
CHAPTER 31

Aligning Compensation Systems with Risk Management Objectives

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Abstract

Case studies of major financial scandals have usually focused on the controls and processes that might have prevented their realization. However, a deeper look into the behavioral aspects of the cases leads to some interesting insights about the environments in which these losses were allowed to occur. The dynamics of authority influence and incentive compensation may actually be primary contributors. Understanding how these interact is an essential component of a good risk management program, particularly as they apply to risk managers, upon whom much moral reliance is placed.

I. INTRODUCTION

Professor John Darley of Princeton University has stated “The more any quantitative performance measure is used to determine a group or an individual's rewards and punishments, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the action patterns and thoughts of the group or individual it is intended to monitor.” This has become known as Darley’s Law.

Darley’s Law is a good warning to organizations that employ overly objective incentive systems and likewise to those who pursue risk management as primarily a control tool or quantitative science. Humans are quite adept at manipulating rules to personal benefit. Success in recognizing this and in aligning compensation, particularly incentives, with behavioral objectives, means that incentives must be carefully crafted so that the mix of measurable and qualitative inputs to the award match the behavior desired from the individual being incented.

We must, as a first step, understand how humans respond to incentives and controls before we are able to build structures to match desired behaviors with compensation. Second, we must recognize that there is an ultimate reliance on high morals from risk managers in a structure in which incentives are reviewed for consistency with the risk appetite of an organization.

This chapter first looks at the relationship between Operational Risk, Darley’s Law and Behavioral Finance. It then reviews Darley’s warnings on the unintended consequences of overly objective systems and raises issues about the dynamics of authority influence. This warning about the dynamics of authority influence is something of which we must all be aware. Next, the chapter examines well-publicized cases that demonstrate Darley’s warnings being played out. A review of the role in which risk management can be employed to help with the mitigation of incentive-misalignment risks follows. The chapter concludes with a warning about the importance we must assign to ethical standards for risk management employees and reward systems that do not counteract the adherence to these ethical standards.

II. OPERATIONAL RISK, DARLEY'S LAW AND BEHAVIOR

In 2001 the Risk Management Group (RMG) of the Basel Committee on Banking Supervision defined operational risk in a causal-based fashion: "The risk of loss resulting from inadequate or failed internal processes, people and systems..." Darley (1994) describes compensation and incentive programs as being *critical control systems*. We set criteria for people's performances, measure, and reward or punish according to a process or system.

The general intent of critical control systems is to develop calculations (or, in the business vernacular, *metrics*) of how individual contributions have helped the organization to reach corporate goals. By inference, the corporate goals are metrics such as share price, earnings and market share, expecting that the company will be rewarded by "the market" for making goals and punished for not doing so. Such systems are designed to pay off those who make their numbers and punish those who do not.

Darley's Law, as it applies to incentive systems, has a cousin in behavioral finance called Prospect Theory. Daniel Kahneman and Amos Tversky started their research in the 1970's by investigating apparent anomalies and contradictions in human behavior around choice. When offered a choice formulated in one way, subjects might display risk-aversion, but when offered essentially the same choice formulated in a different way might display risk-loving behavior. Further, their risk-taking behavior was changed by their point of reference. After realizing losses, their risk-taking appetite increased, while after realizing gains, they tended to become more risk averse.

Prospect Theory Example

Would you rather:

1. Take a bet in which you lose \$4,000, 80% of the time and \$0, 20% of the time, or
2. Take a bet in which you lose \$3,000 every time

Despite the fact that the expected value of 1 is -\$3,200 versus -\$3,000 for #2, 92% of respondents asked this question chose 1. Source: Celati (2004)

Whether simple or complicated, incentive systems (on which we focus in this chapter) are based on objective measures upon which all parties agree, ex ante. Employers formulate a choice and employees respond to the potential outcomes perceived and the risks with which they associate them.

The appeal for the employer of such systems is in the perception that they provide more predictable budgeting, they may make employees behave more like owners and they help to retain attractive human capital. Such systems, though, may inadvertently attract a concentration of a certain type of human capital. Employees who are averse to subjective systems under which they perceive less control are more likely to be drawn to highly objective or criterial control systems. The cause of their preference may be related to a level of trust in organizations, or something deeper in the personality of the employee. Whatever the source, the more rigidity there is in a criterial control formula the more tightly defined will be the personality attracted to it, and the greater the potential impact of concentrated misalignment.

Tying this back to Prospect Theory and Darley's Law, if the behavior that an organization is seeking to stimulate through criteria-based incentives provides the employee with a choice in an 'incorrect' manner, the organization might be creating risk of which it is not aware, or, in fact, exacerbating risk that it thought the incentive system was reducing. Further, this risk might be highly concentrated in places where its realization it is also likely to have high impact, like trading desks, sales teams or business line management.

III. A TYPICAL TRADING DESK CRITERIAL CONTROL SYSTEM

Consider the following choices given to a derivatives trader:

- Make US\$1 million in trading gains, keep 1% of your profits
- Make US\$5 million in trading gains, keep 3% of your profits
- Make US\$10 million in trading gains, keep 6% of your profits

This is not an uncommon structure, noting that generally the base salary of a trader

is relatively small compared with other financial sector salaries. It is clearly understood that gains are expected and perhaps (although not clearly stated), that losing money will result in loss of a job, not just a zero bonus. Our derivatives trader, being quite astute we hope, recognizes the payoff chart shown in Figure 31.1 as being that of a call option. In other words, he/she has been given the same rewards as an owner, or the rights to those rewards, with none of the owner's downside risk.

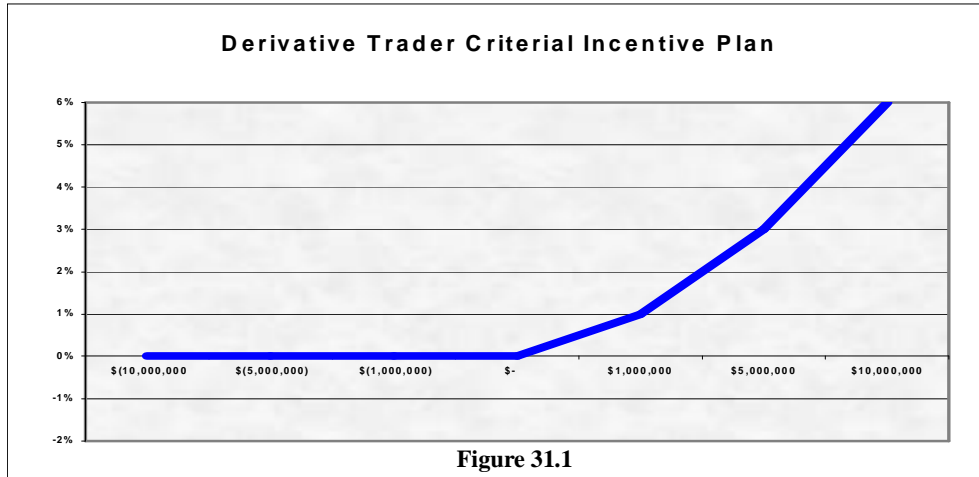


Figure 31.1

Further, unless we consider the lower base salary to be so because it includes the premium for this option, we can consider this to have been an option granted without cost, especially given the penchant for financial firms to hire traders who have experienced 'blow-ups' at other firms. It seems reasonable, then, to also expect a certain type of person to be drawn to effectively a type of free lottery. The risk-taking bias in this reward structure could well be framed in an alternative manner that provides similar potential "owner-like" benefits, but that would not drive the trader to potentially harmful behavior.

IV. GENERALIZED PROBLEMS WITH OBJECTIVE SYSTEMS

Darley (1994) also suggests that a highly objective system is not necessarily a morally neutral system. Objective systems may create certain pressures on the actors within the system that may be not at all what the performance measurers intended. This goes beyond the framing issue of Prospect Theory and into even more complex behavioral notions. According to Darley (1994), three general sorts of occasions arise when the criterial control system is not morally neutral:

1. *“A person, in hopes of advancement or in fear of falling behind, “cheats” on the performance measurement system by exploiting its weaknesses to “make his or her numbers.” Others who see this, and see this action succeeding, are then under pressure to cheat also. There is a diffusion of a corrupt innovation that corrupts the individuals within the system.”*

Consider two employees at the same level in an organization, both seeking advancement within the organization. If one succeeds in cheating, the second may perceive his/her chances for promotion slipping away. That person is thus pressured to engage in the same or ‘better’ cheating. The increased cheating is more likely to stimulate cheating behavior by other advancement-hungry peers.

2. *“A person, with the best will in the world, does what optimizes his or her performance measurements, without realizing that this is not what the system really intended. A performance measurement system is a powerful communication that the authorities have thought these issues through, and want what they reward. The individuals in the system are to some extent relieved of their responsibilities to think through the system goals, and to independently determine their contributions to those goals.”*

In this instance, the rules of the game have been defined and the employee simply plays the game to his or her highest benefit.

3. *“A person who has the best interests of the system in mind, may “game” the performance measurement system in various ways, to allow the continuation of the actions that best fulfill his or her reading of the system goals. However, this ‘takes underground’ those activities, and diminishes the possibilities of dialogue about system goals or modifications in system measurements.”*

V. DYNAMICS OF AUTHORITY INFLUENCE AND THE IMPACT ON RISK

Moral alignment of the incentive scheme still may not be sufficient unless the influences of management in the organization are clearly understood. Darley (2001) illustrates four connected implications for considering social influence processes in organizations that drive behaviors.

- Hierarchies are authority hierarchies
- Communication of directives is often done in an incomplete manner
- Incentives are often used to drive behavior
- Organizations often default to corporate codes of conduct to drive ethical behavior, communication about which might clash with other authority structures

Simon (1997) further notes that of all the modes of influence, authority is the *one* that distinguishes individuals' behavior inside of an organization versus that in which they engage outside of the organization. In other words, verbal or nonverbal commands are almost always assumed to be legitimate if they come from superiors in an organization. This may take one to the point of engaging in behavior which might be morally objectionable to the individual, but is nevertheless engaged in because it has the implicit blessing of authority within the organization.

Although risk management checks and balances on authority may well interrupt such an influence from becoming pervasive, if the communication about the overall corporate morals is incomplete, or if the authority is removed from oversight through complacent assumption of knowledge about corporate morals throughout the organization, these checks may not be engaged.

Corporate authority, communicated through incentives (money), often speaks louder than policy (words) anyway, and may more strongly indicate true corporate intent to employees, especially where communication is wanting. Darley (2001) notes that incentive systems have an elevated status for communicating what the organization “really wants”.

The idea that some people might do bad things or things that are not in the interest of the organization is not a novel idea. Management that is well aware of the possibilities of unethical behavior by employees may create a corporate code of conduct policy to instruct employees on what the organization thinks is good behavior and what is bad. This leads to the most dangerous aspect of these codes: the assumption by managers that they are actually on the minds of employees. The complacency that is a byproduct of misplaced confidence increases the likelihood that business-ethical awareness is assumed to be more pervasive than is the case. This can effectively relieve the manager from a degree of oversight in which he or she might otherwise engage. The following are key points regarding control systems and authority influences.

- Overly objective systems may increase risk by attracting concentrations of personalities who prefer such to subjective systems
- Correct framing of incentive plans, particularly objective ones, thus becomes even more critical
- Objective systems may not be morally neutral and can stimulate gaming, cheating and the placing of self-interest above corporate interest
- Corporate authority, particularly when expressed through monetary incentives is the most pervasive influence
- Management may exacerbate risks through complacent oversight, brought about by a misunderstanding of how well corporate morals are understood by employees

VI. HIGH PROFILE MISALIGNMENTS OF INCENTIVES AND OBJECTIVES

The cases discussed in the following sections are illustrative of the damaging influence of the moral misalignments.

A. Enron

There is no reason to doubt that the impropriety of financial accounting that took place at Enron started at the top, or very nearly the top of the firm. Further, there is no reason to doubt that, eventually, several layers down the management chain and

several layers into the investment banking houses that supported the Enron off-balance sheet transactions, that there was awareness of the intent of the transactions which have caused so much fallout and participation in their execution.

Yet, almost no one seemed to step forward to stop the charade. The partner of the accounting firm responsible for the Enron account allegedly led his employees in the destruction of evidence once the misrepresentations has been discovered. His reported actions, thought to be in his own best interests, were the ones that nearly ended the entire global operations of Arthur Anderson, once the most highly respected accounting firm.

Enron executives and most employees were being richly rewarded by an accelerating stock price that enhanced the value of their stock options. Investment bankers were being richly rewarded for facilitation of balance sheet transactions that allowed for the report of performance measures that were misleading and thus fed the gains in the stock. The partner of the accounting firm of Arthur Andersen dared not lose such a high profile account, so he too seems to have been complicit in the fraud.

Somehow, the illegal actions of leaders, and the rewards provided to people by those actions allowed for a diffusion of accountability and further cheating throughout the system. The moral authority led the way and it is likely that many involved would not have otherwise engaged in the documented behavior were it not for the actions of the organizations' authority.

B. National Australia Bank Foreign Exchange Options Trading Desk

In January of 2004, National Australia Bank announced the discovery of substantial trading losses in its foreign exchange trading operations. These losses, initially reported to be substantially lower, ultimately totaled nearly US\$400 million.

The losses occurred when traders on the foreign exchange option trading desk made bets with proprietary trades that the US Dollar would appreciate following a meeting of the G-7 finance ministers in September of 2003. Their expectations

were not met, and the positions they took began to lose substantial amounts of money. In fact, the options positions which they had taken were such that their bet became larger as the market moved against them, resulting in an acceleration of losses.

In October of 2003, the traders began to mask their trading losses using a variety of methods. The traders would enter fictitious transactions that masked directional risk and those that took advantage of a system failure to properly account for the volatility smile in the options market, thus creating false trading gains. Furthermore, the traders took advantage of an operational window which allowed for the entry of these trades just prior to the end-of-day snapshot on which risk measures were calculated, and the trade reconciliation process, which took place approximately two hours later. This window allowed the fictitious trades to be entered into the system prior to end-of-day and removed prior to trade reconciliation. This means that they were able, for a while, to avoid detection.

PricewaterhouseCoopers (2004) reports that taped conversations between the traders involved show that the purpose of the scheme to hide losses was to protect bonuses that were earned on trading profits through the end of the fiscal year in September of 2003, but which had not yet been paid to the traders as of October 2003.

PricewaterhouseCoopers (2004) concludes that the failure at NAB resulted from three critical weaknesses: the integrity of the people, the risk and control framework and the governance and culture of the organization. It seems that the traders on the desks had been hiding losses for several years. Further, even when reports were issued to management raising concerns about the foreign exchange options trading desk, management simply dismissed them as part of the process of building a currency options trading business.

The culture of the organization was such that responsibilities were “passed on”, and thus when risk management reported problems to middle management, they did not feel the obligation to see that issues were subsequently raised to the most senior management personnel. Absent the receipt of any concerns, the Board was

unaware of potential problems that the culture kept well hidden. The Board was ultimately determined to be responsible for the culture.

C. Nick Leeson and Barings Bank

Perhaps romanticized through its foreign intrigue and visions of a rogue trader fleeing to international waters on his yacht, the case of Nick Leeson and Barings is simply one of a system that failed to align corporate risk taking goals with incented and implicitly “approved” behavior.

Leeson had escalating risks and hidden losses (over US\$1.3 billion) that took down the oldest bank in England. The demise ultimately came from excessive trading positions, which came about from a sense of ‘approval’ of his trading activity that came about because of the lack of management discovery about his initial losses.

It is a widely known oddity of probability that in a fair game if you keep doubling your bets you will always come out ahead. Yet, unlike trading houses and banks, this mathematics game is not constrained by liquidity or capital. As losses on previous trades mounted, Mr. Leeson kept increasing the size of his trading positions, waiting for the market turnaround that would more quickly return his trades to profitability. To keep his secret from management, he created a fictional trading account #88888 in which he could place offsetting trades that seemed profitable. Ultimately, although he was able to beat internal systems, when he reached the real-world liquidity constraints from his counterparties he faced an end to the game and so too did his employer.

Leeson was able to hide his losses, because he controlled and cheated the reporting system from his office. He was so good at this, or the internal systems were so bad, that in the middle of the mounting real losses, the Barings Board discussed what steps they might take to protect Leeson’s market share from their competitors, not how they might provide better oversight to his office. In the end Barings was shut and Leeson went to jail.

D. John Rusnack and Allied Irish Bank

The story of the trader John Rusnack is frighteningly similar to that of Nick Leeson. His story includes a disappearing act and subsequent jail sentence upon his

discovery and capture. Mr. Rusnack, though, managed to amass five years of hidden trading losses, which (even if they were undiscovered frauds) effectively told him that the company approved or did not have the skill or knowledge to ever disapprove.

Just like Leeson, in effect he was being told to keep doing what he was doing, by lack of an oversight authority. Mr. Rusnack became trapped by a system that would eventually discover his fraud -- a fraud that had become so massive it ceased to have downside risk. He was in a position of having an option payout with nearly certain sunk, but undetected, costs.

VII. THE PERFECT STORM: JOSEPH JETT AND KIDDER PEABODY

There is perhaps no better illustration of the concepts outlined in Darley's Law than the case of Orlando Joseph Jett and Kidder Peabody. At a go-go time for fixed income desks, Jett was employed to engage in bond trading for Kidder Peabody. Like most traders, he was controlled through an incentive scheme based primarily on trading profits. His plan and how management communicated it to him gave Jett a clear direction to make money from trading only. While the firm may have wanted Jett to care about the Kidder brand image, customer loyalty, or long-term business strategies, he had no incentive to do so. He was simply "instructed" to make money from daily transactions.

Hansel (1977) writes an excellent narrative of how this case developed. When Jett made a "paltry" US\$417,000 for the firm in his first five months, he was rewarded with a bonus of just US\$5,000. This was a signal that his career with the firm was not expected to be long if his profitability was not higher. A former top Kidder executive noted "I think Joe was someone who had a tremendous psychological need to be a star trader." Given the fact that Jett had been dismissed by one Wall Street firm already, the risks were high that if he lost this job, he might not get a third chance to be such a star.

Things changed quickly for Jett. Over the next several months, he showed accounting profits of US\$28 million on his trades and subsequently received an

incentive payment of roughly 8% of those profits. This payout was, in percentage terms, six times that which he received for his earlier “meager” profitability. The shape of the incentive curve was quite steep and probably was starting to look like a call option to Mr. Jett.

It turns out that while Mr. Jett’s profits were being reported through a company-approved system, vetted by his boss, that system was providing inaccurate figures. It is not clear if Mr. Jett was cheating the system, because it is not clear that he knew of the accounting glitch. Still, when on one trading day, Jett reconstituted US\$200 million of bonds for forward settlement, producing an immediate profit of US\$12 million according to the system, he might be reasonably expected to become suspicious of some problem. Jett said that indeed this was the first time he noticed the big profits to be had from forward reconstitutions, and he sought an explanation from the programmer who helped design the system. By the programmer's own account, he responded that the system was supposed to work as Jett saw it working. Moral authority was further extended by this validation.

The same former senior Kidder executive noted about Mr. Jett’s trading, "It was like a lab rat in a cage. He pushed the lever, and food came out. The rat doesn't give much thought to why the food came out." In his second full year with Kidder, Jett was realizing trading gains of over \$10 million a month for the company. As his boss moved on to another assignment, Jett was named to supervise all government bond trading. At the end of 1993, he was named Kidder’s Man of the Year and awarded \$9 million in bonuses.

The trap was growing. Since Jett was a star, so too, by inference were those brilliant enough to have hired him. There was a highly perverse incentive created for those who should have been supervising him to ignore or not to dig too deeply into any suspicions that they may have had. The answers to any questions that were asked were not being challenged sufficiently.

One might have expected Kidder’s risk management infrastructure to step in. It seems that in this case risk managers may have been partially culpable in realizing the ultimate result. According to Jett’s first boss, long after he had switched jobs and Jett was no longer his responsibility he casually asked the risk manager in the

fixed-income division, how Jett was making money. "[the risk manager] said he has a big bet on the shape of the yield curve" (the gap between short-term and long-term interest rates) Jett's former boss said. "We don't do that," he further recalled. "And [the risk manager] said, 'Jett can do anything he wants.'" Our risk manager was likely influenced by the corporate authority that was rewarding Jett and did not want to hurt his own prospects for advancement.

GE, Kidder's parent company had around this time begun to look with dismay at the size of Kidder's portfolio of bonds. Worried about risks, GE ordered Kidder to cut back on its holdings, and it gave the firm three weeks to meet its target. Jett was told to reduce his combined bond holdings from \$22 billion to \$16 billion. It seems that if Jett had reduced his positions in the tainted-accounting trades, he would have incurred a loss and that would have impacted his incentive payments. He instead resorted to a complex series of forward trades that simultaneously preserved his profits and complied with GE's new balance-sheet mandate.

In court records, Jett and Kidder oddly agree that his new approach consisted entirely of paper trades, with the sole purpose of manipulating Kidder's financial statements. "We no longer had a profit motive," Jett said. "The trades became more and more a massive juggling act." In effect, he began to take things underground. Jett says he was ordered by Kidder to engage in the trading to deceive GE. The SEC contends that Jett desperately sought to keep a fraudulent scheme from being detected by Kidder management. The evidence on the issue is ambiguous, but the alignment with Darley's Law is not.

So was Jett just playing the game that Kidder had built for him? Said Jett, "If I am operating under their system to generate profits, with their approval, and they turn around and change the rules so the reasons you had for doing this no longer exist -- and, by the way, we are taking all the money back we paid you -- is that fair?"

Hansel (1997) concludes his narrative of the Jett case by relaying a story of a professor from New York University named William Starbuck and 500 graduate business students who gathered one evening to hear Jett discuss his case and the point Jett made about the rules of the game. Starbuck reported that the overwhelming majority of students felt that Kidder and GE had implicitly defined

a game by setting up their accounting system. In the students' view, Starbuck said, "It is the job of employees to play the game, not to decide whether they are good games or bad games."

VII. THE ROLE OF THE RISK MANAGER

For many risk professionals, these cases are not new. However, their treatment has generally been in the context of what kinds of procedures and controls could have stopped them. In truth, procedures and controls can and do make it more difficult for risks to realize their full potential negative impact. However, in both the NAB and Kidder examples, risk management personnel, controls and processes were already in place. The existence of such, then, is not a sufficient condition to keep major financial scandals at bay, nor is an excess of controls and processes the best thing for the stakeholders of a business.

The common theme among all of the cases cited is the behavior of people. Further, in nearly every case the authority message is one that either encourages or applies passive oversight to the activities that led to the losses. Notes Bill Mann [2002] of the Motley Fool about human behavior, "When we face imminent danger or actualized danger, we react instinctively rather than rationally. In the perception of safety, we tend toward greater risk-taking. Humans generally lack the cognitive ability to properly measure risks and rewards."

Are any employees/people exempt from the behaviors Darley notes if so allowed to exhibit them? Because our future corporate leaders, such as those at the New York University gathering, seemed to see no moral issue with Mr. Jett's behavior, will there be further erosion of the morality of authority, leading to more cases like those detailed above?

It is likely too simplistic to suggest that the cases above all relate to poorly framed incentive structures or only to morally misaligned schemes. The intersection of opportunity, situation and personality may well be something that happens with enough frequency that it occurs under appropriately framed and morally aligned schemes as well.

Ong (2004) notes the “causal-based” definition of operational risk (such as that provided by the Risk Management Group of the Basle Committee and more detailed specifications of it) is particularly useful for the discipline of *managing* [emphasis added] operational risk within institutions. In fact, he goes so far as to suggest that the fundamental goal of operational risk management should be *prevention*.

By extension, prevention of a failure in a criterial control incentive system should also be a fundamental goal of operational risk management at an organization. Simply because of the enormity of impact from some failures that are linked to activities of one or only a handful of people, finding the root cause of a failure in a criterial control incentive system is likely to be of high value to financial institutions that primarily compensate some employees with incentives. If we address the issues of moral misalignment and framing, which do seem highly correlated with major scandals (Figure 31.2), we will be taking steps to prevent such operational risks.

	Misaligned Incentives	Absent or Negative Authority Influence
Enron/Andersen	✓	✓
NAB FX Options	✓	✓
Barings/Leeson	✓	✓
Rusnack/AIB	✓	✓
Jett/Kidder	✓	✓

Figure 31.2

So how does the risk manager come into play in the alignment of communication, corporate policy, incentive and overall compensation structure and still avoid moral conflict in his/her role? Ultimately, as Ong (2004) mentioned, operational

risk management (which is what this system of critical controls requires) is about prevention.

Every risk management program is really about understanding and maximizing the value of a system. Risk managers and business leaders, one in the same, seek to create economic value for shareholders or stakeholders through their actions. *Ceteris paribus*, if the system that generates economic profits has a longer expected life over which those profits can be discounted it will be more valuable in today's dollars.

Koenig (2004) writes about *ductile systems* or systems that break well. He posits the idea that dissemination of knowledge and risk-awareness can help make financial systems more ductile, and hence more valuable. These systems might be as simple as a trading desk or as complex as a multinational conglomerate. If the players in a system are risk-aware, problems are less likely to reach their full potential to cause damage. This is the case simply because some element of the system by virtue of their risk-awareness takes an action to stop the problem before it realizes its full impact.

Figure 31.3 shows “the path of a problem” in two systems. In the top graph, problems go unfettered and reach their maximum potential financial impact. These problems all develop over some period of time (the X axis). In a ductile system, where risk awareness is disseminated throughout the organization, problems are “interrupted” before they can reach their full potential. In other words, the potential impact of “problems” is greatly reduced and the likelihood that the firm will experience losses from a problem that exceeds its capital base is reduced.

Concentrations of misaligned or poorly framed incentive plans (or morally negative authority structures) on the other hand, increase the brittleness of systems. In other words, when there is no awareness of these misalignments or the ability to identify when authority systems are failing to provide appropriate governance it makes it more likely that problems can reach their full potential, some of which can end the life of the system (Enron, Barings and Arthur Anderson, for example).

So, the risk manager's job is to foster and develop system-wide risk awareness. The goal of the risk manager is to make the system within which they operate,

more ductile, and more likely to 'break well' when opportunity, situation and personality unfavorably intersect.

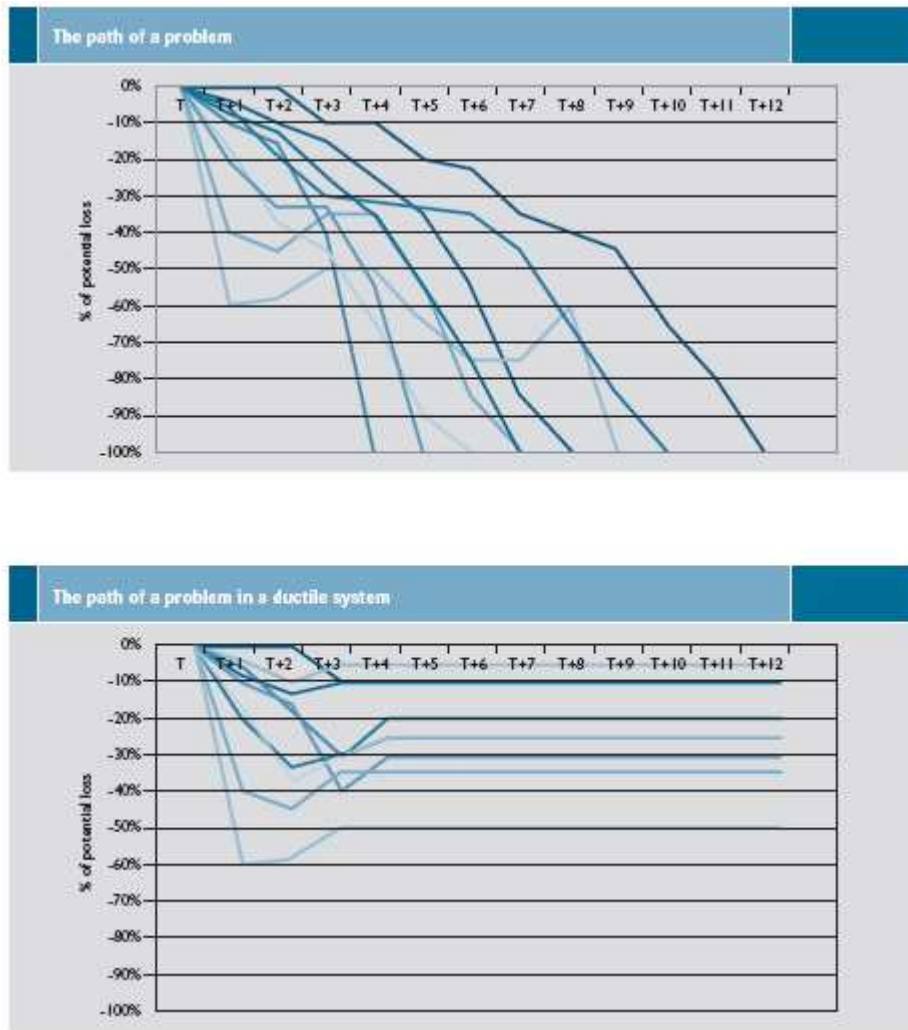


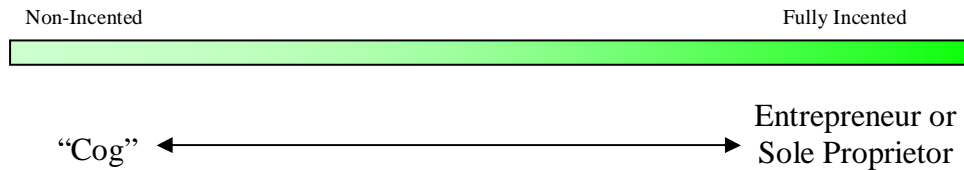
Figure 31.3

Recall the four areas of authority influence which Darley (2001) outlines. We map these to some aspects of the work that a risk manager can do to strengthen the ductile nature of a system (See Table 31.1).

TABLE 31.1
Mapping desired employee behavior

Darley (2001)	Risk Manager's Role
Hierarchies are authority hierarchies	<p>→ To ensure sufficient independence of control and oversight functions so that the authority message about morals is never corrupted.</p> <p>Help authority figures to be risk-aware of the power of authority influence.</p>
Communication of directives is often done in an incomplete manner	<p>→ Engage in a partnership with human resources, using an Operational risk management framework and process controls to ensure that employees are regularly engaged in the discussion of corporate morals.</p>
Incentives are often used to drive behavior	<p>→ Work with human resources to identify key employees with enough authority to create or influence a problem of large magnitude. Then map the alignment of incentive plans with the desired risk-taking behavior of those key employees.</p>
Organizations often default to corporate codes of conduct to drive ethical behavior, communication about which might clash with other authority structures	<p>→ Codes of conduct, corporate conflict of interest policies, risk management policies and limits must continuously be communicated. Further, employees must be tested for awareness and authority figures must be held to oversight accountability.</p>

Let us crudely define the spectrum of desired worker behaviors in the following manner:



The first risk management decision that a firm makes is the one in which it decides to operate toward being a viable entity. Therefore, we can consider the entrepreneur to be the firm’s first risk-taker and its first risk manager. As a firm develops, the entrepreneur cannot fulfill all of the tasks the successful organizational structure requires. New inputs, from plant, equipment or similar non-thinking cogs in the machinery of the organization to more “corporate” managers will ultimately be needed as the organization moves from start-up to growth-company status. As the organization matures, its personality lies somewhere between the extremes of its origin and that of an automated machine.

The key to an effective incentive scheme will be to align compensation with the current and expected future corporate personality or perhaps more accurately to align it with the different desired personalities of key employees within the corporate structure that, in sum, align with the corporate personality. Companies like DRI Consulting use *work personality testing* to profile employee personalities.

Although we know this not to be an exact science, the risk manager can have an influence on the actions taken when a personality may appear to be out of alignment with the identified corporate needs for the key position within which they are employed. Further, the risk manager can analyze department- or system-wide alignments, the framing of those schemes, and the personalities of those given incentive by those schemes to identify concentrated misalignments. In effect, the risk manager acts as an educator and a facilitator of information exchange about risk concentration.

IX. MAPPING EMPLOYEE DESIRED BEHAVIOR

Let's revisit our derivatives trader and the compensation scheme presented to him/her. We noted that the payout profile was that of a call option, or the right to owner-like rewards. We also noted that individual did not have owner-like risks, and thus was more likely to exhibit risk-loving behavior.

Suppose on the other hand that the firm wished to make the trader's compensation more owner-like in upside and downside. Return to the entrepreneur who had nothing at the start of the firm, except for an idea. Over time, the entrepreneur built equity and value, ultimately liquidating parts of that equity to achieve greater overall value of the firm and individual return.

How could we similarly structure the derivative trader's incentive to follow the path of the matured entrepreneur? First, we need to reward upside, but also to reinvest it in the system. Second, we need to create risk that the attained upside might be forfeited if future decisions are not as good as those made to generate the upside. Third, we need to be assured that communication around the system is clear and that it is an appropriate blend of rules and subjectivity so as to avoid some of the failings of overly objective criterial control systems.

Illustration: Trading limit knock-outs

We assume that a trader's incentive scheme is a blend of objective and subjective inputs and that incentive payments are paid out over time. Under this modification, the trader's accrued bonus is reduced, or the degree to which it is subjectively determined is increased, if the trader exceeds risk model trading limits without having obtained prior approval. Further, an increased capital charge can be applied to the trader for excessive risk-taking, which affects his/her future ability to generate profits.

This approach will have two important effects. First, the trader will have a heightened interest in the risk model parameters and how they work, building risk awareness. Second, the trader will be highly incented to manage risks to be within the risk-taking appetite that the firm has communicated through trading limits as his/her punishment is consistent with how "the market" will punish the organization.

However, it is not only traders whose incentive schemes must be carefully examined. As was noted earlier, the risk manager can be helpful in identifying all key roles where the potential for the taking of risk is significant enough where problems that realize their full potential could greatly damage the organization. The sales process, new product development process, and overall business leadership roles often provide even greater opportunities for incentive misalignment.

Illustration: Deferred Compensation

Under this regime, incentive payments to a sales person, for example, are paid out over the life of the product being sold. In many cases, a product may carry a credit risk that is heavily concentrated at the end of the product life or the management of the client during the life of the product may substantially influence the risk assumed through the sales process. In this case, the sales person has owner-like incentives to both target the most appropriate customers and to manage them through the product life cycle.

The fact of the matter is that organizations must continually be moving in the direction of a better understanding of their people and behaviors, creating more “risk managers” through education of business managers and address the potential for problems to materialize. The following are the key points regarding risk managers’ roles in aligning incentives.

- Risk managers must work to ensure sufficient independence of control and oversight functions so that the authority message on morals is never corrupted. They can help authority figures to be more risk-aware of the power of authority influence.
- Risk managers must engage in a partnership with human resources, using an operational risk management framework and process controls to ensure that employees are regularly engaged in the discussion of corporate morals.
- Risk managers must work with human resources to identify key employees with enough authority to create or influence a problem of large magnitude. Then they should map the alignment of incentive plans with the desired

risk-taking behavior of those key employees, noting misalignments and concentrations of those misalignments.

- Codes of conduct, corporate conflict-of-interest policies, risk management policies and limits must continuously be communicated by management. Further, employees must be tested for awareness and authority figures must be held to oversight accountability for such codes and policies.
- The presence of a risk manager or even of a risk management department is not a sufficient condition to avoid loss or prevent fraud. Education about the costs of decisions and appropriate pricing of those decisions is essential at all levels of the organization.

X. THE RISK MANAGER'S DILEMMA

Celati (2004) suggests that the risk manager of today is simply a broker of information between risk taker and capital provider. The key points above align with this notion. Management, though, he suggests is under an illusion that the risk management function can box and “vivisect” risk in ever more minute and manageable components. This situation exacerbates any misalignment between incentives and desired behavior as the presence of “risk management” may allow business managers to stray further from their “management” role, much like the presence of a corporate ethical code.

Celati's characterization of the risk manager may be put more positively as that of an educator whose most important job is to teach his or her students how to think, how to question and to provide some guidance on answers during the instructive period. Still risk managers should be aware that brokers often seek the best price and extract some kind of rent for the power of their information. If a risk manager falls into the role of information broker, their positioning cannot be morally neutral.

Further, risk managers are no different from other human beings in their work. In the uncertain worlds of human behavior and the future, we must be cognizant of the wish in any one of us to look good. Darley (1994) illustrates a human behavior he calls “paving the rivers” where Russian tank developers knew that the generals wanted to see their tanks perform beautifully in battle. So, they staged impressive

shows where tanks deftly crossed rivers, demonstrating the superiority of Russian technology. What was unknown to the visiting generals was that the river had been paved just below surface, so while water was dutifully splashing as the tanks crashed through, the tanks were never really subjected to the full treachery of a river, leading the generals to believe they were better prepared than was actually the case.

Someone must keep an eye on the risk managers, their “tanks” and their “pavers” to ensure that modeling, controls, oversight and input are not structured primarily for the purpose of looking good to the generals. Internal and external audit departments, thus, are a key check on risk managers.

XI. CONCLUSIONS

The focus on the human situation, changing and complex as it is, must never be removed from the incentive determination process. Static plans or those that are simply driven by formulas will alter behavior in ways that may not be anticipatable upon inception. Managers must always have the flexibility to override formulas, while at the same time firms must recognize that such an approach increases the authority position of the manager and the potential for negative impact of any decisions that they make in conflict with the organizations morals. According to Darley (1994):

I would encapsulate one aspect of the moral issue by suggesting that installing a criterial control system often substitutes “accountability” for “responsibility.” We can define “responsibility” as doing what one judges to be right to advance the goals of the organization in which one is placed, within those limits that are set both by moral considerations and considerations of organizational policy and culture. “Accountability,” on the other hand, involves maximizing those outputs, activities, or actions that are defined and incentives by the criterial control system that has been imposed.

What I invite you to do is to simply see the near inevitability with which an individual is caused to commit actions that are accountable but not

responsible by inept criterial control systems. If the individual is caused by the control system to take an action that is not responsible, in that it does not advance the organization's goals, or does not stay within moral and procedural limits, then we can say that an accountability system has displaced responsibility.

The task for the moral individual, then, is to maintain a personal system of responsibility in a world of accountability. To act responsibly in a world in which those who act irresponsibly by acting in ways that fulfill accountability requirements are often paid off for doing so by an insensitive criterial system.

I suggest that risk managers play an increasingly important role in compensation plan review. At the same time, we must recognize that by so doing, we increase the firm's exposure to misaligned moral behavior by risk managers. This means that there is an increasing need to be assured that the personality of those in risk management roles is highly aligned with the morals of an organization's stakeholders and that we do not create incentive plans for risk managers that might compromise their integrity. According to Darley (1994):

"I would simply offer the suggestion that the time for the individual to raise the moral issue is when he or she feels the pressure to substitute accountability for morality, to act wrongly, because that is what the system requires. And that intervention might then be directed at the system, by honorably protesting its design.

For those who are governed by a performance measurement system, a constant moral vigilance is necessary."

A high level of importance should be assigned to Darley's Law, the awareness of the influence of authority and the role that the risk manager can play in creating ductile systems that create value. The Australian Prudential Regulatory Authority (2004) conducted a full review of the NAB foreign exchange options scandal. Their first recommended remedial action to the NAB Board echoes this: "The Board is required to review the cultural norms within NAB and clearly articulate the standards of behaviour, professionalism and openness it expects of the

organization; the Board is required to develop policies that promote and support ‘whistle-blowing’; the Board is required to review incentive arrangements to ensure that these promote behaviours that have appropriate regard to risk.” This admonition is appropriate for all firms with key employees operating under criterial control systems.

References and Further Reading

Australian Prudential Regulatory Authority (2004), Report into Irregular Currency Option Trading at the National Australia Bank, March 23, 2004

Celati, Luca (2004), *The Dark Side of Risk Management*, FT Prentice Hall

Darley, J.M. (1994), *Gaming, Gundecking, Body Counts, and the Loss of Three British Cruisers at the Battle of Jutland: The Complex Moral Consequences of Performance Measurement Systems in Military Settings*, Unpublished Speech to Air Force Academy, April 6, 1994

Darley, J.M. (2001). The dynamics of authority in organizations and the unintended action consequences. In J.M. Darley, D.M. Messick, & T.R. Tyler (Eds.), *Social influences on ethical behavior in organization* (pp. 37-52). Mahwah, NJ: L.A. Erlbaum Assoc.

Hansel, Saul (1997), *Joseph Jett: A Scoundrel or a Scapegoat?* New York Times, April 6, 1997

Koenig, David R. (2004), *Understanding Risk Management as Added Value, Derivatives and Risk Management Handbook*, Euromoney Yearbooks

Mann, B (2002). www.fool.com/news/foth/2000/foth000728.htm.

Ong, Michael (2004), *The Operational Risk Management Framework, Professional Risk Managers’ Handbook: A Comprehensive Guide to Current Theory and best Practices*, PRMIA Publications

PricewaterhouseCoopers (2004), *Investigation into Foreign Exchange Losses at National Australia Bank*, March 12, 2004

Simon, H.A. (1997), *Administrative Behavior*. (4th ed.). Free Press.