Fear, Duty, and Regulatory Compliance: Lessons from Three Research Projects

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Socio-legal explanations of law-abidingness among regulated business enterprises, as well as among individuals, point to three basic motivational factors: fear of detection and legal punishment; concern about the consequences of acquiring a bad reputation; and a sense of duty, that is, the desire to conform internalized norms or beliefs about right and wrong. Drawing on three research projects of our own, supplemented by references to other scholars' research, this essay concludes that in economically advanced democracies, regulatory compliance tends to be more prevalent than a simple fear-of-legal sanctions model would predict because of (1) business managers' desire to capture and retain the economic benefits of a reputation for good corporate citizenship, and (2) many managers' and in-house professionals' internalized sense of duty to obey the law and to avoid doing harm. At the same time, some significant threat of legal enforcement is essential for generating and assuring compliance. Moreover, without the normative benchmarks, "reminder effect", and "reassurance" effect provided by specific regulatory requirements and regular enforcement efforts, social and normative pressures tend to be less potent.

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What it means, exactly, to "comply" with regulations is not always straightforward. Sociolegal scholars have emphasized that "compliance" is socially constructed within the regulated enterprise, sometimes in dialogue with regulatory enforcement officials when (Hutter, 1997; Edelman et al, 1991). But not infrequently, regulatory officials differ among themselves as to what is required. When mismatches between regulatory standards and particular contexts occur, some (but not all) dedicated enforcement officials may classify "substantial compliance" as adequate (Bardach & Kagan, 2002: ch.5). Furthermore, due to variation in reporting by both regulators and business firms, the regulatory agency data bases that researchers use to measure noncompliance vary in quality, while researchers who rely on those data bases often differ in what they treat as significant noncompliance.

In the three research projects we refer to throughout this essay, we sought to avoid some of the uncertainties associated defining and measuring compliance, as well as

concerns about agency data-bases, by focusing on regulated firms' environmental *performance* as well as legal compliance, using both self-reports on concrete "improvements" in environmental protection but also on whether or not the firms we studied employed particular control measures. In two of the projects -- which we will call the Pulp Mill Study and the Diesel Truck Study in this chapter -- we studied environmental performance and compliance via in-depth, in-person interviews with managers in a relatively small number of companies that used very similar production technologies -- pulp and paper mills (14 facilities) and small trucking companies (16 companies). Through site visits, we were able to obtain firm-level data on environmental performance and regulatory compliance. By focusing on just one industry per study, we were able to learn in advance a considerable amount about the operating technologies common in the industry and about older and newer pollution-reduction technologies and practices. With this background, we were able to ask pointed questions about particular measures the enterprise had or had not instituted ; this enabled us to make meaningful inter-firm comparisons. By focusing on a relatively small number of firms, we had time to extract from respondents detailed accounts of choices they had made in response to the challenges posed by regulation; these accounts generally were more revealing of their firm's motivations – the primary subject of our research -- than direct survey-type questions probably would have been. We constructed our sample of firms by drawing on expert opinion (regulatory officials and industry consultants) and governmental data on compliance or performance to identify firms that had records of better than average

versus average environmental performance, and to then to choose randomly within each set (Gunningham et al, 2003; Thornton et al, 2009).

Our third research project, which we will refer to as the General Deterrence Study, entailed two phases. In the first phase, we used telephone interviews with the official responsible for environmental compliance in 233 firms in 8 industries, exploring the whether their firms had taken environmental compliance measures in response to "general deterrence messages," that is, news or perceptions of regulatory enforcement actions and penalties against *other* companies, especially companies in the same industry as the respondent (Thornton et al, 2005). In the second phase, we conducted longer telephone interviews with a sample of 35 firms in two industries (chemical manufacturing and electroplating) in two states, exploring in greater depth the role of both specific and general deterrence in influencing the firm's environmental compliance measures (Gunningham et al, 2005).[1]

In Section I of this essay, we review research indicating the limits of explanations of regulatory compliance based solely on a fear-of- legal-deterrence model. Section II discusses the significance of fear of social disapprobation, as enforced by "social license pressures." Section III discusses the evidence indicating the importance of business

[1] These studies, as well as most of the other research relied upon in this paper, concern social or protective regulation – that is, environmental, health, and safety regulation – rather than economic regulation (regulation of prices, wages, market entry, etc) or the regulation of fraud, price-fixing, or financial services. We have less confidence, therefore, that the observations offered herein about regulatory compliance motivations work out in quite the same way with respect to business firms' responses to the latter forms of regulation. Similarly, the studies relied on in this paper focus on evidence from the United States and other economically advanced democracies which rank relatively high on comparative measures of the rule of law and governmental honesty and capacity. Thus the observations herein may well be less applicable to regulation and business in countries that lack those attributes.

managers and corporate regulatory compliance specialists sense of normative duty. Section IV discusses the interaction of 'fear" and 'duty

I. Regulation and Business Behavior: Amending the Legal Deterrence Model of Compliance

In recent decades, sociolegal studies of regulation have expanded their focus from the study of regulatory agencies to the study of regulated enterprises. The reasons are not obscure. Legal coercion is expensive and difficult. Environmental regulation, for example, depends almost entirely on regulated business firms to devise, finance, and operate the technologies that prevent, measure, or treat pollution. Inside regulated companies, the day-to-day effectiveness of many regulatory compliance measures depends on the capacity and diligence of the corporate employees who are assigned to maintain equipment, monitor quality control systems, train operators, and take appropriate action when problems occur. In sum, effective regulation requires imaginative *cooperation* as much or even more than it requires government monitoring and legal coercion.

For sociolegal scholars, therefore, the key theoretical and empirical issues have become: what factors shape regulation-related behavior by business firms? What makes them cooperate? What makes them resist? Why and when do firms overcomply by taking environmental actions in the absence of any regulation requiring them to do so?

In the standard economic model, the regulated business firm is an "amoral calculator," motivated only by economic self-interest (Kagan & Scholz, 1984). Profit-

seeking firms take costly measures to comply with public policy goals only when they are specifically required to do so by law *and* they believe that legal noncompliance is likely to be detected and harshly penalized (Faure et al, 2009). Supporting this assumption, researchers have found that reductions in mining fatalities in the U.S. have followed significant increases in the enforcement budgets of federal mine inspection agencies (Lewis-Beck & Alford, 1980). Sociolegal scholars have found that violations of occupational safety and water pollution regulations decline among firms that have recently been visited by regulatory inspectors and fined for violations (Gray & Scholz, 1991; Siskind, 1980; Weil, 1996; Ko et al 2010). In addition to that "specific deterrence" effect, many enforcement officials believe that prosecution and heavy punishment of serious violators sends a "general deterrence" message through the entire community of regulated firms, increasing fear of punishment and thereby increasing investment in compliance.

On the other hand, sociolegal researchers have found that compliance generally is much better than the legal deterrence model would lead one to expect. For many regulatory programs, the number of enforcement officials is small relative to the size of the regulated population. Inspections are relatively infrequent, and penalties for violations often are quite limited. Nevertheless, although newspaper headlines constantly remind us that serious instances of noncompliance constantly recur, it appears that at least in most economically advanced democracies, most business firms, particularly large ones, substantially comply with most kinds of regulations most of the time. (Mehta & Hawkins,

1998; Vandenbergh 2003). Using data on 113 paper and pulp mills, Gray and Shadbegian (2005) found that each facility was inspected for pollution violations only about once a year, on average. Yet in only 16% of cases was the facility found "out of compliance" with a complex and demanding set of water pollution requirements. (Id at 247, 250). In a study of nursing homes in Australia, John Braithwaite and his colleagues found that, except for a special subset of homes, there was virtually no correlation between facilities' regulatory compliance rates and their perception of the certainty and severity of punishment for violations (Braithwaite & Makkai, 1991:35). Fear of legal penalties clearly is not the whole story.

Socio-legal research, for example, indicates that managers in regulated business firms do not resemble the calculating managers pictured in the economic model of the firm, carefully figuring out the probabilities of detection and the cost of legal sanctions so that they can determine what legal obligations they must comply with and what they can get away with. Amidst the cacophony of information and urgent demands that business firm managers receive, the deterrent messages sent by legal penalties often do not get through or soon drift out of consciousness. In our General Deterrence Study, when we surveyed managers in charge of environmental compliance in 221 firms in the U.S., we found that they had widely-varying notions of the probability of detection and what the likely penalty would be for a serious violation (Thornton et al, 2005). A majority of those managers did not recall having heard about a very severe penalty U.S. EPA recently

imposed on another firm in their own industry and state. When these managers were asked to describe the most significant environmental safeguards their firm had instituted in the previous five years, their responses, ranked by the magnitude of effort or expenditure, did not correlate with their estimates of the probability that a serious violation would be detected and punished.

What's more, contrary to the fear-of-punishment model, many business firms undertake fairly costly environmental and workplace safety improvements that are not required by legal regulations at all, even when those improvements do not clearly save the firm money (Gunningham et al, 2003:20-40; Prakash, 2000; Konar & Cohen, 1997). The frequency of such "beyond compliance" behavior, along with much sociolegal research, highlights the causal importance of other factors – such as social and political pressures, or business managers' normative beliefs -- in shaping business responses to regulatory programs and values. These factors will be discussed in the following two sections of this chapter.

But first, to be clear, we do not mean to imply that fear of legal punishment is unimportant in explaining compliance, or, when fear is absent, in explaining non-compliance. As we will discuss later, legal rules and a significant prospect of enforcement and punishment provide the essential standards and expectations around which social and normative pressures for compliance revolve. In the absence of legal requirements and threats, the other factors are much weaker. Our point, rather, is merely that it is essential to amend the simple fear-of-legal-punishment model by recognizing

that business firms , and the people that manage them, respond to a variety of motivational factors.

More specifically, to repeat what we said at the outset, sociological explanations of law-abidingness in individuals (among taxpayers, for example) suggest three basic motivations (Friedman, 1975:105-113) . One is fear of detection and punishment by government enforcement agents. The second motivating factor is fear of humiliation or disgrace in the eyes of family members or social peers. The third factor is an internalized sense of *duty* – the desire to conform to internalized norms and beliefs about the right thing to do. Referring to the accumulated body of psychological research Jerome Kagan (2006: 126) noted:

> "Nothing about human thought, feeling, and behavior can be understood without acknowledging that humans evaluate events, others and themselves on a good-bad continuum and try to acquire the personal features they judge as praiseworthy."

Since business corporations are staffed by human beings, it should not be surprising that sociolegal researchers have often found that business firms' responses to government regulatory norms are shaped not only by fear of legal sanctions but also by social pressure and a sense of civic duty.

II. "Social License" Pressures

In our Pulp Mill Study, we examined environmental performance in 14 pulp and paper mills in New Zealand, Australia, Canada (British Columbia) and the states of Georgia and Washington in the United States. (Gunningham et al, 2003; Kagan et al

2003). After intensive interviews with mill managers and environmental managers at each site, it was clear to us that managers felt constrained and pressured by a three-stranded "license to operate." The first strand is the firm's *economic license* -- its obligations to meet the financial expectations of investors and creditors. The second strand is the facility's *legal or regulatory license* -- applicable laws, regulations, and permit conditions.

The third strand the managers referred to as their *social license.* By that, they meant the pressures for responsible environmental performance that they felt from nearby neighborhoods, employees, community groups, the news media, and environmental advocacy groups. All those groups, the mill managers believed, could generate adverse publicity about the firm's environmental failings, damaging their firm's reputation. That in turn could make it harder to recruit and retain professional employees. It could turn the neighbors and hence the city government against them, which might hurt the company's ability to get land use permits to expand its local operations or to renew its water pollution permit – both of which entail public hearings many jurisdictions; that indeed had been the experience of more than one mill we studied. (Gunningham et al, 2004)

As the last example indicates, there is a significant interaction effect between an enterprise's legal and social licenses. To a considerable extent, government regulation and enforcement provide the foundation on which social license pressures are built. For business people, a British study observed, "regulations are taken to be a measure of social expectations, and thus interpreted as a guide to an organization's moral and social duties"

(Wright, 1998: 14). Many regulations require firms to publicly disclose information that advocacy groups, news media, and ordinary citizens can use to monitor firm behavior . Regulatory standards give social license enforcers benchmarks for criticizing firms that appear to have violated them and for filing complaints with regulatory agencies or other authorities. Moreover, by publicizing a violation, social license enforcers amplify an official legal sanction's impact and deterrent weight. Adverse publicity concerning regulatory violations can erode the "reputational capital' that most firms work hard to build and protect (Van Erp, this volume) . In extreme cases, the adverse publicity concerning a legal sanction or prosecution can trigger significant consumer defection, costly class-action lawsuits, the promulgation of much more stringent regulations, or declines in the corporate violator's stock price (Karpoff et al, 2005). Those kinds of extreme social and economic sanctions are not frequent, but for corporate executives, they can happen unpredictably and with potentially disastrous effects. Not surprisingly, therefore, corporate regulatory compliance specialists have been found to overestimate the risk of adverse regulatory decisions or civil litigation, see Edelman et al,1992; Nielsen, 2000: 245-46

Using a mixture of qualitative and quantitative indicators of plant-level environmental performance in the 14 pulp mills studied (Kagan et al, 2003: 55-56), we found that the variation in environmental performance across mills was *not* strongly associated with differences in the facilities' legal licenses (probably because regulatory

requirements were rather similar across the jurisdictions we studied). Nor was variation in environmental performance associated with the regulatory enforcement style of the different regulatory jurisdictions. Rather, the facilities' environmental performance varied in relation to the intensity of the social license pressures facility managers experienced. The poorest environmental performer of the 14 pulp mills was located in an isolated mill town in which where it was the largest employer and social license pressures concerning environmental issues were very weak. The best environmental performer was a mill in a fairly large city that over time had expanded and surrounded the facility. Managers in that firm felt closely scrutinized and often criticized; in consequence, compared to the average mill studied, they maintained a more open relationship with citizen groups and regulatory officials, worked harder at environmental training of operating personnel, and instituted more environmental control measures that were not required by regulation.

Similarly, social license pressures help explain why larger regulated firms, especially those which deal directly with the consuming public, tend to have better regulatory compliance records than smaller firms. We say "help explain" because large firms also tend to have tighter "legal licenses" in the sense that they usually are more closely monitored or more frequently inspected that smaller companies (se Shover et al, 1984). But in addition, large firms with widely recognized consumer brand names are more fearful of the adverse publicity that can flow from a serious environmental accident or regulatory prosecution (Mehta & Hawkins, 1998; Kagan, 2000: 372-74). That is, they have tighter social licenses. In consequence, like the urban pulp mill mentioned above,

they are more likely than low visibility companies to go "beyond compliance," taking measures that provide a wider margin of safety against accidental regulatory violations, or responding directly to popular concerns that have not yet been embodied in specific regulatory mandates. A number of the pulp mills studied by Gunningham et al (2003) had made substantial expenditures to reduce unpleasant odors – measures not required by their regulatory permits.

Moreover, hundreds of large corporations, motivated partly by concerns that chemical spills, deadly industrial accidents, or journalistic *exposés* might generate social and political pressures for more stringent and intrusive government regulations, have voluntarily institutionalized formal, externally-certified environmental management systems (Delmas & Toffel, 2008; Coglianese & Nash,2006; Prakash & Potoski, 2006 ;Prakash, 2000), participated in industry-run self-regulation systems (Rees, 1997, 1994 ; Gunningham & Sinclair, 1998), or joined programs designed to foster sustainable forestry, agriculture, and labor practices [2] Multinational companies headquartered in economically advanced democracies in which aggressive advocacy groups scrutinize and

[2] Researchers have found that voluntary self-regulatory programs vary in effectiveness -- compare Andrews et al 2003 (a study of the effects of ISO 14001 adoption in the US motor vehicle industry) with Anton et al 2004 (electronics industry) ; see also Morgenstern & Pizer, 2007). Espach (2009) found that industry programs in forestry and chemical manufacturing were more effective in Brazil, where direct governmental environmental regulatioin was regarded as relatively potent, than in Argentina, where government regulation was regarded as relatively impotent. The way industry self-regulatory programs are implemented also affects performance (Rees, 1994). In addition, effectiveness varies among firms in the same industry and program, depending on management attitudes and commitments (Coglianese & Nash, eds, 2006). It seems clear, however, that such programs cannot automatically be regarded as mere symbolic showmanship, for many have been shown to improve the performance of many firms with respect to regulatory values – thus providing substantial support for the significance of reputational concerns and social license pressures in motivating business firms

criticize their performance tend to have better environmental performance standards in their operations in weak-regulation developing countries than do domestic firms in the those countries and industries (Fowler, 1995: 13)

Many smaller firms, too, care about preserving their reputational capital. Peter May (2005) studied compliance with building codes by homebuilders in the state of Washington, as well as compliance with environmental regulations by boatyards. He was told by 78 - percent of homebuilders and 87 percent of boatyard operators that maintaining a good reputation was a strong consideration in motivating their compliance-related actions. Both builders and boatyard operators said fear of regulatory sanctions was a substantially *less salient* reason for compliance. In sum, in the minds of many firm managers – in smaller firms as well as in large, socially visible corporations -- acquiring a reputation for being a regulatory scofflaw is not a good business plan.

, ***III. Normative Duty***

Studies of taxpayer behavior find that in deciding whether to report non-salary income on their returns, some taxpayers respond primarily to fear of being caught and punished, while others are more motivated by a sense of legal or civic duty (Scholz & Pinney, 1995; Schwartz & Orleans, 1967). Social psychologists have shown that when the personal values of individual taxpayers or corporate employees are consistent with particular laws, regulations, and company policies, they are much more inclined to comply voluntarily (Murphy et al, 2009: 3; Tyler et al 2008), whereas normative

disagreement undermines compliance (Tyler & Darley, 2000). Civic duty motivations – including the felt obligation to comply with law in general, or agreement with the basic norms and goals that underlie many regulatory programs -- also affect many managers of regulated business firms too, (Vandenberg, 2003; Spence,2001). May and Winter studied Danish farmers' compliance with stringent environmental regulations concerning use of fertilizer and the density of their livestock per acre. They found that 93 percent of farmers in their sample complied with major requirements and 68 percent went "beyond compliance," using non-required best practices. Yet the farmers' fear of punishment for violations was quite low: only 10 percent had received any kind of written warning from regulators or a formal enforcement action. Only 17 percent reported an awareness of regulatory enforcement actions against other farmers. But 82 reported a strong sense of civic duty to comply (May, 2005:330; Winter & May, 2001).

Similarly, in the abovementioned study of homebuilders (May, 2005), most respondents rated fear of punishment for violation of building codes very low, but 82 percent said they felt a strong sense of duty to comply with building codes. Internalized craft norms appear to matter in this context. Braithwaite & Makkai (1991:35) found that in Australian nursing homes the strongest predictor of regulatory compliance was the level of professionalism and normative commitment among the top nursing staff (Braithwaite & Makkai, 1991:35). Similarly, to avoid legal trouble and scandal, large corporations typically maintain intra-corporate staffs of professionals or specialists – environmental engineers, occupational safety specialists, quality control experts, human

relations departments, auditors, and so on – charged with keeping the firm out of legal trouble; these intra-corporate "shadow regulators" often arrive with or develop commitments to the basic regulatory norms they work with every day and refer to in their discussions with operations departments (Parker and Nielsen 2009).

Of course, the effectiveness of intra-corporate shadow regulators varies, depending on the powers they are granted, the degree of support they get from facility level managers or corporate headquarters, and the overall attitudes and management style of their company. In our Pulp Mill Study (Gunningham et al, 2003), we used a variety of indicators, including not only expressed attitudes but concrete management actions and decisions, to assess the 'environmental management style" of 14 mills. We then , arrayed them on a scale that ranged from (1) "regulatory laggards"(the least committed to compliance) , to (2) "reluctant compliers," (3) "committed compliers," (4) "environmental strategists" (who tended to substantially "overcomply" with regulatory pollution limits and search for innovative ways of improving environmental performance," and finally (5), "true believers" (who viewed striving for better environmental performance as a primary business goal, integral to their corporate identity and critical for long term financial success. Among the 14 firms, none were classified as laggards and only two as reluctant compliers. The great majority of mill managers -- encompassing the committed compliers and the environmental strategists as well as the true believers -- clearly accepted the normative legitimacy of the regulatory regime as

well as in their obligation, as "corporate citizens," to comply with the law. The debates were all about techniques of pollution control and their relative costs, not about goals.

IV. On the Interaction of Fear and Duty.

Of course, the level and intensity of internalized normative commitments to law-abidingness, or to specific regulatory norms – as well as levels of fear of legal sanctions and social disapproval -- vary across firms and contexts. Chester Bowles (1971:25), head of the U.S. Office of Price Administration during World War II, when asked how he could enforce price regulations applicable to every business firm in the country, said he figured that 20 percent of the population would comply with *any* regulation out of patriotism, 5 percent would evade the law, and the remaining 75 percent would comply as long as the 5 percent were caught and punished. Officials in more contemporary regulatory agencies often echo that theory, using similar percentages. That suggests one can conceptualize any population of regulated enterprises in terms of a bell curve. At one tail of the curve are 15-20% of firms who are duty-driven "good apples", committed to law-abidingness, and at the other end, a 5-15% tail of recalcitrant ""bad apples" who would score "low" on both fear and duty (and hence are very difficult to control completely). Arrayed in between are the bulk of firms, most of which one might think of as "contingently good apples," generally willing to comply -- but not when they think a regulatory requirement is unreasonable or excessively burdensome under the particular circumstances, or when they think most of their competitors are cheating. (Bardach &

Kagan, 2002 [1982]). That suggests that reliable regulatory *enforcement* is a key to building a culture of compliance and keeping a sense of duty alive.

In our General Deterrence Study (Thornton et al (2005) we got striking confirmation of that suggestion . In interviews with officials responsible for environmental compliance in a sample 221 firms, we described a serious violation by a company in the respondent's own state and industry, and also described the severe regulatory penalty (jail sentences for managers or very large money damages) that had been imposed. Almost all of the respondents said they thought the penalty was quite reasonable; many of them – as Chester Bowles's maxim would suggest– actually *applauded* the enforcement officials' harsh action. Since respondents' firms had made costly efforts to comply with the social contract, they were pleased that their competitors who "cheated" by failing to invest in compliance had been punished. Regulatory enforcement, we inferred (Id at 266), serves a "reassurance function" for firms that have made normative commitments to be law-abiding.

In addition to the "reassurance function," regulatory enforcement has an important "reminder function" for firms that feel a general duty to comply. In our survey of 221 facility managers, we asked whether they had taken any actions to improve environmental performance after hearing about severe legal penalties against other firms who had violated the law. Sixty-five percent of respondents answered affirmatively. A third of those said they had made operational changes, such as obtaining new pollution

control equipment or instituting new procedures. The most common response, however, was that the firm had reviewed its existing environmental program.. Like a basically law-abiding driver who glances at her speedometer when she sees a police car on the highway, firm managers realized that they had better check.

This "reminder function" of regulatory enforcement is important because a significant proportion of regulatory violations – perhaps most violations by firms that are generally committed to compliance – also violate official company policies In most regulatory programs, enforcement officials find that only a tiny fraction of detected violations entail sufficient evidence of willfulness, deception, or gross negligence to justify criminal prosecution. Rather, the violations stem from inattention or miscalculation of risks by particular company subunits or employees, or by unexpected technical or business pressures that induce harried subunit managers or employees to postpone or modify time-consuming regulatory compliance routines (Kagan & Scholz, 1974; Spence, 2001: 972-73; Malloy, 2003).[3]

Consequently, in well- established regulatory regimes in which a significant level of enforcement is taken as inevitable, the primary function of most enforcement action is *consciousness raising*, reminding business managers to try harder to achieve the regulatory goals that they had already promised to work toward. That, in all probability, helps explain why Mendeloff & Gray (2005) found that smaller and medium-sized

[3] A survey of environmental lawyers (Ruhl et al, 2002) discovered strong agreement that the sheer number, complexity, and changeability of environmental regulations is the chief cause of noncompliance (far outranking "costs of compliance") and indeed made it virtually impossible to achieve full compliance 100 percent of the time, even for committed firms.

companies fined by OSHA respond by reducing workplace injury rates – as a pure legal-deterrence model would predict but that the greatest reductions entailed kinds of injuries that are not addressed by OSHA regulations at all. Mendeloff & Gray concluded that inspections and penalties induced firms to direct more attention and effort to the normative goals of safety in general, not merely toward compliance with legal rules. That suggests that in many firms, OSHA – although often characterized as a weak agency wielding inadequate legal sanctions – has over 30 years of inspection and prodding helped generate a commitment not only to compliance with regulatory rules but to the program's broader normative goals.

The rise of "management-based regulation" (Coglianese & Lazer, 2003), whereby agencies require companies to formulate and implement their own plans and procedures for reducing hazards (and report on progress) relies on the interaction of fear and duty. It presumes that many companies can and will sincerely and creatively seek to advance regulatory goals. Studies show that OSHA's mandates for hazardous chemical management are responsible for at least part of the 40% reduction in chemical industry damage claims over the period 1987 through 1997 (Ibid; Mahoney 1997). But it is also very likely that the perceived threat that failure to make such progress will trigger more specific and more stringent regulation helps explain such outcomes (Braithwaite, 2002).

An important but as yet unanswered question is what level of regulatory enforcement is necessary to build and sustain a culture of commitment to regulatory norms. As noted earlier,in our survey of 221 environmental management officials we

described to each respondent a serious regulatory offense that had been committed by a firm in his industry and state. We then asked the respondent to estimate the probability of detection and punishment of such an offense should it occur in their facility. The median perception of detection risk was 70 percent. Moreover, most respondents thought the risk of a significant fine (e.g., tens of thousands of dollars) against the company was at least 75% ((Thornton, et al 2005: 273-74). That is not quite equivalent to believing that regulatory enforcement and punishment for serious violations is "inescapable." But is evidence that for most of these firms, the legal risks were regarded as very serious, even though the frequency of inspections most firms had experienced was relatively low.

In the second phase of our General Deterrence Study, we conducted in-depth interviews with a smaller sample of firms -- 18 chemical companies (which tend to be large) and 17 electroplating companies (generally small), all in the states of Ohio and Washington (Gunningham et al (2005). Environmental officials in the chemical firms claimed that government regulations and enforcement played only a "baseline"-setting role in their environmental programs. Compared to the smaller electroplaters, chemical companies had larger staffs of environmental and safety engineers and managers and were more proactive in finding new ways, not required by regulation, to reduce pollution or prevent accidents. This behavior reflected a blend of motives. In part, the chemical firms' proactive stance reflected their compliance staffs' commitment to safety goals and their professional pride in finding efficient ways of improving safety performance. But it also reflected the fact that the companies dwelt in a regulatory legal and political

environment that, in the minds of company officials, would harshly punish serious violations and in which regulations would probably grow more stringent over time. To a considerable extent, that perceived regulatory environment had been shaped by the intensification of social and political pressures on the chemical industry in the wake of the widely-publicized Bhopal, India chemical explosion and the ensuing creation of a well-funded industrial self-regulatory program known as Responsible Care (Gunningham & Grabosky, 1998).

Even among small businesses, regulatory rules and scrutiny can generate normative commitment by raising the consciousness about the social purposes that underlie the regulatory requirements. Both Johnston (2006:168) and Gunningham et al (2005: 312) found such effects among small metal finishing and electroplating firms, which are not subject to significant social license pressures. But a "culture of compliance" had not developed until a sustained period of government enforcement of environmental requirements had made regulatory requirements seem inescapable to company officials.

V. The Limits of Normative and Social Pressures: Economic Pressures as Constraint, Regulatory Pressures as Necessary Foundation.

The emphasis thus far on the interaction of fear of legal punishment, social pressures, and normative commitments should not obscure the powerful influence of business firms' *economic license* - their obligations to meet the financial expectations of

investors, creditors, and ambitious chief executives. A firms' economic license can be seen as a source both of fear and of duty: managers fear being punished for declining profits or financial losses, and they usually have an internalized sense of duty to prove their worth by improving profits.

In our Pulp Mill Study (Gunningham et al, 2003) found that on the one hand, every company's legal licenses had trumped economic license pressures. That is, even in a capital-intensive industry that in the 1980s and 1990s struggled with intensified global competition, overcapacity, low returns on investment, and stagnant stock prices, each of the facilities had complied with tightening regulatory requirements that had compelled it to spend hundreds of millions of dollars on second-generation effluent treatment processes and new less-polluting pulp-bleaching technologies. Moreover, to varying degrees, all 14 mills "overcomplied', emitting significantly lower levels of environmentally harmful chemicals than their most recent and hence most demanding regulatory permits authorized. And as noted above, some mills, responding to social license pressures and managerial normative commitments, had invested in costly odor-control and other environmental measures that were not required by law, even though those investments could not be justified via the *ex ante* return-on-investment calculations that economic license pressures usually require for large expenditures.

At the same time, however, economic license pressures imposed a cap or ceiling on the amount of investments even "true believers" and 'environmental strategists" could make in environmental improvements. None of the mills had leapt far ahead of its

competitors (or regulatory requirements) by creating a totally chlorine free (TCF) bleaching process, or by abandoning pulp bleaching (to eliminate a major source of chemical waste). One company that had spent hundreds of millions on an innovative TCF process had lost a great deal money and had retreated. Consumers, even in Western Europe, would not pay a premium for "greener" but more costly paper. All this had not escaped the notice of the other firms studied.

Whereas social license pressures and normative beliefs had generated incremental (and not insignificant) levels of "beyond compliance" activity and expenditure, the *largest* reductions in pulp mill discharges of harmful pollutants had stemmed from investments in very expensive technologies which had been necessitated by new or forthcoming government regulations. Only specific regulatory requirements and the threat of enforcement could trump tight economic constraints by making a credible implicit promise to each pulp mill: "You have to make a huge investment in environmental technology, but believe me, your competitors will have to do it too."

The Pulp Mill Study's finding thus are consistent with David Vogel's (2005) summary of the evidence concerning the "corporate social responsibility" movement: social and normative pressures often do engender a "market for virtue" in which particular business firms can prosper (as required by their economic licenses) by investing in socially and normatively-desired – but not legally-required -- products or processes. But that market, Vogel concludes, is rather limited – always constrained, to use our terminology, by the companies' economic licenses.

Similar findings emerge from our study of environmental behavior among operators of heavy-duty diesel trucks (Thornton et al (2009). Nitrogen oxide (NOx) and small particulates emitted by diesel engines are very hazardous to human health, particularly in high-truck-traffic areas. Beginning in the 1990s, Federal statutes and regulations have required manufacturers of diesel-powered heavy-duty truck engines in a series of steps to steadily and very substantially ratchet down emissions in new model years. Petroleum companies have been required to develop and sell the cleaner-burning diesel required by 2007 and subsequent model year engines. But pursuant to a precedent set years ago in regulating maximum emissions from cars, federal regulations do not require trucking companies to buy the new model trucks or engines. In an intensely competitive market dominated by tens of thousands of thinly-capitalized small trucking companies, relatively few can handle the $150,000 cost of new model trucks or even the $10,000-$25,000 cost of retrofitting engines to reduce emissions. Shrinking from the economic and political consequences of driving so many small companies out of business, no state (except for California) has enacted laws or regulations forbidding the use of older, dirtier diesel engines, and California's regulations, enacted in 2009, prescribe a graduated phase-out over a decade or more (Thornton et al, 2008) .

Social, political, and normative pressures have induced a number of large companies, such as UPS, Federal Express and Walmart, whose brand names are emblazoned on their frequently-seen trucks, to invest in the newer, less-polluting vehicles. On the other hand, having interviewed a sample of small diesel trucking

companies in California and Texas, we found that few of them had experienced strong social or normative pressures to make such costly capital investments (Thornton et al 2009),. Some of the small companies, despite the absence of legal requirements to do so, had in fact bought newer, greener, costlier trucks. They had done so, however, for "economic license" reasons alone – those small companies operated in particular market niches that demanded the higher reliability that newer trucks provide. The resulting environmental benefits were a side-effect, not a motivation. Similarly, some of the small truckers studied had made special efforts to reduce fuel-consumption (and, as a byproduct, lower emissions), but had done so wholly to reduce high diesel fuel costs, not because of a commitment to reduce harmful pollution.

The small trucking firms studied were not oblivious to their legal obligations. They took pains to comply with the extensive safety regulations applicable to trucking operations. They obeyed environmental regulations concerning disposal of used motor oil and run-off from maintenance yards (Thornton et al, 2009:431). But reducing pollution by scrapping or retrofitting old model diesel engines had not been legally required. We concluded, therefore, that variation in regulatory contexts profoundly affect the potency of social license pressures. In contrast to the pulp and paper industry, our Diesel Truck Study indicates that among small, low-visibility firms in highly competitive markets, social and environmental concerns are not likely to rank high in their "economic, social, and normative calculus" unless those firms "are subject to regulatory regimes that induce

significant fear of punishment for noncompliance – and thereby assure firms that not only they but their competitors will be compelled to invest in compliance" (Id at 431).

Thus as noted earlier, regulation, by establishing and enforcing normative standards, provides the foundation on which most corporate social responsibility is built. Even in the case of the abovementioned large, visible companies that purchased and operated new model, low-polluting trucks, it was government regulation that publicized the harmful effects of heavy-duty diesel engine emissions, required engine manufacturers to develop and produce low-emission vehicles, and hence provided the predicate for social activists and government officials to pressure prominent firms to adopt the less-polluting "best available technology." Similarly, regulatory reporting requirements, by triggering business firms' efforts to *measure* chemical use or emissions, often raises management's awareness of potential risks, which in turn leads to them to adopt voluntary programs to reduce those risks (Lanou & Law, 1999; O'Rourke & Lee, 2004; Konar & Cohen, 1997).

VI. Conclusion: The Importance of Variation in Regulatory Programs, Rules, and Contexts

To summarize, some significant level of legal enforcement -- it is not clear quite how much -- undoubtedly is essential in generating and assuring compliance. Enforcement is important, first of all, in communicating regulatory norms and threatening

credible levels of monitoring and legal sanctions for noncompliance; second, for its reminder effect ("check your speedometer!"); and third. for its reassurance effect ("you're not a fool to comply; we are really looking for and finding the bad apples"). In addition to legal deterrence, however, the research summarized above shows that compliance gets a large boost from most business managers' desire to build and preserve their firm's reputation for being a good corporate citizen, as well as their own personal reputation as a good citizen. Moreover, in addition to these legal and social pressures, many – not all – businesses are motivated by managers' or influential in-house professionals' internalized sense of duty to obey the law and to avoid doing harm.

In some circumstances, for some companies, non-mandatory socially responsible behavior can enhance market share and commercially valuable good will. Yet firms' economic license pressures impose unavoidable constraints on how far beyond legal compliance most companies will go, especially when improvements in the pursuit of the normative goals of regulation entail costly investments, and especially for smaller, less-well-capitalized companies in very competitive markets. Similarly, without the normative benchmark and threat of enforcement provided by specific regulatory requirements, social and normative pressures are likely to be weak.

All the factors discussed in this essay – fear and duty, regulatory license and social license, law and normative commitments –- interact. The relative weight and explanatory potency of each influence varies across regulatory programs and contexts.

Much also depends on the enforcement capacity and enforcement style of regulatory officials. Hence the findings and analysis in this essay do not easily lead to strong predictions or generalizations about when and where each compliance motivation will matter most, or when higher and lower levels of compliance will occur.

One important reason is that in complex political and economic systems, the realm of law and public policy that is commonly labeled "regulation" is so diverse. The interplay of fear and duty in banks subject to financial services regulation differs from that that of deep-sea oil drillers subject to environmental regulation, and both different from small restaurants subject to public health regulation.

Moreover, even within each single regulatory program, the mix of "license pressures" and dispositions to comply often differ from nation to nation (Kagan, 2000), from region to region within nations (Shover et al, 1984), from firm to firm (Coglianese & Howard- Grenville, 2008), and sometimes from facility to facility within the same corporation (Gunningham & Sinclair 2009).

Further, both within and across regulatory programs, different regulatory *rules* elicit different compliance motivations. Each rule generates its own set of *compliance costs*, a variable that surely is one of the most powerful influences on compliance motivations. Put another way, rules vary in the extent to which regulated entities acknowledge that the required compliance costs are *justified*, which of course influences not only normative motivations to comply but regulators' enforcement style. To make it more complicated, for each rule, as our Diesel Truck Project showed, the costs and

justifications for compliance vary across firms that occupy different *market niches*, and vary over time as technologies and the costs of compliance evolve.

Still other contextual factors affect both enforcement and compliance motivations. The intensity and perceived fearsomeness of regulatory enforcement are affected by such factors as (a) the visibility of violations to potential complainants and enforcement officials (Kagan, 1994; 1989), (b) the staffing and legal capacities of enforcement officials in different political administrations and budgetary environments, and (c) the disposition and ability of particular enforcement officials to elicit cooperation through responsiveness and "procedural justice" (Murphy et al 2009; Nielsen & Parker, 2009).

In sum, many legal and contextual variables affect precisely how fear and duty influence the behaviors of regulated entities. The complexity of the causal model implied by this catalogue of variables makes it quite risky to make sweeping generalizations about when and to what extent regulation is likely to "succeed" or "fail" in controlling behavior. Much research remains to be done and synthesized. Yet it is worth noting that notwithstanding the repeated images of regulatory "failure" conveyed by newspaper headlines dominated by instances of fraud and corporate heedlessness, the accumulating body of research discussed and referenced in this essay suggests that regulation-induced fear of legal punishment, social license pressures, and the normative commitments of a great many regulated enterprise managers, acting together, are sufficiently powerful to induce relatively high levels of regulatory compliance in a great many regulatory programs and contexts.

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