

Symposium: New and Critical Approaches to Law and Economics (Part II)
Norms Theory

ACCOUNTING FOR GREED: UNRAVELING THE ROGUE TRADER MYSTERY [\[FNaa1\]](#)

Kimberly D. Krawiec [\[FNa1\]](#)

Copyright © 2000 University of Oregon; Kimberly D. Krawiec

Traders are dying to make money. That's all they care about. Most traders don't care about the diplomacy that you see in the corporate environment. They don't care about titles. They are here to make money. They live in a four-by-four foot space and put up with all the bullshit that goes on around them. They put up with a lot, but the money is worth it. . . . *302 On Wall Street there is no "working your way up." You have a good year, make a million dollars. You're a hot shot. [\[FN1\]](#)

I A Rogue Trading Primer

A rogue trader is a market professional who engages in unauthorized purchases or sales of securities, commodities or derivatives, often for a financial institution's proprietary trading account. [\[FN2\]](#) Most readers, whether or not they realize it, already have some familiarity with rogue trading, due to the many highly publicized rogue trading losses that have fascinated the media and infiltrated popular culture in recent years. [\[FN3\]](#) For example, Nicholas W. Leeson, who lost \$1.4 billion at Barings Bank, [\[FN4\]](#) Robert Citron, who lost \$1.5 billion of Orange County's funds, [\[FN5\]](#) and Toshihide Iguchi, who lost \$1.1 billion of Daiwa Bank's capital, [\[FN6\]](#) *303 are all well-known rogue traders. [\[FN7\]](#)

It is important to recognize, however, that these well-publicized rogue trading incidents are neither new nor isolated events. [\[FN8\]](#) In fact, one early rogue trading case in 1884 involving two partners at Grant & Ward who illegally rehypothecated securities that had already been posted as collateral for margin purchases caused a national panic and a scandal involving former president Ulysses S. Grant, a partner at the firm. [\[FN9\]](#) Since that time, numerous rogue traders have lost billions of dollars of their employers' capital, generating a pop culture fascination with such events, [\[FN10\]](#) as well as congressional hearings, [\[FN11\]](#) regulatory and legislative proposals, [\[FN12\]](#) and changes and modifications to many firms' *304 internal compliance programs. [\[FN13\]](#)

For example, Joseph Jett was the chief government bond trader at Kidder, Peabody until April 1994, when the firm reportedly discovered that Jett had exploited an accounting loophole to credit himself with \$350 million in profits from fictitious trades, earning him a \$9 million bonus in 1993. Jett's real trades had actually generated \$100 million in losses for the firm.[\[FN14\]](#) Howard A. Rubin was head of mortgage securities trading at Merrill Lynch until the firm discovered Rubin's 1987 losses of \$377 million due to mortgage backed securities trading. Due to these losses, the Securities and Exchange Commission ("SEC") suspended Rubin from the securities industry for nine months in 1990. He subsequently joined the firm of Bear, Stearns. [\[FN15\]](#)

Paul W. Mozer was head of the government bond trading desk at Salomon Brothers until August 1991, when Salomon management discovered that he had attempted to purchase more than the firm's purchase limit at U.S. Treasury auctions by submitting false bids in the name of Salomon customers. Mozer was fired, barred from the securities industry for life and sentenced to four months in prison. Salomon was forced to pay nearly \$290 million in fines and several members of senior management, including Chairman John H. Gutfreund, resigned. [\[FN16\]](#)

Yukihusa Fujita was the former general manager of the finance department at Showa Shell Sekiyu K.K., a Japanese subsidiary of Royal Dutch/Shell, who lost \$1.06 billion in unauthorized currency trading. Showa's chairman and president resigned after the news of Fujita's losses was disclosed, as did two of Fujita's superiors who failed to report

their knowledge of the illicit trades. [\[FN17\]](#)

Collectively, along with other "rogue traders," these individuals lost billions of dollars of their employers' capital, inspired newspaper and magazine articles, books, and movies about their illicit activities and, in some cases, caused the downfall of the ***305** once-venerable firms that employed them. Although much has been written in both popular and academic circles about recent rogue trading scandals, most of the accounts to date have focused on the individual traders and institutions involved. Such a focus, I argue in this Article, overlooks valuable lessons concerning the causes of rogue trading losses.

Rogue trading is particularly mysterious given both the extensive legal regime and formal institutional policies designed to prevent it. A wide array of state and federal laws, regulatory rules and SRO (self-regulatory organization) guidelines mandate that financial institutions adequately supervise their employees. [\[FN18\]](#) The "duty to supervise" provision of the Securities Exchange Act is representative of such guidelines. Section (4)(E) of the 1934 Act authorizes the SEC to suspend or revoke the registration of any broker/dealer that "has failed reasonably to supervise, with a view to preventing violations of the provisions of [the 1933 or '34 Act, either of the 1940 Acts, the Commodity Exchange Act, or any rule or regulation under any of these statutes], another person who commits such a violation, if such other person is subject to his supervision." [\[FN19\]](#) Additionally, the statute provides that the supervisory requirement will be deemed met so long as procedures reasonably designed to detect and prevent violations have been implemented. [\[FN20\]](#) Similar provisions are contained in the Commodity Exchange Act and the SRO rules. [\[FN21\]](#)

***306** Financial institutions have implemented elaborate compliance procedures and programs in an apparent attempt to fulfill these supervisory requirements. [\[FN22\]](#) Many firms spend millions of dollars on expensive computer and reporting systems and on supervisory personnel designed to curb abusive trading practices. [\[FN23\]](#) Other firms have attempted or considered alterations to their compensation systems in an effort to deter irresponsible trading behavior. [\[FN24\]](#)

The continued existence of rogue trading in the face of these extensive legal and institutional prohibitions presents a mystery for many scholars and industry observers. If firms are comprised of rational, risk-averse wealth maximizers who, by definition, behave in a manner that enhances their own self-interest, then why does management permit its employee-traders to behave in a manner that jeopardizes not only the continued existence of the firm (and, correspondingly, of management employment), but also jeopardizes the integrity of the markets in which the firm operates? [\[FN25\]](#)

Most analyses of rogue trading losses to date have focused on ***307** faulty internal controls as the culprit and have concluded that firms will quickly learn from well-publicized rogue trading losses and voluntarily increase their oversight and supervision of traders, because these actions are in the firms' economic best interests. [\[FN26\]](#) In this Article, I argue that most commentators have underestimated the benefits of rogue trading to traders, management and, arguably, shareholders. I further argue that the costs to management and shareholders of prohibiting rogue trading have been underestimated. Accordingly, a cost-benefit analysis reveals that the continued existence of rogue trading in the face of pervasive legal rules providing incentives for firms to curb such behavior indicates that financial institution management has made a conscious decision to foster an institutional culture that encourages at least some rogue trading. Consequently, market forces cannot be expected to eliminate rogue trading, because eliminating the conditions that give rise to rogue trading is not in the best interest of traders, managers, or, perhaps, of shareholders.

The conclusion sets out an agenda for future research on the topic of rogue trading. First, the theories set out in this Article as ***308** to the causes of rogue trading should be empirically tested. Second, the data collected in that empirical test should be compared and contrasted with the available data on conspiracy, cover-up, and rogue behavior in other types of organizations. Third, further analysis should be devoted to the issue of whether government regulation to prevent rogue trading is necessary or desirable.

II The Trader's Story

In determining the causes of rogue trading, it is useful to distinguish two separate types of rogue trading. Financial institutions typically set both risk limits and loss limits as a part of their internal risk management system. In other words, most firms are comfortable allowing traders to assume risks only within specified limits, the idea being that no single actor should be permitted to endanger the firm's continued existence. Similarly, most firms are willing to accept losses from a single trader only within specified maximum limitations before actions are taken to mitigate the trader's losing positions.

Accordingly, rogue traders may be individuals who exceed the firm's risk limits, individuals who attempt to exceed the firm's loss limits by concealing losing trades, or both. Nicholas Leeson of Barings, for example, exceeded the firm's risk limits, then hid his large losses. [FN27] Toshihide Iguchi of Daiwa, on the other hand, engaged only in low-risk spot market trades in U.S. Treasury securities, but he managed to hide his mounting losses from his employer for nearly eleven years, accumulating a large deficit in the meantime. [FN28]

A. The Trader's Cost/Benefit Analysis

It is important to recognize that many, if not most, of a trader's attempts to evade his employer's risk and loss limits are rational and predictable behavior. [FN29] In fact, the motivations to evade the firm's risk and loss limits are so great that to fail to attempt such *309 evasion is arguably irrational. A trader's incentives to hide losses or fabricate profits are obvious. Because larger trading profits result in a larger bonus, traders can enhance their own wealth and welfare by fabricating profits. Similarly, when trades go sour, the trader has an incentive to hide those losses from his superiors, hoping to recoup the loss later, perhaps by engaging in riskier trades in an attempt to catch up. [FN30]

Traders also have incentives to evade the firm's risk limits. The first, and most obvious, reason is simple greed, a term that is not intended pejoratively. To paraphrase Gordon Gekko, greed, within limits, can be good. [FN31] The quest for personal wealth can enhance productivity, creativity and innovation and, in the process, benefit society as a whole. However, when the costs of an activity are not fully internalized, then private agreements and legal rules may seek to constrain individual greed for the benefit of specified groups or society generally. [FN32]

Because employers recognize the potential for incentive-based compensation as a motivating device, most traders, like salespersons in many other fields, are paid based on production levels. The proprietary trader thus has available a large amount of the firm's resources that he can use to maximize his own bonus compensation. If he leverages those resources and takes large risks, his reward is potentially greater. Of course, if his trades are unsuccessful, this leverage and risk means that his losses will be greater, resulting in reduced compensation or job loss. However, reduced compensation and loss of esteem and/or employment inevitably result for traders who do not earn money for the firm or *310 who underperform relative to other traders, even if low levels of leverage or risk are pursued. Accordingly, there is much to be gained on the upside and little to be lost on the downside from incurring greater risk. [FN33] Similar theories have been offered by other researchers after finding that subjects incur more risk when playing with "house money" rather than their own money. [FN34]

The pursuit of money, moreover, is more than the mere pursuit of material wealth. Instead, it is a pursuit of esteem and status. [FN35] We often judge ourselves by reference to those around us, and often with respect to material wealth. The perception that those around us are significantly increasing wealth and status, while we remain stagnant, can easily encourage greater risk-taking in the hope of greater wealth accumulation. [FN36]

This is particularly true in Wall Street culture. Trading is an example of what anthropologists sometimes refer to as "deep play." [FN37] As stated by Clifford Geertz: "In deep [play], where the amounts of money are great, much more is at stake than material gain: namely, esteem, honor, dignity, respect-- in a word . . . status." *311 [FN38] One trader neatly summarized the role of money in esteem seeking: "Money is everything in this business. Whatever you make is what you're worth." [FN39]

The connections between esteem, wealth and risk-taking may be even more pronounced if trading floors are "superstar" environments. A superstar environment is one in which a disproportionate share of benefits accrue to the superstar. [FN40] Standard market examples are music, movies, and sports. In all of these contexts, a disproportionate amount of the benefits go to the top performers because the products are easy and cheap to

reproduce, one product is an imperfect substitute for another, and customers typically want to consume only a finite number of goods. For example, if there are five basketball games on television simultaneously and Michael Jordan is playing in one, the vast majority of people are likely to watch the Jordan game and not the others (even though the players in the other games--let us say Kobe Bryant and Shaquille O'Neal--may be only marginally less skilled than Jordan). [FN41]

The trading floor may present a similar superstar environment. As previously discussed, traders highly value status. Status, of course, is a relative good. Returning higher trading profits than other traders not only results in higher bonuses, but it also confers superstar status on the top producer. High status brings many benefits. First, as previously noted, status itself has a high intrinsic value for traders. Perhaps equally important, however, firm management confers benefits on the superstar trader in the *312 form of less scrutiny and oversight. [FN42] As the level of scrutiny imposed on the superstar's trades goes down, the superstar's ability to take larger risks (and, as a result, remain a superstar) increases.

The peculiar nature of this tournament-like structure, then, is not only that the winner reaps the bulk of the rewards, but also that the winner gets the added benefit of increasing the ease with which he can maintain his superstar status. [FN43] In this sense, trading floors are similar to an old-style sports tournament in which the prior year's winner automatically qualifies for the current year's finals, while the other finalist has to go through a grueling and exhausting elimination process that necessarily reduces his chances to win in the finals. The bottom line is that the system provides both the motive (high status and income) and opportunity (less scrutiny) for the superstar to maintain his favored position.

In most employment settings, however, a pure tournament-type structure does not appear to be a feasible incentive mechanism. Tournament structures present high risk gambles, in that the rewards for winning are large, but winning requires a high expenditure of effort and is a low probability event. Because employees are typically assumed to be risk-averse (especially with respect to their jobs), one would expect that the fear of losing good employees to competitor firms with more employee-interest-compatible structures would result in employers avoiding these types of structures. [FN44] Traders, however, may present a special *313 case.

Commentators have argued that, although risk preference is not permanently sustainable, individuals may possess "squiggly" (i.e. with both convex and concave portions) utility curves, meaning that individuals may exhibit risk preference at certain times and under certain circumstances. [FN45] The opportunity to gain, or sustain, superstar trader status may very well lead to at least episodic periods of risk preference among traders. [FN46] This appears especially likely when it is remembered that the risk-taking behavior of traders does not mirror that of society at large. Instead, only individuals who are comfortable taking large risks are attracted to and are successful in the trading environment. [FN47] Unlike many other employment settings, therefore, the tournament structure is a nearly ideal means of incentivizing production on the trading floor.

B. Competing/Complimentary Explanations

Although a trader's motivations to evade the firm's risk and loss limits can be adequately explained through a rational cost-benefit analysis, there are other competing (or complimentary) explanations. [FN48] A growing body of literature concerning behavioral *314 finance--the study of the influence of psychology on the behavior of investors and other financial decision-makers-- highlights further explanations for the risk-taking behavior of traders. [FN49] For example, beyond the money itself and the status it confers, many traders may engage in high-risk trading strategies for the "love of the game." In other words, taking large risks sometimes provides individuals with a sense of excitement and fulfillment and, accordingly, is just plain fun. As explained by one trader: "It's not just the money. It's the excitement, the chance to test yourself every day." [FN50] These feelings are similar to the thrill many gamblers get from placing risky bets and may help account for the success of casinos, lotteries, racetracks and other gambling venues. [FN51] As one long-term colleague described rogue trader Robert Citron: "He's competitive, and if he returns a greater rate on short term money than most people, he considers that winning. . . It's pride. It's being above average." [FN52]

In addition, people, including investors, tend to be overconfident about their abilities. [FN53] This overconfidence

could lead traders to overestimate their trading skill and, therefore, underestimate the levels of risk they are taking. This overconfidence is especially evident in rogue trader Robert Citron of Orange County, who, when queried by an investment banker about the impact of an interest rate increase on the county's portfolio, confidently replied that interest rates would not increase. [FN54] When further pressed as to how he knew that interest rates would not rise, Citron responded: "I am one of the largest investors in America. . . . I know these things." [FN55]

*315 C. Illustrations

All of these phenomena are visible in some of the most recent rogue trading cases. Most rogue traders are extraordinarily successful prior to the ill-fated trades that cause their downfall. For example, Nick Leeson, Paul Mozer, Robert Citron, and Joseph Jett were all superstar traders before their unauthorized losses were discovered. As discussed previously, it makes sense that superstars are more likely to engage in rogue trading for several reasons. Superstar traders are more likely than others to take large risks in order to maintain their position relative to other traders, because they have much more to lose in terms of status and esteem.

Superstar traders may also be more overconfident. Evidence indicates that most people operate under an availability heuristic, meaning that they make decisions about the probability of future events based on the ease with which past events of that type come to mind. [FN56] Traders who have been successful in the past are more likely to believe that their success will continue and feel more comfortable taking riskier positions. Formerly successful traders may also suffer more readily from the mistaken belief that because they have been so successful in the past, any downturn in their fortunes must be temporary and, if hidden from supervisors for a short time, can be made up through riskier trades. Finally, as discussed below in Part III.B, traders that have successfully incurred greater risk in the past are more likely to escape the controls of supervisors and compliance departments. [FN57] In other words, not only is the superstar trader himself more likely to be overconfident about his abilities, but his supervisors and co-workers are also likely to be overconfident about the abilities of a trader that they respect and admire.

III The Employer's Story

While it is fairly easy to construct a plausible story that explains traders' incentives to evade their employers' risk and loss limits, the real mystery lies in explaining management's apparent *316 ignorance of or acquiescence in rogue trading behavior. It seems that a desire to preserve the firm's viability, reputation, or profits (and thus protect management's continued employment prospects) would encourage management to implement supervisory and oversight procedures designed to prevent rogue trading, and we do, in fact, observe extensive and costly compliance programs apparently designed to deter such conduct. Yet rogue trading continues. Why? Is management incapable of understanding the forces that give rise to rogue trading? Is rogue trading simply impossible to eliminate?

In this Part, I argue that management is not stupid, incompetent, or powerless in the face of rogue trading. Instead, the continued existence of rogue trading in financial firms can be attributed to three phenomena. First, management has likely made a conscious decision to tolerate some evasion of the firm's risk limits because to do so enhances management compensation and status. Second, because the events that lead to rogue trading disasters often involve serial decision-making and substantial sunk costs, supervisors and others within the rogue trader's firm are prone to an irrational escalation of commitment. Finally, because the same factors that encourage rogue trading also promote profitable trading strategies, management may purposely foster a firm culture that is likely to induce employee rogue trading. Although the problems of serial decision-making, sunk costs, and firm culture could be overcome through increased compliance programs and alterations to the firm's compensation and incentive structure, to do so would be extraordinarily costly. Accordingly, I argue in this Part that managers within financial institutions have made a conscious decision to tolerate some evasion of the firm's risk and loss limits. [FN58]

*317 A. Risk Limit Evasions

Obviously, all else being equal, firms would prefer that its traders never lose money. [FN59] Accordingly, it would seem that firms have many incentives to prevent traders from hiding positions or losses from their

supervisors. Therefore, it is important at this point to remember that rogue traders may engage in two types of behavior: the evasion of risk limits and the evasion of loss limits. It is not terribly difficult to believe that management may directly benefit from traders, particularly superstar traders, who exceed the firm's risk limits. If greater risk equals greater reward, then management may very well have made a conscious decision to permit successful traders to incur more risk. [FN60] After all, when the trader earns more money, so do the firm's shareholders, upper-level management, the trader's supervisors and, perhaps, even other members of his trading department. In fact, the claims by some financial institutions' management of ignorance and surprise on discovering the risky trading strategies adopted by their rogue trader-employees are so incredible, that the most logical conclusion is that management intentionally cooperated in at least some of the traders' risky gambles. [FN61]

B. Psychology

It is much harder at first glance to find a rational justification for allowing traders to hide losses or invent profits. However, research into a particular judgment bias --the irrational escalation of commitment--provides some insight into the rogue trader phenomenon. Escalation theory stems from research indicating *318 that people and groups are prone to a particular type of bias--a tendency to escalate commitment--when faced with a series of decisions, rather than with an isolated decision. [FN62]

We face serial decisions and struggle with the issue of when to escalate commitment and when to quit on an almost daily basis. For example, you hire and train a new employee who is not performing as expected. Do you fire her or invest more time and resources in additional training? You are down \$200 at the blackjack table. Do you continue to bet in the hope of breaking even or do you walk away and accept the \$200 loss? In each case, you have a decision to make as the result of a previous decision for which you feel responsible. Inevitably, you have already dedicated time, money, and effort to the initial decision, and now things are not working out as expected.

Numerous studies have shown that the likely response to such situations is an escalation of commitment to the previously selected course of action beyond that predicted by rational decision-making models. [FN63] For example, Professor B.M. Staw has demonstrated that subjects are more likely to allocate additional funds to a losing corporate division if they made the initial decision to fund that division than are subjects who are told that the initial funding decision was made by another executive. [FN64] The tendency to escalate is particularly evident when an explanation for failure that is unpredictable and outside the control of the decision-maker can be identified, such as a market downturn or economic shock. [FN65] Similarly, studies have found that subjects who made an initial decision to hire an employee subsequently evaluated that employee's performance higher, provided larger rewards, and made more favorable forecasts of future performance than did subjects who were not involved in the initial hiring decision. [FN66]

*319 Psychologists have identified several causes of escalatory behavior, including perception biases, judgment biases, and impression management. [FN67] Perception bias results because people are likely to notice information that supports their initial decision and to ignore information that contradicts it. [FN68]

In addition to perception biases, most individuals also suffer from judgment biases. As a result, any initial loss from an investment is likely to systematically distort judgment toward continuing the chosen course of action. [FN69] A growing body of evidence indicates that individuals are loss averse, meaning that they tend to be risk averse to positively framed problems and risk seeking to negatively framed problems. [FN70] Individuals will thus go to great lengths, including taking higher risk positions and hiding losses, in order to avoid recognizing a loss. [FN71] Accordingly, when *320 faced with a serial decision following a losing investment, people do not assess the new decision from a neutral reference point, but rather from a loss frame, resulting in extreme risk seeking. [FN72]

According to most economists, this result stems from the decision maker's failure to recognize that the time, money, and effort already expended are sunk costs that cannot be recovered and that the current decision should be made by evaluating only the future costs and benefits of the contemplated action. [FN73] This is true, however, only if wealth maximization as opposed to utility maximization is the goal. [FN74] As discussed previously, decision-makers within trading institutions highly value status. If recognizing a loss results in reduced status, then accepting higher risk in an attempt to eliminate the loss may be a completely rational attempt to maximize utility,

but not wealth.

Finally, managing the impressions of those around us contributes to an escalation of commitment. [FN75] Changing course midstream is tantamount to a public admission of misjudgment and failure. [FN76] Accordingly, psychological studies indicate that subjects who have made an initial commitment to a particular course of action are likely to provide information to others that confirms *321 their initial decision and fail to provide disconfirming information. [FN77] Such behavior is understandable given the high premium that our society places on consistency and the penalties reserved for decision-makers perceived as indecisive. [FN78] Each of these tendencies is visible in the context of recent rogue trading disasters. Robert Citron of Orange County, for example, was able to compile an investment portfolio with sufficient levels of risk and leverage to bankrupt the county and then hide his mounting losses, largely without oversight from county officials, auditors, or voters. Because Citron delivered high returns for years, Orange County was able to avoid making the hard choices faced by other counties during this time period, such as whether to increase local taxes or make cuts in county services. [FN79] Having elected Citron to office and then benefitted from his success, few people were willing to question his investment skills or methodology. [FN80]

For example, the county's board of supervisors was unaware of Citron's investment strategy because it never asked Citron to provide the monthly reports required under California law. [FN81] The county auditor's office also failed to supervise Citron. Although all other county departments were regularly audited, Citron was audited only once in the four years prior to the county's bankruptcy. [FN82] The county's Deputy Chief Controller summed up county officials' attitude stating, "[w]e presumed [Citron] had the ability since he was--had been a treasurer for a long time, and he had an outstanding reputation." [FN83]

One of the few people to question Citron's overconfidence and risky investment strategy was John Moorlach, a certified public accountant and financial planner who ran against Citron in the 1994 County Treasurer election. [FN84] Moorlach based his campaign on criticisms of Citron's heavy reliance on derivatives and leverage, *322 but the voters took little notice, re-electing Citron by a landslide. [FN85]

Similar phenomena are evident in the case of Nicholas Leeson of Barings Bank. Leeson began his career in Baring's "back office," settling trades for the trading department. [FN86] He was transferred to Baring's Singapore office as head of settlements and later became a star trader who earned large bonuses, finally working his way up to head of trading. [FN87] Apparently, the sunk costs of Leeson's recruitment and training combined with his image as a talented trader to blind Baring's management to the true nature of Leeson's positions. For example, Leeson was permitted to settle his own trades, despite the fact that it is considered improper procedure to allow one person to perform both functions, as this increases the possibility that the trader will exceed risk and loss limits. [FN88] In addition, because all of Leeson's transactions were in exchange-traded futures contracts, he was required to put up initial margin and meet margin calls as the value of his investments fell. As Leeson's losing positions grew, the amounts required to meet his margin calls became huge, yet no eyebrows were raised by Baring's officials, who continued to send Leeson funds in order to meet the margin calls. [FN89]

Finally, few people at Barings became suspicious of Leeson, even after rivals at other firms had begun to notice his increasing positions and his risky, aggressive trading strategy. [FN90] As Leeson himself described Baring's senior management, "[T]hey wanted to believe." [FN91] A similar attitude was expressed in the Price *323 Waterhouse report prepared for the Singapore Minister for Finance:

[Baring's] claim that it was unaware that account 88888 existed, and also that the sum of S\$1.7 billion which the Baring Group had remitted to BFS, was to meet the margins required for trades transacted through this account, if true, gives rise to a strong inference that key individuals of the Baring Group's management were grossly negligent, or wilfully [sic] blind and reckless to the truth. [FN92]

Interestingly, this perception bias with regard to Leeson was not limited to officials at Barings, but extended to SIMEX (Singapore Monetary Exchange) officials as well. Leeson was by far the largest trader of Nikkei index futures on the SIMEX and had counseled the exchange with regard to its own settlement procedures. [FN93] Accordingly, SIMEX officials may have failed to perceive the dangerous risk and leverage of Leeson's positions relative to Baring's size.

C. Institutional Norms

Applying theories of individual and group psychology provides some initial insight into why rogue trading occurs, but does not provide a complete explanation for managements' tolerance of rogue trading behavior. Despite the psychological tendency for individuals and groups to escalate commitment to a previously chosen course of action, preventing rogue trading is not impossible. Financial institutions could implement compliance and oversight systems so flawless that every trade was closely monitored and any unauthorized trading would be quickly detected. However, as with any system, management must perform a cost-benefit analysis when deciding which programs to implement and which to bypass. [FN94] An internal control system that detected every incidence of rogue trading would be extraordinarily expensive to implement. [FN95]

The expense stems not only from the costs of computer software, reporting systems, and supervisory personnel, but also from the fact that in order to render traders fully accountable to management, the carefully crafted institutional norms that enable traders to maximize the firm's profits would have to be altered. *324 As a result, traders would be less effective and less profitable.

1. An Introduction to Norms

The term "norms" has been defined as "informal social regularities that individuals feel obligated to follow because of an internalized sense of duty, because of a fear of external non-legal sanctions, or both." [FN96] There is some disagreement about the proper definition of norms. For example, some theorists define norms to include only decentralized or informal rules and exclude from the analysis organizational rules. [FN97] Others consider both formal organizational and informal obligations as norms, [FN98] and some theorists even include legal obligations within the definition. [FN99]

The rogue trader example highlights the importance of distinguishing informal norms from formal organizational rules. [FN100] Trading institutions, be they institutional investors, investment banks, or commercial banks, have a highly-formalized, written set of internal rules and practices that are ostensibly designed to curb rogue trading. [FN101] However, the norms discussed in this Article *325 that lead to the rogue trader phenomenon, which I refer to as "institutional norms," are informal, unwritten codes of conduct that have originated within this highly structured and centralized environment. [FN102] One of the most interesting features of these norms is that they sometimes undermine the organization's formal written rules.

These informal norms, however, do not--indeed cannot--arise without the consent and cooperation of management. [FN103] In other words, despite formal written codes prohibiting traders from exceeding specified risk and loss limits, management has purposely crafted an incentive structure and firm culture that fosters three general norms that encourage rogue trading: greed, risk-taking, and independence. Management fosters these characteristics, not because rogue trading itself benefits the firm, but because these same norms that give rise to rogue trading also create successful and profitable traders. [FN104] A change in firm culture would result in less effective traders and, therefore, would be extraordinarily costly. Consequently, management accepts the risk of rogue trading as being outweighed by the benefits stemming from this system.

2. Financial Institution Norms

Norms analysis has recently been applied to explain behavior in a stunning variety of contexts, including, among others, dispute resolution among cattle ranchers [FN105] drug law enforcement policy, [FN106] the growth of anti-smoking sentiment in the United *326 States, [FN107] and the tendency of lawyers to overstate legal risks to their clients. [FN108] Although some theorists have also employed norms to analyze business relationships, [FN109] relatively few legal scholars have specifically studied the formal and informal norms that influence the behavior of traders and other decision-makers within financial institutions. This is an unfortunate omission. If, as argued by Robert C. Ellickson, "members of a close-knit group develop and maintain norms whose content serves to maximize the aggregate welfare that members obtain in their workaday affairs with one another," [FN110] then financial institutions provide a nearly ideal test-tube for evaluating the ability of norms to constrain economically self-

interested actions that do not further the collective best interests of the group.

Interestingly, it is the rogue trader phenomenon itself that gave rise to some of the most interesting studies of Wall Street culture and norms. For example, after the Salomon Brothers rogue trading scandal of August 1991, the SEC investigated Salomon Brothers and the trading practices at other institutions engaged in government bond trading. [FN111] In interviews following the investigation, the SEC Chairman at that time, Richard C. Breeden, noted that the investigation had uncovered a practice of false statements and phantom records that was "nearly universal in nature. Virtually 100 percent of the firms were involved." [FN112]

*327 Chairman Breeden's comments led at least one economic sociologist to question how a rule violation could become "universal" among a variety of discrete firms within a market. [FN113] Believing it unlikely that individual decision-making could account for such an occurrence, he collected his extensive fieldwork undertaken over the course of thirteen years, including training as a futures trader, into a fascinating study of the culture, organization and social forces at work on the trading floor. [FN114]

Professor Richard McAdams has argued that three conditions are necessary for the development of esteem-based norms: (1) there must be some consensus regarding the esteem worthiness of engaging in some behavior, (2) there must be a risk that others will detect such behavior, and (3) both the consensus and risk of detection must be well-known within the pertinent group. [FN115] All three of these conditions are satisfied with regard to traders in financial institutions.

As to the first condition, consensus, Professor McAdams argues that prior to and without respect to the norm, individuals must have some predefined preferences; in other words, they cannot be completely indifferent to all behaviors. [FN116] Only individuals with a particular psychological and personality makeup are attracted to, and survive in, trading institutions. These individuals tend to be relatively comfortable with taking large risks, and must have the ability to think and act quickly and to prosper under highly stressful conditions. [FN117] In addition, the successful trader is greedy. In other words, he is attracted to trading by a desire for income and continues to be motivated by that desire throughout his trading career. Finally, those attracted to a career in trading are typically independent and entrepreneurial. They often reject the hierarchy and lack of autonomy that characterizes other corporate jobs. [FN118]

As to the second condition, risk of detection, anyone who has ever seen a trading floor recognizes the high risk of detection in such a setting. Even senior traders rarely have a separate office. Instead, traders work side-by-side, separated by only a small cubicle. In such an environment, it is extraordinarily likely that deviant *328 behavior will be observed. In addition, the bonding that takes place under shared high stress levels increases the likelihood of "gossip" that will quickly disseminate such information to the group.

Finally, both the consensus and the risk of detection are highly publicized in the trading environment. The socialization of new traders begins with the training program, which typically includes a short period of classroom training and then a longer period as an intern on the trading floor. [FN119] The internship normally consists of a rotation among various departments, in which the trainee performs low-level tasks and attempts to ingratiate himself with senior traders in the hopes of being offered a permanent position at one of the trading desks. [FN120] This "hazing" process is a common socialization method for building homogeneity and group loyalty and is often used, for example, by the military, fraternities, and secret societies. [FN121] Often, the low status of a new trader continues until his first big trade, at which point he is finally accepted as part of the group. [FN122]

During the training program, which may last anywhere from six months to two years, trainees observe and copy senior traders and learn which behavior is acceptable within the institutional culture. [FN123] As stated by one trader: "You watch the guys around you . . . I got my post-doctorate degree in the bars, mostly after work, hanging around with the older guys, letting them beat me up and tell me stories. Then you begin to see how things work." [FN124]

Significantly, neither the institutional culture nor the socialization process is static, but instead changes over time to reflect market, technological, informational, regulatory, and societal *329 changes. [FN125] To illustrate, many older traders indicated in interviews that increased competition, financial innovations, and the deregulatory attitude

of the Reagan administration resulted in a 1980's culture significantly different from pre-1980's norms. [FN126] In particular, older traders noted that these changes resulted in a firm culture that ignored specific regulatory or institutional rules and encouraged more opportunistic behavior. [FN127]

New traders are thus attracted to the trading environment because of a particular psychological and personality make-up, but do not arrive at a financial institution as a new recruit and find a cultural blank slate. [FN128] Instead, they find a highly structured institutional culture that must be followed if they hope to gain acceptance and win a place at a trading desk. [FN129] Eventually, these norms may become internalized, so that they are no longer experienced as an external shaping force, but as a personal preference that happens to be shared by all group members. [FN130]

3. Three General Norms: Greed, Risk-Taking, and Independence

The three most salient institutional norms that arise in the trading environment are greed, risk-taking, and independence. First, and most importantly, traders are greedy. Again, I emphasize that the term is not intended pejoratively. Traders have a heightened sense of materialism because the firm's incentive structure is designed specifically to foster such an attitude. Unlike jobs in most other fields, there is no real career ladder in the trading department. [FN131] The traders' hierarchy tends to consist only of traders who earn more money for the firm versus traders who earn less. Rather than rewarding good performance with more impressive titles and greater responsibility, successful traders are rewarded with larger bonuses.

As previously discussed, competition for wealth is more than a competition for material gain: it is a contest for status and esteem. This is particularly true on the trading floor. As stated by *330 one observer: "Money is more than just a medium of exchange; it is a measure of one's 'winnings.' It provides an identity that prevails over charisma, physical attractiveness, or sociability as the arbiter of success and power on the bond trading floor. The top-earning trader is king of the mountain." [FN132]

The compensation structure at most trading institutions, typically based almost exclusively on trading profits earned in the current fiscal year, also encourages risk-taking, by sending a message to traders that short-term trading profits will be rewarded, even if incurred at the expense of greater risk-taking. [FN133] This message is far stronger and more persuasive than the countervailing message embodied in the firm's written code of conduct, which forbids traders from exceeding risk and loss limits. [FN134]

It has long been recognized that the firm's compensation structure is perhaps the most powerful tool at management's disposal for shaping firm culture. [FN135] Furthermore, the fact that ill-conceived variable compensation plans can sometimes produce perverse incentives is not a new discovery. [FN136] Many consulting companies, in fact, specialize in crafting compensation policies that mirror or transform institutional culture and eliminate incentives for conduct that does not further the firm's best *331 interests. [FN137]

Not only financial institutions, but also regulatory bodies such as the SEC, are well aware of the moral hazard problem raised by the compensation systems at most financial institutions, which typically pay traders between ten and twelve percent of their net profits as a bonus. [FN138] Recent (mostly unsuccessful) attempts by financial institutions to reformulate traders' compensation packages indicate that firms are aware of the message being sent, but have found no way to provide disincentives for rogue trading while at the same time fostering incentives and preferences that lead to the most profitable trading strategies.

The unsuccessful struggles of Salomon Brothers to revise its compensation system provide a good example. After the firm's large trading losses in 1994, Salomon Brothers overhauled its compensation system in an attempt to more closely align the interests of employees and managers with those of shareholders. [FN139] Among other reforms, the plan provided investment bankers, traders, and other employees with as much as half of their pay in Salomon Brothers stock at a fifteen percent discount. [FN140] The shares could not be sold for five years. [FN141] After announcing the new plan, Salomon lost 20 of its 200 managing directors, including several top traders. [FN142] The plan was later discontinued. [FN143]

Finally, traders are expected to be self-reliant and entrepreneurial. As stated by one trader: "It's a very entrepreneurial *332 business. No one is going to help you make money. They're too busy helping themselves." [FN144] As a result of this attitude, traders operate in an independent and often uncooperative environment. [FN145] Traders perceive their primary obligation as maximizing the value of their own account and feel little duty to "oversee" those around them for potential violations of the firm's trading rules. [FN146]

4. A Market for Trading Norms?

One of the great debates currently raging in norms scholarship is the extent to which collectively efficient norms can arise absent government regulation. [FN147] Like many other public goods, norms may be underprovided because of the tendency for members of the group to free ride on others' enforcement efforts. [FN148] Consequently, many norms scholars favor government intervention to encourage an efficient level of norms development. [FN149] Others, however, are skeptical of the extent to which government regulation can improve on market and cultural processes. [FN150]

In a new article analyzing markets for norms and norms markets failures, Professor Robert C. Ellickson discusses the forces giving rise to a change in norms. [FN151] According to Professor Ellickson, a new norm arises with an individual change agent, who advances a new norm because he anticipates that, over time, the *333 benefits to him of the new norm will exceed the costs he incurs in initiating and enforcing a new norm. [FN152] This could be because the change agent's expected benefits are higher, his expected costs are lower, or both. [FN153]

For a new norm to emerge, however, cheerleaders are also necessary. [FN154] This is because, in order for most change agents to be induced to enforce a new primary behavior, they must receive some reward from the target audience. [FN155] These rewards must be relatively costless for the audience to bestow, however. Otherwise, the tendency for enforcers to free ride results in underenforcement. Accordingly, cheerleaders may reward change agents with esteem, which costs the cheerleader nothing. [FN156] Alternatively, enforcement may signal to the target audience--the cheerleaders--that the enforcer possesses some other positive quality, such as trustworthiness. [FN157]

Applying these principles to trading norms in financial institutions illustrates the small probability that market forces could actually affect a change in currently prevailing norms. First, no private change agent is likely to bear the costs to enforce a new norm regarding financial institutions' internal control procedures because the benefits to any single actor are unlikely to exceed the costs of such enforcement. The high cost of enforcing norms that reduce rogue trading stems partly from the fact that any deviations from the norm are difficult to detect. In other words, outsiders are unable to observe which firms' internal controls are likely to give rise to rogue traders, until a rogue trading loss large enough to attract public attention occurs.

Similarly, there is no audience to provide esteem or signaling benefits to the norm entrepreneur. The shareholders of publicly held financial institutions are unlikely to act as an audience that encourages a norm change. If, as I have argued in Part III of this *334 Article, management purposely encourages the norms that give rise to rogue trading because those norms also enhance trader profitability, then shareholders may not want a change from current norms. In fact, to the extent that public shareholders tend to be more diversified and hence more risk-seeking than managers, investors in financial institutions are even more likely than management to value norms that lead to greater risks, and potentially greater rewards. [FN158]

The customers of financial institutions are also unlikely to act as an audience that bestows benefits on those firms that act as norms entrepreneurs. While it is frequently argued that there is a market for fair dealing firms and that reputations are extraordinarily important to financial institutions, a firm's reputation for providing its customers with profit opportunities may outweigh any concerns with a firm's reputation for lax internal controls. For example, most of Salomon Brothers' customers continued to trade government securities through the firm, even after Salomon admitted to manipulating the Treasury market and entering false orders in customers' names. [FN159]

Conclusion

This Article presents some very preliminary ideas regarding rogue trading and represents, in many ways, a blueprint for future research, rather than a finished project. Three lines of inquiry, in particular, arise from this preliminary study.

First, this Article presents a theory as to why rogue trading has not been eliminated by market forces, despite strong regulatory incentives for firms to curb the self-interested behavior of traders. This theory is ripe for empirical study, similar to that conducted by Lisa Bernstein in connection with the diamond industry and by Tracey Meares in connection with attitudes toward *335 drug law enforcement. [FN160] Second, ample literature exists on conspiracy, cover-up, and rogue behavior within other types of organizations. [FN161] This literature should be compared and contrasted with the data I collect on rogue trading. Third, more research is needed regarding whether regulatory intervention is necessary or desirable in the rogue trader context.

I have argued in this Article that, contrary to popular belief, market forces will not eliminate rogue trading disasters. This is both because some rogue trading personally benefits firm management and, arguably, shareholders, and because installing monitoring systems sufficient to overcome common cognitive impediments to decision-making under risky conditions and altering institutional norms that create profitable--but greedy, risky, and independent--traders is extraordinarily expensive. This does not necessarily mean, however, that government intervention can or should succeed where the market has failed.

First, many commentators have noted the difficulties and drawbacks associated with regulatory attempts to alter norms. [FN162] Second, it is not obvious that rogue trading losses are a cause for public concern. After all, if firm management has correctly conducted its cost-benefit analysis, then the conditions giving rise to rogue trading are arguably profitable to the shareholders of financial institutions. Even if management has erred in estimating the costs and benefits of current compensation and oversight policies, it could be argued that those managers that are too incompetent or self-interested to implement shareholder wealth-enhancing norms will soon be replaced by the market for corporate control or the managerial labor market. [FN163] Although there is *336 a growing body of evidence demonstrating inefficiencies in those markets, [FN164] it has also been argued that firms failing to implement the necessary operational controls to prevent rogue trading disasters that threaten the firms' welfare should be allowed to fail, weeding out unsuccessful firms in a Darwinian survival of the fittest. [FN165]

There are, however, at least two reasons that could be advanced in favor of regulation designed to avoid rogue trading losses. First, because the costs of rogue trading are not fully internalized by either traders or those in charge of enforcing trading restrictions, we may be concerned about negative third party effects. In other words, the negative effects of rogue trading may impact those within and without the firm who have no control over the trading decision. [FN166] For example, non-management employees may suffer from large trading losses or firm bankruptcy. Similarly, shareholders, creditors, suppliers or customers can all suffer from a firm's economic downturn. [FN167]

These negative externalities, however, are arguably not unique to a firm's trading activities. For example, a decision to launch a new product line or marketing campaign or to acquire another *337 company could have similar negative implications, and yet there are few laws specifically restricting these activities.

A more common argument advanced in favor of regulating rogue trading is the potential impact of rogue trading losses on systemic risk. [FN168] Systemic risk is the danger that a disturbance at one financial institution will spread to others in a domino effect, or that severe illiquidity will arise as a result of investors' lack of confidence in a depressed market, impairing the efficient functioning of the financial system and, at the extreme, causing its complete breakdown. [FN169]

Whether systemic risk is a legitimate cause for concern, however, is a subject of great debate, which has become increasingly heated as financial and technological innovations continue to alter the pace and character of investment activity. [FN170] Many scholars point to the fact that the financial system has already weathered the failure of several financial institutions without a systemic crisis and conclude that fears regarding a systemic crisis are unfounded. [FN171] To date, however, these failed institutions *338 have been relatively minor players in the global finance game. [FN172]

To some extent, the reality of systemic risk may be less important than government and industry perceptions that a systemic crisis is possible. In other words, if the federal government is willing to engineer a taxpayer bail-out due to ill-founded fears of a systemic danger, then this puts United States tax dollars at risk and provides a potential rationale for preventive regulation. [FN173] Professor Jonathan R. Macey has made similar arguments regarding Federal Deposit Insurance, albeit with the intent of arguing against federal regulation. [FN174]

The answers to these questions are complex and are left unanswered in this Article. However, I hope to further explore the issue of systemic risk and the impact of new technologies and financial innovations on systemic risk in future research.

[FNaa1]. This title is adapted from Gary S. Becker, *Accounting for Tastes* (1996) and Richard H. McAdams, *Accounting for Norms*, 1997 *Wis. L. Rev.* 625 (1997).

[FNa1]. Visiting Professor, UCLA School of Law; Associate Professor, University of Oregon School of Law. This Article was presented at the conference, *Community, Law, Power: New & Critical Approaches to Law and Economics*, at the University of Oregon School of Law and at faculty colloquia at Emory, UCLA, and the University of North Carolina law schools. I am grateful to the participants at those events for their many questions and comments. I would also like to thank Professors G. Mitu Gulati, Peter H. Huang, William A. Klein, Russell B. Korobkin, and Edward J. McCaffery for helpful comments on earlier drafts of this Article. Finally, I am grateful to Frank Partnoy for helpful insights on the topic of rogue trading.

[FN1]. Interview with a bond trader. Mitchel Y. Abolafia, *Making Markets: Opportunism and Restraint on Wall Street* 14 (1996).

[FN2]. One of the most famous rogue traders, Robert Citron, the former Treasurer of Orange County, California, managed an investment portfolio for a municipality. While the psychological phenomena discussed in this Article apply equally to Citron and traders within financial institutions, much of the discussion regarding institutional norms is specific to financial institutions and, therefore, does not apply to Citron. Because the environment in which Citron made trading decisions differs from that of a rogue trader investing funds for a financial institution's proprietary account, some of the forces giving rise to Orange County's losses are necessarily different from those faced by banks and other financial institutions.

[FN3]. See, e.g., Joseph Jett & Sabra Chartrand, *Black and White on Wall Street: The Untold Story of the Man Wrongly Accused of Bringing Down Kidder Peabody* (1999); Luke Hunt & Karen Heinrich, *Barings Lost: Nick Leeson and the Collapse of Barings plc* (1996); Judith H. Rawnsley, *Total Risk: Nick Leeson and the Fall of Barings Bank* (1995); Nick Leeson, *Rogue Trader: How I Brought Down Barings Bank and Shook the Financial World* (1996); *Rogue Trader* (Miramax 1999) (the movie version of Nicholas Leeson's biography).

[FN4]. Leeson was a 28-year-old trader in the Singapore office of Barings plc (Barings), the oldest merchant banking firm in Britain and a financial advisor to Queen Elizabeth II. His \$1.4 billion loss due to ill-fated trades in stock index futures forced Barings to declare bankruptcy on February 26, 1995. See Kimberly D. Krawiec, *More Than Just "New Financial Bingo": A Risk-Based Approach to Understanding Derivatives*, 23 *J. Corp. L.* 1, 2-3 (1997).

[FN5]. Citron, the former treasurer of Orange County, California, caused the largest municipal bankruptcy in United States history through losses on reverse repurchase agreements. He later claimed to lack the sophistication necessary to understand his investments and the county sued Merrill Lynch, the broker/dealer that had sold the contracts to the

county's investment fund, alleging that an unscrupulous broker had sold the county unsuitable investments. Id. at 27- 28.

[FN6]. Iguchi, a former vice president with Daiwa Bank's New York office, allegedly lost \$1.1 billion in thirty thousand unauthorized trades of U.S. Treasury securities that took place from 1983 to 1995. As a result of Iguchi's trades and the bank's subsequent cover-up attempts, U.S. regulatory agencies closed Daiwa's United States operations. Id. at 43-45.

[FN7]. Leeson, perhaps because of his youth, seems to have attracted the most attention. See sources cited *supra* note 3.

[FN8]. Due to the secret nature of rogue trading, the evidence relating to its pervasiveness is primarily anecdotal, rather than empirical. Nonetheless, the evidence suggests that it is fairly widespread, and perhaps even more common than realized, as only rogue trading losses eventually become public. Presumably, there are numerous examples of successful rogue traders as well, although their activities are never brought to the attention of the public.

[FN9]. Jerry W. Markham, Guarding the Kraal--On the Trail of the Rogue Trader, 21 J. Corp. L. 131, 136-39 (1995) (discussing the Grant & Ward scandal and other rogue trading incidents); see also Kenneth D. Ackerman, The Gold Ring: Jim Fisk, Jay Gould, and "Black Friday," 1869 (1988) (discussing the Grant & Ward scandal and several other early securities markets scandals).

[FN10]. See sources cited *supra* note 3.

[FN11]. See, e.g., Hearing on the Daiwa Bank of Japan and Foreign Banks Operating in the U.S., 104th Cong. (Nov. 27, 1995) (Senate Banking Committee Supervision Hearing); Municipal, Corporate and Individual Investors, 104th Cong. (Jan. 5, 1995) (Senate Banking Committee Hearing) (discussing the Orange County losses).

[FN12]. See, e.g., S. 557, 104th Cong. § 2 (1995) (proposing a prohibition against insured depository institutions and credit unions engaging in certain activities involving derivative financial instruments); Derivatives Dealers Act of 1995, H.R. 1063, 104th Cong. § 1 (1995) (proposing a framework for Securities and Exchange Commission supervision and regulation of derivatives activities); Derivatives Safety and Soundness Supervision Act of 1995, H.R. 31, 104th Cong. (1995) (proposing regulatory oversight and coordination and greater disclosure of the derivatives activities of financial institutions); Risk Management Improvement and Derivatives Oversight Act of 1995, H.R. 20, 104th Cong. § 1 (1995) (seeking to create a Federal Derivatives Commission to establish standards governing dealers and end-users of derivatives).

Most of the legislative proposals sought to restrict or increase oversight regarding derivatives use, as derivatives, rather than rogue trading, were blamed for many of the largest rogue trading incidents. This is an erroneous perception, however, as evidenced by the fact that the majority of known rogue trading incidents do not involve derivatives trades. See *infra* notes 14-17 and accompanying text (discussing non-derivatives losses by rogue traders). In addition, most of the rogue traders who employed derivatives invested in very uncomplicated contracts. For example, Nicholas Leeson's losses were attributable to trades in exchange listed stock index futures, a relatively simple derivative contract that does not present the complexity and price opacity problems of an over-the-counter derivative contract. Krawiec, *supra* note 4, at 40-43.

[FN13]. See *infra* notes 22-24 and accompanying text.

[FN14]. An Unusual Path to Big-Time Trading, N.Y. Times, Sept. 27, 1995, at D6.

[FN15]. Id.

[FN16]. Krawiec, supra note 4, at 43.

[FN17]. An Unusual Path, supra note 14.

[FN18]. Under Delaware law, directors have a duty "to attempt in good faith to assure that a corporate information and reporting system, which the board concludes is adequate, exists...." In re Caremark Int'l Inc. Derivative Litig., 698 A.2d 959, 970 (Del. Ch. 1996).

[FN19]. 15 U.S.C. § 78o (2000).

[FN20]. The Securities Exchange Act provides:

"No person shall be deemed to have failed reasonably to supervise any other person, if --

(i) there have been established procedures, and a system for applying such procedures, which would reasonably be expected to prevent and detect, insofar as practicable, any such violation by such other person, and

(ii) such person has reasonably discharged the duties and obligations incumbent upon him by reason of such procedures and system without reasonable cause to believe that such procedures and system were not being complied with.

Id.

[FN21]. See, e.g., NASD Rules of Fair Practice, art. III, § 27 (requiring NASD members to establish and maintain a system to supervise employees); N.Y. Stock Exchange Rule 342.21 (requiring that trades be subjected to review procedures); Chicago Board of Options Exchange Rules 4.2 and 9.8; 17 C.F.R. § 166.3 (2000).

[FN22]. See Kurt Eichenwald, Learning the Hard Way How to Monitor Traders, N.Y. Times, March 9, 1995, at D1 (discussing the supervisory procedures implemented by Merrill Lynch after a rogue trader's \$377 million loss in 1987).

[FN23]. Id.

[FN24]. See Pay Dirt: Salomon Brothers, The Economist, July 1, 1995, at 67 (discussing Salomon Brothers' unsuccessful attempts to restructure its compensation system); Bonus Points, The Economist, Apr. 15, 1995, at 71 (discussing efforts by various financial services firms to restructure their compensation systems in an effort to reduce agency costs and unauthorized activities).

[FN25]. Traditional economic theory tends to assume that firms, and the individuals that comprise them, behave in a rational manner that enhances their own welfare. See, e.g., Robert C. Ellickson, Order Without Law: How Neighbors Settle Disputes 156 (1991) [hereinafter Ellickson, Order Without Law] (discussing the rational-actor model); Edward J. McCaffery, Why People Play Lotteries and Why it Matters, 1994 Wis. L. Rev. 71, 72-73 (stating that "[m]ost economic theory presumes that individuals are rational... and risk averse."); Charles F. Manski,

Economic Analysis of Social Interactions, 14 J. Econ. Persp. 115, 118 (2000) (noting that "[t]he essential characteristic of an economic agent is not its physical form but rather its status as a decisionmaker" and noting further that economic theory typically assumes that agents, whether firms, individuals or other entities, maximize expected utility).

This assumption has recently come under attack from two fronts. The first leaves intact the assumption that individuals behave in a rational, wealth maximizing manner, but argues that collective action, principal-agent, or other group dynamic problems render the assumption of rational wealth maximization inaccurate in the firm context. See, e.g., Timothy F. Malloy, *Regulating by Incentives: Myths, Models & Micromarkets* (unpublished manuscript, on file with author) (criticizing the rational actor model as applied to firm actions).

Others attack the rational actor assumption more directly, by arguing that individuals cannot be expected to behave rationally in a wide variety of contexts. See, e.g., Russell B. Korobkin & Thomas S. Ulen, Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics, 88 Cal. L. Rev. 1051, 1053 (2000) (criticizing law and economics' "unrealistic core behavioral assumption: that people subject to the law act rationally."); Peter H. Huang, Reasons Within Passions: Emotions and Intentions in Property Rights Bargaining, 79 Or. L. Rev. 435, 435 (2000) (arguing that "people do not behave the way that rational actors do because people also feel emotions and those emotions drive behavior.").

[FN26]. See, e.g., Saul Hansell, *For Rogue Traders, Yet Another Victim*, N.Y. Times, Feb. 28, 1995, at D1 (stating that "[g]enerally, regulators have argued that these internal controls, rather than government supervision, afford the best protection [against rogue trading losses]."); Jonathan R. Macey, Wall Street Versus Main Street: How Ignorance, Hyperbole, and Fear Lead to Regulation, 65 U. Chi. L. Rev. 1487, 1501-03 (1998) (book review) (arguing that sufficient market incentives exist to encourage firms to prevent unauthorized or unscrupulous derivatives sales tactics); The Group of Thirty, *Derivatives: Practices and Principles* (1994) (studying the derivatives industry and recommending various improvements, nearly all of which involve firms' internal control systems); Gordon L. Clark, *Rogues and Regulation in Global Finance: Maxwell, Leeson and the City of London*, 31.3 Regional Studies 221, 231 (stating that "[t]he realist, liberal approach to financial regulation assumes that the culture of finance is either benign or is adequately 'policed' by efficient markets."). But see Donald C. Langevoort, Selling Hope, Selling Risk: Some Lessons for Law From Behavioral Economics about Stockbrokers and Sophisticated Customers, 84 Cal. L. Rev. 627 (1996) (analyzing "rogue brokers" and demonstrating that several common behavioral characteristics may defeat the presumably efficient development of a market for fair-dealing firms).

[FN27]. Krawiec, *supra* note 4, at 40-42.

[FN28]. *Id.* at 43-45.

[FN29]. As stated by former SEC chairman Richard Breeden: "You have to expect that people will try to get around your controls on an unpredictable basis.... You don't know how and you don't know when, but over time it's certain that someone will try to do it." Hansell, *supra* note 26.

[FN30]. Recent massive rogue trading incidents, many of which arose as an attempt to recoup fairly small losses, support this theory. Toshihide Iguchi of Daiwa, for example, lost \$50,000 on a trade in 1983. Rather than report the loss to his employer and accept the consequences, he engaged in thirty thousand unauthorized trades from 1983 to 1995 in an attempt to recoup the loss, eventually accumulating a \$1.1 billion deficit. An Unusual Path, *supra* note 14. Similarly, Nicholas Leeson's \$1.4 billion loss allegedly began with a << PoundsSterling>>20,00 deficit generated by a clerk's simple trading error. See Thomas C. Baxter, Jr. & Anita Ramasastry, The Importance of Being Honest-- Lessons from an Era of Large-scale Financial Fraud, 41 St. Louis U. L.J. 93, 97 (1996) (discussing the Barings incident in greater detail).

[FN31]. *Wall Street* (Twentieth Century Fox Film Corp. 1988) ("The point, ladies and gentlemen, is that greed, for

lack of a better word, is good. Greed is right. Greed works. It clarifies, cuts through the essence of the evolutionary spirit." Mr. Gekko, of course, was not the first to express this concept. See Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* 423 (Edwin Canaan ed., 1937) (introducing the "invisible hand" metaphor).

[FN32]. See *infra* notes 166-174 and accompanying text.

[FN33]. Markham, *supra* note 9, at 14-45.

[FN34]. Hersh Shefrin, *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing* 218 (2000); Richard H. Thaler & Eric J. Johnson, *Gambling with the House Money and Trying to Break Even: The Effects of Prior Outcomes on Risky Choice*, in *Quasi-Rational Economics* 48-73 (Richard Thaler ed., 1991).

[FN35]. The low compensation of most municipal fund managers, such as Robert Citron of Orange County, reinforces the notion that many rogue traders seek esteem, prominence or power, rather than wealth accumulation alone. See Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 *J. Corp. L.* 211, 243 (1997).

[FN36]. Langevoort, *supra* note 26, at 639; see also Keith C. Brown et al., *Of Tournaments and Temptations: An Analysis of Managerial Incentives in the Mutual Fund Industry*, 51 *J. Fin.* 85 (1996) (demonstrating that mutual fund managers increase their portfolio's risk profile when in fear of under-performing other money managers).

Evolutionary biologists have also studied the link between risk-taking and status. Under this theory, males are biologically pre-disposed to incur risks that provide the hope of increased status, because higher status attracts more female mates and, consequently, increases the number of potential offspring. Cf. Azar Gat, *The Human Motivational Complex: Evolutionary Theory and the Causes of Hunter-Gatherer Fighting*, 73 *Anthropological Q.* 20 (2000) (discussing the role of male competition for female mates in increasing male risk-taking). Interestingly, traders are overwhelmingly male, although this may be more a function of discrimination, intolerance and sexual harassment of women in this environment than of evolutionary biology. See Michael Siconolfi, *Wall Street Fails to Stem Rising Claims of Sex Harassment and Discrimination*, *Wall St. J.* May 24, 1996, at C1 (discussing sexual harassment and discrimination against women in the securities industry).

[FN37]. Clifford Geertz, *The Interpretation of Cultures* 433 (1973).

[FN38]. *Id.*

[FN39]. Mitchel Y. Abolafia, *Making Markets: Opportunism and Restraint on Wall Street* 30 (1996).

[FN40]. The classic article on superstar theory is Sherwin Rosen, *The Economics of Superstars*, 71 *Am. Econ. Rev.* 845 (1981). Subsequently, superstar theory has been applied to explain otherwise puzzling phenomena in a wide variety of fields, including law. See, e.g., Robert H. Frank & Philip J. Cook, *The Winner-Take-All Society* (1995); Cass Sunstein, Kevin Murphy, Robert Frank & Sherwin Rosen, *The Wages of Stardom: Law and the Winner-Take-All Society: A Debate*, Roundtable Discussion at the University of Chicago *Law School*, 6 *U. Chi. L. Sch. Roundtable* 1 (2000).

[FN41]. Rosen argued that the superstar phenomenon arises because small differences in talent result in

disproportionate differences in rewards whenever the conditions for a superstar market--poor product substitutes and a constant or nearly constant marginal cost of output--are present. Rosen, *supra* note 40, at 845. Subsequent economists, however, have attributed the superstar phenomenon not to differential talent, but to attempts by consumers to minimize search costs. See, e.g., Moshe Adler, Stardom and Talent, 75 *Am. Econ. Rev.* 208, 212 (1985). Under this theory, large differences in success could hold even among individuals with equal talent. *Id.*

[FN42]. See *infra* Part III.B (describing the probability that successful traders will be subjected to less scrutiny).

[FN43]. For discussions of tournament theory (a close cousin of superstar theory), see Edward P. Lazear, *Personnel Economics* 25-37 (1995); Harold Demsetz, *The Economics of the Business Firm: Seven Critical Commentaries* 110-36 (1995). The puzzle that tournament theory helps explain is why firms (or sports tournaments) often offer extremely high rewards to the top producers (or winners) and dramatically less to those who finish second who are often almost as good as the winner. The insight is that the disproportionately high reward to the winner (and occasional penalty to the loser) is not a measure of the value of the winner's production (or the loser's lack of production), but an *ex ante* incentive mechanism to encourage all the participants in the game to exert high levels of effort to win. See Paul Milgrom & John Roberts, *Economics, Organization, and Management* 367-69 (1992); Ronald G. Ehrenberg & Michael L. Bognanno, Do Tournaments Have Incentive Effects?, 98 *J. Pol. Econ.* 1307-24 (1990) (empirically demonstrating that effort and performance in men's professional golf tournaments are positively related to prize amount and distribution).

[FN44]. See generally Marc Galanter & Thomas Palay, *Tournament of Lawyers: The Transformation of the Big Law Firm* 77-120 (1991) (arguing that law firm structure is explainable through tournament theory); David Wilkins & Mitu Gulati, *Reconceiving the Tournament of Lawyers*, 84 *Va. L. Rev.* 1581 (1998) (proposing modifications to the Galanter and Palay theory of law firm structure as a tournament). But see George Rutherglen & Kevin A. Kordana, *A Farewell to Tournaments? The Need for an Alternative Explanation of Law Firm Structure and Growth*, 84 *Va. L. Rev.* 1695 (1998) (arguing that law firm structure can be explained without reference to tournament theory).

[FN45]. See, e.g., McCaffrey, *supra* note 25, at 93 (arguing that lottery play is best explained by risk-preference with regard to the unique opportunity presented by lotteries - the opportunity to risk small amounts of income in the hope of winning sudden wealth); Milton Friedman & L.J. Savage, *The Utility Analysis of Choices Involving Risk*, 56 *J. Pol. Econ.* 279 *passim* (1948) (arguing that agents are willing to take large risks in order to elevate themselves into a higher social class). But see Lloyd R. Cohen, *Lotteries, Liberty and Legislatures* (Feb. 2000) (unpublished manuscript, on file with author) (criticizing this view as "naive" and "implausible").

[FN46]. See *supra* notes 40-43 and accompanying text (discussing superstar environments).

[FN47]. See *infra* notes 115-18 and accompanying text (discussing the fact that the trading culture favors those who feel comfortable taking large risks).

[FN48]. In the real world, rarely does one explanation suffice to completely explain behavior across a range of individuals. Even trading floors, which are characterized by a high degree of homogeneity, are comprised of a psychologically heterogeneous workforce. Accordingly, rational cost-benefit analyses may best explain the behavior of some traders, while overconfidence or other behavioral anomalies may best explain the rogue trading behavior of others. Put differently, given the different types of workers likely to exist in any given workforce, employers are likely to set up multiple simultaneously operating incentive systems in order to motivate the different types of workers to exert effort.

[FN49]. See, e.g., Shefrin, *supra* note 34, at ix (defining behavioral finance).

[FN50]. Abolafia, *supra* note 1, at 18.

[FN51]. Langevoort, *supra* note 26, at 637; McCaffrey, *supra* note 25, at 89 (discussing the consumption value of gambling and rejecting it as a complete explanation for lottery play, in part because lotteries are one of the least thrilling forms of gambling).

[FN52]. Mark Platte & Jeff Brazil, O.C. Treasurer Thrust into Spotlight over Risk Claims, *L.A. Times*, Apr. 30, 1994, at A1.

[FN53]. See Shefrin, *supra* note 34, at 41. For example, when asked whether they are above-average drivers, between 65 and 80 percent of people respond that they are above average. *Id.*

[FN54]. Sarah Lubman & John R. Emshwiller, *Before the Fall: Hubris and Ambition in Orange County: Robert Citron's Story*, *Wall St. J.*, Jan. 18, 1995, at A1.

[FN55]. *Id.*

[FN56]. Shefrin, *supra* note 34, at 13-16.

[FN57]. See *infra* Part III.B; see also Markham, *supra* note 9, at 145 (stating that "[t]he firm will forgive any especially risky position if the trader is successful. The trader will also acquire a degree of immunity from normal supervision. He will be viewed as a 'superman' whose judgement cannot be second-guessed.").

[FN58]. This conclusion is analogous to the recognition that the socially optimal amount of crime, pollution, or torts may be greater than zero, particularly if enforcement is costly. See, e.g., George J. Stigler, *The Optimum Enforcement of Laws*, 78 *J. Pol. Econ.* 526, 527 (1970); Fred S. McChesney, Boxed In: Economists and Benefits from Crime, 13 *Int'l Rev. L. & Econ.* 225 (1993); Jennifer H. Arlen & William J. Carney, Vicarious Liability for Fraud on Securities Markets: Theory and Evidence, 1992 *U. Ill. L. Rev.* 691, 692 (1992) (stating that "[i]n the standard torts case, the goal is not to prevent all harms, but rather is to induce the actor to take the optimal level of care"). The theory introduced in this Article is slightly different, in that I remain agnostic as to the social costs and benefits of rogue trading, but argue that, from the perspective of traders, managers, and, arguably, shareholders, the optimal amount of rogue trading within the firm is greater than zero.

[FN59]. Traders are expected to take some risks and suffer some losses. Although a trader could avoid the possibility of losses by investing in a portfolio consisting solely of U.S. Treasury securities, such a trading strategy would not generate sufficient profits to justify the costs of running a proprietary trading division.

[FN60]. C.f. Jay L. Koh, The Myth of Procedure: Derivatives Investment Reform in St. Petersburg, 16 *Yale J. on Reg.* 245, 291 (1999) (arguing that neither procedure-based nor agency cost explanations explain the large derivatives losses of St. Petersburg, Florida, and that it is much more likely that the city "knowingly and intentionally engaged in a high-risk, high-return strategy that carried the potential for significant losses, and that

those losses unfortunately, but not unexpectedly, occurred as a result of external market factors.").

[FN61]. See, e.g., Edward J. Kane & Kimberly DeTrask, Breakdown of Accounting Controls at Barings and Daiwa: Benefits of Using Opportunity-Cost Measures for Trading Activity, 7 Pac. Basin Fin. J. 203, 209-10 (1999) (presenting substantial and persuasive evidence that Barings management was aware of Leeson's attempts to increase risk in order to eliminate trading losses and concluding that management intentionally gambled on Leeson's high- risk, high-return strategies).

[FN62]. Max Bazerman, Judgment in Managerial Decision Making 66 (1998). Perhaps one of the earliest commentators to highlight the theory of irrational escalation of commitment was Mr. W.C. Fields, who quipped: "If at first you don't succeed, try, try again. Then quit. No use being a damn fool about it." Id.

[FN63]. Id. at 67.

[FN64]. Barry M. Staw, Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Chosen Course of Action, 16 Org. Behav. & Hum. Performance 27 passim (1976).

[FN65]. See Barry M. Staw & Jerry Ross, Commitment to a Policy Decision: A Multi-Theoretical Perspective, 23 Admin. Sci. Q. 40 passim (1978).

[FN66]. See, e.g., Bazerman, supra note 62, at 69. Similar results were obtained in a recent study concerning the impact of National Basketball Association (NBA) draft choice on subsequent team commitment to a player. Professors Staw and Hoang found that NBA draft pick order was strongly related to a player's playing time, probability of being traded, and league longevity, even after controlling for playing ability. Apparently, managers are unable to eliminate their "sunk costs" in terms of a wasted draft pick from subsequent decisions involving the player in question. Id. at 70; Barry M. Staw & Ha Hoang, Sunk Costs in the NBA: Why Draft Order Affects Playing Time and Survival in Professional Basketball, 40 Admin. Sci. Q. 474, 474-77 (1995).

[FN67]. See Bazerman, supra note 62, at 73-76.

[FN68]. Id. at 73.

[FN69]. Id. at 74.

[FN70]. Id. at 48. For example, Professors Tversky and Kahneman posed the following hypothetical to 150 subjects. The subjects were asked to choose between (a) a sure gain of \$240 on the one hand, a 25% chance to gain \$1000, and a 75% chance to gain nothing on the other; and (b) between a sure loss of \$750 on the one hand, a 75% chance to lose \$1000, and a 25% chance to lose nothing on the other. The majority of respondents chose a sure gain in question (a), but took a chance on a loss in question (b). Amos Tversky & Daniel Kahneman, The Framing of Decisions and the Psychology of Choice, 211 Science 453, 453-63 (1981).

[FN71]. Loss aversion may account for many large losses experienced by investors and corporate decision-makers. Shefrin, supra note 34, at 24-25. One popular stockbrokers' manual describes the loss aversion of investors:

Many clients, however, will not sell anything at a loss. They don't want to give up the hope of making money on a

particular investment, or perhaps they want to get even before they get out. The "get-evenitis" disease has probably wrought more destruction on investment portfolios than anything else.

Id. at 24 (quoting Leroy Gross, *The Art of Selling Intangibles: How to Make Your Million(\$)* by Investing Other People's Money 150 (1982)).

The frequency with which gains and losses are accounted for also affects decision-makers' tolerance for risk. It has been shown, for example, that investors demonstrate "myopic loss aversion" in that they are less likely to invest in stocks, which present a risk of loss, and are more likely to invest in low risk, low return securities, such as treasury bills, when gains and losses are evaluated frequently. Richard H. Thaler et al., *The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test*, 112 Q.J. Econ. 647 (1997); Shlomo Benartzi & Richard Thaler, *Myopic Loss Aversion and the Equity Premium Puzzle*, 110 Q.J. Econ. 73 (1995).

As applied to professional trading activity, myopic loss aversion is likely to operate somewhat differently. Traders and their supervisors are likely to be extraordinarily sensitive to recognizing losses, because these losses may result in job and esteem loss. Unlike average investors, however, traders and trading desks are evaluated relative to each other and are expected to take some risks in exchange for enhanced returns. Consequently, moving into less risky assets is not an option. Instead, a trader or trading desk manager faced with the prospect of realizing losses is likely to incur greater risks when the evaluative period is shorter, because other options for eliminating the loss, such as a market turn-around, are less likely to succeed. Cf. Russell Korobkin & Chris Guthrie, Psychology, Economics, and Settlement: A New Look at the Role of the Lawyer, 76 *Tex. L. Rev.* 77, 133-34 (demonstrating through controlled experiments that litigants are apt to select a higher risk strategy with a lower expected return, such as going to trial rather than settling, when trial presents the only viable option for an award high enough to replace the lost item); McCaffrey, *supra* note 25, at 106-08 (arguing that individuals are likely to engage in a high-risk strategy with low expected returns, such as lottery play, when it is the only feasible means of attaining their desired goal, such as no longer having to work).

[FN72]. Bazerman, *supra* note 62, at 74.

[FN73]. Id. at 68.

[FN74]. Korobkin & Guthrie, *supra* note 71, at 133-34 (demonstrating that the decision to litigate may sometimes maximize the litigants' expected utility, but not their expected wealth).

[FN75]. Bazerman, *supra* note 62, at 75.

[FN76]. Id.

[FN77]. Id.

[FN78]. For example, a frequent criticism of former President Jimmy Carter is that he was indecisive and studies show that administrators that are consistent in their decisions are perceived as better leaders. Id. at 75.

[FN79]. Tracy Weber et al., *How Deceit, Blunders Triggered O.C. Disaster*, L.A. Times, Dec. 31, 1995, at A1.

[FN80]. Id.

[FN81]. Leslie Wayne, *Merrill Tied to Orange County Loss*, N.Y. Times, Jan. 18, 1995, at A1.

[FN82]. Dexter Filkins & Ken Ellingwood, O.C. Auditors Didn't Understand Investments, Grand Jury Told, L.A. Times, Dec. 30, 1995, at A22.

[FN83]. Id.

[FN84]. Richard Cohen, The Affluent Passing the Buck, Wash. Post, Dec. 15, 1994, at A27.

[FN85]. Id.

[FN86]. The Collapse of Barings, The Economist, March 4, 1995, at 20.

[FN87]. Id.

[FN88]. Id.

[FN89]. Id.

[FN90]. Id. At the time of the collapse, Baring's positions on the Osaka exchange were eight times greater than its nearest rival firm and its positions on the Singapore exchange were even larger. Yet neither Barings officials nor those on the exchanges investigated. Id.; see also, Kane & DeTrask, supra note 61, at 209 (arguing that inquiries from the Bank for International Settlements and the press regarding Leeson's positions "were treated only as public relations problems. Inside the firm, management locked itself into denial, refusing to test the contention that its Singapore positions were fully hedged."). Those within Barings who did express concern with Leeson's trades were reassured that senior management was investigating the matter, reinforcing the notion that at least some members of management were complicit in Leeson's strategy. The Report of the Inspectors Appointed by the Minister for Finance, Oct. 1, 1995, at 121.

[FN91]. Agis Salpukas, Barings Trader Questions Monitoring by His Superiors, N.Y. Times, Sept. 11, 1995, at D4.

[FN92]. Report of the Inspectors, supra note 90, at B.vi.

[FN93]. Hu-bris: Singapore's Futures Exchange, The Economist, March 4, 1995, at 72.

[FN94]. Langevoort, supra note 26, at 646.

[FN95]. Id.

[FN96]. Richard H. McAdams, The Origin, Development, and Regulation of Norms, 96 Mich. L. Rev. 338, 340 (1977).

[FN97]. See, e.g., Ellickson, *Order Without Law*, supra note 25, at 130-31.

[FN98]. See, e.g., McAdams, supra note 96, at 351 n.59 (defining norm to include "any nonstate obligation"); Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 *J. Legal Stud.* 115 (1992).

[FN99]. See McAdams, supra note 96, at 340 & n.7. In addition to the definitional debate, there is a lively ongoing normative debate as to the efficiency of norms. Some scholars, for example, appear relatively confident that norms will enhance societal welfare by encouraging an efficient result. See, e.g., James S. Coleman, *Foundations of Social Theory* (1990); Ellickson, *Order Without Law*, supra note 25, at 167; Robert D. Cooter, *Structural Adjudication and the New Law Merchant: A Model of Decentralized Law*, 14 *Int'l Rev. L. & Econ.* 215, 224-26 (1994). Others, however, focus on the potential inefficient effects of norms. See, e.g., David Charny, *Illusions of a Spontaneous Order: "Norms" in Contractual Relationships*, 144 *U. Pa. L. Rev.* 1841, 1848 (1996); Eric A. Posner, *Law, Economics and Inefficient Norms*, 144 *U. Pa. L. Rev.* 1697 (1996); McAdams, supra note 96, at 412-424. In this Article, I argue that the informal institutional norms that give rise to rogue trading are wealth maximizing for traders, managers, and, perhaps, shareholders, within each individual firm, but could impose negative externalities on other stakeholders in the firm or on society generally. See infra notes 170-74 and accompanying text.

[FN100]. See Charny, supra note 99, at 1845 (stating that "one might question whether it is useful to use the same term ('norms') for comprehensive and relatively complex regimes as for more informal and diffuse sanctioning systems.").

[FN101]. In addition to these internal rules, traders' conduct may be governed by stock exchange and NASD rules, as well as by rules enacted by regulatory bodies such as the SEC, CFTC, or Federal Reserve.

[FN102]. See McAdams, supra note 96, at 351 (referring to norms "arising informally within highly structured groups" as "norms for which the meaning is most obscure").

[FN103]. Cf. Peter H. Huang & Ho-Mou Wu, *More Order Without More Law: A Theory of Social Norms and Organizational Cultures*, 10 *J.L. Econ. & Org.* 390, 393, 397 (1994) (arguing that the likelihood of corrupt actions by agents is impacted by the agent's rational expectations regarding the level of corruption within the organization and that organizational leaders can shape those expectations through their own behavior).

[FN104]. See Clark, supra note 26, at 226 (stating that, "traders are very often employees of large firms who operate within well-structured sets of sanctions and incentives designed and maintained by senior management so as to drive firms' profits.").

[FN105]. See generally Ellickson, *Order Without Law*, supra note 25.

[FN106]. See generally Tracey L. Meares, *Social Organization and Drug Law Enforcement*, 35 *Am. Crim. L. Rev.* 191 (1998).

[FN107]. See generally Cass R. Sunstein, *Social Norms and Social Rules*, 96 *Colum. L. Rev.* 903 (1996).

[FN108]. See generally Richard W. Painter, Lawyers' Rules, Auditors' Rules and the Psychology of Concealment, 84 *Minn. L. Rev.* 1399, 1420 (2000); Donald C. Langevoort & Robert K. Rasmussen, Skewing the Results: The Role of Lawyers in Transmitting Legal Rules, 5 *S. Cal. Interdisc. L.J.* 375, 413-19 (1997).

[FN109]. See generally Stephen M. Bainbridge, Mandatory Disclosure: A Behavioral Analysis, 69 *U. Cin. L. Rev.* 1023 (2000) (examining the SEC's mandatory disclosure rules through an analysis that employs behavioral economics and norms theory); Lisa Bernstein, Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms, 144 *U. Pa. L. Rev.* 1765 (1996) (presenting a case study of the National Grain and Feed Association); Bernstein, *supra* note 98; Melvin A. Eisenberg, Corporate Law and Social Norms, 99 *Colum. L. Rev.* 1253 (1999); Jason Scott Johnston, The Statute of Frauds and Business Norms: A Testable Game-Theoretic Model, 144 *U. Pa. L. Rev.* 1859 (1996); Edward B. Rock & Michael L. Wachter, The Enforceability of Norms and the Employment Relationship, 144 *U. Pa. L. Rev.* 1913 (1996).

[FN110]. Ellickson, Order Without Law, *supra* note 25, at 167.

[FN111]. Stephen Labaton, 98 Banks, Brokerages Fined by SEC, Orange County (Cal.) Reg., Jan. 17, 1992, at D1.

[FN112]. *Id.*

[FN113]. See Abolafia, *supra* note 1, at 2.

[FN114]. *Id.* at 2-3.

[FN115]. McAdams, *supra* note 96, at 358.

[FN116]. *Id.*

[FN117]. Abolafia, *supra* note 1, at 32-33.

[FN118]. *Id.*

[FN119]. *Id.* at 30. For an amusing description of this process, see Michael Lewis, Liar's Poker 37-83 (1989).

[FN120]. Abolafia, *supra* note 1, at 31. As one trader described the experience: "You were supposed to go around from desk to desk in different departments. If they like you they would offer you a job. If they didn't, they'd send you on your merry way." *Id.*

[FN121]. *Id.*; see also Sandra Salmans, Climbing the Ladder at Salomon's Boot Camp, *San Fran. Chron.*, Sept. 16, 1985, at 33 (comparing Salomon's training program to boot camp at Camp Lejeune).

[FN122]. Abolafia, supra note 1, at 31.

[FN123]. Id.; see also Lewis, supra note 119, at 48 (stating that "the [written] materials were the least significant aspect of our training. The relevant bits, the ones I recall two years later, were the war stories, the passing on of the oral tradition of Salomon Brothers.... All the while there was a hidden agenda: to Salomonize the trainee.").

[FN124]. Abolafia, supra note 1, at 31.

[FN125]. Id. at 9.

[FN126]. Id. at 22.

[FN127]. Id. (quoting one trader as saying "[a] lot of things that are OK now, we thought of and dismissed. Nice people wouldn't do such trashy things.").

[FN128]. Id. at 28.

[FN129]. Id.

[FN130]. See McAdams, supra note 96, at 340.

[FN131]. Abolafia, supra note 1, at 18.

[FN132]. Id. at 30; see also Frank Partnoy, *FIASCO: The Inside Story of a Wall Street Trader* 53 (1997) (stating that "[e]ach [derivatives salesman] wanted to be paid more than his peers, not necessarily because the money was relevant to day-to-day life, but because it would signal that he had beaten the others. The money itself meant very little.").

[FN133]. *When Words are Not Bonds: Wall Street Pay*, *The Economist*, Feb. 19, 1994, at 90 (stating that Wall Street bonuses "account for at least 75% of total remuneration").

[FN134]. Deborah A. DeMott, *Organizational Incentives to Care About the Law*, 60 *Law & Contemp. Probs.* 39, 45 (1997) (stating that "[a]s an organization, the corporation defines rewards and penalties; by doing so it creates incentives for agents to act in ways that promise rewards conferred by the organization. These incentives can be so strong that they mute the message otherwise conveyed by the organization's instructions to its agents.").

[FN135]. See *A Fair Day's Pay: How to Tailor Pay to Performance*, *The Economist*, May 8, 1999 (survey at 12) (quoting Albert Knab, head of compensation and benefits at DaimlerChrysler's Stuttgart offices as saying "[c]ompensation policy is central to supporting the company culture"); see also DeMott, supra note 134, at 39-40 (arguing that, "[o]rganizational culture and practice... often reflect how the organization as a principal has shaped its agents' incentives and preferences.").

[FN136]. A Fair Day's Pay, *supra* note 135 (survey at 13) (quoting Professor Mark Huselid of Rutgers University as saying "[t]he fear is not that incentive pay doesn't work--but that it works so well that companies have to be careful about the incentives they create.").

[FN137]. See, e.g., Thomas P. Flannery, David A. Hofrichter, & Paul E. Platten, *People, Performance and Pay* (1995) (noting that the three authors, all of whom work for Hay Group, a management consulting company, advise clients to adopt pay policies that further the firm's culture, and further identifying four separate types of company cultures and the pay structures that best suit those cultures).

[FN138]. Bonus Points, *supra* note 24, at 71 (noting that, after the Baring's rogue trading scandal, many firms concluded that their compensation structures encouraged the possibility of a similar mishap). The SEC has focused on the moral hazard problems raised by the compensation systems of brokers, which often provide perverse incentives for illegal activity such as churning client accounts or recommending unsuitable investments. See SEC Chairman Levitt Receives Compensation Committee's Report Highlighting Industry 'Best Practices'; Calls On Entire Industry To Review Closely, Securities and Exchange Commission News Release, April 10, 1995, available at 1995 WL 154267.

[FN139]. Michael Siconolfi, Salomon Looks at Backing Out of Pay Plan, *Wall St. J.*, April 25, 1995, at C1 [hereafter Siconolfi, *Salomon Looks at Backing Out*]; Michael Siconolfi & Anita Raghavan, *Trading Traumas*, *Wall St. J.*, April 21, 1995, at A1.

[FN140]. Siconolfi, *Salomon Looks at Backing Out*, *supra* note 139.

[FN141]. *Id.*

[FN142]. *Id.*; Bonus Points, *supra* note 24.

[FN143]. Pay Dirt, *supra* note 24.

[FN144]. Abolafia, *supra* note 1, at 28.

[FN145]. *Id.* at 28-29; see also, Clark, *supra* note 26, at 226 (stating that "[t]he firm deliberately sets-off their traders one against the other, and from the firm's own resources so that each trader's performance can be directly compared; group-based or team-based organizational modes of trading are eschewed at this level of the firm in favour of a model which can identify and reward the best and the brightest.").

[FN146]. Abolafia, *supra* note 1, at 28-29.

[FN147]. See Robert C. Ellickson, *The Evolution of Social Norms: A Perspective from the Legal Academy* (Yale Law School Program for Studies in Law, Economics, and Public Policy, Working Paper #230) (July 1999) (on file with author) [hereinafter Ellickson, *The Evolution of Social Norms*] (discussing this debate).

[FN148]. Robert D. Cooter, Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant, 144 U. Pa. L. Rev. 1643, 1657 (1996).

[FN149]. See generally Dan M. Kahan, Social Influence, Social Meaning, and Deterrence, 83 Va. L. Rev. 349 (1997); Lawrence Lessig, The New Chicago School, 27 J. Legal Stud. 661 (1998); Cass R. Sunstein, Social Norms and Social Roles, 96 Colum. L. Rev. 903 (1996).

[FN150]. See, e.g., Richard A. Posner & Eric B. Rasmusen, Creating and Enforcing Norms, With Special Reference to Sanctions, 19 Int'l Rev. L. & Econ. 369, 379-82 (1999).

[FN151]. Ellickson, The Evolution of Social Norms, supra note 147 (working paper at 14-16).

[FN152]. Id. (working paper at 17).

[FN153]. Id.

[FN154]. Id. (working paper at 21).

[FN155]. While some change agents and enforcers may derive such substantial personal benefits from initiating change that additional signalling or esteem rewards are not necessary to induce action (for example, someone with emphysema or lung disease may derive substantial personal benefits from changing smoking norms), most norms, such as an anti-littering norm, generate primarily public benefits. Id. (working paper at 23).

[FN156]. McAdams, supra note 96, at 364.

[FN157]. See generally Eric A. Posner, Symbols, Signals, and Social Norms in Politics and the Law, 27 J. Legal Stud. 765 (1998).

[FN158]. See Kimberly D. Krawiec, Derivatives, Corporate Hedging, and Shareholder Wealth: Modigliani-Miller Forty Years Later, 1998 U. Ill. L. Rev. 1039, 1055 (1998) [hereinafter Krawiec, Derivatives] (discussing the traditional risk aversion of corporate managers relative to public shareholders). This is not to imply, however, that diversified shareholders are never damaged by high risk behavior within firms. Because risk-averse stakeholders doing business with risky firms charge a risk premium to shareholders as a condition of doing business, actions that increase a firm's riskiness may harm even diversified shareholders. See id. at 1058-78 (arguing that risk reduction at the firm level often benefits diversified shareholders for a variety of reasons).

[FN159]. Abolafia, supra note 1, at 37.

[FN160]. See Bernstein, supra note 98; Tracey L. Meares, Charting Race and Class Differences in Attitudes Toward Drug Legalization and Law Enforcement: Lessons for Federal Criminal Law, 1 Buff. Crim. L. Rev. 137 (1997). The research challenge posed by rogue trading is more difficult than that faced by Professors Bernstein and Meares for the simple reason that they were not attempting to discern their subjects' motivations to engage in fraudulent

conduct. Needless to say, neither traders nor managers are likely to openly admit to such conduct. However, this Article has presented a theory as to how firms' incentive structures affect the attitudes and behavior of traders - a phenomenon that is observable through a careful field study.

[FN161]. See, e.g., Codes of Conduct: Behavioral Research into Business Ethics (David M. Messick & Ann E. Tenbrunsel eds., 1996).

[FN162]. See Ellickson, The Evolution of Social Norms, supra note 147 (working paper at 45, 47-51). See, e.g., Posner & Rasmusen, supra note 150, at 379-82.

[FN163]. See Lucian Arye Bebchuk, Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law, 105 Harv. L. Rev. 1453, 1463-64 (1992) (noting that "[a] company's success may well affect the managers' opportunities for continued employment and promotion at the company as well as their future employment prospects at other firms."). Bebchuk explains that many commentators consider the market for corporate control an important constraint on management misbehavior on the theory that "[b]ecause a takeover bid or a proxy contest may wrest from managers the control that is valuable to them... the prospect of such a bid or contest discourages managers from seeking value-decreasing rules." Id. at 1462.

[FN164]. See id. at 1462-65 (arguing that the markets for corporate control and managerial labor are imperfect); Victor Brudney, Corporate Governance, Agency Costs, and the Rhetoric of Contract, 85 Colum. L. Rev. 1403 (1985) (arguing that empirical evidence fails to support the argument that an efficient market exists for managerial competence).

[FN165]. See, e.g., Jonathan R. Macey, Derivative Instruments: Lessons for the Regulatory State, 21 J. Corp. L. 69, 80 (1995) [hereinafter Macey, Derivative Instruments] (arguing that "Barings got what it deserved for its lax monitoring practices"); Rochael M. Soper, Promoting Confidence and Stability in Financial Markets: Capitalizing on the Downfall of Barings, 7 Duke J. Comp. & Int'l L. 651, 659 (1997) (stating that, "[s]ome may view the Barings affair as a just ending for a financial institution which played the high- stakes derivatives game").

[FN166]. See Peter H. Huang, A Normative Analysis of New Financially Engineered Derivatives, 73 S. Cal. L. Rev. 471, 501 (2000) (demonstrating that derivatives trading may involve negative externalities because the consequences of derivatives use are not limited to those who make the trading decision).

[FN167]. See generally Krawiec, Derivatives, supra note 158 (demonstrating the potential negative impacts on corporate constituents, including shareholders, creditors, employees, customers and suppliers, from financial shocks to the corporation).

[FN168]. Sheila C. Bair, Remark, Lessons from the Barings Collapse, 64 Fordham L. Rev. 1, 7-8 (1995) (stating that, "[o]f preeminent concern was the danger of systemic risk resulting from Barings going into administration"); Soper, supra note 165, at 661 (arguing that, "the primary concern for bank regulators to address in the aftermath of Barings is systemic risk").

[FN169]. Derivative Financial Markets, Hearings Before the Subcomm. on Telecomm. and Fin. of the House Comm. on Energy and Commerce, 103d Cong. 1, 43 (1993).

[FN170]. For example, one frequent element of the debate is the extent to which derivatives and other financial innovations have altered systemic risk. Many industry observers, for example, argue that the leverage, illiquidity, lack of transparency, size, complexity, lack of regulation, and market concentration of the over-the-counter derivatives market have increased systemic risk. See Krawiec, *supra* note 4, at 47-51 (discussing each of these arguments). Others, however, argue that derivatives actually decrease, rather than increase systemic risk. See, e.g., Adam R. Waldman, Comment, OTC Derivatives & Systemic Risk: Innovative Finance or the Dance into the Abyss?, 43 *Am. U. L. Rev.* 1023, 1055 n.223 (1994) (arguing that, "the proposition that derivatives actually decrease systemic risk has strong anecdotal evidence. Vast improvement in the financial health of banks has coincided with the growth of the derivatives market.").

[FN171]. Professors Jonathan Macey and Geoffrey Miller have posited the most persuasive arguments against increased regulation as a necessary means to avoid systemic crisis. See Jonathan R. Macey & Geoffrey P. Miller, Bank Failures, Risk Monitoring, and the Market for Bank Control, 88 *Colum. L. Rev.* 1153, 1172- 93 (1988) (arguing that it is only the presence of federal deposit insurance that differentiates the systemic risk implications of bank failures from failures in other industries); Macey, *Derivative Instruments*, *supra* note 165, at 84 (arguing that more federal regulation leads to more, not less, systemic risk). But see generally, John Eatwell & Lance Taylor, *Global Finance at Risk: The Case for International Regulation* (1999) (arguing that an international lender of last resort is needed to avoid systemic crises).

[FN172]. See Waldman, *supra* note 170, at 1058 (arguing that, "[a]ppraising systemic risk by confidently pointing to these isolated bankruptcies is akin to discussing the risk of nuclear holocaust by examining the global impact of nuclear testing on an isolated Pacific island.").

[FN173]. The federal government has on several occasions indicated its willingness to use federal dollars or regulatory muscle to avert a perceived systemic crisis, including the Savings and Loan bailout of 1989, the Federal Reserve Board's promise to provide liquidity to the financial markets in the wake of the 1987 stock market crash, and the private rescue engineered by the New York Federal Reserve after the Long Term Capital Management crisis. See Krawiec, *supra* note 4, at 47 & n.276 (discussing the government's role in the Savings and Loan and 1987 stock market crash incidents); Carol J. Loomis, *A House Built on Sand*, *Fortune*, Oct. 26, 1998, at 110 (discussing the government's role in the Long Term Capital incident).

[FN174]. Macey, *Derivative Instruments*, *supra* note 165, at 84 (arguing that federal deposit insurance puts federal dollars at risk, which then provides an incentive for federal regulation).

END OF DOCUMENT