconsistent with Procedural Justice Theory and anticipated by Sherman's (1993) Defiance Theory.[16]

Regarding beyond-compliance behavior, the likelihood of informal rewards increased the likelihood of enhancing security around waste sites as well as the likelihood of reducing pollution. The potential benefit of informal rewards enhanced one of the two beyond-compliance behaviors (enhancing security). Neither economic constraints nor rewards impacted beyond-compliance behavior.

Some additional patterns are noteworthy, particularly the finding that different variables reached statistical significance for different types of behaviors. Only a few variables behaved consistently across behaviors. For instance, being asked to behave a certain way by a supervisor (versus being a supervisor and asking an employee) consistently increased the likelihood of offending (although it did not reach significance for discharging toxins) as well as the likelihood of beyond-compliance behavior. An increased perception that the behavior was desirable significantly increased the likelihood of all five behaviors, and the perception that engaging in a behavior would be "thrilling" significantly increased the likelihood of all behaviors aside from enhancing security.

V. DISCUSSION AND FUTURE RESEARCH

Neither procedural justice nor legitimacy as explanations for corporate compliance or beyond-compliance behaviors received much support in the aggregate, but we observe different results when the full sample is broken down into specific types of behaviors—in particular, violating an EPA compliance order or enhancing security as a counterterrorism measure. We suggest that one way to distinguish these actions from the others is the fact that the former involve direct interactions and consultation with outside government agencies. Conversely, ignoring hazardous labels, discharging toxins, or reducing pollution levels does not require communication with external agencies. The fact that the exchange between regulator and company is already in play instead of "uncertain" (only in play if detected) implies that regulation, when *directly* applied, can affect decision making in corporations by making procedural justice and legitimacy more important to regulated entities. As more abstract concepts guiding behaviors outside of direct monitoring, however, procedural justice and legitimacy are, our results suggest, less relevant to decision making, although they are not irrelevant.

These findings support the use of responsive regulatory strategies as a means to develop trust between authorities and the regulated, and to ensure information sharing and compliance in *all* regulatory settings (Braithwaite 2013), even those currently characterized by indirect interactions (i.e., relying on technology for monitoring, information sharing, etc.; see Abbott and Snidal 2013; Ford 2013; Baldwin and Black 2008). Braithwaite (2013) suggests that regulatory failures occur when people expect technological innovations to take the place of regulation, since trust between authorities and the regulated remains empirically supported as a critical component in promoting information sharing and compliance. When regulators are in direct contact with the organizations they are monitoring, there may be an opportunity for implementing procedurally just methods, building trust, and increasing the perceived legitimacy of the law. Feelings of legitimacy then seem to modestly influence compliance.

Also noteworthy is that other variables appear to be just as—if not more—important predictors of decision making by environmental managers than procedural justice or legitimacy measures. For instance, a higher perceived likelihood of informal sanctions (e.g., losing the respect of friends and family) decreased one form of offending, while an increase in perceived likelihood of informal rewards (e.g., impressing friends or better job prospects) and higher perceived benefits of such rewards encouraged beyond-compliance behavior (see also Rorie 2015). Regulators may be able to discourage offending by publicizing actual cases of noncompliance or beyond-compliance behaviors (e.g., Indonesia's Program for Pollution Control Evaluation and Rating; Lopez, Sterer, and Afsah 2004), especially given evidence that information about enforcement activities against other firms is widely known and may have a deterrent effect (see e.g., Shimshack and Ward 2005; Thornton, Gunningham, and Kagan 2005; but for evidence rebutting that extensive knowledge of enforcement activities exists, see Muelenbachs, Newcomb Sinha, and Ranjan Sinha 2011; Vandenbergh 2003).

Similarly, according to our beyond-compliance results, prosocial behaviors may be motivated by educating top managers about the reputational benefits of corporate social responsibility marketing efforts. For example, Rivera and Leon (2005) found that Costa Rican hotels were more likely to participate in a voluntary environmental program when top management had received a degree in environmental management; environmentally aware CEOs went beyond regulatory compliance not only because of perceived social responsibility but also because of the perceived reputational and financial rewards of doing so.

Our findings show that the type of behavior depicted in the scenario is an important predictor of compliance and volunteerism across all models. In the offending scenarios, respondents indicated that they would be more likely to ignore an EPA compliance order than to ignore hazardous waste labeling requirements or to discharge toxins into a local waterway. In the beyond-compliance scenarios, respondents were more likely to protect toxic chemical storage sites than to significantly reduce pollution levels below regulatory standards. It seems, therefore, that those behaviors associated with more direct harm (toxic waste, hazardous material labeling) are much less likely to be committed, while those providing more immediate benefits (preventing terrorism) are more likely (see also Vandenbergh 2003). In the case of beyond-compliance behavior, it may also be the case that the counterterrorism item is activating patriotic motivations as opposed to environmental predispositions; in other words, certain internal norms may be stimulated by certain types of harm/benefits (see, e.g., Green 2006; Vandenbergh 2003; Shichor 1989).

Finally, the ability to diffuse responsibility (Feldman and Rosen 1978) to authority figures seems to play an important role in decisions to engage in all depicted behaviors (Sanders and Hamilton et al. 1997). Respondents encouraged by the hypothetical supervisor to behave in a certain way were much more likely to do so, a finding replicated across many samples and studies (Rorie 2015; Smith, Simpson, and Huang 2007; Simpson 2002; Simpson and Piquero 2002; Paternoster and Simpson 1996; see also Green 2006). Efforts to promote a corporate culture of compliance (coupled with formal and informal rewards for adopting that culture), to provide supervisory training to address such issues, or perhaps to encourage whistleblowing by low-level employees asked to engage in unethical behaviors could be logical steps for fostering environmentalism.

Although this research contributes significantly to knowledge about managerial environmental decision making, three important considerations are beyond the scope of this study. First, our measures of procedural justice did not ask about perceived treatment by authorities in a particular situation; based on our results, this specificity may be more pertinent in predicting the influence of procedural justice perceptions on behavior. Instead,

the measures used in the present study assessed more general attitudes about regulation and authorities. This is consistent with the conceptualization of procedural justice such that one's *overall* view of authorities promotes future compliance or offending. In future endeavors, however, researchers may consider tying procedural justice considerations more specifically to the hypothetical scenarios. Second, we limit our focus to the effect of formal regulations and neglect the influence of entities such as environmental groups or consumers. Prior research finds such groups to be important in guiding corporate behavior (Kagan, Gunningham, and Thornton 2003); these entities should be the focus of future research. Although one vignette dimension in our study captured public awareness of toxic chemical releases (i.e., whether the firm was mandated to publicly release toxins information), it had no significant effect on overall behavior. More specific measures of organized community responses would be valuable.

Some criticisms of vignette surveys deserve discussion as well. Although vignette surveys improve upon previous methods by controlling for temporal ordering and allowing for randomization, scholars question whether behavioral intentions reported using a hypothetical scenario accurately translate to real-life behavior (Mesmer-Magnus and Viswesvaran 2005; Hughes and Huby 2004; Durham 1986; but see also Alexander and Becker 1978). Similarly, another limitation of the current study is the inability to control for whether a respondent has actually been subject to enforcement measures for environmental or other regulatory activities. In addition, we did not ask respondents about their experiences with authorities in the past. Such experiences are likely to affect perceptions of legal and informal costs as well as procedural justice. To approximate the effect of experience with regulatory or legal enforcement, we compared results for respondents who indicated they had experienced a similar situation (regardless of whether the situation resulted in an enforcement action) to those depicted in the scenarios to results for those people who had no experience with such situations. The results of this test (available upon request from the authors) indicated that predictors of offending and overcompliance differ according to whether one has encountered these situations. Although we did not ask specifically about experiences with formal sanctions, these findings suggest an important avenue for future research. Future research might sample individuals who have been subject to environmental enforcement efforts to determine why they engaged in environmental offenses (and whether this offending is related to legitimacy or to how they were treated by law enforcement).

Despite limitations, this study tests a popular psychological and criminological theory using individual-level perceptions and hypothetical scenarios depicting a variety of corporate environmental behaviors. Our findings indicate that, although procedural justice concepts may not be salient in all situations, focusing on enhancing legitimacy in direct interactions with organizational managers may have an effect on environmental decision-making. This supports Braithwaite's (2013) contention that direct and frequent interactions between regulators and the regulated can promote compliance—so long as those interactions involve fair methods for addressing noncompliance.

NOTES

1. Procedural Justice Theory has been applied to perceptions of fairness and decision making within corporations using a variety of different outcomes (see, e.g., Kim and Mauborgne 1993).
2. An important criticism of the theory by Bottoms and Tankebe (2012) notes that legitimacy is not solely the province of the regulated community, nor is it static. They argue that scholars should also examine the power holder's claims to legitimacy and how such claims are formed as well as the dialogic process by which legitimacy is asserted, confirmed, or lost. Although this criticism is of great consequence—especially in the domain of corporate crime—it is beyond the

scope of the current data, which only poses questions about legitimacy to those potentially subject to law enforcement efforts.

3. See also May and Winter (2011) for an excellent synopsis of the regulatory enforcement style literature.
4. While our vignette survey targets individual-level offending decisions, we believe that the individual decisions in the vignettes directly reflect corporate behaviors. Although corporations can be argued to be unique entities in and of themselves such that they possess stable traits and policies above and beyond the contributions of individual employees (Bernard 1984), in a given situation individuals make decisions that lead to corporate behaviors. In other words, individual-level perceptions and decisions affect corporate-level outcomes.
5. This response rate is not atypical of those seen in previous studies on web-based surveys (Porter and Whitcomb 2003; Ranchhod and Zhou 2001). Scholars have long noted that web-based surveys lack certain features that would increase the likelihood of response: researchers cannot include tangible incentives (e.g., pens, stickers), respondents may feel that data integrity is not secure, and technical issues may affect responsivity (Sax et al. 2003; Ranchhod and Zhou 2001). We assessed nonresponse bias and found no salient differences between respondents and nonrespondents with regard to multiple characteristics (more information available from authors).
6. Using ANOVAs for each type of scenario, we analyzed whether the order in which the scenarios were presented (i.e., whether a given scenario was seen first, second, or third) had any effect on the number of scenarios the respondent completed. We found one significant test for the enhancing security scenario, but the effect was nonsensical and the significance likely due to the large sample size.
7. The number of dimensions manipulated in the original scenario were numerous—the number of possible scenarios is 111,974,400. It is common in the literature for the possible combinations of dimensions to exceed the sample size used (Wallander 2009). Although there is clearly no possible way to represent the universe of possible scenarios in our data, it is important to note that all levels in all dimensions had an equal likelihood of being seen by a participant—in other words, the scenario seen by any particular individual was randomly generated, and thus we are confident that these results have high internal validity.
8. Note that "adequate law" is scenario-specific, while all other procedural justice and legitimacy variables are asked only once during test administration to assess global procedural justice perceptions.
9. Note that these operationalizations of legitimacy are similar to Reisig and Mesko's (2009) measures of the perceived legitimacy of prison guards as well as Gezelius and Hauck's (2011, 444) description of "legislator's authority."
10. This phrase has been used as an injunctive norm in previous research (see Vandenbergh 2003). Here we use it to represent a measure of group engagement. We do so under the assumption that respondents would not agree with this statement if they did not feel a strong allegiance to a larger group.
11. A sensitivity analysis comparing the logistic regression to an OLS regression found few substantive differences.
12. Our choice of OLS over other analytical plans that, for instance, could better assess how combinations of factors produce outcomes (e.g., Conjunctive Analysis of Case Configurations [Miethe et al. 2008]) is justified as a better fit for the data at hand given the continuous nature of the dependent variables. We also feel that it is important, given the complexity of corporate crime, to include many controls in this initial exploration of procedural justice in this domain—conjunctive analyses would not allow for the breadth of variables we include here.
13. An alternative method for handling lack of independence between observations is to estimate a random effects model, which allows the intercept to vary across individuals. While estimating robust standard errors treats the correlation among time varying variables as a nuisance, random effects models explicitly model the lack of dependence and decompose the total residual into between- and within-individual components (Rabe-Hesketh and Skrondal 2005).
14. A reviewer questioned whether the number of variables was too large given the sample size. This reflects a concern about the possibility of "overfitting" the regression model, which could lead to an inflated R^2 and poor prediction in later samples. Simulation studies have demonstrated that accurate results are obtained when there are at least two subjects/events per variable in OLS regressions (Austin and Steyerburg 2015) and ten subjects/events per variable in logistic regressions (Peduzzi et al. 1996). To that end, we would obtain accurate coefficient estimates so long as we had 330 subjects in the offending scenarios (in which we have thirty-three independent variables) and fifty-four subjects in the beyond-compliance scenarios (in which we have twenty-seven independent variables). We have 587 responses in the combined offending

scenario regression model, which meets these criteria. However, caution should be used in interpreting the results of the specific offending behavior scenarios (in which the sample sizes fall below 330). We are confident that the beyond-compliance regression models have enough responses to generate accurate predictions.

15. It is reasonable to believe that procedural justice and legitimacy concerns may interact to promote offending or beyond-compliance behavior. We ran additional models to examine theoretically sensible interactions between these variables. No interactions were significant.
16. Of course, the emergence of these counterintuitive findings in the situation-specific regressions may also reflect the ratio of the sample size to the number of independent variables in these models (see endnote 14). Though beyond our interest here, future research should reassess the situationally specific drivers of offending.

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