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The impact of negative compensation shocks on individual performance

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University of Iowa

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THE IMPACT OF NEGATIVE COMPENSATION SHOCKS
ON INDIVIDUAL PERFORMANCE

by

Susan Lynn Dustin

An Abstract

Of a thesis submitted in partial fulfillment of the
requirements for the Doctor of Philosophy degree in
Business Administration
in the Graduate College of The University of Iowa

December 2009

Thesis Supervisor: Professor Greg Stewart

ABSTRACT

This study examines the impact of negative compensation shocks on individual performance over time. To do so, performance data over a two year time period were obtained for individuals who remained with their organization after experiencing a reduction in compensation. Using both equity theory and the unfolding model of turnover as theoretical perspectives, the study examines whether the magnitude of the shock matters, whether the individual's pay level affects their reaction to a negative shock, and whether or not the impact of a negative compensation shock dissipates over time. Additionally, this study proposes an extension to the unfolding model of turnover by suggesting that a logical outcome in response to a negative shock may be to stay with an organization but to reduce one's performance in response to a dissatisfying situation. Based on equity theory, it was predicted that individuals would decrease their performance (inputs) in response to a decrease in compensation (outputs). To examine these questions, the study used an interrupted time series with a nonequivalent no-treatment control group method of design. Data on 292 individuals were analyzed. The findings were contrary to expectations in that negative compensations shocks caused performance to increase rather than decrease. The contradictory findings may be due to the fact that pay was highly linked to individual performance for the individuals participating in this study. Some of the study's findings do show consistency with expectations. First, the results show that in response to a negative compensation shock, individuals at high pay levels change their performance less than individuals at lower pay levels. Thus, high pay seems to be an insulating factor as it relates to negative compensation shocks. Second, the effects of negative compensation shocks on performance tend to dissipate time. Third, the study shows that the magnitude of the shock matters such that the larger the shock, the larger the resulting performance impact. The practical implications of these findings provide important new insights into contingencies that may affect the outcomes of pay for performance programs, particularly

in the case of individuals whose performance is tightly linked to their compensation.

Abstract Approved: _____

Thesis Supervisor

Title and Department

Date

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A thesis submitted in partial fulfillment of the
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CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

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CHAPTER 1

INTRODUCTION

Predicting individual job performance is of fundamental importance to organizational psychology and organizational practice. Yet relatively little is known about the nature of individual job performance over time (Sturman, Cheramie, & Cashen, 2005). Additionally, missing from much of the research on individual job performance is the role of major life changes, or shocks, that can cause significant shifts in performance. The notion of shocks was first introduced into the management literature by Lee and Mitchell (1994) in their paper on the unfolding model of turnover. A ‘shock’ is defined as an initial, jarring event that prompts an employee toward deliberate judgments about his/her job (Lee & Mitchell, 1994) and may lead the employee to voluntarily quit.

In the management literature, the vast majority of studies related to shocks have been conducted in the context of the unfolding model of turnover and with individuals who had already left their organizations. It is for this reason that so little is known about the impact of shocks on performance. In a study summarizing data on more than 1,200 individuals across a number of industries who had left their organizations, Holtom, Mitchell, Lee, and Inderrieden (2005) concluded that “shocks do matter” (p. 349). The authors demonstrated the diverse nature of shocks and how different types of shocks affect voluntary turnover. Still, many questions related to the impact of shocks remain unanswered, particularly with regard to how they impact performance.

The purpose of this study is to provide an extension to Lee and Mitchell’s (1994) unfolding model of turnover. To do so, this paper extends the unfolding model of turnover (Lee & Mitchell, 1994) by proposing a new path that includes employees who stay on the job but adapt to the shock by changing their performance. Previously, studies of the unfolding model of turnover have assessed reactions to shocks as the decision to either stay or to leave the organization. This study suggests that in response to a shock,

reduced performance may be an outcome for those employees who stay with the organization.

There has been considerable research to date on work behaviors that dissatisfied individuals engage in to avoid participating in dissatisfying work situations (Hulin, 1991). Early research related to work withdrawal primarily measured the construct in terms of absenteeism and turnover (Hanisch & Hulin, 1990) similar to the unfolding model of turnover. Yet employees may withdraw and still remain part of an organization. Later research on work withdrawal examined additional withdrawal behaviors such as tardiness, desire to retire, and making excuses to go somewhere to avoid work (Hanisch & Hulin, 1990), all of which are behaviors that may result in reduced performance. Thus, including reduced performance as an alternative outcome to turnover in the unfolding model of turnover is important because it reflects the possibility that employees who stay with an organization may engage in adverse performance-related behaviors of detriment and cost to the organization (Hanisch & Hulin, 1990; Hanisch, Hulin, & Roznowski, 1998; Boswell & Olson-Buchanan, 2004).

Changes in compensation are one potential form of a shock that may cause employees to perceive a mistreatment and reduce their performance in response. Compensation has long been thought to affect employee motivation and performance. In fact, there is considerable evidence that individual incentive plans can generate substantial increases in performance (Gerhart & Rynes, 2003; Guzzo, Jette, & Katzell, 1985; Jenkins, Mitra, Gupta, & Shaw, 1998; Judiesch, 1994; Locke, Feren, McCaleb, Shaw & Denny, 1980; Stajkovic & Luthans, 1997). More than 90 percent of U.S. organizations use some kind of individual incentives (Heneman, 1992; Shaw, Gupta, & Delery, 2002). In fact, the last two decades have seen an increase in the prevalence of pay for performance systems in many organizations (Cadsby, Song, & Tapon, 2007; Heneman, Ledford, & Gresham, 2000; Milkovich & Newman, 2002). Yet most

managers are unsure of the consequences of spending either more or less on employees (Gerhart & Rynes, 2003).

As the unfolding model of turnover (Lee & Mitchell, 1994) clearly states, one of the possible outcomes of shocks is turnover. If high performers are leaving then this is cause for concern; however, if low performers are leaving then this functional turnover can actually be beneficial to the organization. As Holtom et al. (2005) state, “The bottom line – all turnover is not equal.” (p.338). Despite this assertion, researchers have done little empirical work on the relationship between shocks and performance. This is not surprising given that studies of the unfolding model have typically resulted from exit interviews of individuals who have already left the organization. Of the major studies conducted on both individuals that left (leavers) and those that stayed (stayers), only Lee, Mitchell, Sablinski, Burton, and Holtom’s (2004) study on embeddedness had an objective measure of performance. The study showed that embeddedness was significantly predictive of job performance. Furthermore, as suggested in a theoretical paper by Allen and Griffeth (1999), job performance might influence the desirability of leaving the organization because of the greater rewards typically received by high performers. This is particularly the case in situations in which rewards are contingent on performance such as sales. These authors specifically cite that contemporary turnover theories such as Lee and Mitchell’s (1994) unfolding model have not been directly applied to the turnover-performance relationship.

This study seeks to extend the unfolding model of turnover to include changes in performance as a possible outcome for those individuals that decide to stay with the organization. To do so, this study will empirically examine the relationship between shocks and performance by analyzing the impact on performance of negative compensation shocks that were rolled out to a sales force of 1,000. Thus, this sample provides a unique opportunity to study how specific, pinpointed negative compensation shocks impact performance. As previously noted, research suggests that results-based

individual incentive plans can generate substantial increases in performance (Gerhart & Rynes, 2003; Guzzo et al., 1985; Jenkins et al., 1998; Judiesch, 1994; Locke et al., 1980; Stajkovic & Luthans, 1997). Yet little is known about how downward changes to these plans can impact performance. This study focuses on sales individuals because positions such as sales lend themselves to results-based incentive plans where performance can be defined and measured objectively.

Furthermore, researchers have long recognized the importance of examining behavior in organizations in a temporal context (Kammeyer-Mueller, Wanberg, Glomb, & Ahlburg, 2005). Despite the fact that newer statistical tools and theoretical perspectives enable researchers to add a temporal dimension to their research (Klein & Kozlowski, 2000), most studies rarely incorporate a temporal dimension into their design (Kammeyer-Mueller et al., 2005). Thus, this study will also be the first to provide insights into the yet unstudied relationship between negative compensation shocks and objective measures of performance over time.

To extend the unfolding model of turnover (Lee & Mitchell, 1994) to include changes in performance as an alternative outcome to turnover, this study will examine the following research questions:

Research Question 1: What is the impact of negative compensation shocks on performance?

The unfolding model of turnover (Lee & Mitchell, 1994) suggests that critical events may shock people into a reassessment of their employment situation and cause an immediate response. The model asserts that shocks prompt employees toward deliberate judgments about their jobs and may lead employees to voluntarily quit (Lee & Mitchell, 1994). Surprisingly, the unfolding model does not consider the performance impact of shocks if employees decide to stay with the organization. Work-related shocks can be likened to feelings of unjust treatment. Such feelings have been linked to a decline in general work attitudes and desirable behaviors such as organizational citizenship

(Greenberg, 1990). Research has also shown a link between feelings of unjust treatment and employee withdrawal outcomes (Boswell & Olson-Buchanan, 2004; Hanisch & Hulin, 1990; Colquitt, Conlon, Wesson, Porter & Ng, 2001). In line with equity theory, employees may react to perceptions of unjust treatment (or work-related shocks) by engaging in behavior aimed at restoring feelings of justice or by leaving the situation (Adams, 1965). Thus, a logical extension of the unfolding model of turnover is that shocks may result in changes in performance for those employees who decide to stay with the organization.

This study provides an opportunity to examine the role of shocks on performance. Specifically, due to market maturation and competitive issues, the organization providing the sample offers a particularly unique opportunity to study the impact of negative compensation shocks. Previous findings by Lee, Mitchell and colleagues have downplayed the importance of compensation on employees' decisions to stay or to leave. For example, in their overall analysis of shocks as the cause of turnover, Holtom et al. (2005) examine the nature, content, and role of shocks. This study examined more than 1,200 leavers in different samples and analyzed whether the shocks that caused them to leave were expected or unexpected, personal or organizational, positive or negative or neutral. Surprisingly, the authors found that only 14% of people in one sample who were specifically asked about compensation, mentioned it as a reason for leaving. In an aggregate across all samples, the authors found that only 9% mentioned money as the shock or a component of the shock. Yet none of the groups studied included a defined compensation shock where significant, negative compensation changes were made to a group of employees. Accordingly, little is known about the impact of compensation shocks on employees' performance, motivation, and decisions to stay or leave. Additionally, there have been very few compensation studies that empirically examined the impact of downward adjustments in compensation or negative compensation shocks.

Therefore, this study will be the first to examine the specific role of negative compensation shocks on employees' performance.

*Research Question 2: Does the magnitude
of the shock matter?*

As discussed above, it is important for organizations to understand the impact of shocks on performance. The degree to which an employee's performance declines in response to a shock may depend on the magnitude of the shock. To date, none of the studies related to organizational shocks have examined or measured how the magnitude of the shock affected employees' performance. Once again, this is likely because the majority of studies were conducted on people who had already left the organization and therefore performance measures were not readily available. It may also be because none of these studies involved a single shock that was experienced by all employees to varying degrees.

In an effort to provide for richer data on the nature of shocks, Morrell, Loan-Clarke, and Wilkinson (2004) revised the dichotomous scale based on Lee, Mitchell, Holtom, McDaniel, and Hill's (1999) research. In doing so, Morrell et al. (2004) used the same shock dimensions as the unfolding model of turnover: expected/unexpected, positive/negative, personal/work but construed the items as scalar. They also measured the extent to which the shock influenced the final decision to quit. This study found that work related shocks were less salient than personal shocks (Morrell et al., 2004). However, once again, the sample was retrospective, did not include objective measures of performance, and examined only individuals that already had left their respective organizations.

The current study provides a situation in which compensation shocks were consistently enacted across a group of sales employees at the same time. Despite the fact that the compensation shocks affected the majority of employees, some representatives were more affected than others. It may be that the larger the compensation shock

incurred by an employee, the more likely it is to result in a large change in performance. As a result, this study will be the first to provide critical insights into how the magnitude of shocks affect employees' performance over time.

Research Question 3: Which individuals are more or less likely to have an adverse performance response to a shock?

Organizations also need to understand which individuals are most likely to react negatively, in terms of performance, in response to an organizational shock. Given that work withdrawal reflects the extent to which an employee engages in adverse performance-related behaviors (Hanisch & Hulin, 1990), the extent to which an employee perceives or is impacted by a shock may impact the extent of their decline in performance. That is, employees who are impacted by a shock to a relatively minor degree may reduce their performance to a lesser degree than those who are more severely impacted.

In the context of compensation, pay structures refer to the various pay rates within an organization and the degree of the slope in the organization's pay policies (Milkovich & Newman, 2002). It may be that individuals who are highly compensated on the organization's pay structure are better able to withstand a relatively similarly sized negative compensation shock than those at a lower end of the organization's pay structure. For instance, an employee who is currently making \$200,000 a year and incurs a \$10,000 negative compensation shock, might not reduce their performance in response to a shock as much as an employee who is making \$100,000 per year who also incurs a \$10,000 compensation shock.

Previous research suggests that a reduction in pay without any lowering of job responsibilities will lead workers to experience an underpayment inequity (Greenberg, 1989). Related research on perceived compensation inequalities by Frank (1985) suggests that workers may be more likely to accept a perceived inequality when they are paid above the level of the value of their organizational contributions. This suggests that highly compensated individuals may be relatively accepting of a negative compensation

shock and that the resulting change in their performance would be minor. Conversely, a study conducted by Bloom and Michel (2002) shows that lower level employees may have feelings of inequity due to comparatively low pay. Combined, these studies suggest an individual's reaction to a negative compensation shock may depend on their level of pay. Based on these findings, it seems reasonable to conclude that individuals at different pay levels may have varying reactions to compensation shocks.

*Research Question 4: Does the performance impact of
a negative shock dissipate over time?*

Since little research has been done on the impact of shocks on performance, it is also unknown whether or not the effect of a shock will continue or dissipate over time. The Unfolding Model of Turnover (Lee & Mitchell, 1994) suggests that when a shock occurs, the employee begins to interpret the event through the social and cognitive context that surrounds the shock experience (Mitchell, Holtom, Lee, Erez, & Sablinski, 1999). The context provides a frame of reference or a decision frame that the employees use to interpret the event (Holtom et al., 2005). If, after interpreting and evaluating the event, employees decide that leaving the organization involves too much sacrifice or is too difficult, a decision might be made that it is best to stay with the organization for the time being.

Even though the employee decides to stay with the organization, the theory of work withdrawal suggests that employees who decide to stay with the organization may exhibit withdrawal behaviors such as reduced performance. For sales representatives, behavioral changes may include behaviors such as making fewer sales calls, not responding to clients in a timely manner, and poor client service. The outcome of such behavior is likely to result in a decline in performance. However, once employees have had an opportunity to reframe the event, they may engage in fewer of such behaviors. This suggests a negative performance trend that begins to level off over time and may

retreat to pre-shock levels after employees have had time to evaluate alternative opportunities and determine that their current situation is better than the alternatives.

In summary, this study extends Lee and Mitchell's (1994) unfolding model of turnover to include declining performance as an alternative outcome to turnover for those individuals that decide to stay with the organization. While this paper does not answer all of the open questions that remain regarding the unfolding model of turnover (Lee & Mitchell, 1994), it will contribute to this body of literature by proposing an extension to the unfolding model and providing important insights into some critical areas yet to be studied. First, the unfolding model to date considers two possible outcomes: the decision to stay or to leave. This paper suggests that a logical outcome of the unfolding model of turnover may be to stay with the organization but to reduce one's performance in response to a dissatisfying situation. Second, most of the studies related to the unfolding model of turnover involve individuals who have already left their organizations. Therefore, the studies to date have been retrospective rather than predictive. Additionally, since these individuals had already left their organizations, performance data was not available. By analyzing performance data on individuals who are still with their organization, this study will provide critical insights into the performance impacts of compensation shocks on individuals over time. Thus, the data set that will be used in this study provides a unique opportunity to shed light on impact of compensation shocks and whether individuals may change their performance in response to such shocks. Specifically, this study provides an opportunity to examine whether the magnitude of the shock matters, which individuals are more or less likely to respond adversely to shocks, and whether or not the impact of a shock dissipates over time. Most importantly, this study provides critical new insights into the yet unstudied relationship between shocks and individual performance.

CHAPTER 2

LITERATURE REVIEW

In order to stay competitive with changing market conditions, organizations must sometimes make difficult decisions which directly impact employees. These decisions impact the very individuals in which the organization relies on for achieving its performance objectives. Thus, it is important to understand how these changes or “shocks” impact employees and what performance consequences will likely result. In order to examine the research questions related to the relationship between organizational shocks and performance outlined in the previous chapter, this chapter will first explore the literature related to shocks and the unfolding model of turnover. Second, for individuals that decide to stay with the organization, declining performance will be discussed in terms of an alternative outcome to turnover in the unfolding model of turnover. Third, potential moderators of the relationship between organizational shocks and performance will be discussed.

The Unfolding Model of Turnover

It has been suggested that research related to the unfolding model of turnover can be organized around why people stay and why people leave. With regard to why people leave, the two constructs of job satisfaction and job alternatives have served as the primary focus for much of the research on voluntary employee turnover (Hulin, Roznowski & Hachiya, 1985; Mitchell & Lee, 2001). Major reviews of the turnover literature such as Hom and Griffeth (1995), Maertz and Campion (1998) and Griffeth, Hom, and Gartner (2000) suggest that while this line of research has provided considerable knowledge related to how attitudes lead to turnover, these variables account for only 4 to 5 percent of the variance in turnover. Maertz and Campion (1998) assert that the research findings on the links between attitudes, perceived alternatives, job

search and turnover have been thoroughly explored and are found to be consistently weak. At the same time, other meaningful topics related to turnover have been ignored.

One of the recent leading theories on why people leave is the unfolding model of turnover. This model was developed by Mitchell and Lee (2001) to provide a general theory of voluntary employee turnover. The unfolding model proposes that many employees keep the same job more as a function of habit than of choice (Kammeyer-Mueller et al., 2005). However, critical events may shock people into a reassessment of their employment situation and cause an immediate response. The unfolding model built on the earlier turnover theories, such as those presented by March and Simon (1958), which focused on individual's perceptions about the desirability and ease of job movement as the antecedents to voluntary turnover. Over time, researchers have used job alternatives to reflect the perceived ease of movement and job dissatisfaction to reflect the desirability of movement (Lee & Mitchell, 1994). Lee et al. (1999) introduced the unfolding model of turnover in response to their: 1) concerns with the state of the turnover literature and its lack of effectiveness in predicting turnover; 2) experience in talking to people who had left their jobs; and 3) research on image theory (Mitchell & Lee, 2001).

Shocks

As previously discussed, a shock is an initial, jarring event that prompts an employee toward deliberate judgments about his/her job and may lead the employee to voluntarily quit (Lee & Mitchell, 1994). In other words, a shock is an event that generates information or has an impact on an individual's system of beliefs or images (Mitchell & Lee, 2001), thus causing an employee to experience a change in his or her environment that causes a reassessment of the individual's plans. In order for the event to be considered a shock, it must be significantly jarring so that it cannot be ignored and

involve job-related deliberations that involve the prospect of leaving the job (Lee & Mitchell, 1994). As such, not all events are considered shocks.

A shock is not necessarily a surprise. It can be either an expected or unexpected event that jolts the employee out of the steady state related to his or her job-related thinking (Mitchell & Lee, 2001). It can also be a positive, negative or neutral event and either internal or external to the organization (Lee & Mitchell, 1994). For example, the birth of a child or a spouse getting a better paying job are both examples of positive, external events that may cause an individual to re-evaluate his or her current position. On the other hand, a decrease in compensation or a missed promotion is an example of internal, negative event that might also cause an individual to re-evaluate his or her thinking about the job. An example of a neutral event might be the announcement of one organization merging with another organization.

Image Theory/Decision Frames

In developing the unfolding model of turnover, Lee and Mitchell (1994) used Beach's (1990) image-based model for decision making to explain the decision-process used by employees. In the image-based model of decision making, the process begins with a distinguishable event that causes an employee to evaluate the impact of the event on his or her job. The employee then interprets the event through the social and cognitive context that surrounds the shock experience (Mitchell et al., 1999). The context provides a frame of reference or a decision frame that the employee uses to interpret the event (Holtom et al., 2005).

In interpreting the event, the employee's evaluation is shaped by the context of his or her knowledge regarding the organizational culture (Holtom et al., 2005). The employee then evaluates the shock based on key dimensions such as novelty, favorability, threat, or anticipation. Next, the employee evaluates the shock on a more personal level and considers whether or not the shock can be responded to in an appropriate manner.

This evaluation may cause an obvious response or script to come to mind in the form of past actions or rules based on observing others or on previously acquired knowledge (Holtom et al., 2005). When an encountered event cannot be resolved based on previously successful strategies, the employee then resorts to a two-step process which involves screening options and choosing from the surviving options (Beach, 1990; Mitchell & Beach, 1990; Donnelly & Quirin, 2006). Image theory asserts that a distinct selection process is used to evaluate the options which survive the screening process (Donnelly & Quirin, 2006). This decision-making/selection process has been found to include a number of processes including cost benefit and expected utility models (Beach, 1993), time constraints (Smith, Mitchell & Beach, 1982) and the significance, irreversibility and accountability of the selected decision (McAllister, Mitchell & Beach, 1979).

In the unfolding model, Lee and Mitchell (1994) assert that a shock to the system and the individual's decision frames prompt the employee to consider one of four decision paths. Although the purpose of this study is not to explicitly test the paths outlined in the unfolding model of turnover, it does build on the concepts presented by the decision paths by proposing that shocks may result in withdrawal behaviors for those employees who decide to stay with the organization. Accordingly, it is important to briefly discuss the decision paths as employees experiencing a compensation shock may react similarly to the decision processes described in Paths 1-3.

*Decision Path 1: Following a Plan (shock and a plan or a script
already in place for leaving)*

Decision Path 1 requires an employee to go through a three step process. In step one, a shock occurs which jars the employee to construct a decision frame (Lee et al., 1999). Step two involves the process of the shock causing the employee to search his or her memory for prior experiences, rules, or learned responses based on similar scripts.

Scripts are defined as a pre-existing plan of action based on either past experience, observation of others, or social expectations (Donnelly & Quirin, 2006). If the individual decides that the current experience is virtually identical to a prior decision frame and the associate response of quitting was appropriate, a decision frame match occurs which sets off a script or rule that is already in place which involves quitting in response to a similar shock (Lee & Mitchell, 1994). In such instances, quitting is enacted almost automatically (e.g. “I will not accept a pay cut; I had a pay cut before and I left in response; therefore, I quit.”). The employee’s immediate responses in such cases are due, in part, to unique personal characteristics and experiences (e.g. no tolerance for accepting a cut in pay under any circumstances). In this path, the decision to leave involves very little mental deliberation. It does not involve images, evaluation of alternatives, or job satisfaction (Lee & Mitchell, 1994). Thus, the decision to quit is fairly automatic and script driven. However, if a match does not occur, one of the following different decision paths is evoked.

*Decision Path 2: Leaving Without a Plan
(shock, but there is no plan or script in place)*

In the second decision path, the employee is required to go through four steps. Once again, in step one, a shock occurs. Step two involves a search for a script or decision frame based on previous experience but a match is not found. This causes the employee to engage in additional mental deliberations and decision frames with the choice of staying or leaving the organization (Lee & Mitchell, 1994). In step three, the employee then evaluates how well the shock integrates or fits into his or her personal principles, goals, and plans (referred to as value images) and whether or not it passes some acceptability threshold that allows staying with the current organization (Lee & Mitchell, 1994; Donnelly & Quirin, 2006). If the shock is incompatible with any of the employee’s value images, the employee will either quit the organization or make a

change in his or her images (Lee & Mitchell, 1994). In image theory, this process is known as the compatibility test (Beach, 1990; Donnelly & Quirin, 2006).

Decision Path 2 may result in the same response as Decision Path 1, the difference being that in this case, a ready response is not available. Thus, Decision Path 2, typically requires the employee to evaluate his or her job satisfaction prior to deciding to leave. However, this path does not result in a search for job alternatives prior to the decision to stay or quit. Lee and Mitchell (1994) note that negative shocks are more likely to initiate Decision Path 2 because of this path's focus on leaving without a specific job alternative.

Decision Path 3: Leaving for Something Better

(shock, consideration of alternatives, leave organization)

Similar to Decision Path 2, Decision Path 3 also requires the employee to engage in a four-step process. However, in this path, the shock fails to pass the compatibility test and the employee finds the shock to be incompatible. The resulting dissatisfaction initiates a search for job alternatives (Lee & Mitchell, 1994). In this case, the decision to be made is between staying with the current organization and leaving for one or more acceptable job alternatives. Thus, in Decision Path 3, the imagined comparisons are much more complex than in Decision Paths 1 and 2, as the employee will evaluate the compatibility of his or her personal images with each of the alternative job environments (Donnelly & Quirin, 2006). If one of the alternative environments provides more benefit than the current environment, the employee will leave (Lee & Mitchell, 1994). Similar to the other two decision paths, the shock may be positive, negative, or neutral. However, the difference with Decision Path 3 is that this path involves the search for and evaluation of job alternatives. It is important to note that these job alternatives may be solicited or unsolicited alternatives and the employee may very well be reasonably satisfied with his or her current position. It is just that one of the alternatives may be preferable to the

current position; the alternative that maximizes the expected utility is expected to be the enacted outcome (Lee & Mitchell, 1994).

Decision Path 4: Leaving an Unsatisfying Job

(no shock, decision to leave is initiated by accumulated job dissatisfaction)

Unlike the prior three decision paths, Decision Path 4 does not begin with a shock event. In this case, the decision to leave is not the result of an internal or external shock but rather that over time, either the organization or the individual's own personal images gradually change to the point where they no longer pass the compatibility test. This reassessment of commitment and fit with their current organization can occur routinely, casually or even randomly (Lee & Mitchell, 1994). The lack of compatibility over time results in job dissatisfaction and reduced organizational commitment (Donnelly & Quirin, 2006). As a result, the employee will consider one of two decision processes: 1) to quit without considering job alternatives which follows a path similar to Decision Path 2, or 2) initiate a job alternative evaluation process similar to Decision Path 3 which involves the search for alternatives and evaluation of each alternative's compatibility. The decision to stay or to leave will be based on the assessment of the alternative that provides the maximum benefit (Lee & Mitchell, 1994).

As outlined above, the four paths of the unfolding model of turnover frame employee decisions in terms of two possible outcomes: staying or leaving. However, the decision to stay after a shock may not be as straightforward as the model suggests. Employees may decide not to leave following a shock, however, they may engage in withdrawal behaviors in an effort to restore equity in response to a shock. The alternative outcome of withdrawal in response to a shock is most applicable to Decision Paths 2 and 3 since these paths do not involve a script already in place for leaving. However, withdrawal behaviors may also apply to Decision Path 4, since withdrawal behaviors have been shown to correlate with job dissatisfaction (Colquitt et al., 2001).

Research conducted on the unfolding model to date provides a context for why an extension to the model is needed. One of the reasons is that research on the unfolding model of turnover and the role of shocks or critical events in organizational behavior is only beginning to accumulate (Kammeyer-Mueller et al., 2005), and most of the research conducted to date has involved retrospectively interviewing or surveying individuals who had voluntarily left their positions. The method typically used is recall analysis, which involves interviewing individuals who had recently quit their jobs via surveys or interviews and asking them to recall whether they left due to a distinguishing, jarring event (a shock) and then ascertaining which of the four decision paths they followed. This approach is a reasonable starting point for this body of research. However, the use of recall can cause recall biases – the tendency for discrete events to become more meaningful or the use of post hoc justifications for behaviors (Kammeyer-Mueller et al., 2005). This method of research also fails to provide insight into individuals who received a shock but decided to stay with the organization as they would not be included in the study. Thus, it leaves alternative paths of the model unexplored.

Specific parts of the unfolding model that may not have been adequately tested include the influence of compensation and the possibility of withdrawal behaviors that do not result in turnover. For example, one of the first tests of the unfolding model was a study by Lee, Mitchell, Wise and Fireman (1996). This study of the unfolding model involved a small qualitative sample of nurses (n=44) who had already left their positions. This study confirmed that the reasons people stay or leave are more complicated than traditional turnover models had implied (Lee et al., 1996). For example, one of their findings was that many people had shocks that were unrelated to their jobs or organizations and many shocks were considered positive events. Despite the relatively small sample, the authors concluded, "...an almost overwhelming inference from our data is that shocks are not often about economic issues. For example, very few

interviewees even mentioned compensation as an issue. Contextual issues like supervision, training, and job content appeared much more frequently than compensation as a cause for quitting.” (Lee et al., 1996, p. 33). Results from this study generally supported the unfolding model theory: however, eleven (25% of the total) non-confirming cases revealed some ambiguities in the model which the authors sought to resolve in a following study (Lee et al., 1996).

A later test of the unfolding model conducted by Lee et al. (1999) was aimed at providing further theoretical development of the unfolding model of voluntary turnover and to resolve some of the previously identified ambiguities in the model. For example, in the original model, scripts about leaving in response to a shock were theorized to only affect quitting in Path 1 and were theorized to not affect quitting in Paths 2 - 4. After further evidence, Lee et al. (1999) revised the model to include the possibility that scripts may exist in additional paths, a broader definition of possible job alternatives, and the decoupling of job search from evaluation.

This newer version of the model was tested on a larger sample ($n = 229$) of former employees of the then “Big 6” accounting firms using quantitative methods. The revised unfolding model enabled a higher proportion of individuals to be classified into the theorized paths as compared to the old model. The study also showed that Decision Paths 1 and 2 occurred significantly more quickly than Decision Paths 3 or 4. Furthermore, the study showed that different shock characteristics were associated with different paths. Specifically, Path 1 was found to be positively related to the occurrence of personal shocks and Path 2 was found to be positively related to negative shocks. The authors also found that job satisfaction was negatively correlated with image violations (Lee et al., 1999).

Lee et al. (1999) concluded that the two prior studies by Lee and colleagues suggest that people use different, distinct and systematic processes (paths) when

determining whether or not to leave organizations. The authors cautioned that the two empirical studies to date (Lee et al., 1996; Lee et al., 1999) involved retrospective self reports and were not predictive of turnover. Thus, they called for more traditional predictive studies and the need for additional validation of the unfolding model. The author's call for further refinement of the model suggests a recognition that further development of the unfolding model is needed. Clearly, one of the aspects missing from the unfolding model of turnover was a discussion of what happens if people decide not to leave the organization. This study suggests that withdrawal behaviors may be a possible outcome in response to a shock for those people that decide to stay with the organization. Later work by Lee, Mitchell and colleagues began to address the issue of why people stay by introducing a new construct of 'job embeddedness'.

Embeddedness Construct

While previous work by Mitchell and Lee had focused on 'Why do people leave?', the development of the job embeddedness construct was aimed at answering the question of 'Why do people stay?' The construct of job embeddedness refers to: 1) individuals' links to other people, teams and groups, 2) their perceptions of their fit with the job, organization and community, and 3) what they would have to sacrifice if they left their job. In two studies, job embeddedness predicted two key outcomes, intent to leave and voluntary turnover, and explained significant incremental variance over and above job satisfaction, organizational commitment, job alternatives, and job search (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001).

A further refinement of the embeddedness construct disaggregated the construct into its two major subdimensions: on-the-job and off-the-job embeddedness (Lee et al., 2004). In a large (n = 829) survey of financial institution employees, off-the-job embeddedness was found to be significantly predictive of subsequent voluntary turnover and absences, and surprisingly, on-the-job embeddedness was not. The study found that

embeddedness moderated the effects of absences, citizenship, and job performance (measured by manager ratings) on turnover (Lee et al., 2004). While the construct of job embeddedness has proven valuable in answering the question of ‘Why do people stay?’, the question still remains ‘What is the result if they do stay?’ Extending the unfolding model of turnover to include the possibility that shocks may result in withdrawal behaviors for those individuals who decide to stay will help to answer this question.

There have been only a handful of researchers other than Lee, Mitchell and colleagues who have tested the unfolding model of turnover. Morrell et al. (2004) studied 352 nurses who had left hospitals in the UK. In this study, the authors tested a revised scale designed to provide a richer picture of the shocks experienced by these individuals. Like Lee et al. (1999), the items used tested the same shock dimensions: expected/unexpected, positive/negative, personal/work. However, these authors construed the items as scalar rather than dichotomous. By allowing for greater complexity, the scale added two additional dimensions to the shock: 1) the extent to which a shock influences thoughts of quitting (a shock could prompt thoughts of quitting but not be the reason the employee decided to leave), and 2) the extent to which a shock is specific to the leaver only. The results of this study showed that the decision to quit is different for different types of nurses and that there are different types of shocks. Similar to Lee et al. (1999), the authors implied that different occupations are likely to have different typical profiles of shocks. For example, because nurses are typically covered by collective pay agreements, their shocks are more likely to be global rather than specific (Donnelly & Quirin, 2006).

One of the few studies that looked at both stayers and leavers was conducted by Donnelly and Quirin (2006). The authors studied 84 accountants and found that Lee et al.’s (1999) unfolding model accurately captured employee decision processes in an accounting environment. This study also extended the model to consider the economic

consequences to the employee in the turnover decision. Donnelly and Quirin (2006) posit that a turnover decision can result in a negative (loss of pay), neutral (changing jobs at the same pay level) or positive (increase pay) economic effect. In strong contrast to prior conclusions drawn by Lee, Mitchell and colleagues, the results of the study showed that economic consequences are very important to employees who make the decision to quit as well as to employees who make a decision to stay. Their findings also suggest that when a shock initiates the evaluation of alternatives there is a much greater likelihood that the employee will quit the organization. Despite Lee et al.'s (1996) conclusion that "shocks are often not about economic issues", the results of this study suggest that negative compensation shocks may be particularly influential in employees' decisions to stay or to leave.

One of the most recent studies on the unfolding model by Holtom et al. (2005), reported on both the published (from those studies discussed above) as well as unpublished data on 1,200 individuals who had left their organizations and describe the nature, content, and role of shocks on turnover decisions. According to the authors, the results show that precipitating events (shocks) are more often than not (64%), the immediate cause of turnover. They also reported that across all data sets for Path 1 leavers, shocks were primarily personal (88%), positive (62%), and expected (69%). For Path 2 leavers, the shocks were predominantly unexpected (89%), organizational (58%), and negative (58%). Additionally, a large percentage of Path 3 leavers experienced unexpected shocks (91%); these shocks were balanced between positive, neutral and negative as well as across personal and organizational issues (Holtom et al., 2005).

The Holtom et al. (2005) article also included a large-scale sample (N = 5,790) drawn from individuals taking the GMAT. One of the key findings the authors highlighted from the study is that their overall analysis of shock content indicated that only 14% of individuals from the GMAT sample, mentioned money as a reason for

leaving. Across all samples, the aggregate number who mentioned money as the shock or as a component of the shock was only 9%. In a related thought piece summarizing their findings, Mitchell, Holtom, Lee, and Griske (2001) concluded the internal, organizational shocks which caused the most thinking about leaving were: being encouraged to leave (but not fired); having a major disagreement with one's boss; being passed over for a promotion; or receiving an unexpected negative performance evaluation. The authors asserted that the external shocks which caused the most leaving were the unexpected job offer (which probably includes pay as an issue to consider) followed by a spouse's relocation (Mitchell et al., 2001). Given the nature of the sample included in this study, it seems premature to suggest that shocks are not about economic issues for two primary reasons: 1) none of the studies on the unfolding model to date focused on a specific compensation shock (positive, neutral, or negative), and 2) a sample of individuals taking the GMAT would have included individuals who were likely very early in their careers and therefore, issues of economics may not have been as salient to this population.

Despite these shortcomings, it is important to note that Mitchell and Lee (2001) recognized that considerable research on the unfolding model still needs to be done. They specifically noted that much of the data on the unfolding model comes from exit interviews conducted by them for their research purposes. The authors also asserted that it is important for future research to look at different time intervals: 1) between the onset of a shock and the decision to leave (or not), and 2) between the decision to leave and actual leaving. Additionally, the authors also called for more integrative, longitudinal studies (Mitchell & Lee, 2001).

As previously discussed, while this paper does not answer all of the open questions that remain regarding the unfolding model of turnover (Lee & Mitchell, 1994), it will contribute to this body of literature by proposing an extension to the unfolding

model and providing important insights into some critical areas yet to be studied. As highlighted above, Lee, Mitchell and colleagues have previously concluded that shocks which involve quitting, “are not about economic issues” (Lee et al., 1996, p. 33). Yet, this conclusion is drawn based on the limited research conducted on the unfolding model to date and based on data sets that did not involve any compensation shocks (positive, neutral or negative). Thus, the data set that will be used in this study provides a unique opportunity to shed light on impact of compensation shocks and whether or not such shocks may cause individuals to change their performance.

Employee Performance Changes

Changes in employees’ performance may result from feelings of unjust treatment. Feelings of unjust (or unfair) treatment have been extensively linked to a decline in general work attitudes and desirable behaviors (Greenberg, 1990) and research has shown an important link between such feelings and employee withdrawal outcomes (Colquitt et al., 2001). Employee withdrawal behaviors can be described as the ways in which an employee responds to a dissatisfying work situation (Hulin, 1991). Employees may react to perceptions of unjust treatment, such as a reduction in compensation, by engaging in behavior aimed at restoring feelings of justice or by leaving the situation (Adams, 1965; Boswell & Olson-Buchanan, 2004). Withdrawal can occur as a result of a thorough, reasoned evaluation of one’s work situation or on a more “spur of the moment” basis in reaction to an unsatisfactory outcome (Colquitt et al., 2001).

An organizational shock is one possible example of a “spur of the moment” reaction or unsatisfactory outcome (depending on the nature of the shock) which may cause employees to engage in withdrawal behaviors resulting in changes in performance. The basis for why an individual may engage in withdrawal behaviors can be found in the equity theory of motivation. Equity theory claims that people compare the ratios of their own perceived work outcomes (rewards) to their own perceived work inputs

(contributions) to the corresponding ratios of another individual. As the equity theory of motivation suggests, employees seek to either increase job outcomes or decrease work output in order to equitably compensate for the perceived work inputs (Adams, 1965; Kanungo & Mendonca, 1997). In the case of a negative compensation shock, research has shown that when rewards do not reflect the employees' perceived job value and performance, employees experience serious inequity that leads to pay dissatisfaction. Perceptions of pay equity lead to feelings of satisfaction or dissatisfaction with pay which, in turn, partially determine whether people will choose to stay in an organization or look for another job (Porter & Steers, 1973). For individuals that decide to stay with the organization, employees may also engage in other withdrawal behaviors such as absenteeism and reduced performance in order to restore equity (Brown, 1996; Kanungo & Mendonca, 1997). Thus, measuring performance change as a possible outcome for employees that decide to stay with an organization is a logical extension of the unfolding model of turnover.

There is little debate about the practical importance of the study of employee performance. Withdrawal behaviors that result in performance changes can be very costly to organizations in terms of both human and financial resources (Cascio, 1991). Thus, including performance in the unfolding model of turnover provides considerable organizational benefit. The focus of early withdrawal researchers was on the study of turnover, absenteeism, and lateness as these behaviors are both costly and highly visible to most organizations (Hanisch et al., 1998; Hulin, 1991). Similar to research on the unfolding model of turnover, the withdrawal behaviors of absenteeism and turnover have received considerable attention as these behaviors are relatively easy to measure in most organizational settings (Hanisch et al, 1998; Roznowski & Hanisch, 1990). Later withdrawal researchers recognized that employees are likely to engage in a host of other withdrawal behaviors that might underlie the tendency of employee withdrawal and

adaptation to dissatisfying organizational situations (Rosse & Hulin, 1985; Hulin, 1991; Roznowski & Hanisch, 1990). The evolution of research on withdrawal to include a broader range of withdrawal behaviors foreshadows the similar enhancement that is suggested here as an enhancement to the unfolding model of turnover.

There are a number of models or theories of withdrawal behaviors which have been proposed over the past several decades. Each of these models implies different relationships among the withdrawal behaviors (Hanisch, 2002). Three of the early models of withdrawal behavior, the Independent Forms of Withdrawal Model (March & Simon, 1958), Compensatory Behaviors Withdrawal Model (Hill & Trist, 1955), and the Progression of Withdrawal Model (Baruch, 1944) have little empirical support and thus these models will not be discussed here in any depth. However, two later models of withdrawal behavior, The Spillover Model of Withdrawal and The Alternative Forms of Withdrawal Model, focus on a broader range of multiple withdrawal behaviors beyond turnover.

The first of these models, The Spillover Model of Withdrawal (Beehr & Gupta, 1978) argues that withdrawal behaviors should be positively intercorrelated, meaning that several withdrawal behaviors appear in concert with each other. According to the Spillover Model of Withdrawal, the non-specific avoidance tendencies then “spill over” from one withdrawal behavior to another (Hanisch, 2002). This suggests that an aversive work situation may generate several different withdrawal behaviors at the same time. The actual behaviors enacted may depend on situational constraints imposed by some jobs. In the context of sales, The Spillover Model of Withdrawal suggests that sales people might engage in multiple withdrawal behaviors since due to the autonomous nature of their work, there are relatively few situational constraints on their behavior.

The Alternative Forms of Withdrawal Model hypothesizes that different withdrawal behaviors are substitutable for each other (Mobley, 1977; Rice & Trist, 1952).

The model assumes that aversive work conditions, through their effects on job dissatisfaction will lead to organizational withdrawal. The withdrawal behaviors enacted are determined by external economic conditions, organizational constraints on behavior, and histories of individuals that have enacted similar behavior (Hanisch, 1995). The model posits that when constraints are placed on one withdrawal behavior, the probability of an alternate form of withdrawal increases. Thus, there is an assumption of substitutability of withdrawal behaviors (Hanisch, 2002).

A study by Hanisch (2002) provides limited support for both the Progression of Withdrawal Model and the Spillover Model of Withdrawal. This study examined the withdrawal behaviors of staff personnel at a university who had recently resigned from their positions, separating those who had been thinking about quitting for 6 months or more from those who had been thinking about quitting for less than 6 months. It measured 17 withdrawal behaviors (such as being late to work, leaving work early, surfing the Web on work time, missing meetings, etc.) and showed that those who had been thinking about quitting for less than 6 months engaged in fewer withdrawal behaviors than those who had been thinking about resigning for 6 months or more. Thus, the research suggests that the longer individuals think about quitting before making a break from the organization, the greater the detrimental consequences compared to those who leave within 6 months of their first thoughts of leaving (Hanisch, 2002). One implication of the study is that dissatisfied individuals who stay with the organization engage in a greater number of withdrawal behaviors, resulting in a decline in performance. This potential decline in performance further underlies the need to extend the unfolding model of turnover to include changes in performance as alternative outcomes to turnover.

In the sales context, behavior that may result in performance changes may take many different forms. This is particularly the case in outside sales positions where sales

people have a lot of autonomy. When a job provides considerable freedom to the salesperson in designing and carrying out procedures to complete assigned tasks, the results depend substantially on the salesperson's own efforts, initiative, and decisions rather than on supervisory guidance or specific job procedures (Tyagi, 1985a). This provides salespeople with a lot of latitude to expend varying amounts of effort on various sales functions such as servicing key accounts, customer counseling and training, as well as prospecting (Tyagi, 1985b). Therefore, withdrawal behaviors in the sales context may not only involve taking long breaks and leaving work early (Rosse & Hulin, 1985) but also such behaviors as reduced responsiveness to clients, fewer sales calls, and a lack of prospecting activity.

Since sales individuals typically work out of the office and have infrequent interactions with their supervisors and others in their organization, it is difficult to measure their behavior via the common measures used in the study of withdrawal, such as absence and tardiness. Both the Alternative Forms of Withdrawal Model (Mobley, 1977; Rice & Trist, 1952) and the Spillover Model of Withdrawal (Beehr & Gupta, 1978) indicate that multiple withdrawal behaviors are likely to occur in conjunction with each other. Furthermore, researchers have argued that a focus on general withdrawal constructs rather than on individual withdrawal behaviors generates greater scientific and practical advantage (Hanisch et al., 1998). Increases in withdrawal behavior in sales individuals have been linked to decreased sales performance (Cron & Slocum, 1986). Similarly, disengaged sales people have been found to be more prone than others to target their efforts toward minimally acceptable performance goals (Cron, Jackofsky, & Slocum, 1993). Combined, this indicates that due to the autonomous nature of the sales role, the best way to measure withdrawal behavior in sales individuals is to measure whether or not there has been a decline in performance.

Thus, research on equity theory and withdrawal behaviors provides strong support for extending the unfolding model to include withdrawal behavior in the form of decreased performance as a possible alternative outcome for those individuals who decide to stay with the organization. Therefore, the hypothesized relationship is shown in Figure 1.1 should be of particular concern to organizations. Based on the research outlined above, I hypothesize the following:

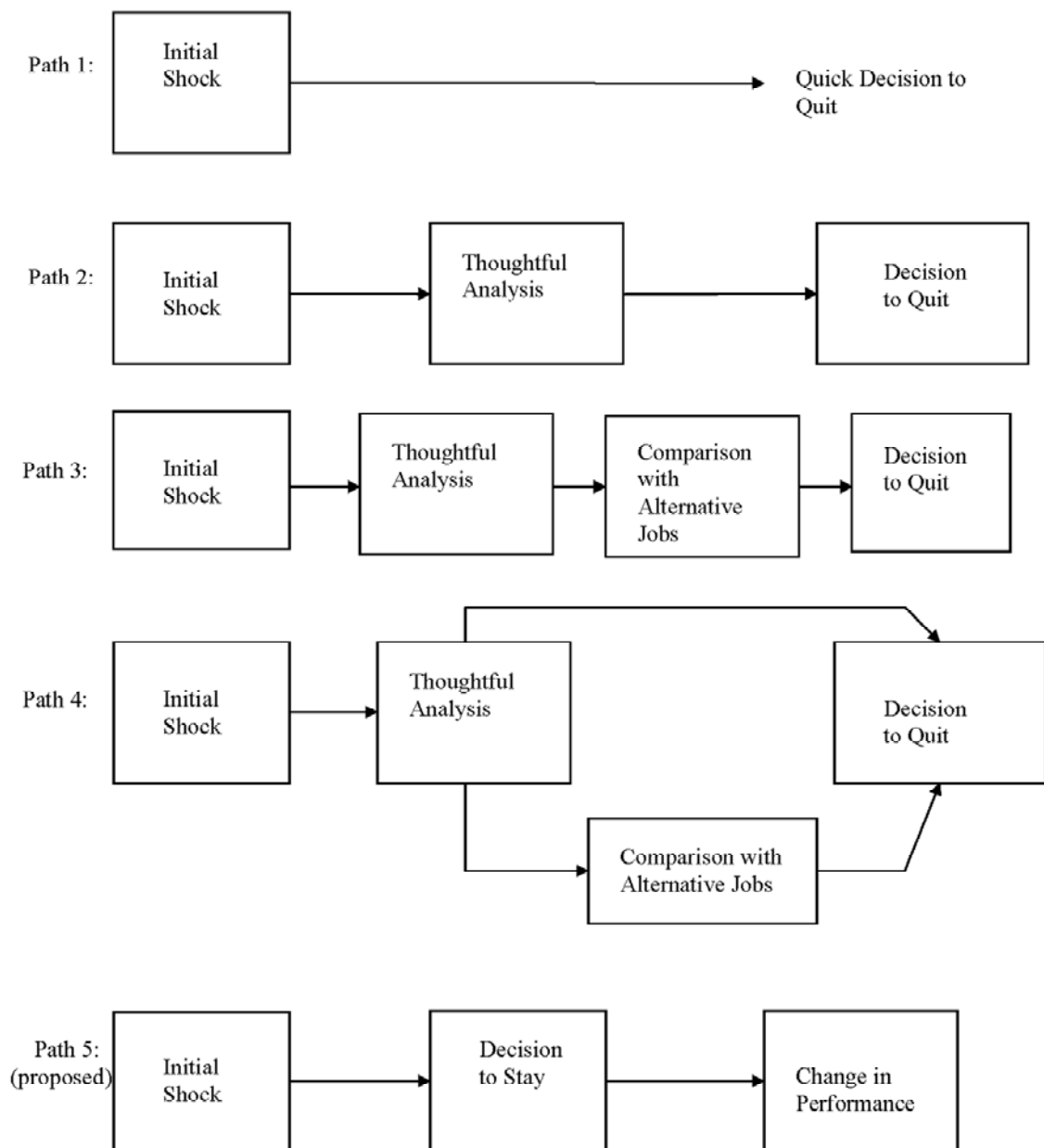
H1: Negative compensation shocks will cause employees to withdraw from the organization by decreasing their performance.

Moderators of the Relationship Between Shocks and Performance

Two potential moderators of the relationship between negative compensation shocks and performance that will be explored in this study are: 1) the magnitude of the shock and, 2) the individual's pay level. This relationship is shown in Figure 1.2. The first moderator, the magnitude of the shock relative to one's total compensation, is thought to affect the degree to which an individual engages in behavior that will change their performance. The basis for this assumption can be found in equity theory.

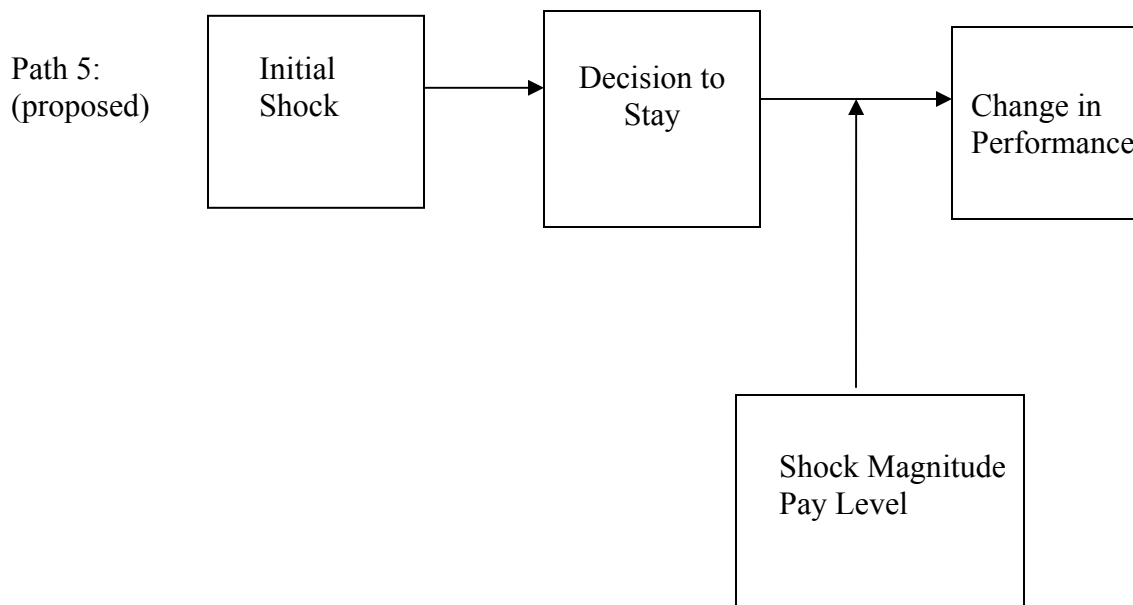
Equity theory assumes that employees compare their job inputs and outcomes with those of coworkers or reference groups (Dittrich & Carrell, 1979). However, research has demonstrated that preferences for forms of equity are sensitive to context effects (Weick, Bougon, & Maruyama, 1976). Weick et al. (1976) use the phrase *equity context* to designate the residual and background stimuli that could influence an actor's choice and use of a comparison other. The authors assert that inequity can occur in one of three basic forms: 1) own inequity: the person's own input-outcome ratio is unbalanced, 2) other inequity: the input-outcome ratio is unbalanced in relationship to a comparison other and, 3) comparison inequity: the person's input-outcome ratio is not the same as the co-workers. The authors suggest that if an individual values independence, then he or she may find it more difficult to locate someone else who is

Figure 1.1. The Unfolding Model of Turnover



From Lee, T. W. & Mitchell, T. R. (1994). An alternative approach: The unfolding model of voluntary employee turnover. *Academy of Management Review*, 19 (1), 51-89.

Figure 1.2 Moderators of the Shock-Performance Relationship



similar and can serve as a comparison. In contrast, extensive contact with work associates should increase the amount of comparison that occurs (Weick et al., 1976). Thus, in highly autonomous jobs such as sales, equity comparisons are more likely to be made based on own equity, or one's own input-outcome ratio.

Equity theory is a particularly applicable motivational theory for pay-for-performance situations and specifically to instances in which compensation shocks are involved. In terms of specific application to compensation, equity theory asserts that people make judgments about the fairness of their pay on the basis of assessments of their perceived outcomes/inputs ratio relative to others and take action to restore equity if the ratios are not equal (Adams, 1963). However, as discussed above, in the sales context these judgments about the fairness of pay of their perceived outcome/input ratios are more likely to be made relative to one's own equity or input-outcome ratio. When a negative compensation shock occurs, equity theory suggests that a sales representative will reduce his or her effort (input) in response to a reduction in pay (output).

Furthermore, the larger the magnitude of the negative compensation shock (larger decrease in outputs), the more the sales representative will need to reduce their effort (larger reduction in inputs) in order to restore his or her own equity ratios.

Evidence for this can be found in the several empirical studies conducted to test the various aspects of equity theory in the context of compensation (Greenberg, 1990). The studies generally support the theory, finding that workers lower their performance (reduce their outputs) when they are underpaid and raise their performance (increase their outputs) when they are overpaid (Adams & Freedman, 1976; Greenberg, 1982). Although there have been some challenges to equity theory, overall the evidence in support of equity theory has been quite strong (Adams & Freedman, 1976; Greenberg, 1982; Greenberg, 1990).

Equity and related theories also provide support for the relationship between negative compensation shocks and changes in performance. For example, Gerhart and Rynes (2003) assert that equity theory may be helpful for understanding pay dissatisfaction (under-reward inequity), an outcome which would be the likely result after receiving a negative compensation shock. Research has clearly shown that pay dissatisfaction can have important and undesirable impacts on several employee outcomes (Heneman & Judge, 2000). A study by Bretz and Thomas (1992) showed that baseball players who lost salary arbitration cases were more likely to have decreased performance following arbitration relative to those who won arbitration. Pay dissatisfaction has also been shown to correlate with withdrawal behaviors such as employee lateness (Koslowsky, Sagie, Krausz, & Singer, 1997) and voting for union representation (Davy & Shipper, 1993).

One of the reasons that negative compensation shocks may cause a change in performance is due to employee entitlement perceptions. Research on entitlement defines this construct as, “the compensation expected as a result of an individual participating in

an employment relationship” (Naumann, Minsky, & Sturman, 2002, p. 150). Employee entitlement perceptions have been associated with the development of psychological contracts (Robinson & Rousseau, 1994), which are thought to influence work attitudes and behaviors. Psychological contracts indicate what employees believe they are entitled to receive, or should receive, because they perceive that their employer conveyed or promised to provide those things (Robinson, 1996). Most employees believe that psychological contracts are stable and they cannot envision situations where the contract might change (Robinson & Rousseau, 1994; Rousseau, 1990). The level of one’s compensation is something that most employees do not expect to change. Therefore, a negative compensation shock would likely come as quite a surprise and be perceived as a strong breach of a psychological contract.

Psychological contract breach is frequently operationalized as an employee’s perception of the *extent to which* the employer has failed to fill a promised obligation such as a high salary, promotions and advancement, pay based on performance, job security, training and career development (Robinson, 1996). Psychological contract breach has been found to be negatively correlated with various work-related outcomes such as lowered citizenship behavior, reduced commitment and satisfaction (Robinson & Rousseau, 1994; Robinson & Morrison, 1995). Therefore, it is likely that employees who experience a psychological contract breach, in this case caused by a negative compensation shock, will engage in work withdrawal behaviors which, in turn, reduce their subsequent contributions to the firm resulting in a decline in performance. However, the extent to which the employee perceives the breach is also a factor (Robinson, 1996). Therefore, individuals who receive a larger magnitude compensation shock will perceive a larger psychological contract breach, resulting in an even greater need to restore equity balance and resulting in a larger decrease in performance.

The unfolding model further indicates that the magnitude of the shock may matter. In the unfolding model of turnover, image theory suggests that the process begins with a distinguishable event, or shock, which the employee then interprets and evaluates based on key dimensions such as novelty, favorability, threat, or anticipation (Holtom et al., 2005). Based on image theory, the employee is thought to also evaluate the shock on a more personal level and consider whether or not the shock can be responded to in an appropriate manner. If the shock is a large rather than a small change in total compensation, the employee will likely have more difficulty reconciling that the event can be responded to in an appropriate manner. Thus, an employee experiencing a larger magnitude shock is more likely to begin evaluation of alternative employment options which may include a job search and ultimately a decision to leave the organization. While engaging in this evaluation process, individuals may also participate in withdrawal behaviors such as increased absence that reduce their performance. As a result, individuals incurring larger magnitude compensation shocks are likely to exhibit larger decreases in performance.

Thus, the unfolding model, equity theory, and related research on pay dissatisfaction and entitlement suggest that in response to a negative compensation shock (reduction in inputs), sales representatives will reduce their effort (performance) to maintain an equitable balance. In the case of outside sales representation, there is considerable latitude regarding how to perform one's job. Accordingly, individuals experiencing large negative compensation shocks are able to engage in a greater number of effort reducing behaviors, resulting in a larger decline in performance. Therefore, I hypothesize that:

H2: Individuals experiencing larger negative compensation shocks will have a greater decrease in performance.

A second moderator of the shock-performance relationship which will be explored in this study is the individual's current level of pay. Although the impact of shocks on performance has not been studied, it has been suggested that changes in environmental opportunity may affect the behavior and outcomes of some people more than others (Pulakos, Schmitt, Dorsey, Arad, Hedge, & Borman, 2002). People exhibit high adaptive performance when they adjust their behavior to fit the situation in order to take advantage of opportunities and overcome obstacles (Chan, 2000; Hesketh & Neal, 1999) such as a negative compensation shock. A recent study by Stewart and Nandkeolyar (2006) showed that situational opportunity created more variation in individual performance within individuals than it did between individuals. This suggests that exploring differences in individual reactions to environmental opportunity or obstacles (shocks) can provide critical insight into adaptability as a dimension of performance which captures the importance of long-term contributions to organizations (Stewart & Nandkeolyar, 2006).

The ways in which individuals may adapt to environmental change such as organizational shocks can be explained by image theory. As previously discussed, the image-based model of decision making suggests that the decision process begins with a shock, in this case a negative compensation shock, which causes a sales representative to evaluate the impact of the compensation shock on his or her job. The sales representative then interprets the negative compensation shock through the social and cognitive context that surrounds the shock experience (Mitchell et al., 1999). The context in which the shock occurs provides a frame of reference or a decision frame that the employee uses to interpret the event (Holtom et al., 2005).

The sales representative's current level of pay is likely to be a key contextual factor that will be used to shape his/her evaluation. If an individual is highly compensated, he/she is likely to have fewer acceptable comparable alternative

employment options compared to those that are lower on the pay scale. Therefore, despite incurring a negative shock, a highly compensated individual is more likely to work to integrate the shock into his/her personal value images because alternative employment options are likely to result in a reduction in pay. Conversely, an individual who is lower on the relative pay scale will have a greater number of acceptable alternative employment options and thus, will not have the same need to work to integrate the negative compensation shock into his or her value images.

This also suggests that sales individuals will not only make an own-equity comparison as discussed above, but will also make an other-equity comparison (Weick et al., 1976). In this case, the comparison other used in the other equity comparison will be acceptable sales positions in other organizations. Using the example of a highly compensated sales individual (defined as total sales compensation in excess of \$120,000; range \$120,000 to \$300,000+), following a negative compensation shock the highly compensated individual will first make an own-equity comparison which results in an equity imbalance causing the sales individual to engage in withdrawal behavior (such as job search activities) in order to restore equity. In doing so, the highly compensated individual will also conduct an other-equity comparison and is likely to discover that he or she is well compensated compared to other sales individuals in similar jobs. In fact, the salesperson may find that he/she is overpaid. Previously discussed equity research suggests that individuals will raise their performance when they are overpaid (Greenberg, 1982). As a result of the other-equity comparison, highly compensated individuals will return to a balanced equity state and therefore their performance is likely to return to pre-shock levels more quickly than those individuals who are lower on the pay scale.

Further support for the idea that highly compensated individuals will return to an equity state more quickly can be found in the evidence that people have strong “hindsight biases”. Equity theory typically assumes that individuals involved in the social exchange

process are behaving rationally (Messick & Cook, 1983). However, human rationality is clearly limited as evidenced by biases observed by decision theorists. For example, hindsight biases are biases that make unpredictable events seem to have been obvious in retrospect (Messick & Cook, 1983). Hindsight biases are important in equity judgment decisions because they can create an illusion of equity even if outcomes seem random (Messick & Cook, 1983). When an event such as a negative compensation shock occurs, one is initially overwhelmed by a feeling of unfairness. However, the human mind is very effective at concocting ex-post explanations in an effort to restore equity (Messick & Cook, 1983).

A simple example of this can be found in a common scenario described by Messick and Cook (1983) of receiving a speeding ticket. Initially, receiving a speeding ticket typically seems highly unfair and random such as “I was just going with the flow of traffic”. However, hindsight biases quickly create an illusion of equity and unlucky speeders tend to think they “deserved” a ticket because they hadn’t had one in quite awhile. In the more complex scenario of receiving a negative compensation shock, hindsight biases indicate that highly compensated individuals may create ex-post explanations that since they were so highly compensated compared to similar positions, that they “were due for a compensation correction”. Thus, hindsight biases tend to make individuals rationalize that some events are unpredictable and should not be judged for their equity (Messick & Cook, 1983). As a result of hindsight bias, highly compensated individuals will rationalize the compensation shock and as a result, more quickly return to an equity state and their pre-shock performance levels.

Based on the research of both image theory and equity theory, it seems likely that individuals at different pay levels may have varying reactions to compensation shocks. Although previous discussions indicate that negative compensation shocks will result in a decrease in performance, individuals high on the pay scale have fewer alternative

employment options, indicating that they may not engage in as many performance reducing behaviors in response to a negative compensation shock. Therefore, I hypothesize that:

H3: The individual's pay level within the organization affects their reaction to negative compensation shocks, such that individuals who are highly compensated will show a smaller decline in performance in response to a negative compensation shock

While the previous discussion indicates that negative compensation shocks will cause changes in performance for most sales individuals, research related to equity theory and to the unfolding model of turnover also suggests that this performance decline may dissipate over time. Adams (1965) and colleagues clearly demonstrated that when workers *first* find out they are over- or underpaid they feel concern and will set out to restore equity balance by altering inputs (Hatfield, Walster, & Berscheid, 1978). Research by Hatfield et al. (1978) suggests that if the inequity continues over time, however, the overpaid worker might begin to wonder why his or her employer didn't fire them and instead hire a more qualified worker. Conversely, the underpaid worker is forced to ask if he or she was really so underpaid, why they didn't leave their job and go elsewhere. Therefore, the authors assert that a worker's initial reaction to an inequity might be quite different than their long-term reaction (Hatfield et al., 1978).

Much of the early research conducted on equity theory carefully designed the studies to ensure that employees, equitably paid or not, would stay on (Hatfield et al., 1978). However, in real life, both employers and employees have the option to decide whether they want to continue working together or to sever their relationship. The employee can accept his or her working conditions, withdraw psychologically, request a transfer, or simply quit (Hatfield et al., 1978). Equity theory predicts that equitable

relationships should be stable while inequitable relationships, such as would occur after a negative compensation shock, will be fragile.

While a substantial body of research supports the contention that workers do try to restore actual equity by altering their inputs (Adams & Rosenbaum, 1962; Goodman & Friedman, 1971; Hatfield et al., 1978; Pritchard, Dunnette, & Jorgenson, 1972), research by Adams (1965) and others makes it clear that while over and underpaid workers can respond by trying to maintain actual equity this is only one possible reaction that may result over time. Under some circumstances, instead of trying to restore actual equity, workers will work to restore psychological equity by distorting reality and convincing themselves that they are being equitably paid (Hatfield et al., 1978). Adams (1965) described that in order to restore psychological equity a person may “cognitively distort his inputs and outcomes” (p.290). For example, one of the ways that underpaid workers might choose to restore psychological equity over time is by exaggerating their own outcomes. To do so, they might convince themselves that they are receiving numerous fringe benefits (Lawler & O’Gara, 1967; Gergen, Morse & Bode, 1974).

Similarly, more recent work by Greenberg (1989) related to equity theory and the concept of underpayment inequity suggests that a reduction in pay may affect employees’ perceptions of outcomes that are not manipulated so that workers facing a pay reduction may seek to redress the resulting underpayment inequity by cognitively augmenting the value of other outcomes they receive. In an effort to restore equity balance, research has shown that in response to an underpayment inequity, salaried employees do indeed cognitively augment the perceived importance of the work environment as contributors to their overall payment equity (Greenberg, 1989). These findings support equity theory’s claim that cognitive distortion of outcomes may effectively address perceived inequities.

Workers may also use non-cognitive means to address an underpayment inequity. Research by Greenberg (1990) showed that manufacturing employees whose pay was

temporarily reduced by 15% had significantly higher theft rates. In such instances, workers were attempting to redress the inequity and raise their outputs by stealing from their employer. However, when the reason for the pay cuts was thoroughly and sensitively explained to employees, feelings of inequity were lessened and the theft rate was reduced as well (Greenberg, 1990). Further research by Greenberg (1993) showed that subjects who were inequitably paid (due to a rule change from what was stated at the beginning of the experiment) sought to restore their sense of equity by stealing money when the experimenter left the room.

An alternate explanation of why performance declines may dissipate over time comes from the unfolding model of turnover (specifically, Decision Paths 2 and 3). Decision Paths 2 and 3 suggest that after a shock, an employee evaluates how well the shock integrates or fits into his or her personal principles, goals, and plans (value images) and whether or not it passes some acceptability threshold that allows staying with the current organization (Lee & Mitchell, 1994; Donnelly & Quirin, 2006). In other words, based on image theory, the employee will conduct a compatibility test (Beach, 1990; Donnelly & Quirin, 2006). If the shock is incompatible with any of the employee's value images, the employee will either quit the organization or make a change in his or her images (Lee & Mitchell, 1994). Further, Decision Path 3 suggests that this process requires the employee to evaluate alternative employment options prior to deciding whether or not to leave the organization. Thus, after the compensation shock and while the employee is going through this evaluation process, it is likely that there would be a performance decline as discussed above. However, once employees who decide to stay have completed the evaluation process (perhaps concluding that they are too embedded to leave) it is likely that their performance will begin to return to pre-shock levels. This would indicate that performance declines which result from negative compensation shocks may dissipate over time. Therefore, I hypothesize:

H4: The decline in performance due to a negative compensation shock will dissipate over time.

CHAPTER 3

METHODS

In order to test whether objective performance is impacted by negative compensation shocks, archival longitudinal performance and compensation data were obtained from an organization which enacted a change in compensation effective January, 2007. As a result of changing market conditions, the company made a significant compensation change to bring the pay level of its sales force's compensation in line with those of its competitors. The new plan was designed to put much greater emphasis on "pay for performance". The plan was highly leveraged with a 60/40 split between base and commission. The commission rate was determined by performance to quota in each product line category as well as gross profit dollar attainment. The previous plan was less highly leveraged with a 70/30 split between base and commission and did not emphasize quota attainment.

In addition, under the new plan, each position had a target level of earnings at quota. In order to attain 100% of their total targeted earnings, reps had to: 1) attain 100% of their total volume quota, 2) achieve targeted margin, and 3) achieve quotas in each of the product categories. If total targeted earnings were exceeded, quotas were adjusted (raised) the following quarter in an effort to maintain compensation at the targeted level. If quotas were not achieved, it was also possible that a rep's base pay could be reduced. The net effect was that the new plan was design to cap or reduce compensation for many member of the sales force. The majority of sales employees in this large sample were affected to one degree or another by the new plan. As a result, this situation provided a unique opportunity to study the impact of negative compensation shocks on performance.

Participants

The total participant population consisted of 935 members of the sales force of a large national business-to-business provider of business products, 571 individuals were in the experimental group and 364 individuals were in the control. The final sample size in

both groups was reduced by turnover, missing data, and individuals changing positions within the organization, resulting in a final sample size of 283 individuals (192 experimental and 91 control). The breakdown for each group is as follows:

Table 3.1. Participant Groups

Group	Total population	Number lost due to turnover	Number lost due to missing data	Number lost due to change in position	Final sample size
Experimental	571	203	113	63	192
Control	364	102	104	67	91

The individuals in both the experimental and controls groups were responsible for selling a wide variety of business products (everything from paper to janitorial supplies to furniture) to their clients. The organizations they sold to range in size from revenues of fifty million to several billion. Sales representatives had responsibility for both maintaining and growing revenue within their client base.

Study Setting

Since the specific point in time when the negative compensation shock was introduced is known, a quasi-experiment interrupted time-series design was used for this study (Cook & Campbell, 1979). More specifically, in order to further ensure internal validity, this study used an interrupted time series with a nonequivalent no-treatment control group method of design (Cook & Campbell, 1979). The longitudinal design combined with a nonequivalent control group is a strong research design for two reasons. One, interrupted time series designs provide a strong quasi-experimental approach when interventions are introduced at a specific point in time so that time may be used as a proxy for the true model of treatment assignment. Such designs are thought to provide a strong basis for evaluation of the effects of changes that are implemented at a specific

point in time (West, Biesanz, & Pitts, 2000). Alternative explanations, to be plausible, must account for why the change in the series occurred at a particular point in time. The basic time series design allows researchers to credibly rule out several threats to internal validity such as the threat of history. Therefore, monthly sales and gross profit dollars for the year prior (2006) to the compensation shock which occurred in January, 2007 were used as a control variable. Given the ability to rule out alternative explanations through both design features and statistical adjustment, interrupted time series designs are one of the strongest alternatives to a randomized experiment (West et al., 2000).

Second, design enhancements, including the use of control groups, can further strengthen the causal inferences that may be made (Kratochwill & Levin, 1992; West et al., 2000). The nonequivalent control group design is the most commonly used alternative to the randomized experiment (West et al., 2000). The experimental group is the group of individuals that was given a treatment or “natural event” that occurs in the group. In this case, this was the group of enterprise sales reps that received a decrease in compensation effective January 1, 2007. These individuals were further partitioned into treatment groups based on the hypothesis being tested, making this a cohort design in which treatment partitioning is possible. For example, in order to test Hypothesis I, individuals were partitioned into one of two treatment groups: 1) the minor shock cohort – individuals receiving a $< -10\%$ shock, or 2) the substantial shock cohort – individuals receiving a $> -10\%$ compensation shock. Because the cohorts are likely to be more similar to each other than to the control group, Cook & Campbell (1979) suggest that partitioning respondents into treatment groups based on their level of experience greatly strengthens the internal validity of the study design. Thus, the cohort study design with treatment partitioning, such as was used in this study, is further helpful in ruling out internal threats to validity such as history and selection.

The second (comparison or control) group that did not receive the treatment was identified as a nonequivalent no-treatment control group. This is the group of

commercial sales people. In the nonequivalent control group design, both groups are measured before and after the treatment. Randomization is not used to determine the treatment groups or control groups. In this method of design, it is not expected that the control group be equal, but rather reasonably comparable to the treatment group. Although the control group was different from the experimental group in terms of average territory size and tenure, the control group was comparable to the treatment group in the sense that both groups were selling the same products in the same market conditions. Thus, the control group helps to rule out alternative economic/market condition explanations for changes in performance. To insure comparability of the control group to the treatment group, the possibility of differential regression will be explored by seeing if there is an immediate post-treatment shift in one group but not the other (Cook & Campbell, 1979). This method of untreated control series allows for tests of the other threats to internal validity that may operate on a single time series design (Cook & Campbell, 1979). In summary, the nonequivalent control group interrupted time series design combined with the cohort design with treatment partitioning, is a strong study design which helps rule out many plausible threats to validity.

Measures

Control Variables

Gender. Gender, dichotomized as 1 = male, 0 = female, was defined as a control variable because of possible differences in response across gender. Gender may be related to issues such as job mobility, such that heads of households (most commonly males), may be less able to withstand a compensation shock and therefore, may respond differently (potentially decrease their performance less) than females.

Tenure. Organizational tenure was defined as a control variable due to potential differences in level of experience for newcomers versus long term employees. It is expected that individuals with longer tenure may have higher performance (higher sales). It may also be that individuals with longer tenure may be more invested in the

organization and their clients and therefore, they may respond differently (show a smaller decrease in performance) than individuals with less tenure.

Variables

Total compensation shock. The total compensation shock was defined as January, 2007 when the new compensation program went into effect. The plan was announced in early December only shortly before its effective date on January 1st. Before the change in compensation plan, salespeople were compensated with a salary and commission plan based on sales profitability. As described in detail above, the new compensation plan effective January, 2007 also consisted of a salary plus commission structure, however, the new plan was more highly leveraged and commission payout was now also based on attainment of quota. These quotas were aggressively set in an effort to manage total compensation payout. Additionally, in an effort to achieve total target compensation payout, the monthly base pay for some highly compensated representatives was reduced. Because sales in this industry are highly renewable, sales people view their commission program as an expected part of their total compensation. Therefore, compensation was measured as total compensation which includes both the salary and commission components.

Individuals receiving less than a -10% total compensation shock were defined as the minor shock cohort, and individuals receiving a >-10% total compensation shock were defined as the substantial shock cohort. Total compensation shock was defined as a greater than 10% change in total compensation from 2006 to 2007 ($\Delta \text{Actual Comp}/2006 \text{ Actual Comp}$). The level of -10% was determined based on Lawler's (1990) research which found that in order for pay to be a *significant* motivator, the amount at risk should be at least 10%.

Shock magnitude. The shock magnitude is a different calculation from the total compensation shock in that it factors in what a representative would have made based on the sales performance in the experimental year had the compensation plan not changed.

The performance based compensation shock was calculated in this manner in order to insure that the independent variable (shock magnitude) was not entangled with the dependent variable (sales performance). This can be contrasted to the calculation for the total compensation shock which is based only on actual total compensation payout. In the previous condition (total compensation shock), an individual might have a particularly large total compensation shock if their performance declined. The shock magnitude calculation, on the other hand, would factor in the individual's sales performance decline to determine what they would have made had the compensation plan not changed. In the case of a performance decline, the shock magnitude would show a smaller shock as compared to the total compensation shock due to factoring in actual decline in sales performance.

More specifically, shock magnitude was operationally defined as the percentage variation between what a salesperson actually earned the year before the change in compensation plan (2006) and what he or she would have earned in the year following the compensation change given their 2007 sales performance. In other words, it is the percentage of income variation that he or she experienced as a result of the change in the compensation plan. For instance, assume that a salesperson earned \$200,000 in the year before the compensation plan change (2006) and sold \$2,000,000 (compensation rate of 10% of sales). The following year (2007) this individual sold \$1,800,000 and would have earned \$180,000 based on the same percentage of sales. However, due to the change in compensation, they actually made \$160,000 in 2007. Therefore, the variation in remuneration level in this example is considered to be -11.1% percent $(\$160,000 - \$180,000)/\$180,000$ for this salesperson ($\Delta I/I$). (This can be contrasted to the previous condition total compensation shock which would be -20% $(\$160,000 - \$200,000 / \$200,000)$.)

The experimental group was broken into three performance based compensation shock magnitude cohorts, based on the magnitude of shock that individuals received.

Those categories are: minor shock magnitude (less than -10% change in compensation), medium shock magnitude (between -10 to -30% change in compensation), and large shock magnitude (greater than -30% change in compensation). Once again, Lawler's (1990) research was used to determine these categories. Based on this author's research, it is commonly thought that in order for pay to be a significant motivator it needs to be at least a 10% difference. Lawler (1990) further indicates that the amount of potential compensation change that would be significantly motivational could be in the range of 20%. Therefore, using Lawler's research as a foundation, it was determined that less than -10% performance based compensation shock would be determined a minor magnitude shock, that between -10% to -30% would be a medium magnitude shock, and that > -30% would be considered a large magnitude shock.

Pay level. Pay level is based on total compensation for the year prior (2006) to the compensation shock. Total compensation includes both base and incentive pay, as appropriate for the sales role. The experimental group was broken into three pay levels: high pay level (individuals earning >\$120,000), moderate pay level (individuals earning between \$80,000 to \$120,000), and base pay level (individuals earning <\$80,000). These categories were selected because they coincide with how the organization providing the sample described the compensation levels. That is, the organization considered those earning more than \$120,000 as highly compensated and the company's targeted compensation for the typical salesperson was in the range of \$80,000 to \$120,000.

Performance measures. Objective measures of performance were obtained from the organization for the calendar years of 2006 and 2007. A two-year time span was used as longer time spans yield more reliable measures (Hunter, Schmidt, & Judiesch, 1990). The organization tracks monthly performance based on revenue. Thus, performance measures were obtained from archival records for each sales individual and consisted of monthly revenue over a two year period: 12 months prior to the compensation shock and 12 months post-shock. There were some wide variations in sales from month to month as

in these sales positions it is possible to have a large sale one month and then fall back to a more average sales level the following month. To smooth some of the month-to-month variability in sales figures, the sales data were aggregated into quarterly groupings (Ployhart & Hakel, 1998). This type of averaging has also been performed by researchers such as Hofmann, Jacobs, and Baratta (1993) and is similar to what is known as “detrending” with time-series methods (Chatfield, 1975; Ployhart & Hakel, 1998). This produced four quarterly pre-shock observations (Time 1, Time 2, Time 3, Time 4) and four quarterly post-shock observations (Time 5, Time 6, Time 7, Time 8). Thus, sales data are reported as mean quarterly performance as monthly performance can have considerable variation, making it more difficult to view trends in the data. To further compare the result of performance changes post-shock, the average mean sales for the entire control year (months 1-12) are also reported.

Analyses

As discussed above, the dependent variable in this data set is intraindividual performance. The model includes both individual measures (quarterly objective performance measures) and interindividual constructs (minor versus substantial compensation shock, shock magnitude levels, and pay levels). Accordingly, the data are hierarchical in nature, with the relationship between the compensation shock and performance nested within individuals who vary on levels of performance. In order to test the multi-level data, general linear modeling (GLM) repeated measures analysis was used. Although HLM is often used to test multi-level data, it was determined that HLM was not the best procedure for this study. It is suggested that in order for HLM to have sufficient power (.90) to detect cross-level interactions, it is necessary to have a sample of at least thirty groups containing thirty individuals each (Hoffman, Griffin & Gavin, (2000). This study design and sample did not meet that requirement. Therefore, it was determined that a GLM repeated measures design was the best statistical method to use for this study.

A GLM repeated measures design is helpful in examining patterns of change in the variables over time. This procedure provides a variety of analysis of variance procedures to use when the same measurement is made several times on each subject. The single-factor repeated-measures ANOVA was used because this study involves one independent variable with two or more levels (shock conditions) that are repeated measures and one dependent variable (quarterly sales performance) (Leech, Barrett, & Morgan, 2008). This type of design is thought to have several advantages. In particular, it reduces the unsystematic variability in the design and provides greater power to detect effects (Field, 2000). It also is more economical because fewer subjects are required (Field, 2000).

The assumptions of repeated-measures ANOVA are similar to those for between groups ANOVA, and include independence of observations, normality, and homogeneity of variances (Leech et al, 2008). Although there are many advantages of repeated measures, they do violate the basic assumption of multivariate analysis - independence. Fortunately, GLM for repeated measures can account for this dependence and still test for differences across groups for a set of dependent variables (Ho, 2006). The homogeneity assumption for repeated-measures designs, known as sphericity, requires equal variances and covariances for each level of the within-subjects variable (Leech et al., 2008). GLM repeated measures provide a variety of multivariate tests which can be used even if sphericity is violated (Leech et al., 2008). Sphericity is a less restrictive form of compound symmetry which refers to the equality of variances of the differences between treatments levels (Field, 2000). This means, if you took each pair of treatments levels and calculated each pair of scores, then it is necessary that these differences have equal variances. Due to the nature of the data, it is expected that sphericity will be violated. In this instance, it is recommended that the Pillai's Trace multivariate test with a Greenhouse-Geisser correction be used as opposed to the more commonly used Wilks' Lambda multivariate test (Leech et al., 2008).

The GLM repeated measures analysis first involves running an omnibus test of repeated measures general linear model to look for an overall indication of the effect of time in each of the tested conditions. The omnibus test of repeated measures general linear model compares the control time period (months 1-12) to the experimental time period (months 13-24). This test provides an overall indication of the effect of time in each of the tested conditions, indicating whether or not the linear composite differs over time. The interactions of time with the shock versus no-shock condition, shock magnitude, and pay level conditions were also tested. The results indicate whether or not the linear composite differs for different shock conditions, shock magnitudes, and pay levels. It was expected that the results of the omnibus tests would be significant. Based on the output of the omnibus test, a series of repeated measures contrasts was run to determine which variables contributed to the overall difference.

Contrasts represent linear combinations of the parameters and are used to test for differences among the levels of a between-subjects factor (SPSS, 1999). The contrasts are used to identify which simple effects are statistically significant (Leech et al., 2008). Both Simple and Repeated tests of within-subjects contrasts were run. Simple Contrasts compare the mean of each level to the mean of a specified level. Repeated Contrasts compare the mean of each level (except the last) to the mean of the subsequent level. For this study, the Simple Contrast were used to compare the quarterly mean performance of each level to the mean of the control time period (mean performance months 1-12) since we were interested in whether performance decreased, as hypothesized, after the compensation shock was introduced. The Repeated Contrast was run to compare the mean of each quarterly time period level to the mean of the previous quarterly time period. Repeated contrasts provide insights into the performance trends between quarterly periods both before and after the compensation shock was introduced.

Profile plots were also used to compare the means. A profile plot is a line plot in which each point indicates the estimated marginal mean of the dependent variable

(adjusted for any covariates) at one level of a factor (SPSS, 1999). Each level for the tested conditions is represented by a separate line. The profile plots show whether the estimated marginal means are increasing or decreasing across levels. Nonparallel lines indicate an interaction.

To address the research questions raised of whether negative compensation shocks impact performance (Hypothesis 1), whether the magnitude of the shock matters (Hypothesis 2) and which individuals are more or less likely to have an adverse performance response to a shock, (Hypothesis 3), a series of One-Way ANOVAs was run with performance as the dependent variable and the shock conditions as the independent variables to test whether there are significant differences in the means for each of the between-subjects conditions. Post hoc tests of least significant difference (LSD) were also run. The LSD pairwise multiple comparison test is equivalent to multiple individual *t* tests between all pairs of groups (SPSS, 1999) and was used to identify significant pairwise differences.

While both types of contrasts were used to test all three shock conditions, the Simple Contrasts were particularly helpful in testing Hypothesis 1, to see if performance declined, as compared to the control time period (months 1-12), in the time period immediately following the shock and whether this change in performance was sustained in subsequent time periods. The Simple Contrasts were also helpful in testing Hypothesis 2 and 3 to see if a similarly decline in performance occurred after the shock in the pay magnitude and pay level conditions, respectively. Repeated Contrasts were helpful in testing all hypotheses to show whether there was a significant difference in the mean performance in one time period for each cohort as compared to the mean of the previous time period, both before and after the compensation shock. This shows whether there were significant changes in performance trends. It was expected that prior to the compensation shock that there would be positive upward trends in performance, which may or may not be significant. It is expected that after the compensation shock there

would be a significant decline in performance in the time period immediately following the shock, followed by a leveling of performance. Regarding Hypothesis 2, the size of the performance decline was expected to be larger for individuals in the large performance based magnitude cohort. As it relates to Hypothesis 3, individuals in the base and moderate pay level cohorts were expected to have larger performance declines immediately following the shock as compared to individuals in the high pay cohort.

Hypothesis 4 predicted that the performance impact of a negative compensation shock will dissipate over time. In order to address this question, the results of the means comparison and repeated contrasts tests run for the shock versus no-shock condition were used. Additionally, the plot of the shock condition will provide a visual representation of whether or not the performance decline dissipates over time.

CHAPTER 4

RESULTS

Table 4.1 presents descriptive statistics and intercorrelations for the variables. With the exception of the control variable of gender, each of the variables measured exhibited a strong, significant relationship with the both the performance measures and the control variable tenure. Mean performance in the control year (months 1-12) correlated with mean performance in the four quarters following the shock, at $r = .88, .89, .92, .94$, respectively. As expected, the intercorrelations between all five performance periods were very highly correlated (average $r = .925$). This indicates that individual performance is fairly consistent. Also as expected, tenure was strongly correlated with each of the performance periods (average $r = .366$) such that individuals that had been with the organization longer had higher sales. Gender was not significantly correlated with performance in any time period (average $r = .068$), nor was there a significant correlation between tenure and gender ($r = .03$).

Comparisons Across Conditions

The results of this section compare the differences across the treatment cohorts. Following this section, the results of how the treatment cohorts responded over time will be presented. It is in the second section where the results of the hypotheses tests will be presented. This section presents the results of a series of one-way ANOVA's with tests of least significant difference that were run to compare differences across the cohorts. The assumptions of independent observations and homogeneity of variances for each group were checked. The homogeneity of variances was violated; thus, results should be reviewed with caution. Bivariate scatterplots were checked for multivariate normality and outliers.

Table 4.2 presents the means and standard deviations of the total compensation shock cohorts in each of the performance time periods. The means and standard deviations of the two control variables, tenure and gender, are also presented.

Table 4.1. Correlations for all Variables

Variables	Mean	SD	1	2	3	4	5	6	7
1. Gender	.50	.50	1						
2. Tenure	11.14	8.07	.03	1					
3. Mean Performance Months 1-12	331,665	290,295	-.06	.41*	1				
4. Mean Performance Months 13-15	386,801	315,500	-.05	.40*	.94*	1			
5. Mean Performance Months 16-18	376,825	305,171	-.07	.36*	.92*	.96*	1		
6. Mean Performance Months 19-21	398,595	315,738	-.09	.32*	.89*	.92*	.94*	1	
7. Mean Performance Months 22-24	396,479	316,266	-.07	.34*	.88*	.91*	.92*	.97*	1

Note: $N = 292$ for all measures. All mean performance numbers are represented in dollars.

*Correlation is significant at the .01 level (2-tailed).

Table 4.2. Total Compensation Shock Cohorts: Means, Standard Deviations, Comparison Across Conditions

Measure	All N = 292		Substantial Total Compensation Shock N = 124		Minor Total Compensation Shock N = 77		Control N = 91	
	M	SD	M	SD	M	SD	M	SD
Mean Performance Months 1 – 12	331,665	290,295	464,048	260,239	405,966	292,013	88,404	138,603
Mean Performance Time 1 (Months 1 – 3)	324,325	291,438	455,930 _a	260,318	399,610 _a	298,040	81,291	136,273
Mean Performance Time 2 (Months 4 – 6)	323,317	287,438	455,045 _a	261,920	393,988 _a	285,295	84,018	136,275
Mean Performance Time 3 (Months 7 – 9)	339,076	297,085	473,756 _a	276,814	413,031 _a	290,100	92,977	136,658
Mean Performance Time 4 (Months 10–12)	339,941	298,168	471,459 _a	259,881	417,223 _a	315,491	95,329	47,174
Mean Performance Time 5 (Months 13–15)	386,801	315,500	511,236 _a	273,411	512,461 _a	326,411	110,912	133,826
Mean Performance Time 6 (Months 16–18)	376,825	305,171	485,176 _a	268,972	504,819 _a	320,622	120,878	137,876
Mean Performance Time 7 (Months 19–21)	398,596	315,738	491,341 _a	272,793	524,382 _a	337,077	165,780	210,925
Mean Performance Time 8 (Months 22–24)	396,479	316,266	486,404 _a	257,510	528,217 _a	361,565	162,473	202,571
Tenure (years)	11.14	8.07	14.27 _a	8.11	13.23 _a	7.69	5.09	4.04
Gender (M=1)	.50	.50	.52 _a	.50	.45 _a	.50	.51 _a	.50

Note: N = 292. All mean performance numbers are represented in dollars.

_aMeans in the same row that do not share subscripts differ at $p < .05$ by the least significant difference test.

The total compensation shock conditions presented are: control, minor shock (less than -10% change in total compensation), substantial shock (greater than -10% change in total compensation) as well as the mean of all participants (both control and experimental). In order to identify whether there were meaningful differences between the performance levels of the total compensation shock cohorts identified in Hypothesis 1, a series of One-Way ANOVAs with tests of least significant difference was run to compare the treatment group means. As shown in Table 4.2, the mean performance levels for the two total compensation shock cohorts were not significantly different from each other during the control year (Time 1-4). For example, the mean performance of the substantial shock cohort was similar in size to the mean performance of minor shock cohort (ns, means of \$471,459, \$417,223 in Time 4 for the substantial and minor shock cohorts, respectively). Performance of both treatment cohorts was significantly larger than the mean performance of the control group (mean of \$92,977 in Time 3; $F(2,289) = 68.75, p < .05$).

This pattern between the two cohorts remained the same in the experimental year. However, the level of performance of both groups increased immediately following the introduction of the negative compensation shock. As will be discussed in the following section which analyzes the cohorts over time, this was due to an increase in performance of both the minor and substantial total compensation shock cohorts from Time 4 to Time 5. The increase in performance was particularly large for the minor shock cohort. Following this increase in performance, the mean performance of the substantial and minor compensation total compensation shock cohort was nearly equivalent (mean difference = \$1225, means of \$511,236, \$512,461, for the substantial and minor shock cohorts, respectively). In Time 6, the mean performance of the minor total compensation shock surpassed the performance of the substantial total compensation shock group (means of \$504,819, \$485,176, respectively). This pattern continued for the final two quarters of the experimental year. As expected, these results indicate that those who were

selling the most in the control year (and therefore, most likely earning the most) were ones most likely to receive a substantial negative total compensation shock.

While there were overall significant differences in tenure when the control group was included ($F(2, 289) = 50.18, p < .05$), there were no significant differences in mean tenure between the minor and substantial total compensation shock cohorts: mean tenure was 14.27 years for the substantial total compensation shock cohort, 13.23 years for the minor total compensation shock cohort, and 5.09 years for the control group. While tenure was significantly lower in the control group, the use of the treatment cohorts in this study design as discussed in the previous chapter, helps to rule out many plausible threats to validity. There were no significant differences in gender between the shock cohorts or the control group ($F(2,289) = .12, ns$).

Table 4.3 presents a cross cohort view of the performance-based shock magnitude conditions identified in Hypothesis 2. Those cohorts are: minor magnitude shock ($< -10\%$), medium magnitude shock (-10% to -30%) and large magnitude shock ($> -30\%$). The results show that the mean performance level in the control year was significantly lower in the large shock magnitude cohort as compared to the medium and minor shock magnitude cohorts, which showed relatively equal mean performance ($F(3,288) = 53.021, p < .05$, means of \$345,988, \$487,602, \$489,373, respectively). This indicates that those individuals selling (and therefore earning the most) were not the ones to receive the largest negative compensation shock, as defined by the magnitude calculation which factors in 2007 sales performance. However, this pattern in the differences between cohorts changed immediately following the introduction of the compensation shock in Time 5.

Beginning in this time period, mean performance of the large magnitude shock increased dramatically and this caused the mean performance of the large magnitude shock cohort to no longer be significantly different from the mean performance of the medium or minor shock magnitude cohorts (means of \$503,699, \$556,790, \$486,436 in

Table 4.3. Performance-based Shock Magnitude Cohorts: Means, Standard Deviations, Comparison Across Conditions

Measure	All N = 292		Large (>30%) N = 66		Medium (-10 to -30%) N = 56		Minor (< -10%) N = 79		Control N = 91	
	M	SD	M	SD	M	SD	M	SD	M	SD
Mean Performance Months 1 – 12	331,665	290,295	345,988	136,347	487,602 _a	307,530	489,373 _a	313,353	88,404	138,603
Mean Performance Time 1 (Months 1–3)	324,325	291,438	334,108	128,640	481,097 _a	299,688	484,972 _a	324,895	81,291	136,273
Mean Performance Time 2 (Months 4–6)	323,317	287,438	328,583	133,522	473,019 _a	307,269	488,445 _a	307,963	84,018	136,275
Mean Performance Time 3 (Months 7–9)	339,076	297,085	355,502	153,484	497,780 _a	335,667	496,634 _a	307,621	92,977	136,658
Mean Performance Time 4 (Months 10–12)	339,941	298,168	365,759	159,531	498,510 _a	302,109	487,739 _a	332,527	95,329	147,174
Mean Performance Time 5 (Months 13–15)	386,801	315,500	503,699 _a	193,063	556,790 _a	315,173	486,436 _a	344,134	110,912	133,826
Mean Performance Time 6 (Months 16–18)	376,825	305,171	503,190 _a	214,818	536,812 _a	330,493	452,670 _a	309,669	120,878	137,876
Mean Performance Time 7 (Months 19–21)	398,595	315,738	513,086 _a	218,313	538,394 _a	326,577	472,025 _a	334,433	165,780	210,925
Mean Performance Time 8 (Months 22–24)	396,479	316,266	513,496 _a	217,704	541,896 _a	291,628	465,189 _a	361,827	162,473	202,571
Tenure	11.14	8.07	12.89 _a	8.13	13.98 _a	7.28	14.62 _a	8.28	5.09	4.04
Gender	.50	.50	.58 _a	.50	.43 _a	.50	.48 _a	.50	.51 _a	.50

Note: $\underline{N} = 292$. All mean performance numbers are represented in dollars.

_aMeans in the same row that do not share subscripts differ at $p < .05$ by the least significant difference test.

Time 5 for the large, medium and minor shock magnitude cohorts, respectively). Once again, the results indicate that the individuals selling the most (the medium shock magnitude cohort) were not the individuals that received the largest negative compensation shock. These levels of performance between the large, medium and minor shock magnitude cohorts remained fairly consistent in the subsequent three performance quarters (Time 6-8), such that there were no significant differences in performance between the three shock magnitude conditions after the shock was introduced and the performance of the large shock group showed the substantial increase in performance described above.

Mean tenure in the shock magnitude cohorts did differ significantly from the control group (mean tenure = 5.09; $F(3,288)=33.86$, $p < .05$) as compared to each of the shock magnitude conditions. However, there was no significant difference in tenure between each of the three shock magnitude conditions (means = 12.89, 13.98, 14.62, for the large, medium, and minor shock magnitude conditions, respectively). It is interesting to note that mean tenure was highest in the minor shock cohort, indicating that those that had been with the organization the longest were not necessarily the ones to receive the largest magnitude shock. Gender did not significantly differ significantly between the control group and the shock magnitude conditions ($F(3,288) = .93$, ns).

Table 4.4 presents the cross cohort comparison for the three pay level conditions identified in Hypothesis 3: high pay, moderate pay, and base pay level conditions. As would be expected, during the control year (months 1-12), the mean performance of the high and moderate pay level cohorts were significantly higher than the base pay group and the control group, indicating, as expected, that the individuals selling the most had the highest pay (means of \$588,846, \$510,912, \$334,936, \$88,404 for the high, moderate, base and control groups, respectively). However, the means of the high pay level and moderate pay level groups were not significantly different from each other during the first three quarters of the control year. In the final quarter of the control year, this pattern

Table 4.4. Pay Level Cohorts: Means, Standard Deviations, Comparison Across Conditions

Measure	All N = 292		High (> \$120K) N = 34		Moderate (\$80 - \$120K) N = 73		Base (< \$80K) N = 94		Control N = 91	
	M	SD	M	SD	M	SD	M	SD	M	SD
Mean Performance Months 1 – 12	331,665	290,295	588,846 _a	223,119	510,912 _a	353,168	334,936	153,471	88,404	138,603
Mean Performance Months 1 – 3	324,325	291,438	566,382 _a	222,594	509,406 _a	359,724	328,317	154,642	81,291	136,273
Mean Performance Months 4 – 6	323,317	287,438	559,556 _a	215,527	500,111 _a	348,045	332,231	170,982	84,018	136,275
Mean Performance Months 7 – 9	339,076	297,085	604,370 _a	227,551	520,532 _a	369,040	340,444	153,111	92,977	136,658
Mean Performance Months 10 – 12	339,941	298,168	625,076	264,357	513,600	349,141	338,752	161,571	95,329	147,174
Mean Performance Months 13 – 15	386,801	315,500	625,501 _a	254,865	592,951 _a	377,315	407,451	178,232	110,912	133,826
Mean Performance Months 16 – 18	376,825	305,171	587,972 _a	223,363	560,260 _a	383,179	405,776	184,322	120,878	137,876
Mean Performance Months 19 – 21	398,595	315,738	587,080 _a	237,300	577,096 _a	379,071	417,181	215,095	165,780	210,925
Mean Performance Months 22 – 24	396,479	316,266	609,387 _a	249,148	575,072 _a	370,311	407,313	223,086	162,473	202,571
Tenure	11.14	8.07	19.62	9.12	14.68	7.22	11.17	6.81	5.09	4.04
Gender	.50	.50	.71 _a	.46	.53 _a	.50	.39 _a	.49	.51 _a	.50

Note: $\bar{N} = 292$. All mean performance numbers are represented in dollars

_aMeans in the same row that do not share subscripts differ at $p < .05$ by the least significant difference test.

changed and the mean of the high pay level group increased to \$625,076, while the moderate pay level group showed a slight decline in performance over the previous quarter to a mean of \$513,600, making the difference between these two cohort significantly different ($F(3,288) = 64.65, p < .05$).

After the compensation shock was introduced, the performance pattern between the cohorts reverted to the original pattern, in which the mean performance did not differ significantly between the moderate and high pay level groups. This pattern change was due to a large increase in performance in the moderate pay level group immediately following the shock while the performance in the high pay level group remained stable, indicating the high pay level group did not change its performance in response to the shock. (The differences in each cohorts' performance over time will be discussed in detail in the following section.) The large increase in performance of the moderate pay level group caused the mean difference between the high and moderate pay level groups to be only \$32,550 in Time 5. In fact, the mean difference in performance in these two groups declined to only \$9,984 in Time 7.

When the negative compensation shock was introduced, the mean performance of the base pay cohort also increased but still differed significantly from the other two pay level cohorts in each of the following quarters. During this same time period, performance in the control group maintained a steady increase quarter over quarter until Time 8. Thus, the results shown in Table 4.4 indicate that the high pay level group did not exhibit the same pattern as the other two pay level cohorts and as a result, appeared to be less affected by the compensation shock as measured by the performance impact.

Mean tenure was significantly different in all pay level conditions ($F(3,285) = 52.37, p < .05$; means = 11.17, 14.68, 19.62, for the base, moderate, and high pay level groups, respectively) as well as the control group (mean = 5.09). As expected, this indicates that the individuals that had been with the organization the longest were the ones that were earning the most. Gender was significantly different ($F(3,285) = 3.536, p$

< .05) between only the high and base pay level groups, with the high pay level group being more male dominated ($r = .71$) and the base pay level group being more female dominated ($r = .39$).

Comparisons Over Time

Following the series of one-way ANOVAs to test for differences between the cohorts in each condition, a series of repeated measures general linear models were run to evaluate how the treatment cohorts in each of the conditions responded over time. These models were controlled for both gender and tenure. When running the repeated measures general linear models, the following assumptions were tested: a) equality of covariance matrices, and b) sphericity. Both the homogeneity of covariances and sphericity assumptions were violated. Thus, the results of the Pillai's Trace multivariate test were used and Greenhouse-Geisser corrections were made.

Table 4.5 presents an omnibus test of repeated measures general linear model comparing the control year (months 1-12; Time 1-4) to the experimental year (months 13-24; Time 5-6). A repeated-measures ANOVA, with Greenhouse-Geisser correction, was conducted to assess whether there were differences in mean performance over time in each of the tested conditions. Results of the omnibus test show that the main effect for time was significant (Pillai's Trace = .17, $F(1, 288) = 58.29$, $p < .05$, partial $\eta^2 = .17$). This indicates that the linear composite differs for different time periods. The interaction of time with the total compensation shock (Pillai's Trace = .04, $F(3, 288) = 4.15$, $p < .05$, partial $\eta^2 = .04$) and the shock magnitude (Pillai's Trace = .17, $F(4, 287) = 14.86$, $p < .05$, partial $\eta^2 = .17$) conditions were also significant. This indicates that the linear composition of performance is different across the various total compensation shock cohorts and the shock magnitude cohorts. The interaction of time with the pay level cohorts was not significant (Pillai's Trace = .03, $F(3, 288) = 2.29$, ns, partial $\eta^2 = .03$). Following the omnibus tests, contrast tests were run to further determine where the

Table 4.5. Omnibus Test of Repeated Measures General Linear Model

	F	Sig.
Time	58.29	.00
Time x Total Compensation Shock	4.15	.01
Time x Shock Magnitude	14.86	.00
Time x Pay Level	2.29	.06

Note: $N=292$.

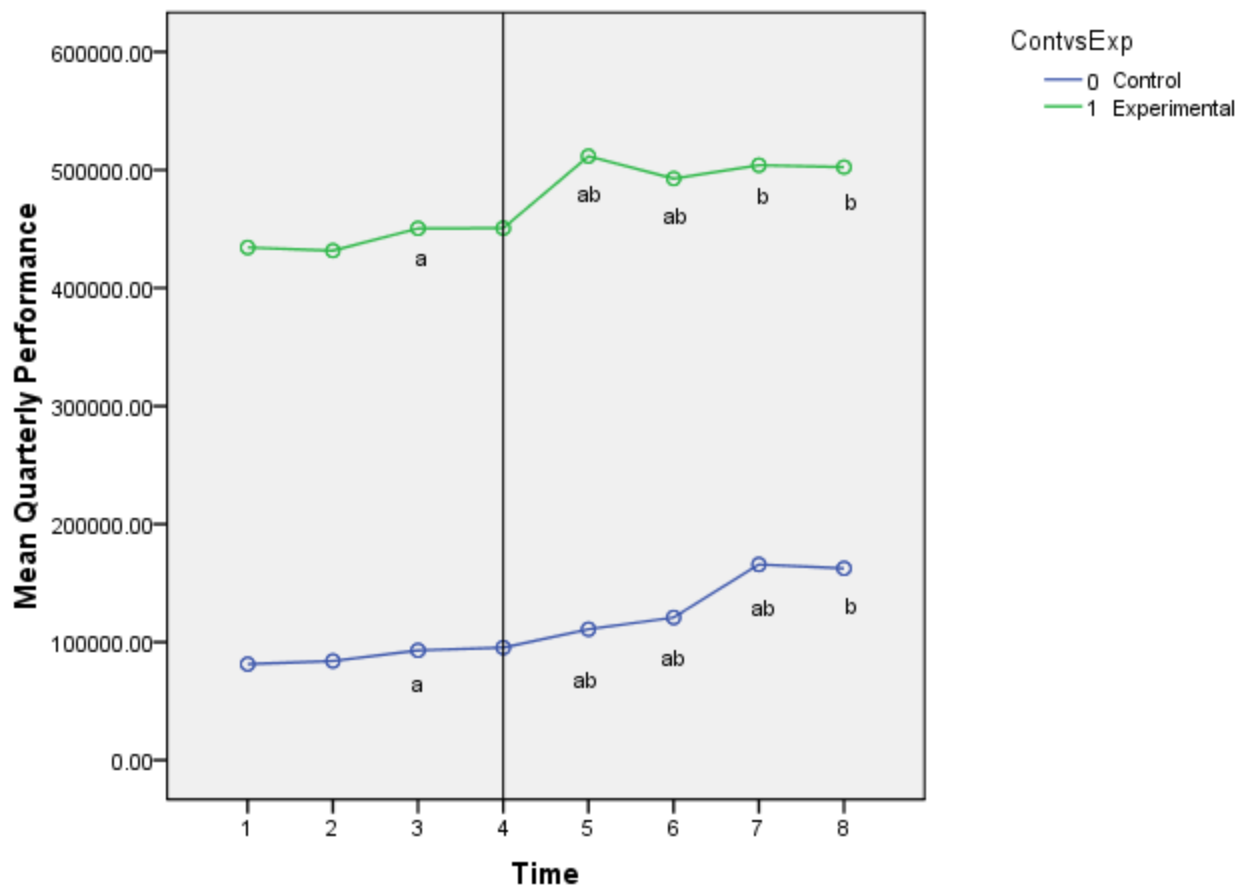
Pillai's trace test. Time 1 (Months 1 - 12) vs. Time 2 (Months 13 – 24)

differences occur. Despite the non-significant results, the pay level cohort was included to explore potential differences in pay levels as posited in Hypothesis 3.

Tables 4.6 through 4.8 present the means and standard deviations of the total compensation shock (Table 4.6), shock magnitude (Table 4.7) and pay level (Table 4.8) conditions across each of the performance time periods along with the results of the simple and repeated contrast tests. Figures 4.2 through 4.4 provide a visual representation of this same data by presenting mean quarterly performance profile plots for the total compensation shock (Figure 4.2), shock magnitude (Figure 4.3) and pay level (Figure 4.4) conditions. In addition, Figure 4.1 provides an overall plot of the quarterly mean performance of the control versus experimental conditions. The profile plots are helpful in looking for trends in performance for each cohort over time and comparing those trends to the trends of the other cohorts (represented by a separate line). The profile plots also provide a quick way to view of whether the estimated marginal means are increasing or decreasing across levels over time.

Hypothesis 1 predicted that negative compensation shocks will cause employees to withdraw from the organization by decreasing their performance. In the substantial total compensation shock cohort, the results in Table 4.3 show that mean performance for

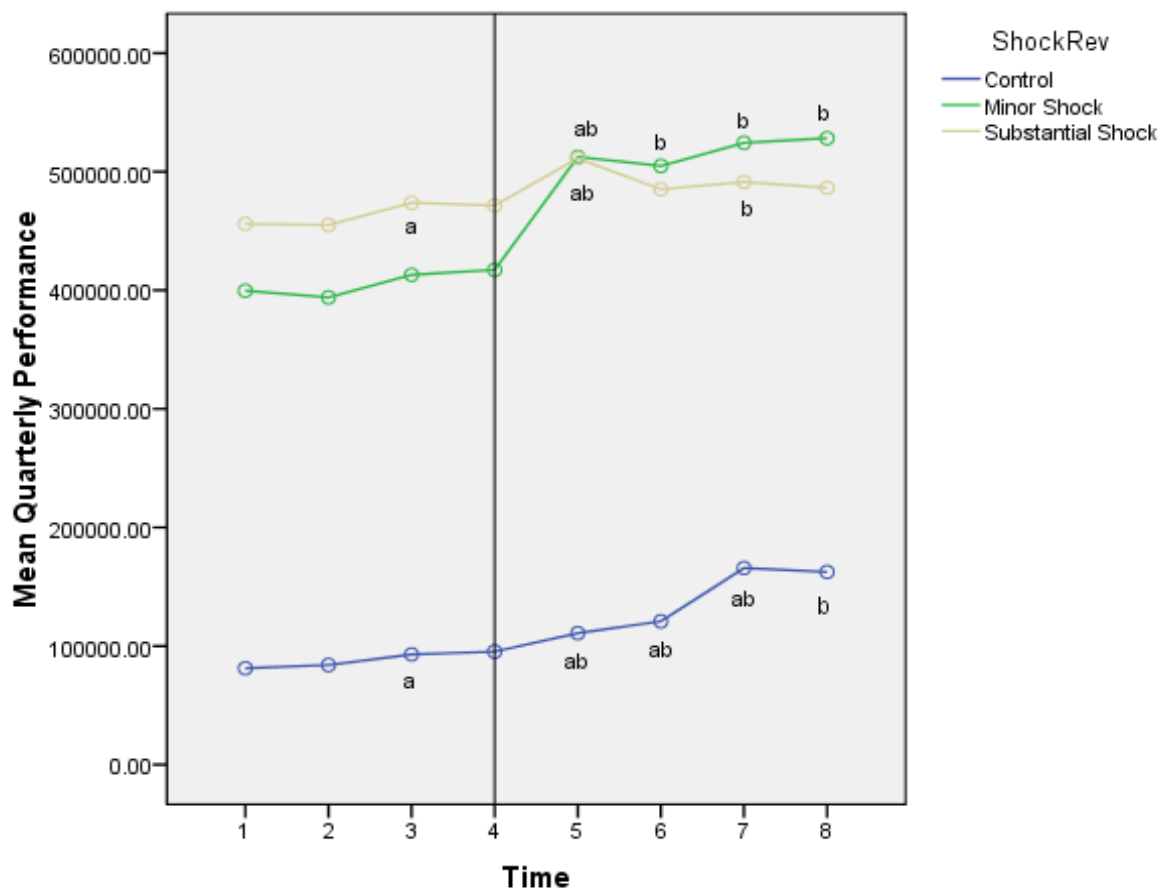
Figure 4.1. Plot of Quarterly Mean Performance: Control vs. Experimental Groups



a Deviates from previous time period at the $p > .05$ level

b Deviates from control months 1-12 at the $p > .05$ level

Figure 4.2. Plot of Quarterly Mean Performance: Total Compensation Shock Conditions



a Deviates from previous time period at the $p > .05$ level

b Deviates from control months 1-12 at the $p > .05$ level

this group instead increased significantly in Time 5 over the mean performance of the control year (months of 1-12) (Time 5: $F(1,122) = 12.31$, $p < .05$, $\text{partial } \eta^2 = .09$). Thus, Hypothesis 1 was not supported. Specifically, results show that mean performance of the substantial total compensation shock cohort increased significantly (mean difference of \$39,777; from mean = \$471,459 in Time 4 to \$511,236 in Time 5; $F(1,122) = 7.17$, $p < .05$, $\text{partial } \eta^2 = .06$) in the time period immediately after the compensation shock was introduced and then leveled off in the subsequent time period (Time 6; from mean = \$511,236 to \$485,176; $F(1,122) = 1.15$, ns, $\text{partial } \eta^2 = .01$), returning to a compensation level consistent with Time 5 in the following two time periods (mean of \$491,341 and \$486,404, respectively; Time 7, $F(1,122) = .85$, ns, $\text{partial } \eta^2 = .01$; Time 8, $F(1,122) = 3.52$, ns, $\text{partial } \eta^2 = .03$). This performance trend can be seen in Figure 4.2 which shows a plot of quarterly performance for the total compensation shock conditions.

The results of Table 4.6 also reveal that the mean performance for the minor total compensation shock cohort were consistent in the first four quarters of the control time period (means of \$399,610, \$393,988, \$413,031, \$417,223, respectively; Time 4, $F(1,75) = .83$, ns, $\text{partial } \eta^2 = .01$). After the compensation shock, results show that for this group, performance increased significantly from Time 4 (mean difference = \$95,238; mean = \$417,223 in Time 4) to Time 5 (mean = \$512,461; $F(1,75) = 22.75$, $p < .05$, $\text{partial } \eta^2 = .23$). In time 6, the minor total compensation shock cohort's performance leveled off (mean difference = -\$7,642; to mean of \$504,819; $F(1,75) = .09$, ns, $\text{partial } \eta^2 = .09$). Following this, the performance of the minor total compensation shock cohort did not differ significantly from the previous time period in any of the subsequent two quarters (means of \$524,382, \$528,217, respectively). Thus, as can be seen in Figure 4.2, the overall performance trend of the minor and substantial total compensation shock cohorts were similar. The minor total compensation shock cohort had a large mean performance increase in Time 5 immediately following the negative compensation shock

Table 4.6. Total Compensation Shock Cohorts: Means, Standard Deviations, Comparison Across Time Periods

Measure	N	Mean Performance Time 1 (Months 1-3)		Mean Performance Time 2 (Months 4-6)		Mean Performance Time 3 (Months 7-9)		Mean Performance Time 4 (Months 10-12)	
		M	SD	M	SD	M	SD	M	SD
All	292	324,325	291,438	323,317	287,438	339,076 _a	297,085	339,941	298,168
Substantial Compensation Shock	124	455,930	260,318	455,045	261,920	473,756 _a	276,814	471,459	259,881
Minor Compensation Shock	77	399,610	298,040	393,988	285,295	413,031	290,100	417,223	315,491
Control	91	81,292	136,273	84,018	136,275	92,977 _a	136,658	95,328	147,174

Measure	N	Mean Performance Time 5 (Months 13-15)		Mean Performance Time 6 (Months 16-18)		Mean Performance Time 7 (Months 19-21)		Mean Performance Time 8 (Months 22-24)	
		M	SD	M	SD	M	SD	M	SD
All	292	331,665	290,295	386,801 _{ab}	315,500	376,825 _{ab}	305,171	398,595 _{ab}	315,738
Substantial Compensation Shock	124	464,048	260,239	511,236 _{ab}	273,411	485,176	268,972	491,341 _b	272,793
Minor Compensation Shock	77	405,966	292,013	512,461 _{ab}	326,411	504,819 _b	320,622	524,382 _b	337,077
Control	91	88,403	138,603	110,912 _{ab}	133,826	120,878 _{ab}	137,876	165,780 _{ab}	210,925

Note: N = 292. All mean performance numbers are represented in dollars.

^aDeviates from previous time period by tests of within-subjects contrasts.

^bDeviates from control months 1-12 by tests of within-subjects contrasts.

This large performance increase was followed by a leveling of performance. Performance of the substantial total compensation shock followed a similar pattern but this group did not change their performance as significantly as the minor total compensation shock cohort (mean differences of \$39,777, \$95,230, for the substantial and minor total compensation shock cohorts, respectively).

The performance of the minor and substantial total compensation shock groups can be contrasted to the performance of the control group (which received no shock). The mean performance of the control group did increase in the quarterly time periods prior to the shock, but this mean performance increase did not differ significantly from the previous time periods except between Time 3 (months 7-9) and Time 2 (months 4-6) ($F(1,89) = 32,96, p < .05, \text{partial } \eta^2 = .27$), when mean performance increased from \$84,018 to \$92,977. In the time period after compensation shock was introduced to the other two cohorts, the mean performance of the control group continued its upward trajectory at a significant level over each of the previous time periods except between Time 7 and Time 8 ($F(1,89) = .01, \text{ns}, \text{partial } \eta^2 = .00$), when it did not significantly change (from mean of \$165,780 to mean of \$162,473). However, as can be seen in Figure 4.2, performance for the control group did not spike in Time 5 as it did for the minor and substantial total compensation shock cohorts. Thus, the performance of the control group did not exhibit the same fluctuations as the minor and substantial total compensation shock groups.

Table 4.7 presents the means and standard deviations of the performance-based shock magnitude conditions across each of the performance time periods. A plot of the mean quarterly performance for each of the pay magnitude cohorts is shown in Figure 4.3. Results for the minor pay magnitude group (change in shock magnitude $< -10\%$) show that mean performance did not differ significantly from the control months (months 1-12) (Time 5, $F(1,77) = .04, \text{ns}, \text{partial } \eta^2 = .00$) in each of the subsequent time periods, nor did it significantly differ from the previous time period in either the control or the

Table 4.7. Performance-based Shock Magnitude Cohorts: Means, Standard Deviations, Comparison Across Time Periods

Measure	N	Mean Performance Time 1 (Months 1-3)		Mean Performance Time 2 (Months 4-6)		Mean Performance Time 3 (Months 7-9)		Mean Performance Time 4 (Months 10-12)	
		M	SD	M	SD	M	SD	M	SD
All	292	324,325	291,438	323,317	287,438	339,076 _a	297,085	339,941	298,168
Large (>-30%)	66	334,108	128,640	328,583	133,522	355,502 _a	153,484	365,759	159,531
Medium (-10% to -30%)	56	481,097	299,688	473,019	307,269	497,780	335,667	498,510	302,109
Minor (<-10%)	79	484,972	324,895	488,445	307,963	496,634	307,621	487,739	332,527
Control	91	81,292	136,273	84,018	136,275	92,977 _a	136,658	95,328	147,174

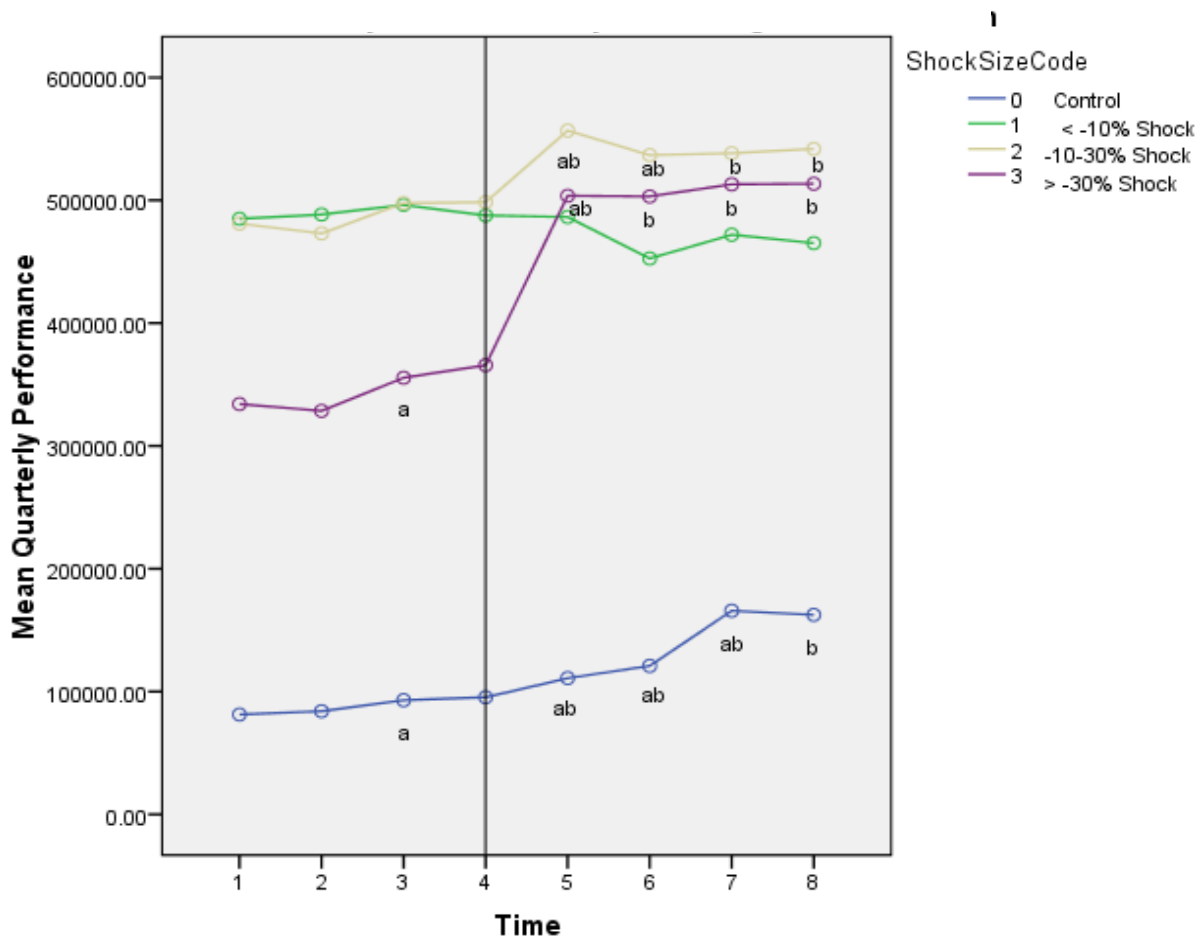
Measure	N	Mean Performance Time 5 (Months 13-15)		Mean Performance Time 6 (Months 16-18)		Mean Performance Time 7 (Months 19-21)		Mean Performance Time 8 (Months 22-24)			
		M	SD	M	SD	M	SD	M	SD		
All	292	331,665	290,295	386,801 _{ab}	315,500	376,825 _{ab}	305,171	398,595 _{ab}	315,738	396,479 _b	316,266
Large (>-30%)	66	345,988	136,347	503,699 _{ab}	193,063	503,190 _b	214,818	513,086 _b	218,313	513,496 _b	217,704
Medium (-10% to -30%)	56	487,602	307,530	556,789 _{ab}	315,173	536,812 _{ab}	330,493	538,394 _b	326,577	541,896 _b	291,628
Minor (<-10%)	79	489,372	313,353	486,435	344,134	452,669	309,669	472,025	334,433	465,189	361,827
Control	91	88,403	138,603	110,912 _{ab}	133,826	120,878 _{ab}	137,876	165,780 _{ab}	210,925	162,473 _b	202,571

Note: $\underline{N} = 292$. All mean performance numbers are represented in dollars.

^aDeviates from previous time period by tests of within-subjects contrasts.

^bDeviates from control months 1-12 by tests of within-subjects contrasts.

Figure 4.3. Plot of Quarterly Mean Performance: Performance-based Shock Magnitude Conditions



a Deviates from previous time period at the $p > .05$ level

b Deviates from control months 1-12 at the $p > .05$ level

experimental period (Time 5, $F(1,77) = .29$, ns, $\text{partial } \eta^2 = .00$). Mean performance in the medium shock magnitude cohort (-10% to -30% shock), however, exhibited a significant increase from the control months (months 1-12) in all subsequent time periods. Mean performance significantly increased immediately following the shock in Time 5 (mean = \$556,789; $F(1,54) = 26.87$, $p < .05$, $\text{partial } \eta^2 = .33$) as compared to Time 4 (mean = \$498,510). For the medium shock magnitude cohort, results also show that after the initial mean performance increase in the three months following the shock (Time 5), a decrease in performance in Time 6 occurred (mean = \$536,812; $F(1,54) = 5.18$, $p < .05$, $\text{partial } \eta^2 = .09$), followed by a leveling of performance in the two subsequent time periods (means = \$538,394, \$541,896, respectively). This effect can be seen in Figure 4.3 which shows the profile plots of quarterly performance for each of the shock magnitude conditions.

Hypothesis 2 predicted that the individuals experiencing larger negative compensation shocks would have a greater decrease in performance. However, as in the medium shock magnitude cohort, results instead show that mean performance for the large pay magnitude cohort increased significantly from the previous time period immediately following the compensation shock (Time 5, mean = \$503,699; $F(1,64) = 35.61$, $p < .05$, $\text{partial } \eta^2 = .36$) as compared to the previous time period (Time 4, mean = \$365,759) and the control months 1-12 (mean = \$345,988; $F(1,64) = 49.05$, $p < .05$, $\text{partial } \eta^2 = .43$). Thus, Hypothesis 2 was not supported. After this initial mean performance increase in the three months following the compensation shock (to a mean of \$503,699 in Time 5), mean performance leveled off and did not differ significantly in the following three time periods (means = \$503,190, \$513,086, \$513,496, respectively). The results indicate that in response to a negative compensation shock exceeding -10%, individuals increased rather than decreased their performance. It is important to note that the increase in performance immediately following the shock in Time 5 over Time 4 was larger for the large pay magnitude group (mean difference = \$137,940) than for the

medium pay magnitude group (mean difference of \$58,279). The results indicate that the individuals receiving the largest negative compensation shock increased their performance the most.

Hypothesis 3 predicted that the individual's pay level within the organization affects his/her reaction to negative compensation shocks such that highly compensated individuals will show a smaller decline in performance in response to a negative compensation shock. Table 4.8 presents the means and standard deviations of the pay level cohorts across each of the performance time periods. A plot of the mean quarterly performance for each of the pay level cohorts is shown in Figure 4.4. As predicted, the high pay level condition (>\$120,000) exhibited a pattern that differed from moderate and base pay level conditions. As can be seen in Table 4.8, mean performance for this group did not differ significantly from the control year (Months 1-12) in any of the subsequent time periods, nor did it deviate significantly from any of the previous time periods. Interestingly, after the compensation shock, mean performance for the most highly compensated group remained consistent (mean = \$625,501 in Time 5) with its mean performance level in the period prior to the shock (mean = \$625,076; $F(1,32) = .14$; ns, partial $\eta^2 = .00$). Performance also remained consistent in the following time period (Time 6: mean = \$587,972; $F(1,32) = .269$, ns, partial $\eta^2 = .01$) as well as in the two subsequent time periods (Time 7 mean = \$587,080; $F(1,32) = .004$, ns, partial $\eta^2 = .00$; Time 8 mean = \$609,387, $F(1,32) = .331$, ns, partial $\eta^2 = .09$). The results suggest that highly compensated individuals did not significantly change their behavior in response to the compensation shock.

Results for representatives in base pay level cohort (earning < \$80,000) in the year prior to the shock show that mean performance increased significantly over the performance in the control year (mean = \$334,935) for each of the subsequent time periods (means of \$407,451, \$405,776, \$417,181, \$407,313, respectively; Time 5, $F(1,92) = 33.11$, $p < .05$, partial $\eta^2 = .27$). Results also show that mean performance deviated

Table 4.8. Pay Level Cohorts: Means, Standard Deviations, Comparison Across Time Periods

Measure	N	Mean Performance Time 1 (Months 1-3)		Mean Performance Time 2 (Months 4-6)		Mean Performance Time 3 (Months 7-9)		Mean Performance Time 4 (Months 10-12)	
		M	SD	M	SD	M	SD	M	SD
All	292	324,325	291,438	323,317	287,438	339,076 _a	297,085	339,941	298,168
High (>\$120K)	34	566,382	222,594	559,556	215,527	604,370	227,551	625,076	264,357
Moderate (\$80K-\$120K)	73	509,406	359,724	500,111	348,045	520,532	369,040	513,600	349,141
Base (<\$80K)	94	328,317	154,642	332,231	170,982	340,444	153,111	338,752	161,571
Control	91	81,292	136,273	84,018	136,275	92,977 _a	136,658	95,328	147,174

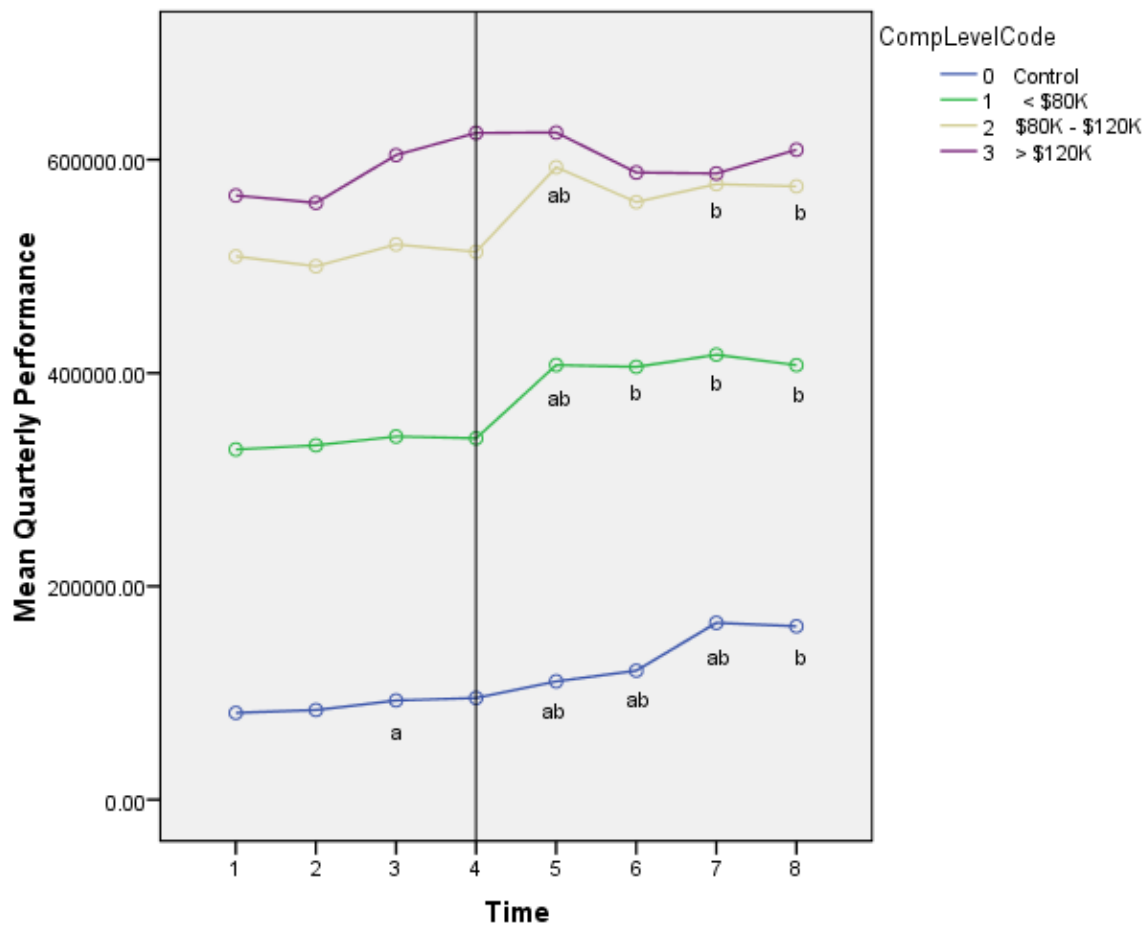
Measure	N	Mean Performance Months 1 -12		Mean Performance Time 5 (Months 13-15)		Mean Performance Time 6 (Months 16-18)		Mean Performance Time 7 (Months 19-21)		Mean Performance Time 8 (Months 22-24)	
		M	SD	M	SD	M	SD	M	SD	M	SD
All	292	331,665	290,295	386,801 _{ab}	315,500	376,825 _{ab}	305,171	398,595 _{ab}	315,738	396,479 _b	316,266
High (>\$120K)	34	588,846	223,119	625,501	254,865	587,972	223,363	587,080	237,300	609,387	249,149
Moderate (\$80K-\$120K)	73	510,912	353,168	592,951 _{ab}	377,315	560,260	383,179	577,096 _b	379,071	575,072 _b	370,311
Base (<\$80K)	94	334,935	153,471	407,451 _{ab}	178,232	405,776 _b	184,322	417,181 _b	215,095	407,313 _b	223,086
Control	91	88,403	138,603	110,912 _{ab}	133,826	120,878 _{ab}	137,876	165,780 _{ab}	210,925	162,473 _b	202,571

Note: $\underline{N} = 292$. All mean performance numbers are represented in dollars.

^aDeviates from previous time period by tests of within-subjects contrasts.

^bDeviates from control months 1-12 by tests of within-subjects contrasts.

Figure 4.4. Plot of Quarterly Mean Performance: Pay Level Conditions



a Deviates from previous time period at the $p > .05$ level

b Deviates from control months 1-12 at the $p > .05$ level

from the previous time period only in the three month time period immediate following the shock (from mean = \$338,752 to \$407,451; $F(1,92) = 32.09$, $p < .05$, partial $\eta^2 = .26$). Results for the moderate pay level condition (\$80,000 - \$120,000) followed a pattern similar to the previously described condition. Performance for the moderate pay level condition increased significantly from Time 4 to Time 5 (from mean = \$513,600 to mean \$592,951; $F(1,71) = 3.81$, $p < .05$, partial $\eta^2 = .05$) and then leveled off in the second time period (Time 6) following the shock (mean of \$560,260 ($F(1,71) = 2.73$, ns, partial $\eta^2 = .04$) and stayed at a consistent performance level in the following two time periods (means of \$577,096, \$575,072, respectively). This trend can be seen in Figure 6 which shows the plots of quarterly performance for each of the pay level conditions. Overall, the results show that the high pay level cohort did not change their performance in response to the negative compensation shock, unlike the base and moderate pay level cohorts, whose performance actually increased in Time 5 in response to the shock. Despite this differing pattern for the most highly paid individuals, Hypothesis 3 was only partially supported as highly compensated individuals did not significantly decrease their performance in response to the compensation shock.

Hypothesis 4 predicted that a decline in performance due to a negative compensation shock will dissipate over time. As shown in Figure 4.2 and Table 4.6, contrary to predictions, mean performance for individuals receiving a substantial negative compensation shock initially significantly increased in Time 5 (mean = \$511,236, $F(1,122) = 12.31$, $p < .05$, partial $\eta^2 = .09$) over the control time period of Months 1-12 (mean = \$464,048), contrary to predictions. However, performance did not significantly change in the time period following the compensation shock (Time 6: mean = \$485,176, $F(1,122) = 1.14$, ns, partial $\eta^2 = .01$) and remained consistent in the final two time periods (means = \$491,341 and \$486,404, respectively; Time 7: $F(1,122) = .85$, ns, partial $\eta^2 = .01$), as predicted. Despite this, because of the sharp increase in performance in the time period immediately following the negative compensation shock,

Hypothesis 4 was only partially supported. It is important to note that as can be seen in Figures 4.2 – 4.4 (for the shock, shock magnitude, and pay level conditions, respectively), after the performance increases that occurred for most cohorts immediately following the negative compensation shock in Time 5, a general leveling of performance trend that can be seen in most every condition in Time 6-8. This indicates that although negative compensation shocks caused significant performance increases immediately following the shock, this effect did dissipate over time.

CHAPTER 5

DISCUSSION

The Unfolding Model of Turnover (Lee & Mitchell, 1994) proposes that critical events shock people into a reassessment of their employment situation, focusing on the question of, Why do people leave? This study sought to examine the opposing question, What happens when people stay? To do so, this study analyzed the effect of negative compensation shocks on performance in an effort to understand what happens to employee performance for those people who stay with the organization.

Hypotheses Discussion

Hypothesis 1

Hypothesis 1 predicted that negative compensation shocks will cause employees to withdraw from the organization by decreasing their performance. Results of the analysis show that this hypothesis was not supported. Instead, the results show that performance for individuals receiving a substantial negative compensation shock actually increased significantly in the time period immediately following the shock. As shown in Figure 4.2, the change in performance of the substantial total compensation shock cohort was a dramatic increase as compared to the relatively stable performance in the control year prior to the compensation shock. Following the significant increases in performance in Time 5, performance leveled off in the subsequent time periods.

A similar pattern can be seen in the minor total compensation shock cohort. Performance for this group of individuals remained unchanged in time period prior to the compensation shock. In Time 5, immediately following the shock, the minor total compensation shock group exhibited a substantial performance increase followed by a leveling of performance in the following three time periods. As can be seen in Figure 4.2, the performance increase in Time 5 of the minor total compensation shock cohort was even larger than the performance increase of the substantial total compensation shock cohort. These results can be contrasted to the performance of the control group (whose

compensation plan did not change), where performance exhibited a general upward trend both before and after the shock time period.

Hypothesis 2

Hypothesis 2 predicted that individuals experiencing larger negative compensation shocks will have a greater decrease in performance. This hypothesis was also not supported. Instead, the individuals in the performance-based large magnitude cohort (received a $> -30\%$ shock) had the largest increase in performance over the control year (months 1-12). In fact, for this group, mean performance increase from an average of \$345,988 in the control months to a mean average of \$503,699 in the three months immediately following the shock (mean difference of \$157,711). As can be seen in Figure 4.3, the medium magnitude shock cohort (-10% to -30% shock) also had a significant increase in performance compared to the control months of 1-12, although the increase was not as dramatic as the large magnitude shock cohort (from mean of \$487,602 in months 1-12 to \$556,789 in months 13-15). The experimental group that received only a minor magnitude shock ($< -10\%$ magnitude shock) had relatively flat performance in the period immediately following the compensation shock. Thus, the results of Hypothesis 2 are exactly opposite of what was expected when the shocks were calculated based on magnitude of change: the group receiving the largest negative magnitude shock had the largest increase in mean performance, followed by a significant increase in performance of the group that received the second largest magnitude shock, while the group receiving a minor magnitude shock had relatively unchanged performance. Following the initial increases in performance for the two largest shock magnitude cohorts, performance remained relatively stable. All of this can be contrasted to the control group which exhibited a general upward trend in performance during this time period.

Hypothesis 3

Hypothesis 3, which predicted that the individual's pay level within the organization affects their reaction to negative compensation shocks such that highly compensated individuals will show a smaller decline in performance in response to a negative compensation shock was partially supported. Contrary to expectations, the high pay level (those earning greater than \$120,000) cohort's performance did not decline in the period immediately following the shock. In fact, performance for the high pay level group was flat in the time period immediately following the shock as compared to the time period immediately preceding the shock (from a mean of \$625,076 to \$625,501) and as compared to the entire control period of months 1-12 (mean of \$588,846). This lack of change in performance immediately following the shock can be contrasted to the moderate and base pay level conditions in which performance showed a significant increase in the three month time period immediately following the shock (see Figure 6). It is also interesting to note that in the months following the compensation shock, performance for the high pay level cohort did not differ significantly from the control months of 1-12 or from any of the previous time periods. This indicates that highly compensated individuals are indeed less responsive to negative compensation shocks than individuals at lower pay levels.

Thus, as can be seen in Figure 4.4, the high pay level cohort exhibited a performance pattern that differed from the two less highly compensated groups (those earning \$80,000 to \$120,000 and those earning < \$80,000). This suggests that Hypothesis 3 was partially supported as highly compensated individuals did respond differently to the compensation shock than those that were less highly compensated. In fact, it would appear that the highly compensated individuals did not exhibit significant performance reactions in response to the compensation shocks.

Hypothesis 4

Hypothesis 4 predicted the decline in performance due to a negative compensation shock will dissipate over time. This hypothesis was only partially supported. As can be seen in Figures 4.2-4.4, most cohorts exhibited an increase rather than a decrease in performance in response to the negative compensation shock that occurred after Time 4. However, as can also be seen in Figures 4.1-4.4, there is an indication that the changes in performance did level off in Time periods 6-8 following the initial performance spikes in Time 5 (the three months following the negative compensation shock). This pattern can most clearly be seen in Figure 4.1, which provides an overall plot of the experimental versus control groups. With the exception of the final quarter (Time 8), the control group's performance significantly increases each quarter over the prior three month time period and remains significantly higher than the control year (months 1-12). The experimental group, on the other hand, exhibited an overall significant increase in performance in the three months following the shock (Time 5), followed by a decline in performance in the following three months and then a leveling of performance. This similar leveling of performance pattern following the initial changes in Time 5 can be seen in each of the shock cohorts depicted in Figures 4.2 – 4.4.

Overall, while none of the four hypotheses were fully supported, there are some important observations that can be made based on this study's findings. The results show that negative compensation shocks caused significant initial increases in performance in Time 5 in most every condition which was, for the most part, sustained over time. What is most interesting is that the performance impact was opposite of what was hypothesized based on equity theory, image theory and the unfolding model of turnover, as well as research on pay dissatisfaction and pay equity. Contrary to predictions, negative compensation shocks would appear to cause significant performance increases rather than decreases, at least for individuals whose pay is highly linked to individual performance.

This increase in performance tends to dissipate over time. And, those that are higher on the pay scale seem to be less affected by negative compensation shocks than those who are lower on the pay scale.

Does Equity Theory Apply?

Equity theory (Adams, 1963) suggests that in response to a compensation shock (decrease in inputs), people will decrease their work outcomes (performance) in order to restore equity. Indeed, studies have shown that perceptions of pay inequity lead to pay dissatisfaction and may cause employees to engage in withdraw behaviors such as reduced performance (Porter & Steers, 1973). Furthermore, research has shown that employees may engage in withdraw behaviors such as reduced performance in order to restore equity (Brown, 1996; Kanungo & Mendonca, 1997). These withdraw behaviors can occur as a result of reasoned evaluation of one's work situation on a "spur of the moment basis" in reaction to an unsatisfactory outcome (Colquitt et al., 2001).

The results of this study are contradictory to predictions suggested by equity theory. In line with equity theory, Hypothesis 1 predicted that negative compensation shocks will cause employees to withdraw from the organization by decreasing their performance. Instead, the results show that performance for individuals receiving a substantial negative compensation shock actually increased significantly in the time period immediately following the shock (Time 5). Also based on equity theory, Hypothesis 2 predicted that individuals experiencing larger negative compensation shocks will have a greater decrease in performance. Instead, the individuals who experienced the large magnitude shocks had the largest increases in performance. These findings suggest that the tenants of equity theory do not hold in this situation: instead, those individuals who experienced the greatest decrease in outputs (largest compensation shock), exhibited the greatest increase in inputs (performance). This should lead to a greater imbalance rather a restoration of equity.

One of the concerns that researchers have had with equity theory is its inability to specify a priori predictions (Gerhart & Rynes, 2003; Mowday, 1996). Specifically, the challenges that have been forth with equity theory is that it is ambiguous as to what course of action a person will take to restore equity if an inequity is perceived (Gerhart & Rynes, 2003; Opsahl & Dunnette, 1966). For example, will the action taken be behavioral or cognitive? Or, might it involve changing one's comparison standard?

The reason that equity theory may not hold in this situation may be due to the fact that individuals' performance in this study is so tightly linked to their compensation. Therefore, taking a behavioral course to address a perceived inequity would only cause further harm to themselves. Accordingly, individuals may have sought to address the inequity through non-behavioral means or perhaps they changed their comparison standard. Although this study cannot specifically answer those questions, the study's findings do suggest that some means other than behavior was used to address a perceived inequity, since in response to a negative compensation shock (decrease in outputs), individuals seem to increase their performance in an effort to maintain their pay level, causing an increase rather than decrease in inputs. Although these findings are contrary to what one would expect based on equity theory, the fact that this study is based on individuals whose compensation is both strongly and exclusively linked to individual performance may explain the result.

Alternative Theoretical Explanations

Since equity theory does not appear to explain the behavior of the individuals in this study, it is important to consider what other motivation theories may better explain the results. In hindsight, expectancy theory (Vroom, 1964), may be more appropriate for situations in which individuals pay is tightly linked to their performance. Indeed, expectancy has been widely used by compensation researchers to explain the motivational and behavioral consequences of pay plans (Gerhart & Rynes, 2003). Expectancy theory is a within-person theory of motivation that views performance as a

joint function as a person's ability and motivational force to engage in one level of behavior rather than another (Vroom, 1964). Motivational force, is hypothesized to a function of three factors: expectancy (the perceived link between effort and behavior), instrumentality (the perceived link between behaviors and outcomes) and valence (the value that the person expects to derive from those outcomes).

Expectancy theory may be particularly appropriate to apply in situations where pay is tightly linked to individual performance specifically because it is a within-person theory. For sales individuals who are highly autonomous, the most relevant comparison standard may be their own prior compensation. Furthermore, the theory holds that pay is thought to be a strong motivator when: a) people believe they have control over their performance levels, b) pay is clearly linked to performance, and c) money is highly valued. In this situation, all three of these motivational force conditions would seem to hold. Therefore, when the new compensation plan was introduced, individuals must have felt that their increased effort would have enabled them to maintain their pay level. Thus, the motivational force of pay must have been stronger than any perceived inequities that resulted from the negative compensation shock.

In addition to expectancy theory, research related to pay-for-performance programs and incentive intensity may shed light on the unexpected results of this study. There is substantial evidence that results-oriented compensation plans can have substantial incentive effects, especially for plans that emphasize individual performance (Gerhart & Rynes, 2003; Guzzo et al., 1985; Jenkins et al., 1998; Locke et al., 1980; Stajkovic & Luthans, 1997). For example, Locke et al. (1980) conducted a thorough meta-analytic study reviewing the impact of four motivational techniques: monetary incentives, goal setting, participation, and job enrichment. Their results show that monetary incentives resulted by far in the largest median performance improvement (30%), followed by goal setting (16%), job enrichment (8.75%-17%) and participation (.5%). Another meta-analysis by Guzzo et al. (1985) found similar results. Thus, there is

considerable evidence that results-based incentive plans greatly increase performance (Gerhart & Rynes, 2003). Locke et al. (1980) concluded that “no other incentive or motivational technique comes even close to money with respect to its instrumental value” (p.379). This could also help explain why equity theory was not useful in predicting performance outcomes for this group of individuals whose compensation is tightly linked to their individual performance.

It is important to note, however, that the results of Hypothesis 1 and 2 are also contrary to what one would expect based on pay dissatisfaction and entitlement research as well as the unfolding model of turnover. As it relates to the research on pay dissatisfaction and entitlement, the contrary findings once again may be due to differences in the strength of the link in pay for performance in this situation. The majority of the research conducted on the topic of pay dissatisfaction and entitlement was not conducted in a setting in which pay for performance was as strong as it was in the current study (Davy & Shipper, 1993; Koslowsky et al., 1997; Robinson & Rousseau, 1994; Robinson & Morrison, 1995). And, although, based on image theory, the unfolding model suggests that the magnitude of the shock may matter, this theory has not been tested in situations where objective measures of performance were available.

Hypothesis 3, which predicted that the individual’s pay level within the organization affects their reaction to negative compensation shocks such that highly compensated individuals will show a smaller decline in performance in response to a negative shock, was developed based on the unfolding model of turnover and the idea that an individual’s current level of pay is likely to be a contextual factor that shapes his/her evaluation. It was posited that highly compensated individuals are likely to believe they have fewer acceptable comparable alternative employment options compared to those that are lower on the pay scale. Thus, highly compensated individuals may be more likely to work to integrate the shock into their personal value images because alternative employment options are likely to result in a reduction in pay. Based

on this research, Hypothesis 3 predicted that highly compensated individuals will return to their pre-shock performance levels more quickly. The results of this study indicate that highly compensated individuals do indeed respond differently, however, unlike the predictions that would be made based on equity theory or the research on pay dissatisfaction, these individuals did not decrease or increase their performance.

Instead, it would appear that the highly compensated individuals did not exhibit significant performance reactions in response to the compensation shocks. In this situation, the economic theory of declining marginal utility principle may be more illuminating than the image and unfolding model theories used in the development of Hypothesis 3. The declining marginal utility principle suggests that once monetary needs are substantially satisfied, obtaining additional money can take on lesser importance relative to other factors. Economists have suggested that the value of pay may depend on the actual level of pay such that there is a phenomenon of a “backward-bending labor supply curve”, which indicates that once people hit a certain target level of income, it becomes very difficult to motivate them to do additional work for pay alone (Gerhart & Rynes, 2003). Thus, individuals in the high pay cohort may fit the definition economists describe of having their monetary needs “substantially satisfied”. Therefore, other needs such as work life balance factors might have equal importance for these individuals. Thus, when the compensation plan changed they would be less motivated to change their behavior in response to a negative compensation shock than other individuals whose monetary needs are not satisfied.

Hypothesis 4 predicted the decline in performance due to a negative compensation shock will dissipate over time. As discussed above, this hypothesis was partially supported as performance in most every cohort showed a general leveling of performance following the initial spikes in performance in Time 5. Expectancy theory may also be helpful in explaining this result. Fundamentally, expectancy theory predicts that individuals will engage in increased effort to achieve desired outcomes. Since sales

individuals are widely thought to be income maximizers, once the new compensation plan was introduced, additional effort may have been initially expended by many sales individuals in an effort to achieve their desired outcome and maintain or enhance their pay. However, once individuals better understood how the plan was going to impact them, they may have discovered that there was low instrumentality. That is, the perceived link between increased performance and desired outcomes may have been broken since ultimately the new compensation plan was designed to decrease their pay. Individuals may not have believed that higher levels of performance would be sufficiently rewarded with higher levels of pay. It likely took at least a quarter of performance for individuals to determine the impact of the new plan on their pay. Therefore, after realizing that harder work was not likely to result in more pay, performance levels may have returned to a more sustainable level. As a result, we see a leveling of performance across the majority of cohorts in the final three time periods.

Thus, in hindsight, because expectancy theory has been the dominate paradigm for work related motivation of the sales force (Chonko, 1986), applying expectancy theory rather than equity theory to the questions posited in this study might have yielded hypotheses more consistent with the study results. This is particularly the case since for the individuals involved in this study, since their compensation is so closely linked to their performance.

Strengths

Strengths of this study include its timeliness and real world applicability. Reports of declining US economic conditions and troubled companies in various industry sectors dominate the news. As economic conditions tighten, companies are forced to re-examine their pay systems. A recent study by Mercer (2008) set out to learn if the changing economic climate was having an implication on organization's compensation budgets, incentive opportunities, and other people strategy related activities. The results from 400 organizations showed that one in three US companies was considering or instituting staff

freezes or downsizing (Mercer, 2009). Thus, the results of this study can provide timely information regarding the performance implications of such compensation changes.

The unique data set provided by this study provides an opportunity to examine the role of shocks on performance. Specifically, due to market maturation and competitive issues, the organization providing the sample offers a particularly unique opportunity to study the impact of negative compensation shocks. Previous findings by Lee, Mitchell and colleagues have downplayed the importance of compensation on employees' decisions to stay or to leave. Yet very few of the studies on this subject included a defined compensation shock where significant, negative compensation changes were made to a group of employees. Accordingly, little is known about the impact of compensation shocks on employees' performance, motivation, and decisions to stay or leave. Additionally, there have been very few compensation studies that empirically examined the impact of downward adjustments in compensation or negative compensation shocks. Therefore, this study is one of the first to examine the specific role of negative compensation shocks on employees' performance.

Another strength of this study is its quasi-experiment interrupted time-series design (Cook & Campbell, 1979) with treatment cohorts. In order to further insure internal validity, this study used an interrupted time series with a nonequivalent no-treatment control group method of design (Cook & Campbell, 1979). As previously discussed in Methods Chapter 3, the longitudinal design combined with a nonequivalent control group is a strong research design. Interrupted time series designs provide a strong quasi-experimental approach when interventions are introduced at a specific point in time so that time may be used as a proxy for the true model of treatment assignment. Alternative explanations, to be plausible, must account for why the change in the series occurred at a particular point in time. The basic time series design allows researchers to credibly rule out several threats to internal validity such as the threat of history. Given the ability to rule out alternative explanations through both design features and statistical

adjustment, interrupted time series designs are one of the strongest alternatives to a randomized experiment (West et al., 2000).

Limitations

One potential limitation of the study is the generalizability of these findings to employees whose performance is not measured by objective measures of performance outcomes. Employees in many organizations and work settings may not have objective measures of performance and instead are measured by subjective measures of performance evaluation (Stewart & Nandkeolyar, 2006). Therefore, the extent to which the findings from this study will generalize to other populations is unknown. This limitation provides an opportunity for future research to conduct similar studies using subjective measures of performance over time.

A second potential limitation of the study is that when the change in compensation plan was introduced at the beginning of Time 5, it was not easy for individuals to assess how large of an impact the new compensation plan would have on their pay. That said, individuals did know that they would need to change their behavior in order to maintain their compensation. Additionally, the organization provided modeling tools and one-on-one counseling to help representatives understand how they might be impacted by the plan. The fact that exact impact of the new plan was unclear or unknown at that time may actually have been a motivating factor that spurred individuals into greater action.

As is typical with field studies, the data used in this study presented some challenges. Although by using a quasi-experimental interrupted time series design with a nonequivalent no-treatment control group (Cook & Campbell, 1979) this study used a very strong design, one of the potential challenges with the data is that the control group was quite different from the experimental group in terms of average sales and tenure with the organization. Although in this type of design it is not expected that the control group be equal, ideally, the control group would have been more similar to the experimental

group. However, the control group does meet the standard set out by Cook and Campbell (1979) of being reasonably comparable to the experimental group.

Another challenge with the data was that a number of subjects could not be included in the study for issues related to missing data. The organization providing this data was operating off of multiple legacy systems. This fact meant that performance data for a number of individuals was incomplete and therefore, they were excluded from the study. The legacy systems also made it difficult for the company to go back and locate missing data when it was discovered.

A high rate of turnover, in both the experimental and control groups, also caused a number of individuals to be excluded from the study. Because this study was evaluating what happens in response to a negative compensation shock to people that stay with the organization, this caused a significant loss of data. Any individuals that were not with the organization for the full two year time period were excluded from the study. It is important to note, however, that although the turnover rate did increase after the introduction of the negative compensation shock, it was high in both the experimental and control groups and it was high both before and after the negative compensation shock was introduced. Furthermore, the percentage of turnover increased more in the control versus the experimental group during this time period. A breakdown of turnover of both the experimental and control groups is shown in Table 5.1.

Table 5.2 shows a further breakdown of turnover by the experimental group pay level cohorts. The results show that turnover increased the most following the negative compensation shock for the high pay level cohort. Because this study focused only on the individuals that stayed with the organization, the data for the individuals that left is not included in the findings for the high pay level cohort. The fact that a high number of individuals from this high pay cohort left may affect the conclusions drawn for this group. This is an important finding to be explored in future research.

Table 5.1. Turnover by Quarter: Experimental Versus Control Groups

Experimental Group										
	Total 2006 Turnover	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Total 2007 Turnover	Q1 2007	Q2 2007	Q3 2007	Q4 2007
Experimental Group Turnover	95	19	22	26	28	113	38	41	24	10
% of Experimental Group Turnover for year	12.2%	2.4%	2.8%	3.4%	3.6%	16.5%	5.5%	5.9%	3.5%	1.6%
Control Group										
	Total 2006 Turnover	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Total 2007 Turnover	Q1 2007	Q2 2007	Q3 2007	Q4 2007
Control Group Turnover	79	23	19	21	16	99	19	30	27	23
% of Control Group Turnover for year	14.6%	4.2%	3.5%	3.9%	3.0%	21.4%	4.1%	6.5%	5.8%	5.0%

Compensation change announced

Table 5.2. Experimental Group Turnover by Pay Level Cohorts

Pay Level Cohort	2006 Turnover	% of Cohort's 2006 Turnover	2007 Turnover	% of Cohort's 2007 Turnover
High Pay (> \$120,000)	4	2.5%	18	11.3%
Moderate Pay (\$80,000 - \$120,000)	15	8.6%	19	10.8%
Base Pay (< \$80,000)	76	30.1%	75	29.7%

Finally, although objective measures of sales performance are commonly used to evaluate sales performance, other potential limitations involve environmental influences that may cause economic fluctuations. For example, there may be regional or cyclical fluctuations that may influence performance. There may also be other factors such as individual differences and attitudes that influence how employees respond to negative compensation shocks. Thus, this is another area of potential research.

Implications for Future Research

This study has a number of important implications for future research. First, the study extends Lee and Mitchell's (1994) unfolding model of turnover to include declining performance as an alternative outcome to turnover for those individuals that decide to stay with the organization. Thus, this study contributes to this body of literature by proposing an extension to the unfolding model and providing important insights into some critical areas yet to be studied. To date, the unfolding model to date considers two possible outcomes: the decision to stay or to leave. This paper suggests that a logical outcome of the unfolding model of turnover may be to stay with the organization but to change one's performance in response to a dissatisfying situation.

Most of the studies related to the unfolding model of turnover involve individuals who have already left their organizations. Therefore, the studies to date have been retrospective rather than predictive. Additionally, since these individuals had already left their organizations, performance data was not available. Although the results of this study were contrary to expectations, by analyzing performance data on individuals who are still with their organization, this study provides critical insights into the performance impacts of negative compensation shocks on individuals over time.

Additional research needs to be conducted on the question of, “Why do people stay?” More specifically, if individuals decide to stay in response to a shock, how do they restore equity? A study that includes both behavioral outcomes and cognitive measures of people that have experienced a shock would help shed light on both the reasons people stay, how they restore equity, and the resulting impact on performance. Furthermore, studies that would include such measures and also include qualitative interviews of the decision making paths that people follow while making their decision to stay would be particularly illuminating as it relates to potential enhancements to the unfolding model of turnover.

Second, this study is one of the first studies to examine the effect of negative compensation shocks on objective measures of performance. Despite the fact that the compensation shocks affected the majority of employees, some representatives were more affected than others. The results show that the larger the compensation shock incurred by an employee, the more likely it is to result in a large performance change. As a result, this study provides critical insights into how the magnitude of shocks affects employees’ performance over time.

Because the subjects of this study were sales individuals whose individual performance was tightly linked to performance, this presents an opportunity to study the impact of negative compensation shocks with people who are measured more subjectively. This is particularly important since many employees’ performance is not

measured objectively. It could be that individuals who are not in as strong of a pay for performance situation may respond more similarly to the predictions of the hypotheses put forth in this study.

Since there have been so few studies to date on the impact of negative compensation shocks, studies that measure how individual differences and attitudes affect individual's responses to negative compensation shocks would be particularly beneficial. The results of this study provide initial indications that the magnitude of the shock matters and that highly paid individuals appear to be less impacted by negative compensation shocks. Additional research needs to be conducted on how individual differences affect these reactions. It could be that some individuals are more resilient than others in the face of negative shocks. Their work related attitudes prior to the shock may also have important implication on how they respond to a negative shock.

Third, this study provides important insights into the implications of pay changes on individuals. When enacting compensation plan changes, it is important to understand which individuals are most likely to react negatively, in terms of performance, in response to a compensation shock. The results of the study indicate that individuals who are highly compensated on the organization's pay structure are better able to withstand a relatively similarly sized negative compensation shock than those at a lower end of the organization's pay structure. The results also indicate that the initial performance implications of negative changes to pay plans may dissipate over time. Additional research needs to be done in this area so that organizations enacting such compensation plan changes can better understand and target their desired results.

Implications for Practice

Relatively little is known about the effect that negative compensation changes can have on individual performance. The importance of this topic is heightened due to the current difficult economic environment which is causing organizations to consider reducing planned compensation budgets or initiate pay freezes. In fact, a recent study by

Mercer (2008) found that 10% of organizations are considering or implementing incentive opportunity or eligibility coverage changes and 7% are considering salary freezes. Thus, the results of this study will be particularly interesting to organizations that are implementing compensation changes and/or reductions and interested in the potential implications of their decisions. Unfortunately, in the current economic environment, there are many organizations that are faced with this decision.

Although the results of the study are contrary to predictions, these results are consistent with what the organization instituting the compensation change in its sales program had hoped would happen. That is, a decrease in compensation did not cause a corresponding decrease in performance and instead, seemed to spur individuals to increase their performance in an effort to maintain the same level of pay. Based on this one study, we cannot conclude that the result of similar changes in compensation would have the same effect in other organizations or industry segments. There are a number of contextual factors such as the pay level of competitors and the relatively high level of pay of these salespeople that may have affected the outcome. However, this study does provide an initial indication that organizations can reduce/restructure compensation programs without decreasing performance, at least for individuals whose pay is tightly linked to performance and in the context of an organization whose pay is relatively high compared to others in similar positions.

The study also provides interesting implications to organizations regarding the size of pay changes that are necessary to be a significant motivator. Consistent with Lawler's (1990) research, the results of the study suggest that pay needs to be at least a 10% change to cause a performance change. Additionally, the larger the magnitude of the pay change, the larger the performance result that is seen. Therefore, organizations instituting changes to pay plans should carefully factor in the magnitude of the change when they are making their compensation decisions.

Conclusions

Overall, while none of the four hypotheses were fully supported, the results of the study do show some consistency with expectations. First, individuals at high pay levels do respond differently to negative compensation shocks than individuals at other pay levels. Thus, high pay seems to be an insulating factor as it relates to negative compensation shocks. Second, the effects of negative compensation shocks on performance tend to dissipate over time. After the initial increase in performance, individuals seem to return to a more consistent pace of performance. Third, this study shows that the magnitude of the shock does matter despite the fact that the results were contrary to predictions. Results indicate that the larger the magnitude of the shock, the larger the resulting performance impact.

What is particularly interesting about this study is that the performance impact was opposite of what was hypothesized based on relevant theories and prior research. Contrary to predictions, negative compensation shocks caused performance to increase rather than decrease. The contradictory findings may be due to the fact that pay was highly linked to individual performance in this study. In such instances, expectancy theory may be a more appropriate theory to apply due to the overwhelmingly strong motivating factor of pay. There are many contradictory claims regarding the consequences of pay programs and strategies in organizations (Gerhart & Rynes, 2003). Thus, the findings of this study tend to support those of compensation researchers: the link between pay decisions and effectiveness depend on a number of contingency factors. Therefore, one of the most important outcomes of this study is that it sheds important new insights into contingencies that may affect the outcomes of pay for performance programs, particularly in the case of individuals whose individual performance is tightly linked to compensation. In light of the current economic conditions, these findings will be particularly interesting to organizations who are re-evaluating their compensation plans and budgets.

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