DISSERTATION

EVALUATING A MODEL OF PLANNED ORGANIZATIONAL CHANGE: INTEGRATING THEORY, RESEARCH AND PRACTICE

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY CAROLYN JANE MOHLER ENTITLED 'EVALUATING A MODEL OF PLANNED ORGANIZATIONAL CHANGE: INTEGRATING THEORY, RESEARCH, AND PRACTICE' BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF **DISSERTATION**

EVALUATING A MODEL OF PLANNED ORGANIZATIONAL CHANGE:

INTEGRATING THEORY, RESEARCH, AND PRACTICE

The field of organizational development (OD) lacks integration of practitioners' knowledge of change methodology and academics' theories which help demystify the underlying process of change. Previous attempts to empirically validate models of planned change using previous research (Robertson, Roberts, & Porras, 1993) have been successful, although limited. The goal of this study was to test several components of a planned change model developed by Porras and Robertson (1992), and to extend this model using a longitudinal design and data collected from an organization undergoing change.

Study variables were suggested by the Porras and Robertson model, as well as by organizational psychology research and psychotherapy research that relates to individual behavioral change at work (i.e., organizational climate, psychological contract, exchange ideology, distributive justice, procedural justice, interpersonal justice, informational justice, readiness for change, self-efficacy, and individual reactions to change). Survey data (N = 690) from a medium-sized technology manufacturing organization did not support the hypothesized relationships suggested by the model; most study variables remained fairly constant following the change intervention. Two variables changed significantly over time (e.g., psychological contract and contemplative stage of readiness), although in a negative direction, as a result of the change intervention.

Social exchange relationships (e.g., organizational climate, psychological contract and exchange ideology) within the model were also explored. Social exchange relationships did not significantly moderate the relationship between fairness perceptions and individual reactions, as well as the relationship between readiness for change and self-efficacy. The findings of this study do not seem to provide support for expectations of significant positive change in work setting variables and individual behavior change following an organizational development intervention. Study limitations and reasons for why change did not occur in the hypothesized manner are discussed. Implications for future research, theoretical development, and practice of planned change are presented.

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CHAPTER I

INTRODUCTION

Organizations must change to survive. Academic theorists and scientist-practitioners alike have been researching the dynamics of the organizational change process for decades (Austin & Bartunek, 2003). Unfortunately, the science of organizational change and development does not seem to adequately inform the state of the art in practice: organizations undergo change without knowing if a given intervention will produce the desired outcome (Halfhill, Huff, Johnson, Ballentine, & Beyerlein, 2002). Successful planned change initiatives often rely on data collected within the organization to understand and diagnose current organizational functioning, as well as providing a guide to direct change interventions (Burke, 2002). There is little agreement, however, on how best to measure the impact of change after a planned change intervention occurs (Porras & Hoffer, 1986).

The field of organizational development (OD) is one approach to the study of planned change in organizations (Austin & Bartunek, 2003), which dually focuses on theoretical development and the practical application of theory (Porras & Robertson, 1992). With historical roots in an action research approach (Burke, 2002) and based on behavioral science principles, the field of OD has advanced practice through applied research of the underlying dynamics of planned change (Austin & Bartunek, 2003). Action research, as conceptualized by Lewin (1951), emphasizes the importance of

collecting data, providing feedback, and applied problem solving (French & Bell, 1999) to ensure success of change interventions.

Despite its historical progress, several authors have acknowledged a broad gap between the science and practice of OD, with separate theories and concepts emerging from each (Austin & Bartunek, 2003; Porras & Robertson, 1992). Academic researchers and practitioners alike have noted the lack of a unified theory of planned change in organizational psychology (Porras & Robertson, 1992). As a result, some scholars have called for research emphasizing knowledge transfer, translating science to practice, and applying practical implementation strategies to scholarly theory, to promote integration and advancement of the field (Austin & Bartunek, 2003). An empirically validated model of planned change could serve as a useful tool to guide change efforts by suggesting most appropriate intervention techniques based on desired change in organizational outcomes. Developing a theory of this nature, that explains the underlying process of change as well as hypothesizes relationships among intervention type and outcomes, is viewed as one of the most important needs of the field (Porras & Robertson, 1987).

Recent efforts have been made to empirically validate theoretical models of planned change. Ideally, theoretical models should be tested using data from organizations undergoing change, in order to provide a well-validated theory of planned change that has direct applications for practitioners. As an example, Robertson, Roberts, and Porras (1993) used meta-analytic techniques to test the potential utility of one model of planned change developed by Porras (1987) and Porras and Robertson (1992; see Figure 1). This model focuses on identifying aspects of the organizational work setting

that influence and shape individual behavior, which in turn impacts organizational performance and individual development.

The Porras and Robertson (1992) model seems to provide an important link between theory and application of planned organizational change. However, it has only been partially tested, using secondary data collected during the years 1959 to 1988. Importantly, the model reflects sound theory yet integrates the empirical findings of previous research, making it a model of planned change that warrants further direct tests to establish its utility and validity. The purpose of the present study, therefore, is to directly test several components of the model using a longitudinal design, and to extend the model by integrating more recent research on variables that impact individual behavioral change from organizational psychology research and psychotherapy research.

The findings from this study may have important implications for the integration of OD theory and practice, as well as serve as a model for future research studies attempting to bridge the knowledge gap between OD science and practice. It is important to test this model because the OD literature has been lacking a validated and simplified model of planned change that integrates both theory and practice. Having an empirically-valid and parsimonious model of planned change offers practitioners a simplified map for planning and implementing interventions in organizations, with confidence that the intervention will produce the desired results.

Organizational Development Research

Collectively, science and practice research findings provide empirical support for the efficacy of change interventions as well as strong theoretical conceptualizations of the change process. Recent reviews of organizational change studies (i.e., Armenakis &

Bedeian, 1999; Guzzo, Jette, & Katzell, 1985; Halfhill et al., 2002; Macy & Izumi, 1993; Neuman, Edwards, & Raju, 1989; Porras & Robertson, 1992; Robertson, Roberts, & Porras, 1993) have determined that planned change initiatives can produce measurable change, and the impact of change has been examined on many types of organizational and individual outcomes. Throughout this research, theories of planned organizational change provide different descriptions of the change process, yet do not converge into one explanatory framework that can describe the process of change and the best method to evaluate the impact of change interventions.

One of the consequences of lacking a unified model of change is a literature base that appears separate and distinct, with little overlap among science and practice. As an example, some authors have described the difference between the products of OD academics and practitioners as 'organizational knowledge' versus 'organizational knowing' (Cook & Brown, 1999). From a broader perspective, theories of planned change have been categorized as either change process theories or implementation theories (Porras & Robertson, 1987, 1992).

Austin and Bartunek (2003) further identified differences in the types of theories and ideas that are produced by academic researchers versus practitioners. Specifically, it seems that academicians tend to focus on research that describes the underlying dynamics of change, or change process theories, whereas practitioners focus on strategies to produce change and intervention types through implementation theory (Austin & Bartunek, 2003; Porras & Robertson, 1992). Both types of research paradigms (e.g., academic and practitioner) provide theories and conceptual understandings of the nature and process of change in organizations, but fail to synthesize theoretical and empirical

work into one overarching model of organizational change. The Porras and Robertson (1992) model seems to be a unified model that integrates change process theory with implementation and evaluation strategies.

Examples of Common Change Interventions

While OD seems to lack an integrated change process model, there appears to be an abundance of widely used intervention techniques (Austin & Bartunek, 2003). Examples include survey feedback methodologies, team building, management by objectives, and job redesign (Burke, 1987). Furthermore, change interventions have been classified in two groups: (1) the target(s) of the intervention, including individual, interpersonal, group, intergroup, or the organization as a whole; and (2) the organizational subsystems affected by the intervention (Porras & Robertson, 1992). As the type of intervention employed by an organization differs on both the target and subsystem affected, outcomes should be evaluated based on variables that specifically detect effects of change to each target and subsystem.

Evaluating Change Interventions

For psychologists and organizational consultants, the ability to accurately assess and evaluate the impact of OD change interventions is essential to retain the validity and credibility of the discipline. Winum, Nielson, and Bradford (2002) suggest that outcomes of interventions should be selected based on organization-specific goals and values, recognizing that different organizations have very different needs. As such, academic and applied researchers have studied a range of organizational and individual outcomes.

Meta-analytic studies of OD outcome variables. Attempting to integrate and synthesize previous research on organizational change, several meta-analyses have shown

that OD interventions have a strong impact on many types of individual and organizational outcomes, such as productivity, sales, and employee behavior. For example, Guzzo et al. (1985) reviewed the results of almost 100 change intervention studies, and classified productivity outcomes into three categories: (1) output (i.e., cost effectiveness, quality, and quantity of output), (2) withdrawal behaviors such as turnover and absenteeism, and (3) disruptions such as strikes or workplace accidents. The meta-analytic results produced a moderate positive effect (d = .44) between change interventions (such as training, goal-setting, work design, and appraisal and feedback) and productivity-type outcome measures. The type of intervention also had different effects on productivity. For example, withdrawal behaviors (e.g., absenteeism and turnover) were less affected by interventions than other measures of productivity (e.g., output and disruptions), and were only affected by interventions designed to address managerial style and work rescheduling. This study also found that effect sizes were greater when the organization implemented two or more interventions at once (d = .72) and found smaller effect sizes in studies that included a randomized control group (d = .23).

In another meta-analysis, Macy and Izumi (1993) examined the results of 131 studies of the effects of organizational change efforts on outcomes categorized into quantity (i.e., output, sales, dollars, and productivity), quality (i.e., number of rejects, repairs, defects, customer service returns, rework, yield, and amount of scrap materials), and costs (i.e., repairs, errors, downtime, labor costs, overtime, recruitment and training costs, etc.) measured over a two-year period. The results of the meta-analysis indicated a moderate positive effect of organizational interventions on financial outcomes (d = 1.27).

This study recognizes that interventions can reduce employee withdrawal behaviors (d = .89), with the largest effects observed for structural design interventions (d = 1.43).

Meta-analytic studies also have focused on change in individual worker attitudes, such as satisfaction and emotional reactions to change, as useful outcomes. For example, Neuman et al. (1989) examined the results of 126 studies that measured the impact of organizational change interventions designed to improve employee attitudes. This study considered change at multiple levels of the organization, such as the supervisory relationship, individual behaviors, and attitudes about work. For example, the outcome measures examined in the study included general and facet satisfaction measures (i.e., overall satisfaction, satisfaction with pay, advancement opportunities, and coworkers) as well as attitudes about self, others, the organization, and their job. The corrected mean correlation coefficient between interventions and attitudes was moderate (r = .33). Results of this study seem to indicate that organizational change interventions can impact employee attitudes, such as trust, social support, commitment, and job involvement, but have little impact on satisfaction with pay or coworker relationships.

The Neuman et al. study also compared the effects of different intervention types. Human process interventions (i.e., lab training, goal setting, participative decision-making, and management by objectives) seemed to be the most effective, with a corrected mean correlation of .37 between interventions and outcomes. Specifically, team-building (M_ρ = .58) and lab training (M_ρ = .57) interventions seemed to have the greatest impact on modifying attitudes and satisfaction over time. The researchers concluded that OD interventions seem to have a stronger effect on attitude change than on satisfaction. Importantly, this study demonstrated the moderating effects of job level

of study participants, with supervisors more greatly affected by OD interventions than employees ($r = .32$).

Summary

Based on the combined results of these meta-analyses, it can be concluded that organizational change efforts have a significant impact on many different types of outcomes. However, the above meta-analytic findings do not specify the best methods to select interventions or to evaluate outcomes. As a result, methods to determine effective interventions are not well-integrated into current theoretical frameworks, although some authors examine these relationships in theory.

The Porras and Robertson (1992) theoretical model hypothesizes effects on both individual and organizational outcomes, and offers a beginning towards the synthesis of science and practice contributions. Thus, this model integrates concepts of the underlying process of change, and suggests how to produce change and evaluate its impact on outcomes. The first step to further test the model's validity is to directly test the model within an organization. The present study was designed to provide a test of several components of the model, as testing the entire model in one study is difficult due to its complexity. Determining the validity of this model will be useful to practitioners, by serving as a guide for effective planned change, and also to academics, whereby researching one common theory could advance what is known about change in a rapid manner. The model, however, acknowledges but fails to integrate key relevant constructs from years of psychotherapy behavioral change research. Therefore, this study makes an important extension to the model by incorporating theories of individual behavior change to the process of organizational change. As a consequence, the Porras and Robertson

model was modified to include this extension. A detailed description of the new model is offered below.

Description of the Model

Porras and Robertson (1992) conducted a review of organizational change theory and research and proposed a framework to facilitate the review of previous research, and to better capture the process of change reflected in the studies (see Figure 1). The model suggests that an organizational change intervention or activity be viewed as the independent variable, with changes in organizational work setting, individual behavior, and organizational outcomes (i.e., organizational performance and individual development) as dependent variables. The model emphasizes the importance of the organizational context which influences and shapes employee behavior, and specifies four subsystems within the organizational work setting: (1) organizing arrangements (i.e., formal elements of the organization including reward systems and policies and procedures); (2) social factors (i.e., individual and group characteristics of people in the organization such as patterns of interpersonal interactions); (3) technology (i.e., transforming inputs to outputs, such as job design); and (4) physical setting (i.e., physical characteristics of organizational environment) (Porras & Robertson, 1992; Robertson, et al., 1993). Each of the four subsystems interacts to influence the cognitions and behaviors of individuals within the organization, which in turn produce change in organization-level outcomes.

Robertson et al. (1993) conducted a meta-analysis of the studies reviewed by Porras and Robertson, to empirically test relationships hypothesized by the model. Specifically, Robertson and colleagues examined the results of 52 studies of planned

change interventions. Robertson et al.'s (1993) research hypotheses were largely supported, and suggest that the model is useful for designing and evaluating planned change efforts that target organizational subsystems articulated in their framework. The authors hypothesized relationships among organizational work setting variables, individual behavior, and organizational outcomes. Across studies, the change interventions positively impacted organizational work setting variables. The authors concluded that change interventions targeting 'organizing arrangements' and 'social factors' have the most consistent significant and positive impacts on organizational work setting variables, measures of individual behavior, and organizational outcomes (e.g., effect sizes ranging from .11 to .17 and .12 to .24, respectively). These relationships were tested in the current study in an attempt to replicate this important aspect of the model.

Additionally, Robertson et al.'s study demonstrated a significant positive correlation between individual behavior change and organizational outcome change (r = .53). The authors did, however, note several limitations of their study, including the use of secondary data (which may limit reliability of findings) and variables that were not specifically designed to test the model. The authors suggested that future research should incorporate time as a variable in order to account for short-term and long-term effects of change.

Contributions of the Model

An important contribution of Robertson et al.'s (1993) study is the recognition that individual-level change is necessary for organizational-level change. The authors suggest that OD interventions should focus on identifying organizational components that will strongly encourage individual behavior change (Robertson et al., 1993), and the

model could benefit from existing knowledge on how people change. Previous researchers also have highlighted the importance of individual behavior change on the job for creating and maintaining organizational change interventions (Goodman & Dean, 1982).

Based on a review of the existing organizational change literature, it appears that no direct tests of the Porras and Robertson model have been conducted to further test its utility above and beyond the meta-analytic findings. This may be due to the complexity of the model, with many variables to measure (i.e., measuring four domains of the organizational work setting as well as measures of individual and organizational outcomes). Given the nature of organizations, the feasibility of fully testing the model in a single study is very low. Additionally, the Porras and Robertson model does not appear to capture the dynamic process of change, whereby the organizational environment impacts the individuals which in turn have an impact on the work setting and possibly the intervention itself.

Application of the Model: The Present Study

This study examines a portion of the Porras and Robertson model of planned change and extends the model by incorporating theories of individual behavior change (see Figure 2). Organizing arrangements and social factors are the most commonly targeted subsystems in OD change interventions (Porras & Robertson, 1992), and received the most consistent empirical support in Robertson et al.'s (1993) study. Thus, the intervention chosen for this current study was designed to impact these two subsystems (e.g., organizing arrangements and social factors), and constructs were selected that best measured the impact of change on these two work setting variables.

The Intervention Activity: Promoting Change in Organizing Arrangements and Social Factors

The organization in which the study data were collected implemented an organization-wide restructuring of the performance management system, which represents a major organizational change. This intervention activity reflects a change to formal organizing policies and procedures and also a change in the interaction processes among employee and employer, as well as employee and supervisor. Thus, this intervention activity is classified as targeting two work setting variables, in that change is expected to occur within organizing arrangements and social factors. A detailed description of the intervention and change process is outlined below.

The organization's previous performance management system relied on essay-based performance evaluations of its managers and employees. According to human resource professionals in the organization, managers varied greatly on the timeliness, length, and specificity of annual performance evaluations, and employees complained about the unfairness of the system. Focus groups revealed that employees were dissatisfied with the lack of structure in the process and outcomes of the performance appraisal process. In an effort to standardize and improve upon this process, human resource personnel wished to design a standardized system that was universally applied throughout the organization. As a result, they developed organization-wide performance competencies upon which all members of the organization were evaluated in their annual performance review (for a list of the performance management system competencies, see Appendix A).

Human resource personnel held a series of mandatory training workshops for employees and managers to acquaint them with the new system and its procedures. During this training, employees were given a blank copy of a self-assessment that they were to complete and return to their manager one week before the performance evaluation feedback session. Managers were instructed to integrate employee self-assessments into their own performance ratings. In addition, a development plan was also introduced, and goals and expectations for development were discussed with each employee during the performance review feedback session between manager and employee. A comprehensive training program was also developed around each of the performance competencies, so that employees would have opportunities for training as articulated during their review session.

The effect of the intervention on work setting variables was assessed by examining two organizing arrangements constructs (i.e., distributive justice and procedural justice) and four indicators of social factors (i.e., organizational climate, psychological contract, interpersonal justice, and informational justice). The effects of the organizational work setting variables (i.e., organizing arrangements and social factors) in changing individual behavior was measured by perceptions of self-efficacy, readiness for behavior change, and individual reactions to the change. The following section describes these constructs in more detail.

Characteristics of the Work Setting: Organizing Arrangements

Porras and Robertson (1992) identify formal organizational policies and procedures, as well as reward systems, as organizing arrangements. They suggest that organizing arrangements proscribe appropriate employee behavior, but may not reflect

actual employee behavior. Thus, it seems logical to assess constructs that may determine whether behavior change will occur as a result of changing formal organization policies. Organizational justice researchers have shown that fairness perceptions, relating to formal policies and procedures of an organization, are associated with organizational outcomes (Colquitt, 2001). Perceptions of fairness of the new policies and procedures may determine if an individual changes subsequent behavior. Therefore, distributive justice and procedural justice assessed individual perceptions of organizing arrangements before and after the change intervention.

Distributive justice. When employees experience the organizational change event, they may consider the fairness of outcomes and decisions resulting from the new policy. Distributive justice refers to the perception of the fairness of outcomes. Distributive justice research is based on equity theory (Adams, 1965), which states that employees expect to receive rewards equivalent to their contribution. In this framework, employees may use a ratio of inputs-to-outputs to determine fairness perceptions, which is usually derived from past experiences and often compared to other reference points in the organization (Adams, 1965; Folger, 1993; Leventhal, 1976). Research conducted by Greenberg (1986) suggests that when an employee perceives the new performance management system as distributively unfair relative to the old system (i.e., "I received a poor performance rating on this system, but not on the old one: it must be unfair."), he or she may attempt to adjust his or her input (i.e., less effort will lead to lower productivity) in order to make up for the loss in output (i.e., poor performance rating may lead to demotion and/or lower pay). Individual perceptions of distributive fairness may depend on many factors, or situational moderator variables (e.g., perceptions from past

performance evaluations, receiving positive or negative feedback, relationship with organization or supervisor, etc.). Therefore, it is difficult to predict if the intervention will positively or negatively impact perceptions of distributive justice. Based on equity theory, the following non-directional hypothesis was made:

Hypothesis 1a: The intervention activity will have a significant impact on employee perceptions of distributive justice.

Procedural justice. Research has shown that procedural justice plays an important role in determining the success of performance appraisal systems. Perceptions of procedural justice are determined by the fairness of the procedures and processes involved in making decisions and distributing outcomes (Folger & Greenberg, 1985; Leventhal, 1980; Leventhal, Karuza, & Fry, 1980; Thibaut & Walker, 1975). For example, research has shown that perceptions of performance appraisal fairness are highly correlated with the employee's belief that he or she can express his or her feelings during the evaluation regardless of the outcome of the appraisal rating (Landy, Barnes, & Murphy, 1978; Landy, Barnes-Farrell, & Cleveland, 1980). Following the implementation of a new performance management system, it is to be expected that employees will evaluate the fairness of processes and policies of the new system.

According to Greenberg (1986), procedural fairness in performance appraisals can be increased by soliciting and using input prior to evaluating employees, gaining rater familiarity with the employee being rated, and using a consistent application of rating factors for all employees. The new performance management system meets some of Greenberg's criteria. For example, employees were required to provide a self-assessment of their performance, due one week in advance of their performance review session.

Completing a self-assessment may have helped employees become more familiar with the new rating system, and enabled them to have input through an informed dialogue with their supervisor during the review process. Similarly, the organization developed performance competencies (Appendix A) which were applied uniformly to all employee and managerial performance evaluations. Therefore, all employees and managers were evaluated on the same dimensions, which may positively impact perceptions of procedural fairness. Furthermore, changing formal policies of an organization is likely to have a significant impact on employees attitudes and resulting behaviors. Given the importance of procedural fairness in determining attitudes and behaviors following performance feedback, the following hypothesis is offered:

Hypothesis 1b: The intervention activity will have a significant positive impact on employee perceptions of procedural justice.

Characteristics of the Work Setting: Social Factors

The nature and patterns of interpersonal interactions are classified within the social factors category of the Porras and Robertson (1992) model. Specific examples include the culture (and climate) of the organization, individual attributes (including beliefs, attitudes, and feelings), management style, and patterns of interactions. Interpersonal interactions (i.e., social factors) have important consequences for employees and for organizational outcomes.

Although not specified by Porras and Robertson, previous research has demonstrated the importance of the supervisor-subordinate relationship in reactions to performance appraisals. For example, Nathan, Mohrman, and Milliman (1991) demonstrated that the nature of the interpersonal relationship with one's supervisor can

have a significant impact on how the employee reacts to performance feedback, as well as have a positive impact on future performance and job satisfaction. More specifically, when employees were able to participate in the feedback process, that also contained a discussion of career development, job performance and satisfaction tended to improve over time.

In the present study, social factors variables were identified that may have important implications for behavior change, and are described below. Porras and Robertson (1992) suggest that social factors variables are among the most difficult to quantify, measure, and subsequently change. In order to extend this component of their model and to further classify the nature of change in social factors, two variables measured social factors relating to patterns of interaction, beliefs, and attitudes about the organization (e.g., organizational climate and psychological contract) and about the individual's supervisor (e.g., interpersonal justice, and informational justice). This provides an extension of the Porras and Robertson model definition of the social factors category.

Organizational climate. The climate of an organization has been defined as the individual's perception of the work environment which indicates the degree of psychological meaning and significance of the organization to the individual (Schneider, 2000). Climate is recognized as a property of the individual, unlike organizational culture (as specified in the Porras and Robertson model) which is a property of the social system or organization as a whole (Burke & Litwin, 1992; Litwin, Bray, & Brooke. 1996). Additionally, some researchers suggest that climate helps psychologically unite employees with their employing organization and work group and directly influences

employee motivation (Burke & Litwin, 1992). Therefore, organizational climate is more appropriate for the present study as individual perceptions (not shared norms or expectations for behavior) of the organizational environment are the focus.

Models of organizational climate tend to recognize that many facets of the environment exist (i.e., the structure, reward system, management style) and each has an impact on the psychological state of employees (Burke & Litwin, 1992). Organizational climate was conceptualized according to the theoretical model developed and empirically tested by Litwin and Stringer (1968). This model recognizes the complex nature of organizational environments by separating climate into dimensions, including structure, responsibility, reward, risk, warmth, support, standards, conflict, and identity. Empirical support of the Litwin and Stringer model (see Litwin, Bray, and Brooke, 1996 for a review of five published and unpublished studies using organizational samples) demonstrates that an organization's climate impacts motivational and performance outcomes at the employee level (Burke & Litwin, 1992). For example, Litwin and Stringer (1968) first demonstrated the impact of simulated organizational climates (operationalized as leadership styles including achievement, power, or affiliation) on motivation levels, psychological well-being, and performance outcomes in a lab-based study involving student teams completing a shared task. They found that achievement-oriented leaders produced teams with higher productivity levels and increased member self-esteem, while power-oriented teams produced less and had significant declines in measures of self-esteem and psychological health.

In organizational settings, the Litwin and Stringer model has been applied to determine differences in climates of high- and low-performing organizations of similar

industries. For example, Litwin and Burmeister (1992) found that high-performing offices within one organization were rated higher on six dimensions of climate (e.g., structure, standards, recognition/rewards, support, warmth and loyalty) as compared to lower-performing offices. This finding implies a relationship between climate and organizational performance, whereby a 'healthy' climate makes for satisfied employees and efficient operations. The authors attributed the results to more frequent interactions among managers and employees in the high-performing offices as compared to lower performing offices within the same organization. In summarizing Litwin and Burmeister's findings comparing five similar studies, Litwin, Bray, and Brooke (1996) identified four climate dimensions which consistently distinguished high-performing organizations from low-performing organizations, including standards, recognition and rewards, team spirit/teamwork, and clarity. Therefore, perceptions of the standards (e.g., a collective expectation for performance excellence) and recognition and rewards (e.g., a norm for positive and negative feedback, along with support and encouragement) dimensions of climate seem to be most applicable to the present study.

Organizational climate seems to have strong implications for providing information about performance and interpersonal relations expectations, and perhaps in determining reactions to change. Based on the above research findings, as well as Porras and Robertson's identification of climate as a social factors variable, this study assessed climate using the task-related reward dimension, and the motivation-related standards dimension. Furthermore, given the previous discussion of situational moderator variables, it seems likely that individuals may have both positive and negative perceptions of the climate following change. Therefore, the following non-directional hypothesis is offered:

Hypothesis 2a: The intervention activity will have a significant impact on employee perceptions of organizational rewards and standards climate.

Psychological contract with the organization. Psychological contracts are often defined as the individuals' perceptions of mutual exchange obligations with the employer (Rousseau, 1995). In this sense, an individual perceives that the organization has made a promise to him or her that in exchange for hard work and productivity, the employee can expect financial rewards and job security. This construct indicates the nature of an individual's relationship with the organization, and represents a new way of conceptualizing a social factors variable relating to the individual's beliefs and attitudes about the nature of his or her relationship with the organization.

The nature of the psychological contract an individual forms with an organization can vary. When an employee views the nature of his or her relationship with the organization as purely an exchange of input to output (i.e., an economic exchange), a transactional contract emerges (Rousseau, 1995). However, when an employee feels more personally connected (via trust and social exchange) to an organization, a relational contract occurs. Transactional contracts imply shorter-term obligation and are often associated with part-time or contract employees (Rousseau, 1995). In relational contracts, employees are more likely to feel a personal sense of obligation, such as interpersonal attachment or even feeling obligated to specific exchange partners (Emerson, 1981). These concepts are not found in purely economic exchanges. That is, employees tend not to form interpersonal obligations in transactional exchanges. This distinction has important consequences for organizations. For example, forming a relational psychological contract with one's employer has been shown to relate to

advancement, job security, and indicators of job stability (Rousseau, 1990). Transactional contracts have been associated with shorter-term commitment to an organization (Fogarty, 1997) and are positively related to frequency of absences (Shore, Tetrick, & Barksdale, 1999). Additionally, research examining employees with relational contracts has found higher levels of affective and normative commitment as compared to employees with transactional contracts (Shore et al., 1999). In spite of these differences in commitment to an organization, some research suggests that job performance is not determined by the type of contract an employee forms with his or her organization (Shore et al., 1999).

Psychological contracts, specifically relational contracts, may be important for organizations to consider when implementing change. For example, organizational change efforts may leave employees unsure of what is expected of them following an intervention and employee reactions to the intervention may result in changes to the employment relationship or relational contract. Furthermore, uncertainty about the nature of psychological contracts following the intervention is likely to produce conflicted employment relationships and future conflict between employees and employing organizations (Rousseau & Tijoriwala, 1998). Given the nature of the intervention in the present study, it seems that employees with relational contracts may be more strongly impacted than those with transactional contracts. For example, a contract based on expectations of high pay for hard work may not be impacted by the new performance management system. A relational contract based on trust, mutual obligation, and social exchange may be challenged, although it is difficult to determine the nature (i.e., positive or negative) and extent of the intervention's impact given situational moderator variables

(e.g., whether a relational contract is present or not for each employee). Therefore, the following non-directional hypothesis was made:

Hypothesis 2b: The intervention activity will have a significant impact on employee perceptions of relational psychological contract with the organization.

Interpersonal justice. The social aspects of procedural justice are extremely important to consider when implementing organizational changes, as socially sensitive treatment tends to enhance perceptions of fairness (Cropanzano & Greenberg, 1997). This social factors variable represents one aspect of the supervisor's management style, as identified by Porras and Robertson (1992). Interpersonal treatment from a supervisor is an important factor above and beyond distributive and procedural justice when judging the fairness of decisions (Bies, 1987). Research has demonstrated that fair interpersonal treatment can lead to increases in trust, commitment, and job satisfaction (Cropanzano & Greenberg, 1997), as well as increased organizational citizenship behaviors and job performance (Colquitt, 2001).

Interpersonal justice is defined as the extent to which individuals believe they have been treated with dignity and respect (Colquitt, 2001; Cropanzano & Greenberg, 1997). Employee perceptions of the interpersonal treatment they received during their performance review session may impact their perceptions of fairness about the system as a whole. In this sense, when a supervisor treats his/her subordinate with politeness, respectfulness, and dignity, perceptions of interpersonal fairness will be increased (Colquitt, 2001; Greenberg, 1990). For example, Greenberg (1990) found that employees who received fair treatment and adequate justifications for temporary pay cuts were less

likely to leave the organization, file formal grievances, steal, or retaliate against the organization.

Interpersonal justice is one indication of the supervisor-employee relationship, which has important implications for promoting positive reactions to performance feedback (Nathan et al., 1991). Therefore, based on these prior research findings, interpersonal treatment from a supervisor during the intervention is expected to impact employee beliefs and behaviors. Because the direction of affect (i.e., positive or negative) is largely determined by the style of the supervisor, it is not possible to make a directional hypothesis, and the following hypothesis was made:

Hypothesis 2c: The intervention activity will change supervisory behavior such that employee perceptions of interpersonal justice will be significantly impacted.

Informational justice. Informational justice is defined as the extent to which individuals believe they have received adequate information about procedures affecting them (Colquitt, 2001; Cropanzano & Greenberg, 1997) and represents the management style and interaction processes dimension of social factors. The information received about the new performance management system and its procedures will likely impact employee reactions to the change.

Informational justice is concerned with the explanations employees receive about why procedures were conducted in a certain way, or why outcomes were distributed in a certain way (Greenberg, 1990). Furthermore, information that justifies undesirable outcomes can help maintain perceptions of procedural fairness. The type of information a supervisor provides about a change may impact how employees react, and may be especially important during organizational change efforts as employees are likely to feel

uncertain and nervous (Bridges, 1986). Folger and Skarlicki (1999) state that organizations have an obligation to provide adequate information and to state clear and necessary reasons for change. Given that the change intervention impacts how a supervisor delivers performance feedback and development information to employees, although the direction of impact (i.e., positive or negative) is unclear due to situational moderators, the following non-directional hypothesis was offered:

Hypothesis 2d: The intervention activity will change supervisory behavior such that employee perceptions of informational justice will be significantly impacted.

Individual Behavior

Organizational change efforts are often viewed as successful only if individual behavior change can be documented (Porras & Robertson, 1992; Robertson et al., 1993). Porras and Hoffer (1986) identified a core set of behaviors resulting from successful change efforts, including open communication, collaborating with others, efficient problem solving, and supporting others. The Porras and Robertson model draws on social cognitive theory of behavior change (Bandura, 1986) which suggests that individuals learn how to behave based on environmental cues from the organizational work setting that shape cognitions.

The present study examined constructs identified through research and theory as important in facilitating the behavior change process. Specifically, models of behavior change in health psychology highlight the importance of considering emotions, cognitions, and behaviors (Prochaska, Norcross, & DiClimente, 1992). Incorporating theories of individual behavior change, psychotherapy research, and social cognitive theory, two variables were measured (i.e., readiness for change and self-efficacy) that

represent individual readiness and ability to change behavior. Additionally, research on performance appraisal feedback suggests that the reactions an individual has following positive and negative feedback has implications for future effort and behaviors at work (e.g., Kluger & DeNisi, 1996). Thus, individual reactions, such as affective states and cognitive evaluations of performance appraisal feedback were examined.

Readiness for change. Psychotherapists have long been aware of the dynamics of change in individuals (Prochaska, Norcross, & DiClimente, 1992). Research on the process of individual behavioral change suggests that change be thought of on a continuum, and readiness for change has been articulated as a stage model. Specifically, Prochaska and DiClimente's (1983) transtheoretical model was developed out of meta-analytic reviews of behavioral change models from psychotherapy and empirical studies of psychotherapeutic effects. Their model states that individuals move through five stages of change (i.e., precontemplation, contemplation, action, maintenance, and relapse) when attempting to make behavioral changes. For example, individuals at the precontemplation stage of readiness have not yet realized that a change is necessary, whereas contemplation suggests that an individual is preparing to make a change within the next month. Individuals at the action stage are currently implementing behavioral modifications based on specific goals for change. Importantly, these authors suggest that interventions to change behavior must target the readiness stage of the individual in order to most effectively promote the desired behavior change, or movement up to a subsequent stage on the continuum.

This model has been successfully applied to various health-promotion programs, such as smoking cessation, treatment for substance abuse, and individuals suffering from

depression (Prochaska, Norcross, & DiClemente, 1994). Although this model has not yet been applied to individual behavior change in organizations, it seems that information about employee readiness for change may have important implications for reactions to feedback and subsequent change in work behaviors. Readiness for change may also have important implications for designing and implementing training programs to encourage skill development and performance improvement following feedback, which may be discussed during the feedback session.

Readiness for change may have important applications within organizational performance appraisals, and training and development of employees. For example, individuals at the precontemplation or contemplation stages may respond more negatively to performance feedback than individuals in the action phase. Alternatively, individuals actively making behavioral changes may receive feedback that is inconsistent with their current change goals. Therefore, individuals will receive feedback from their supervisor that is either consistent with their readiness for change (e.g., "I need to change this behavior," or "I don't need to change this behavior") or inconsistent with their readiness for change (e.g., "I need to change this behavior and I didn't know," or "I am changing the wrong behavior").

In this study, it was expected that the intervention activity could help employees change their perceptions of readiness after receiving feedback from their supervisor. Specifically, the type of performance information collected (e.g., the performance competencies) and the manner in which the feedback was delivered (e.g., semi-structured discussion of specific competencies between supervisor and supervisee) should impact perceptions of readiness. The alterations to the performance management system may

serve as a consciousness-raising intervention (Prochaska, et al., 1994) which can help individuals progress from one stage to the next (e.g., from contemplative to action). Situational moderator variables, including the stage of readiness of each employee before their performance evaluation, and whether feedback was positive or negative, make it difficult to predict the overall direction of change. Based on stages of change and considering the situational moderator variables, the following non-directional hypothesis was offered:

> *Hypothesis 3a:* The intervention activity, which includes changes in the way performance feedback is rated and delivered, will have a significant impact on employee perceptions of readiness for change.

Self-efficacy. Derived from social cognitive theory, perceived self-efficacy is defined as an individual's belief that he or she can do a certain, specific task (Bandura, 1997). Bandura (1986) postulates that behavior is determined through triadic reciprocal causation among personal factors (e.g., cognitive, affective, and biologic events), behavior, and environmental events, with each element interacting with one another bidirectionally. In this manner, characteristics of an individual interact with the environment in determining behavior. Therefore, perceptions of self-efficacy (or, beliefs that one *can do* a certain, specific task) can affect behavior directly, as well as have an indirect impact on goal formation, outcome expectations, affective responses, and perceptions of the social environment (Bandura, 1995, 1997).

Research on self-efficacy consistently shows that individuals with high self-efficacy beliefs tend to achieve higher levels of performance on a variety of tasks as compared to individuals with low self-efficacy beliefs (Wood & Bandura, 1989; Bandura,

1997). Perceptions of self-efficacy can be raised by vicarious learning or modeling of effective behaviors in reducing phobias (Bandura, Reese, & Adams, 1982), demonstrating that self-efficacy beliefs can be altered by watching the behaviors of others. In addition, receiving feedback about performance can change perceptions of self-efficacy. For example, after receiving positive or negative performance feedback, graduate student therapists altered their self-efficacy perceptions consistent with the feedback received. Therefore, self-efficacy beliefs can be impacted by observing behaviors of others and receiving feedback, which has important implications during organizational change and performance appraisal feedback.

In the present study, perceptions of self-efficacy on each of the performance competencies was measured as an indication of cognitions associated with making behavioral change following feedback. Due to situational moderators (e.g., different levels of self-efficacy before performance evaluation) it is difficult to specify how the intervention will impact individual self-efficacy perceptions, thus a non-directional hypothesis was offered as a result. Based on social cognitive theory and self-efficacy research, the following hypothesis was made:

Hypothesis 3b: The intervention activity will have a significant impact on employee perceptions of self-efficacy.

Individual reactions. Individuals have varied emotional, attitudinal, and cognitive reactions to organizational change (Burke, 2002) as well as to receiving performance feedback (Kluger & DeNisi, 1996). The role of affect in determining cognitions and behavior has been researched in social psychology and personality models. For example, research suggests that emotions influence the cognitive attribution process (Weiner,

1985), and that individuals use their feelings to provide information to make decisions (Gohm & Clore, 2002). Some research and theories (e.g., affect-as-information; Schwarz & Clore, 1983, 1988) postulate that feelings inform beliefs and serve as a primary source of information to make judgments about events. To extend this hypothesis to the present study, individuals may use their emotional reactions as a source of information in determining appropriate behavioral changes consistent with performance feedback.

Measuring individual reactions to change seems to be an important indicator of organizational change success (Mossholder, Settoon, Harris, & Armenakis, 1995). In the context of performance evaluation feedback, emotional responses can influence information processing (Robbins & DeNisi, 1994), leading to changes in cognitions and possibly behavioral change. Research has also demonstrated that when employees feel dissatisfied following a performance appraisal, they may reject the results (Bernardin, Hagan, Kane, & Villanova, 1998; Ilgen, 1993; Meyer, 1991) which may inhibit employee development following feedback. In addition, reactions to performance feedback have implications for employee acceptance of performance evaluations, as well as satisfaction with the performance appraisal process (Taylor, Tracy, Renard, Harrison, & Carroll, 1995).

In the present study, affective reactions (e.g., anger and happiness) and cognitive evaluations (e.g., accuracy and utility) will serve as measures of individual reactions to the intervention (e.g., the performance feedback received as a result of the new system). As it is difficult to predict the manner in which individuals will respond to feedback (e.g., positive or negative), the following hypothesis was offered:

Hypothesis 3c: The intervention activity will have a significant impact on employee individual reactions.

The present study attempted to replicate the findings of the Robertson et al. (1993) evaluation of the Porras and Robertson model by hypothesizing direct effects of the intervention activity on organizing arrangements (Hypotheses 1a &1b) and social factors (Hypotheses 2a – 2d) dimensions of the organizational work setting. To extend the model, this study also explored interrelations among organizational work setting variables and individual behavior, using social exchange theory as a framework.

Social Exchange Theory

While the Porras and Robertson (1992) model provides a framework for investigating planned change, social exchange theory may be useful in specifying the nature of the relationships among organizing arrangements (e.g., distributive justice and procedural justice), social factors (e.g., psychological contract, interpersonal justice, and informational justice), and individual behavior (e.g., readiness for change, self-efficacy, and individual reactions). These hypothesized relationships may provide an additional extension of the Porras and Robertson model.

At a broad level, social exchange theory focuses on the patterns of responses, or exchanges, among individuals in dyads as well as individuals and larger social entities such as organizations. Specifically, a social exchange relationship is one that is based on mutual obligations, trust, interpersonal attachment, and commitment (Blau, 1964). The relationship between an organization and its employees has often been conceptualized as an exchange relationship (Mowday, Porter, & Steers (1983), whereby employees exert effort for the good of the organization in exchange for pay, status, and related benefits of

employment. In organizational settings, these types of relationships provide important social and emotional benefits (for a review, see Cropanzano, Rupp, Mohler, & Schminke, 2001), which can lead employees to exert greater effort on the job and motivate them to stay with the organization for a longer time period.

Social exchange relationships have been operationalized in research as relational psychological contracts (Rousseau, 1990, 1995; Shore et al., 1999), organizational commitment (Cropanzano, Rupp, & Byrne, 2003), and individual exchange ideology (Eisenberger, Cotterell, & Marrel, 1987), among others. The presence of social exchange relationships among employees in organizations has been associated with more productive work behaviors and fewer withdrawal intentions (Cropanzano et al., 2001; Masterson, Lewis, Goldman, & Taylor, 2000). When employees feel committed to the organization, or have a sense of reciprocal obligation towards a supervisor, it seems that this type of relationship has more personal meaning than a purely economic exchange. Similarly, when individuals are involved in social exchange relationships with a supervisor, or with their employing organization, they tend to expect better social and emotional treatment. Furthermore, these individuals perceive injustices more negatively because of a sense of violated mutual obligation (Cropanzano et al., 2001).

The majority of research examining social exchange relationships follows theoretical logic that proposes a mediating role of social exchange (Cropanzano et al., 2001). For example, a mediated model suggests that fair treatment can help the formation of social exchange relationships (Masterson et al., 2000). Mediated models have also demonstrated that employees in social exchange relationships with their organization are more likely to work harder, have higher levels of productivity, and

engage in more frequent organizational citizenship behaviors and prosocial workplace activities (Cropanzano et al., 2003). However, there is also evidence that suggests the presence of social exchange relationships can help maintain relationship ties in ongoing relations, meaning that an exchange relationship could moderate reactions to unfair events.

Brockner, Tyler, and Cooper-Schneider (1992) tested this idea by examining 150 survivors' reactions to a layoff. Using a retrospective measure of organizational commitment prior to the layoffs, Brockner et al. found a moderating relationship between justice perceptions and outcomes, such as turnover intentions and work-effort. Among survivors who were high on organizational commitment prior to the layoff, justice perceptions (e.g., the fairness of the layoff) had stronger effects on post-layoff commitment, turnover intentions, and work effort than those who were low on prior commitment.

In another study, Holbrook and Kulik (1996) demonstrated the moderating effect of the strength of loan applicants' membership ties in relation to fairness perceptions and affective reactions following the loan outcome. Specifically, when interpersonal treatment, opportunity for voice, and outcome favorability were low, applicants with strong membership ties had more negative affective reactions than applicants with weak ties. Furthermore, applicants with strong ties reacted more positively to good outcomes, and more negatively to unfavorable outcomes, than applicants with weak ties to the institution. Holbrook and Kulik concluded that members with strong ties may have perceived that the favorability of the outcome was reflective of their worth to the organization.

Given the positive and personally meaningful effects of social exchange, it may be possible that a social exchange relationship with the organization could help inoculate against an unfair change intervention. For example, employees who have a sense of trust and mutual obligation to their organization may be less likely to have negative reactions to an unfair procedure or outcome if they expect that the organization will continue to provide emotional benefits in the future. Conversely, individuals in exchange relationships with their employing organization may also react more strongly to an unfair event than those with a weak exchange relationship. Therefore, the following hypothesis was offered (see Figure 4):

> *Hypothesis 4*: The presence of a social exchange relationship with the organization (psychological contract) will moderate the relationship between perceptions of fairness (distributive justice, procedural justice, interpersonal justice, informational justice) and individual reactions.

Exchange ideology. Given that the intervention activity will impact the behavior of the supervisor, it is important to consider the moderating role of social exchange relationships within the supervisor-subordinate dyad. Individuals in employment relationships tend to differ in the type of interpersonal treatment they expect from their supervisors in return for their work effort. For example, exchange ideology has been defined as a belief that the amount of work produced should partly depend on the treatment received from representatives of the organization (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Exchange ideology is conceptualized on a continuum: individuals with a strong exchange ideology will work hard if they perceive they are being treated well. Individuals with strong exchange ideologies tend to respond to

organizational reinforcements and with a higher level of commitment to the organization (Eisenberger et al., 1987). Conversely, individuals with a weak exchange ideology will perform the same regardless of the types of treatment they receive. The importance of a strong exchange ideology has been linked to reductions in absenteeism (Eisenberger et al., 1986) as well as more organizational citizenship behaviors (Witt, 1991) compared to employees with weak exchange ideologies.

Research has shown that when employees with strong exchange ideologies are treated unfairly, they tend to show fewer affective commitment behaviors, as rated by the supervisor (Witt, Kacmar, & Andrews, 2001). Therefore, it seems that when an employee had a strong exchange ideology, the supervisor tended to view him or her as more committed to the organization, and thus rated the employee more positively. Exchange ideology may have important implications for the performance evaluation process, as well as perceptions of an employee's performance.

During organizational change, exchange ideology should remain fairly constant, although employees may perceive their supervisory relationship in a different context as a result of the intervention. For example, an individual's exchange ideology may be challenged due to a stressful interaction with his or her supervisor during the feedback session. In addition, an individual who has a strong exchange ideology may view the unfairness of the process or outcome, as well as information and treatment received, with less intense affective reactions (e.g., individual reactions) if he or she expects better treatment or exchange in the future. For example, Elicker, Levy, and Hall (2002) found that employees who had a good working relationship with their supervisors perceived better treatment (e.g., perceptions of justice and reactions to feedback) in performance

feedback sessions. The presence of social exchange relationships may help facilitate positive employee reactions (whether feedback is positive or negative) following performance feedback sessions with a supervisor, even if an individual perceives the new system as unfair. Therefore, in the present study, exchange ideology may change (or moderate) the relationship between fairness perceptions and emotional reactions, and the following hypothesis was made:

> *Hypothesis 5*: The presence of a strong social exchange relationship with the supervisor (exchange ideology) will moderate the relationship between perceptions of fairness (distributive justice, procedural justice, interpersonal justice, informational justice) and individual reactions, such that employees will react less strongly to unfairness.

Furthermore, a social exchange relationship with a supervisor may strengthen the relationship among readiness for change (e.g., "I'm ready to make a behavior change") and self-efficacy beliefs (e.g., "I believe that I can improve this behavior"), if an individual feels supported by his or her supervisor. Individuals who are considering or actively making behavioral changes (e.g., contemplative stage and action stage) should also have higher self-efficacy (Porchaska, Norcross, & Diclemente, 1994). A strong relationship with a supervisor (whereby they will expect positive reinforcement of behavior change in the future) may help maintain or promote self-efficacy beliefs, regardless of stage of readiness for change. Similarly, a weak social exchange relationship may change, or moderate, how feedback is perceived by an individual. In this case, these individuals may be at a disadvantage in making behavior change by not feeling supported by their supervisor (through an exchange relationship) and thus less

confident in their abilities, regardless of their readiness for change. Therefore, the following exploratory hypothesis (see Figure 6) was offered:

> *Hypothesis 6*: The presence of a strong social exchange relationship with the supervisor (exchange ideology) will moderate the relationship between readiness for change and self-efficacy, such that readiness stage will more strongly impact level of self-efficacy following performance evaluation.

Contributions of this Study

This field study empirically tested portions of a model of planned change (Porras & Robertson,1992). The study provides important linkages within the field of OD applied research and academic theory, by drawing from change process theory, incorporating evidence from practitioner studies, and applying theories of individual behavior change to a model that has already received some empirical validation. The study recognizes the importance of relationships in determining individual behavior, and incorporates this framework via social exchange theory. Also, several of the variables in the study (i.e., interactional justice, exchange ideology, self-efficacy, readiness for feedback) have not been analyzed longitudinally in an organizational sample, and may provide additional insight into the impact of change over time on these variables. The study also incorporates psychotherapy research by utilizing empirically validated measures of behavioral readiness for change.

CHAPTER II

METHOD

Power Analysis and Research Design

In order to determine probabilities of detecting significant effects, power analysis can be used to determine adequate sample size (Cohen & Cohen, 1983). In multivariate repeated measures designs, it is important to first hypothesize the extent of the relationship among the independent variables (i.e., the intervention or time). Barcikowski and Robey (1985) provide power tables for various alpha levels which assume correlation among repeated measures. The researcher assumed that the average correlation of measures between Time 1 and Time 2 would be moderate (r = .50). According to Barcikowski and Robey's tables (power = .80), at a .05 level of significance, 199 subjects is needed to detect a small effect size of .14 on two repeated measures. The current study obtained a repeated measures sample size of 154, which does not meet the proposed guideline. The sample size may limit the ability to detect a small effect of the change intervention on the variables measured.

In repeated measures designs, the amount of change in the dependent variable over time is a measure of the relative impact of the intervention (Keppel & Zedeck, 1989). The initial measurements provide a baseline to be improved upon following the intervention. However, one cannot be certain that changes in the outcome variables are indeed the result of the intervention. The introduction of a control group could provide

additional explanatory power, as one can rule out the effects of history, maturation, statistical regression to the mean, and other measurement artifacts typical of time-series analysis (Cook & Campbell, 1979). However, due to limitations within the participating organization, control group data were not obtained. As a substitute, the researcher met regularly with the organization's project sponsor (the Director of Organization Development) to better understand any changes that were taking place in the organization that may have impacted the variables measured at Time 2.

The Intervention Activity

The change intervention began when consultants entered the organization to gather information about the existing performance management system and to design new performance competencies. This occurred approximately twelve months before data collection for this study began. All employees were impacted by this component of the intervention, as consultants interviewed employees about their job duties. The next stage of the intervention is represented in a series of training activities, where the survey for Time 1 data collection was distributed. Six-hundred and ninety employees out of the total 1074 employees participated in this stage of the intervention.

Despite a tumultuous economy, the organization was functioning well during data collection at Time 1. Approximately two months after data collection began for Time 2, however, the organization experienced financial problems that ultimately led to layoffs and closing of one manufacturing plant. Due to concerns about employee morale, data collection was stopped approximately one month after the layoffs occurred.

Participants

Employees of a technology manufacturing organization (e.g., concept design

and production of microchips and related technologies) located in the Western United States participated in the study. The organization consisted of administrative offices, information technology personnel, as well as manufacturing divisions, and data were collected to represent all levels of employees (e.g., manufacturing, administrative, full and part-time employees, etc.). Of the 1074 total employees, 690 participants (or 62.25% of the organization) completed a survey at Time 1, and 242 (or 22.53% of the organization) completed the web-based survey at Time 2. Demographic information suggests that the sample included in this study is very similar in age, gender, ethnicity, and employee type (i.e., part-time or full-time employee) to the total employee population of the organization.

Using a unique identification code to match participant's data at Time 1 and Time 2, a sample size of 154 (or 14.34% of the organization) was obtained for use in repeated measures analyses. Participants ranged in age from 21 to over 60 years, with 34% endorsing the age range of 31 to 40 years. Fifty-six percent of the participants identified as salaried employees, and almost 90% described themselves as full-time employees. Twenty-eight percent of the study participants were female, which is similar to the demographic makeup of the entire organization. Fifty-three percent of the participants have worked for the organization for one to five years, with 24% working there for 6 – 10 years. Demographic information is listed by sample (Time 1, Time 2, and Matched Samples) in Tables 1, 2, and 3.

Procedures

This project consisted of a two-part survey with the first data collected prior to the introduction of a new performance management system (Time 1), and the second survey

distributed after participants completed their performance review meeting with their supervisor (Time 2). Self-report surveys were the only source of data utilized in the study. No additional data were collected between Time 1 and Time 2. The Time 1 questionnaire (Appendix B) and consent forms (Appendix C) were distributed to employees during the first 15 minutes of an organizational training session.

Approximately 35 training sessions occurred over a two month period; managers and employees attended separate sessions. The training sessions focused on the procedures and policies of the new performance management system. The researcher was present at each session to distribute and collect completed surveys. All of the employees who attended a training session (e.g., roughly 700, or about 70% of the total organizational sample) accepted a survey and provided consent for the study, for a response rate of 100%. Approximately 15 surveys were not used in the analyses due to missing responses and/or blank surveys, yielding a final sample size of 690.

For the Time 2 survey, the researcher sent participants an email with a link to a web-based survey, within one month after their performance appraisal review session. The survey was completed online at Time 2 to help protect confidentiality of participants and their responses after their performance evaluation. Previous research comparing online and paper-and-pencil tests has found little differences in psychometric properties of data collected from different sources (e.g., King & Miles, 1995; Stanton, 1998). Other research has found significant differences comparing paper tests and online personality tests in a selection setting (Ployhart, Weekley, Holtz, & Kemp, 2003). Given that the nature of this survey is not contingent upon rewards or decisions (e.g., its purpose is for internal human resource functions rather than a selection situation), it seems that

participants would be motivated to provide their true responses, rather than socially desirable ones as in a selection context.

Given that the research was halted midway through data collection, it is difficult to determine attrition rates, response levels, and meaningful group differences among responders and non-responders. More specifically, only 475 of the 1074 total employees had completed their annual performance review under the new system, and these were the only employees eligible to participate in completing the Time 2 survey. Of the 475 emails sent to these employees who had completed reviews, 242 online surveys were completed for a response rate of 50.92%.

In order to match the Time 1 and Time 2 surveys for each participant, the following method was used: approximately one week before participants completed the Time 2 survey, each participant received his or her unique ID code (as determined from the Time 1 survey administration) via electronic mail directly from the researcher. Participants were instructed to enter this ID code online when completing the Time 2 survey. This method allowed the researcher to supply the identical ID numbers from Time 1 in a confidential manner. Of the 242 surveys completed at Time 2, 154 were matched to a completed survey at Time 1.

Measures

All variables were measured using a 1 (*strongly disagree)* to 7 (*strongly agree)* response scale. Descriptions of the measures and their sources are presented in the following section, organized by each category of outcome variables (e.g., organizing arrangements, social factors, and individual behavior). All scales and items are listed

Appendix D. Internal consistency reliabilities reported below are from scales measured at Time 1, and are approximately equal to scale reliabilities obtained at Time 2.

Organizing arrangements variables. Measures of distributive justice (four items; $\alpha = .97$) and procedural justice (seven items; $\alpha = .90$) were adapted from Colquitt (2001). As recommended by Colquitt, a stem was added to modify the scales to the specific situation. For example, "To what extent do you agree that your last performance appraisal..." was added as a stem for distributive justice and procedural justice items in order to orient the participants to the appropriate frame of reference (see Appendix D).

Social factors variables. In the Porras in Robertson framework, it is assumed that individuals learn from and interact within the organization's environment. This common understanding among employees serves as a guide for performance expectations and appropriate behaviors. A psychological measure of the organizational environment was included by measuring two aspects of organizational climate. Organizational climate was assessed using the reward (six items; $\alpha = .71$) and standards (six items; $\alpha = .45$) dimensions of Litwin and Stringer's (1968) measure of organizational climate. The standards scale did not achieve an acceptable level of internal consistency, but was included in the analyses given that the scale has received empirical support in previous studies (e.g., Burke & Litwin, 1992). The nature of the employee's relationship with the organization (i.e., psychological contract; eight items; $\alpha = .86$) was measured using the relational psychological contract items outlined in Shore, Tetrick, and Barksdale (1999).

Indicators of the supervisor-subordinate interaction during the performance feedback session include the type of interpersonal treatment and amount of information received from the supervisor during the performance feedback session. Scales to

measure interpersonal justice (four items; $\alpha = .94$) and informational justice (four items; $\alpha = .87$) were modified from Colquitt (2001) by adding the stem, "During my last performance evaluation, my Supervisor..." to orient the participant to the appropriate frame of reference.

Individual behavior variables. Scales to measure readiness for feedback, self-efficacy, and emotional reactions were created for the purpose of the study, and also used a 7-point Likert scale. Readiness for change was measured using items from the University of Rhode Island Change Assessment (URICA) questionnaire (McConnaughy, DiClemente, Prochaska, & Velicer, 1989; McConnaughy, Prochaska, & Velicer, 1983). Five items from each of the precontemplation ($\alpha = .48$), contemplation ($\alpha = .72$), and action stages ($\alpha = .68$) scales were modified to reflect relevant organizational and job-related wording. Due to the low internal consistency of the 'precontemplation' scale ($\alpha = .48$), it was not included in the analyses.

Based on recommendations made by Bandura (2001), self-efficacy items were constructed to reflect a specific behavior domain. Behavioral anchors for self-efficacy items were based on each of the performance competencies using the descriptions similar from the performance evaluation form. One item measured overall performance self-efficacy. A stem was added to each competency description, instructing the participant to rate the level of confidence in his/her ability to do a specific task (i.e., "In general, I feel confident in my ability to..."). A composite was formed from the self-efficacy items to produce a scale with 14 items ($\alpha = .84$).

A scale to measure emotional reactions (five items; $\alpha = .92$) was developed for this study. Based on previous research, typical affective reactions following performance

evaluation were assessed including feeling "happy with the results," "satisfied with the performance evaluation overall," and "angry with the results." One item was reverse coded (e.g., "...I was angry").

Moderator variable. Social exchange relationships between supervisor and subordinate were assessed using items from a measure of exchange ideology (Eisenberger et al., 1987). As this scale was originally developed to assess exchange relationships with the organization, exchange ideology (five items; $\alpha = .87$) was measured by making minor alterations (i.e., the word 'organization' was changed to 'supervisor') to Eisenberger et al.'s reciprocation ideology measure. Demographic information (i.e., age, gender, work location, supervisory role, and job classification) were included on the last page of the survey.

Data Analysis

Correlations and descriptive statistics were calculated for all study variables. Inferential analysis was used to determine the potential effects of demographic group membership. In order to assess change in employee perceptions over time, a repeated measures analysis of variance (RM-ANOVA) was used. Keppel and Zedeck (1989) recommend using a hierarchical strategy rather than a difference score approach to analyze repeated measures designs, with the "unique" contribution of the intervention included in the analyses by controlling for the effects of Time 1 on Time 2. Therefore, this statistical test will provide the amount of variance in Time 2 explained by the intervention after controlling for the effects of Time 1 (Keppel & Zedeck, 1989).

Next, multiple regression analyses were used to test the hypothesized moderated relationships of social exchange (i.e., psychological contract and exchange ideology)

among fairness perceptions and emotional reactions, and among stage of readiness and self-efficacy beliefs.

CHAPTER III

RESULTS

Descriptive Statistics

Means, standard deviations, and sample sizes for study variables for all samples are presented in Table 4. Internal consistency reliabilities and intercorrelations for study scales are presented for Time 1 and Time 2 in Tables 5 and 6, respectively. The correlations among most of the study variables are positive and significantly related as expected, with exchange ideology and stages of readiness being exceptions. Exchange ideology was not significantly related to interpersonal or informational justice, or the stages of readiness at Time 1. Correlations among the repeated measures scales are presented in Table 7.

Tests of Hypotheses 1 – 3

Means were computed for each variable measured at Time 1 and Time 2. A repeated measures analysis of variance (RM-ANOVA) was conducted to test Hypotheses 1 – 3, that the change intervention would have a statistically significant impact on 1a) distributive justice, 1b) procedural justice; 2a) organizational climate, 2b) psychological contract, 2c) interpersonal justice, 2d) informational justice; 3a) readiness for change, 3b) self-efficacy, and 3c) individual reactions. Examining changes in means, eight of the 10 study variables decreased from Time 1 to Time 2. Informational justice had no change, while interpersonal justice increased slightly.

A one-way within-subjects RM-ANOVA was conducted to evaluate changes on the ten study variables by controlling for the effects of Time 1 on Time 2, and to test hypotheses 1 - 3. Results are presented in Table 8. Multivariate results indicated a significant main effect for time, F (11.136) = 3.50, $p < .01$, $\eta^2 = .22$. Overall, the included variables accounted for 22% of the variance. Univariate tests indicated a significant interaction effect for psychological contract (2b) and time, F (1, 146) = 9.65, $p < .01$, $\eta^2 = .06$, as well as contemplative stage (3a) and time, F (1, 146) = 25.81, $p < .01$, $\eta^2 = .15$. The rewards dimension of organizational climate (2a) approached but did not reach statistical significance, F (1, 146) = 3.88, $p = .05$, $\eta^2 = .03$. No other main effects or interactions were statistically significant.

In summary, the above results suggest that overall, the change intervention did not have a statistically significant impact on the study variables over time, providing only partial support for hypotheses 1 – 3. Specifically, only hypotheses 2b and 3a were supported. In addition, the data do not support a positive change interpretation; most of the study variables did not change and the two that changed did so in a negative direction.

Tests of Hypotheses 4 – 6

Social exchange relationships were hypothesized to moderate the relationship between fairness perceptions and emotional reactions. Hypothesis 4 examined the social exchange relationship with the organization (e.g., psychological contract), and hypothesis 5 tested the moderating effect of a social exchange relationship with a supervisor (e.g., exchange ideology).

To test for moderator effects, Baron and Kenny (1986) suggest using hierarchical multiple regression analysis. To reduce multicollinearity between the interaction term

and the main effects when testing for moderator effects, Aiken and West (1991) suggest using centered independent variables (i.e., mean deviation scores). In each of these analyses, demographic controls were entered in Step 1, the main effects and moderator variable were entered in Step 2, and the interaction term was entered in Step 3 of a hierarchical multiple regression. A significant interaction term indicates a significant moderator effect. A significant change in R^2 for the interaction term indicates that the moderator has an effect beyond the direct effects.

As shown in Tables 9 and 10, no significant moderator effects were found when examining the relationship among fairness and individual reactions, thus hypotheses 4 (psychological contract as a moderator) and 5 (exchange ideology as a moderator) were not supported. As indicated by the adjusted R^2 for the regression equations examining psychological contract and exchange ideology, the fairness and moderator direct effects accounted for 76% of the variance in individual reactions in both tests.

As shown in Table 11, no significant moderator effect of exchange ideology was found when examining the relationship between readiness and self-efficacy; therefore, hypothesis 6 was not supported. The adjusted R^2 for the direct effects of readiness and exchange ideology accounted for 5% of the variance in self-efficacy.

Post Hoc Exploratory Analyses

Previous research suggests that job level (i.e., supervisor versus non-supervising employee) may have a significant impact on reactions to change (Neuman et al., 1989). In the present study, the intervention likely altered the role of the supervisor, but not the role of non-supervising employees. For example, supervisors may have had a more negative reaction to the intervention, which could mask any changes in subordinate

reactions. Although not suggested by theory or driven by the model, it seemed important to determine if supervisors had a significantly different type of reaction (e.g., perceptions of fairness, psychological contract, organizational climate, self-efficacy, and stage of readiness) following the change than subordinates. Therefore, this exploratory hypothesis was tested using a two-way mixed ANOVA, with supervisory level as a between subjects variable. Results are presented below in text as well as in Table 12.

A significant multivariate effect was found for time, F (11, 135) = 2.68, $p < .01$, $\eta^2 = .18$, but not for supervisory level or the interaction, Fs (11, 136) = 1.44 and 0.64. Univariate analyses revealed significant time effects only for contemplative stage and psychological contract, Fs (1, 145) = 15.92 and 6.40, ps < .01 and .05, $\eta^2 = .10$ and .04, respectively. As found in earlier analyses, means at Time 2 on both variables were lower than means at Time 1 (see Table 9 and related analyses).

CHAPTER IV

DISCUSSION

The goal of this study was to empirically test and extend a model of planned change developed by Porras and Robertson (1992) in an organization using well-validated measures expected to capture the impact of a change intervention. The Porras and Robertson model is important to test, because it recognizes previous theoretical contributions, integrates findings from applied research, and has received some empirical support through meta-analytic techniques. This study attempted to replicate and extend two of Robertson et al.'s (1993) research hypotheses by suggesting statistically significant changes (e.g., the intervention activity will have a significant impact on work setting variables and individual behavior variables), rather than correlational relationships as hypothesized by Robertson and his colleagues.

The results of the study do not resemble the pattern of relationships (i.e., positive correlations) obtained by Robertson et al. (1993). Comparing means of all study variables indicates that overall, the intervention activity had a neutral to negative impact (i.e., change) on employee perceptions of work setting variables, in contrast to Robertson et al's (1993) hypotheses. Furthermore, this study tested the statistical significance of the change and found that no organizing arrangements constructs changed, and only one social factors construct changed significantly, although in a negative manner. Specifically, the relational psychological contract with the organization decreased

significantly. The intervention was designed to change policies and procedures of the organization as well as interactions among supervisor and supervisee. However, the only change present in the study variables measured was how employees felt about their relationship with the organization. This is an important finding for an organization to consider, as research suggests that changes to a relational psychological contract may lead to decreases in organizational commitment (Shore et al., 1999).

One other social factors variable, the rewards dimension of organizational climate, also decreased in a significant manner, although not statistically. Employees identified changes in the way rewards and recognition were distributed as a result of the intervention, as perceptions of the reward climate significantly decreased. This change in climate perceptions may have an impact on motivation to perform as suggested by Litwin and Burke's (1992) research on organizational climate. However, these findings are contradictory to Robertson et al.'s hypotheses, which suggest that the intervention activity will generate positive change in the work setting variables.

Robertson and his colleagues found that organizing arrangements and social factors interventions had significant and positive impacts on measures of individual behavior. This study also tested the relationship among changes to the work setting variables (as a result of the intervention) and individual behaviors. This finding was not fully replicated in the current study. Theories underlying individual behavior change (e.g., social cognitive theory, transtheoretical model and readiness for change) were explored to further understand relationships among work setting variables and individual behavior change. Specifically, one individual behavior construct (i.e., contemplative stage) decreased by a statistically significant amount, which does not support the

hypothesized relationships within the Porras and Robertson framework. Perhaps individuals who were contemplating change received feedback that was inconsistent with their beliefs about their needs for performance change. After receiving feedback, negative reactions may have decreased their readiness at this stage. However, this does account for the lack of positive change in other stages of readiness or in perceptions of self-efficacy.

Study Conclusions

The findings of this study do not seem to provide support for expectations of statistically significant positive change in work setting variables and individual behavior change following an OD intervention. In other words, individual employees within the organization were not affected when the organization introduced a major shift in organizational procedures and operations. The change intervention, which impacted supervisory roles, responsibilities, and interactions with subordinates, had little impact on individuals' perceptions of the work environment as well as individual behavior change constructs.

The work setting variables that changed significantly did so in a negative direction, which was not hypothesized according to the model. For example, psychological contract with the organization decreased over time, suggesting that employees may have lost a sense of trust in the organization. Negative findings may be explained by several factors. First, it is important to consider if something about the respondents is different from non-respondents (e.g., individuals with more negative reactions to the change may have been more likely to complete the survey), suggesting that the sample is negatively biased. Given that it is impossible to test these assumptions,

alternative explanations may be useful. Perhaps the target of the change intervention impacted the findings. Specifically, performance evaluations represent a stressful and oftentimes negatively perceived but necessary part of organizational life. It is possible that this unique aspect of the change target (e.g., performance evaluation expectations and reactions are typically negative) prohibited positive findings from being measured. Future research should explore employee reactions to performance evaluations as a specific type of change intervention that may not yield positive changes in perceptions. Additionally, the timing of this intervention may have impacted the results, as the intervention began well in advance of data collection. It can be speculated that employee perceptions decreased well before surveys were distributed at Time 1.

Contributions to Theory

This study also attempted to better understand relationships among constructs within the Porras and Robertson model using social exchange theory as a framework. The moderating role of social exchange relationships is important to consider when organizations implement change interventions, and also when the interventions target interactions among supervisor and subordinate. It was hypothesized that social exchange relationships (e.g., psychological contract and exchange ideology) would moderate the relationship between fairness perceptions (e.g., distributive justice, procedural justice, interpersonal justice, and informational justice) and individual reactions. The findings from this study do not support the moderating role of social exchange relationships, or that relationships can help maintain reactions during unfair events. Given that little change was observed in study variables, perhaps fairness perceptions and individual reactions to the change were not strong enough to be detected through moderation

analysis. Perhaps this study suggests that in a performance appraisal setting, social exchange relationship may be less important than economic exchanges, given that performance appraisals are closely linked with outcomes such as pay raises and promotions. Future research should continue to consider the moderating role of social exchange, as well as the importance of economic exchange relationships, in performance appraisal contexts.

Another goal of the study was to further the understanding of individual behavior change in organizations by incorporating stages of readiness and measures of self-efficacy. The change intervention significantly impacted individuals contemplating change, but not individuals taking action to change. Perhaps reactions to specific performance feedback are negative when one is unsure what to change, or how to change. As a limitation, one of the scales (i.e., precontemplative stage) was not internally consistent, and consequently not used in the analyses. Perhaps this stage is not useful or applicable in organizational settings, as employees considering their performance review are aware that they will receive feedback that they *may* need to change, whereas individuals in the precontemplative stage do not feel that change is necessary. Furthermore, the publishers of the scale do not suggest cut scores to determine an individual's specific 'stage.' However, despite methodological limitations and lack of specificity in the scales, this study found that the new performance management system significantly decreased perceptions of readiness at the contemplative stage. It seems that performance feedback can impact perceptions of readiness for change, and researchers should continue to explore the utility of this measure in organizational settings.

Limitations

Some limitations of the study methodology, in addition to organizational events, however, may account for the lack of statistically significant change in study variables. First, due to financial problems encountered by the organization, data collection was halted before all organization employees could respond to the second survey, making it difficult to determine the full impact of change and resulting in a sample size too small to achieve adequate statistical power. As a result of stopping data collection, survey response rates, participant attrition, and differences among responders at Times 1 and 2 cannot be accurately assessed. In addition, survey responses were only collected at two points in time, which may not have allowed enough time to pass for the full impact of the intervention to be recognized.

It is possible that positive change did occur, but due to methodological limitations, the change was not detectable using a self-report survey. For example, some studies suggest that the process of research and data collection can influence the outcome (Rosenthal, 1976). The mere presence of a researcher delivering surveys in an organization can have an impact on employee perceptions of a work environment. The nature and types of questions addressed on the survey may have had an impact on employees perceptions of the performance management system. In addition, some research suggests that data obtained via paper-and-pencil surveys should not be compared directly to data collected online using the internet (e.g., Ployhart, Weekley, Holtz, & Kemp, 2003) as data may not be psychometrically equivalent. If this were true in the present study and, if change occurred, it may not be found due to sample means that may not be directly comparable. Future research should continue asking these questions as

organizations are likely to continue utilizing web-based technologies for personnel testing and survey data collection.

Identifying whether change has occurred or not has been explored by the work of Golembiewski, Billingsley, and Yeager (1976), who suggest that change can take several forms in organizational change efforts. For example, these authors differentiate alpha, beta, and gamma change. *Alpha* change is defined as change that is comparable before and after an intervention occurs, and is assumed to be the intended result of the change. In the current study, where no change or negative change was found, Golembiewski et al. suggest that *beta* change may have occurred, whereby recalibration or standards for judging an event change. *Beta* change can be assessed by comparing factor loadings or variances obtained in factor analysis that suggests differences in how the rating scale is interpreted. Applying a *beta* change interpretation to this study, the findings can be interpreted in the following manner: Perhaps individuals rated their previous experiences with performance appraisals on the first survey; the new performance management system was vastly different, and could have changed the way individuals interpreted the survey items on the second survey. Therefore, any changes may have in fact been due to how employees perceived the new system, rather than a simple increase or decrease in perceptions compared to the previous system.

Taken a step further, Golembiewski et al. (1976) propose that *gamma* change occurs when an intervention facilitates a redefinition or alteration in frame of reference about an event. *Gamma* change can also be assessed by comparing factor analytic results of constructs at Time 1 and Time 2 to determine if scales are interpreted differently at each moment in time. If *gamma* change occurred in the present study, it seems likely that

a different pattern of results would have been obtained, with changes occurring in the relationships among variables to each other. As this did not occur, it seems most likely that *beta* change can account for the lack of significant findings. In this manner, employees' basis for judging the fairness of performance appraisals shifted as a result of the intervention, rather than fairness perceptions and reactions changing as a result of the intervention.

Other explanations for the lack of change include the difficult task of capturing the process of change over time. Perhaps not enough time elapsed for effects of the intervention to be evident in thoughts and behaviors of employees. Alternatively, the change may have occurred earlier than when the first survey was administered. For example, the organization collected survey data approximately one year before this project was conducted. The results of the preliminary survey suggested the need for a new performance management system. Next, the new performance competencies were developed by external consultants who interviewed incumbents about their job duties. Therefore, the effects of the change may have already been in place by the time the first survey of this study was administered. Other significant interventions may have included human resource representatives conducting focus groups with managers and employees regarding their experiences in the previous performance appraisal system. It is difficult to determine when change occurs, and it seems likely that some change may have occurred before this study began.

From a practical standpoint, the variables expected to change did not, and employees' average rating on all measures was "somewhat positive" at both times of measurement (e.g., an average of 5 on a 7 point scale). It seems that employees were

satisfied with the performance appraisal process, prior to the intervention. Given that the focus of the intervention was the performance appraisal system, it may be hard to improve this. That is, the intervention may have not been able to move employee perceptions above a ceiling effect.

Implications

Although most of the current study hypotheses were not well supported, the results have implications for future research and practice of organizational change interventions. First, future research should continue to focus on the integration of the science and practice of OD in order to continue the advancement of the field. Although this study had some methodological limitations (such as small sample size, timing of collection of time 1 data, and lack of control group), the study provided a framework to understand the process of change and the intervention's potential impact on several subsystems of the organization. Additional tests of the model should include individual and organizational outcomes, measured at several points in time, to best capture the impact of change. Future research should focus on monitoring change longitudinally, as change to one facet of the system could serve as a second intervention, reigniting changes within other organizational subsystems (Porras & Robertson, 1992).

The results of this study may have implications for the application of change interventions in organizations. Although significant change was detected on only two measures, it remains important to consider the contributions of the model. The Porras and Robertson model provides a useful framework for selecting and designing an intervention based on the desired impact on subsystems of the organization, such as organizing arrangements and social factors. The model also encourages change agents to

consider the interaction effects within an open system, recognizing that change to one facet of the system may cause change to other aspects of the system. Furthermore, it is important to select instruments that are sensitive to change, as well as relate specifically to the targets of or goals of the change intervention. In this study, some scales may not have been sensitive to employee attitude change, with two scales having low reliability. Other scales, like stages of readiness and self-efficacy, were constructed for the study and may not have been context-specific enough to detect change at the broad level of attitudes about performance. Future research should continue to refine measurement of these constructs in job performance settings.

The results of this study may suggest that organizations train supervisors to deliver feedback in a manner that is consistent with an employee's stage of readiness and perception of their ability to change. Furthermore, organizations introducing change should focus on factors relevant to maintaining positive employee-employer relationships. Last, the study results offer insights into the measurement of change within an organization. Measuring change in several subsystems of an organization and collecting data over multiple time periods are important to fully capture the effects of change interventions.

In summary, the findings of this study seem to show some support for the usefulness of the Porras and Robertson framework, but not for Robertson et al's hypothesized relationships within the model. Future applied research endeavors should continue to test the model using longitudinal designs. For the field of OD to continually progress, it is important to continue research that reflects academic and practitioner

contributions, to integrate the field in a manner that incorporates best practices with sound theoretical models.

REFERENCES

Adams, D. (1965). Inequity in social exchange. In L. Berkowitz (Ed.) *Advances in experimental social psychology* (Vol. 2, pp. 267-299). New York: Academic Press.

Armenakis, A.A. & Bedeian, A.G. (1999). Organizational change: A review of theory and research in the 1990s. *Journal of Management, 25*(3), 293-315.

Austin, J.R. & Bartunek, J.M. (2003). *Theories and practices of organizational development.* In W.C. Borman, Walter C., D.R. Ilgen, et al. (Eds.) *Handbook of psychology: Industrial and organizational psychology* (Vol. 12. pp. 309-332). New York: John Wiley & Sons, Inc.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (Ed.). (1995). *Self-efficacy in changing societies.* New York: Cambridge University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Bandura, A. (2001). *Guide for constructing self-efficacy scales.* Unpublished manuscript, Stanford University.

Bandura, A., Reese, L., & Adams, N.E. (1982). Microanalysis of action and fear arousal as a function of differential levels of perceived self-efficacy. *Journal of Personality and Social Psychology, 43,* 5 – 21.

Barcikowski, R.S., & Robey, R.R. (1985). Decisions in a single group repeated measures analysis: Statistical tests and three computer packages. *The American Statistician, 38,* 248-250.

Bernardin, H.J., Hagan, C.M., Kane, J.S., & Villanova, P. (1998). Effective performance management: A focus on precision, customers, and situational constraints. In J.W. Smither (Ed.), *Performance appraisal: State of the art in practice* (pp. 3 – 48). San Francisco, CA: Jossey-Bass.

Bies, R. (1987). The predicament of injustice: The management of moral outrage. In L. L. Cummings & B.M. Staw (Eds.), *Research in organizational behavior* (Vol. 9, pp. 289-319). Greenwich, CT: JAI Press.

Bies, R.J. & Moag, J.S. (1986). Interactional justice: Communication criteria of fairness. In R.J. Lewicki, B.H. Sheppard, & B.H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol. 1, pp. 43-55). Greenwich, CT: JAI Press.

Blau, P.M. (1964). *Exchange and power in social life.* New York: John Wiley & Sons.

Bridges, W. (1986). Managing organizational transitions. *Organizational Dynamics, 15*(1), 24 – 33.

Brockner, J., Tyler, T.R., & Cooper-Schneider, R. (1992). The influence of prior commitment to an institution on reactions to perceived unfairness: The higher they are, the harder they fall. *Administrative Science Quarterly, 37,* 241 – 261.

Burke, W.W. (1987). *Organization development: A normative view.* Reading, MA: Addison-Wesley Publishing Company.

Burke, W. W. (2002). *Organization change: Theory and practice.* Thousand Oaks, CA: Sage Publications, Inc.

Burke, W.W. & Litwin, G.H. (1992). A causal model of organizational performance and change. *Journal of Management, 18*(3), 523-545.

Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology,* 86, 386-400.

Cook, S.D.N. & Brown, J.S. (1999). Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. *Organization Science, 10,* 381- 400.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation: Design and analysis issues in field settings.* Chicago: Rand McNally.

Cropanzano, R., & Greenberg, J. (1997). Progress in organizational justice: Tunneling through the maze. In C.L. Cooper & L. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 317-372). London: Wiley

Cropanzano, R., Rupp, D.E., Byrne, Z.S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology, 88*(1), 160-169.

Cropanzano, R., Rupp, D.E., Mohler, C.J., & Schminke, M. (2001). Three roads to organizational justice. In J. Ferris (Ed.), *Research in personnel and human resources management* (Vol. 20, pp. 1-113). Greenwich, CT: JAI Press.

Eisenberger, R., Cotterell, N., & Marvel, J. (1987). Reciprocation ideology. *Journal of Personality and Social Psychology, 53*, 743-750.

Eisenberger,R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500-507.

Elicker, J.D., Levy, P.E., & Hall R.J. (2002). *An organizational justice explanation of feedback reactions in leader-member exchange relationships.* Paper presented at the 17th Annual Meeting of the Society for Industrial/Organizational Psychology, Toronto, Ontario, Canada.

Emerson, R. (1981). Social exchange theory. In M. Rosenberg & R. Turner (Eds.), *Social psychology: Sociological perspectives* (pp. 30-65). New York: Basic Books.

Findley, H.M., Giles, W.F. & Mossholder, K.W. (2000). Performance appraisal process and system facets: Relationships with contextual performance. *Journal of Applied Psychology, 85*(4), 634-640.

Fogarty, G.M. (1997). *The change in employer and employee obligations following reemployment: A study of psychological contract violation of professionals and managers.* Unpublished doctoral dissertation. College of Education, Temple University, Philadelphia, Pennsylvania.

Folger, R. (1993). Reactions to mistreatment at work. In J.K. Murnighan (Ed.), *Social psychology in organizations: Advances in theory and research* (pp. 161-183). Englewood Cliffs, NJ: Prentice Hall.

Folger, R. & Greenberg, J. (1985). Procedural justice: An interpretative analysis of personnel systems. In K. Rowland & G. Ferris (Eds.), *Research in Personnel and Human Resource Management* (Vol. 3, pp. 141-183).

Folger, R., & Skarlicki, D.P. (1999). Unfairness and resistance to change: Hardship as mistreatment. *Journal of Organizational Change Management, 12,* 35-50.

French, W.L. & Bell, C.H. (1999). *Organization development: Behavioral science interventions for organization improvement* (6th ed.). Upper Saddle River, New Jersey: Prentice-Hall Inc.

Giles, W. F., & Mossholder, K.W. (1990). Employee reactions to contextual and session components of performance appraisal. *Journal of Applied Psychology, 75,* 371-377.

Gohm, C.L. & Clore, G.L. (2002). Affect as information: An individual-differences approach. In L.F. Barrett & P. Salovey (Eds.). *The wisdom in feeling: Psychological processes in emotional intelligence. Emotions and social behavior.* (pp. 89-113). New York, NY, US: Guilford Press.

Golembiewski, R.T., Billingsley, K., & Yeager, S. (1976). Measuring change and persistence in human affairs: Types of change generated by OD designs. *Journal of Applied Behavioral Science, 12*, 133 -157.

Goodman, P.S., & Dean, J.W., Jr. (1982). Creating long-term organizational change. In P.S. Goodman and Associates (Eds.) *Change in organizations* (pp. 226-279). San Francisco: Jossey-Bass.

Greenberg, J. (1986). Organizational performance appraisal procedures: What makes them fair? In R.J. Lewicki, B.H. Sheppard, & B.H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol 1, pp. 25-41). Greenwich, CT: JAI Press.

Greenberg, J. (1990). Organizational justice: Yesterday, today, & tomorrow. *Journal of Management, 16,* 399-432.

Guzzo, R.A., Jette, R.D., & Katzell, R.A. (1985). The effects of psychologically based intervention programs on worker productivity: A meta-analysis. *Personnel Psychology, 38,* 275-291.

Halfhill, T.R., Huff, J.W., Johnson, D.A. Ballentine, R.D., & Beyerlein, M.M. (2002). Interventions that work (and some that don't): An executive summary of the organizational change literature. In R.L. Lowman (Ed.) *Handbook of organizational consulting psychology* (pp. 619 – 644). San Francisco: Jossey-Bass.

Holbrook, R.L. Jr., & Kulik, C.T. (1996). *Strength of membership influences on reactions to bank loan procedures.* Paper presented at the annual meeting of Society for Industrial and Organizational Psychology, San Diego, CA.

Ilgen, D.R. (1993). Performance-appraisal accuracy: An illusive or sometimes misguided goal? In H. Schuler, G.L. Farr, and M. Smith (Eds.), *Personnel selection and assessment: Individual and organizational perspectives* (pp. 235-252). New Jersey: Erlbaum.

Katz, D. & Kahn, R.L. (1978). *The social psychology of organizations* (2nd ed.). New York: Wiley.

Keppel, G., & Zedeck, S. (1989). *Data analysis for research designs.* New York: W.H. Freeman and Company.

King, W.C. & Miles, E.W. (1995). A quasi-experimental assessment of the effect of computerizing noncognitive paper-and-pencil measurements: A test of measurement equivalence. *Journal of Applied Psychology, 80,* 643 – 651.

Kluger, A.N., & DeNisi, A.S. (1996). Effects of feedback intervention on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin, 119,* 254-284.

Konovsky, M.A. & Cropanzano, R. (1991). Perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. *Journal of Applied Psychology, 76,* 698-707.

Landy, F.J., Barnes, J.L., & Murphy, K.R. (1978). Correlates of perceived fairness and accuracy of performance evaluation. *Journal of Applied Psychology, 63,* 751-754.

Landy, F.J., Barnes-Farrell, J.L., & Cleveland, J.N. (1980). Perceived fairness and accuracy of performance evaluation: A follow-up. *Journal of Applied Psychology, 65,* 355-356.

Lewin, K. (1951). *Field theory in social science.* New York: Harper.

Leventhal, G. S. (1976). The distribution of rewards and resources in groups and organizations. In L. Berkowitz & W. Walster (Eds.), *Advances in experimental social psychology* (Vol. 9, pp. 91-131). New York: Academic Press.

Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. Gergen, M. Greenberg, & R. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 27-55). New York: Plenum Press.

Leventhal, G.S., Karuza, J., & Fry, W.R. (1980). Beyond fairness: A theory of allocation preferences. In G. Mikula (Ed.), *Justice and social interaction* (pp. 167-218). New York: Springer-Verlag.

Litwin, G.H., Bray, J., & Brooke, K.L. (1996). *Mobilizing the organization: Bringing strategy to life.* London: Prentice Hall.

Litwin, G.H., & Burmeister, M.G. (1992). *Climate and performance.* Mattapoisett: The Purrington Foundation.

Litwin, G. H., & Stringer, R. A. (1968). *Motivation and organizational climate.* Cambridge, MA: Harvard University Press.

Macy, B.A., & Izumi, H. (1993). Organizational change, design, and work innovation: A meta-analysis of the employee turnover process. *Psychological Bulletin, 86,* 493-522.

Masterson, S.S., Lewis, K., Goldman, B.M, Taylor, M.S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal, 43*(4), 738-748.

McConnaughy, E.N., DiClemente, C.C., Prochaska, J.O., & Velicer, W.F. (1989). Stages of change in psychotherapy: A follow-up report. *Psychotherapy, 26*, 494 – 503.

McConnaughy, E.N., Prochaska, J.O., & Velicer, W.F. (1983). Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research, and Practice, 20*, 368-375.

Meyer, H.H. (1991). A solution to the performance appraisal feedback enigma. *Academy of Management Executive, 5,* 68-76.

Moorman, R.H. (1991). Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? *Journal of Applied Psychology, 76*, 845-855

Mossholder, K., Settoon, R., Harris, S., & Armenakis, A. (1995). Measuring emotion in open-ended survey responses: An application of textual data analysis. *Journal of Management, 21*, 335-355.

Mowday, R.T., Porter, L.W., & Steers, R.M. (1982). *Employee-organization linkages: The psychology of commitment, absenteeism, and turnover.* New York: Academic Press.

Nathan, B.R., Mohrman, A.M., Jr., & Milliman, J. (1991). Interpersonal relations as a context for the effects of appraisal interviews on performance and satisfaction: A longitudinal study. *Academy of Management Journal, 34,* 352-369.

Neuman, G.A., Edwards, J.E., & Raju, N.S. (1989). Organizational development interventions: A meta-analysis of their effects of satisfaction and other attitudes. *Personnel Psychology, 42,* 461-483.

Ployhart, R. E., & Ryan, A. M. (1997). Toward an explanation of applicant reactions: An examination of organizational justice and attribution frameworks. *Organizational Behavior and Human Decision Processes, 72,* 308-335.

Ployhart, R. E., Weekley, J. A., Holtz, B. C., & Kemp, C. (2003). Web-based and paper-and-pencil testing of applicants in a proctored setting: Are personality, biodata and situational judgment tests comparable? *Personnel Psychology. 56*(3), 733-752.

Porras, J.I. (1987). *Stream analysis: A powerful way to diagnose and manage organizational change.* Reading, MA: Addison-Wesley.

Porras, J.I. & Hoffer, S.J. (1986). Common behavior changes in successful organization development efforts. *The Journal of Applied Behavioral Science, 22*(4), 477 – 494.

Porras, J.I., & Robertson, P.J. (1987). Organization development theory: A typology and evaluation. In R.W. Woodman & W.A. Pasmore (Eds.), *Research in organizational change and development* (Vol. 1, pp. 1-57). Greenwich, CT: JAI.

Porras, J.I., & Robertson, P.J. (1992). Organizational development: Theory, practice, and research. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial/organizational psychology* (2nd ed., Vol 3, pp. 719-822). Palo Alto, CA: Consulting Psychologists Press.

Prochaska, J.O. & DiClimente, C.C. (1983). Stages and processes of self-change in smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 5,* 390-395.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to the addictive behaviors. *American Psychologist, 47,* 1102-1114.

Prochaska, J.O., Norcross, J., & DiClimente, C.C. (1994). *Changing for good.* New York: William Morrow.

Robbins, T.L. & DeNisi, A.S. (1994). A closer look at interpersonal affect as a distinct influence on cognitive processing in performance evaluations. *Journal of Applied Psychology, 79(3),* 341-353.

Robertson, P.J., Roberts, D.R., & Porras, J.I. (1993). Dynamics of planned organizational change: Assessing empirical support for a theoretical model. *Academy of Management Journal, 36,* 619-634.

Rosenthal, R. (1976). *Experimenter effects in behavioral sciences* (enlarged ed.). New York: Halsted.

Rousseau, D. M. (1990). New hire perceptions of their own and their employer's obligations: A study of psychological contracts. *Journal of Organizational Behavior, 11,* 389 - 400.

Rousseau, D.M. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements.* Thousand Oaks, CA: Sage Publications.

Rousseau, D. M, & Tijoriwala, S. A. (1998). Assessing psychological contracts: Issues, alternatives and measures. *Journal of Organizational Behavior, 19,* 679 - 695.

Schneider, B. (2000). The psychology of organizations. In N.M. Ashkanasy, C. Wilderom, & M.F. Peterson (Eds.), *Handbook of organizational culture and climate* (pp. xvii-xxi). Thousand Oaks, CA: Sage.

Schwarz, N. & Clore, G.L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45,* 513 – 523.

Schwarz, N. & Clore, G.L. (1988). How do I feel about it? Informative functions of affective states. In K. Fiedler & J. Forgas (Eds.), *Affect, cognition, and social behavior* (pp. 44 – 62). Toronto, Ontario, Canada: Hogrefe International.

Shore, L.M., Tetrick, L.E., & Barksdale, K. (1999; April). *Measurement of transactional and relational exchanges.* Paper presented at Society for Industrial Organizational Psychology, Atlanta, GA.

Stanton, J.M. (1998). An empirical assessment of data collection using the internet. *Personnel Psychology, 51,* 709 – 725.

Taylor, M.S., Tracy, K.B., Renard, M.K., Harrison, J.K., & Carroll, S.J. (1995). Due process in performance appraisal: A quasi-experiment in procedural justice. *Administrative Science Quarterly, 40,* 495-523.

Thibaut, J. & Walker, L. (1975). *Procedural justice: A psychological analysis.* Hillsdale, NJ: Erlbaum.

Van de Ven, A., and Huber, G. (1990). Longitudinal field research methods for studying processes of organizational change. *Organization Science, 1,* 213-219.

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review, 92,* 548 – 573.

Winum, P.C., Nielsen, T.M., and Bradford, R.E. (2002). Assessing the impact of organizational consulting. In R.L. Lowman (Ed.) *Handbook of organizational consulting psychology* (pp. 645 – 667). San Francisco: Jossey-Bass.

Witt, L.A. (1991). Exchange ideology as a moderator of the job attitudes—organizational citizenship behaviors relationships. *Journal of Applied Social Psychology, 21,* 1490-1501.

Witt, LA., Kacmar, M.A., & Andrews, M.C. (2001). The interactive effects of procedural justice and exchange ideology on supervisor-rated commitment. *Journal of Organizational Behavior, 22,* 505-515.

Wood, R.E. & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14,* 361-384.

APPENDICES

APPENDIX A: Performance Competency Dimensions

Competency
Teamwork
Customer Focus
Quality
Productivity
Innovation
Achieves Results
Communication
Organizational Knowledge
Decision Making
Planning and Organizing
Technical/Functional Expertise
Interpersonal
Overall Performance

APPENDIX B: Survey Form Example

IMPORTANT: Please create a unique ID number by supplying the last 2 digits of your home telephone number followed by the day of the month on which you were born (dd) followed by the last 2 digits of your social security number. Ex: 260599.

***Please write your ID number here: ___ ___ ___ ___ ___ ___

To determine the impact of the new performance management system, we need to adequately assess the various aspects of the work environment that might have been affected by its introduction. Therefore, although not all the questions below may appear to be directly related to the new performance management system itself, they give us a sense of your overall work environment now that you've experienced the new system in your recent performance evaluation. *Please* answer every question. This survey takes about 20 minutes to complete. **Thank you!**

Section 1: How You Feel About [company name]

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Your Overall Relationship with [company name]

Circle Your Response

1.	[Company name] has made a significant investment in me.	1	2	3	4	5	6	7
2.	The things I do on the job today will benefit my standing in [company name] in the long run.	1	2	3	4	5	6	7
3.	There is a lot of give and take in my relationship with [company name].	1	2	3	4	5	6	7
4.	I worry that all my efforts on behalf of [company name]will never be rewarded.	1	2	3	4	5	6	7
5.	I don't mind working hard today – I know I will eventually be rewarded by [company name].	1	2	3	4	5	6	7
6.	My relationship with [company name] is based on mutual trust.	1	2	3	4	5	6	7
7.	I try to look out for the best interest of [company name] because I can rely on [company name] to take care of me.	1	2	3	4	5	6	7
8.	Even though I may not always receive the recognition from [company name] that I deserve, I know my efforts will be rewarded.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Working at [company name]

Circle Your Response

9.	We have a promotion system here that helps the best person rise to the top.	1	2	3	4	5	6	7
10.	In [company name] the rewards and encouragements you get usually outweigh the threats and the criticism.	1	2	3	4	5	6	7
11.	In [company name] people are rewarded in proportion to the excellence of their job performance.	1	2	3	4	5	6	7
12.	There is a great deal of criticism about people's job performance in [company name].	1	2	3	4	5	6	7
13.	There is not enough reward and recognition given in [company name] for doing good work.	1	2	3	4	5	6	7
14.	If you make a mistake in [company name] you will be punished.	1	2	3	4	5	6	7
15.	In [company name] we set very high standards for performance.	1	2	3	4	5	6	7
16.	Our management believes that no job is so well done that it couldn't be done better.	1	2	3	4	5	6	7
17.	Around here there is a feeling of pressure to continually improve our personal and group performance.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Working at [company name]:

Circle Your Response

18.	Management believes that if the people are happy, productivity will take care of itself.	1	2	3	4	5	6	7
19.	To get ahead in [company name] it's more important to get along than it is to be a high producer.	1	2	3	4	5	6	7
20.	In [company name]people don't seem to take much pride in their performance.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

To what extent do you agree that your last performance evaluation...

Circle Your Response

21.	...reflected the effort you put into your work.	1	2	3	4	5	6	7
22.	...was appropriate for the work you completed.	1	2	3	4	5	6	7
23.	...reflected what you contributed to [company name].	1	2	3	4	5	6	7
24.	...was justified, given your performance.	1	2	3	4	5	6	7

To what extent do you agree that the last performance appraisal process...

Circle Your Response

25.	...allowed you to express your views and feelings during the performance evaluation procedure.	1	2	3	4	5	6	7
26.	...allowed you influence over the evaluation arrived at by the performance evaluation procedure.	1	2	3	4	5	6	7
27.	...was applied consistently.	1	2	3	4	5	6	7
28.	...was free of bias.	1	2	3	4	5	6	7
29.	...was based on accurate information.	1	2	3	4	5	6	7
30.	...allowed you to appeal your evaluation arrived at by the performance appraisal process.	1	2	3	4	5	6	7
31.	...upheld ethical and moral standards.	1	2	3	4	5	6	7

The following items refer to overall Procedures and Policies at[company name]

Circle Your Response

32.	I am satisfied with the information I receive about my job duties.	1	2	3	4	5	6	7
33.	I am satisfied with the information I receive about how my performance is being evaluated.	1	2	3	4	5	6	7
34.	I am satisfied with the information I receive about promotion and advancement opportunities at [company name].	1	2	3	4	5	6	7

Section 2: How You Feel About Your Supervisor

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

During my last performance evaluation, my Supervisor...

Circle Your Response

35.	...treated me in a polite manner.	1	2	3	4	5	6	7
36.	...treated me with dignity.	1	2	3	4	5	6	7
37.	...treated me with respect.	1	2	3	4	5	6	7
38.	...refrained from improper remarks or comments.	1	2	3	4	5	6	7
39.	...was candid in his/her communications with me.	1	2	3	4	5	6	7
40.	...explained the procedures thoroughly.	1	2	3	4	5	6	7
41.	...gave reasonable explanations regarding the procedures.	1	2	3	4	5	6	7
42.	...communicated details in a timely manner.	1	2	3	4	5	6	7
43.	...seemed to tailor his/her communication to my specific needs.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Overall, My Supervisor...

Circle Your Response

44.	...strongly considers my goals and values.	1	2	3	4	5	6	7
45.	...really cares about my well-being.	1	2	3	4	5	6	7
46.	...would be sure to notice if I did the best job possible.	1	2	3	4	5	6	7
47.	...cares about my general satisfaction at work.	1	2	3	4	5	6	7
48.	...would forgive an honest mistake on my part.	1	2	3	4	5	6	7
49.	...would take advantage of me if given the opportunity.	1	2	3	4	5	6	7
50.	...cares about my opinions.	1	2	3	4	5	6	7
51.	...is willing to help me when I need a special favor.	1	2	3	4	5	6	7
52.	...is available to help when I have a problem.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Your Relationship With Your Supervisor

Circle Your Response

53.	My willingness to help my supervisor depends partly on his/her behavior toward me.	1	2	3	4	5	6	7
54.	If I am treated badly by my supervisor, I would probably reduce how much I do for him or her.	1	2	3	4	5	6	7
55.	How much I help my supervisor does not depend on how he/she treats me.	1	2	3	4	5	6	7
56.	My effort to assist my supervisor has nothing to do with how much he/she assists me.	1	2	3	4	5	6	7
57.	The failure of my supervisor to appreciate my assistance does not reduce my willingness to offer him/her help.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents **your level of confidence** for each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

In general, my level of confidence that my supervisor...

Circle Your Response

58.	...is technically competent at the critical elements of his/her job is:	1	2	3	4	5	6	7
59.	...will follow through on assignments is:	1	2	3	4	5	6	7
60.	...has an acceptable level of understanding of his/her job is:	1	2	3	4	5	6	7
61.	...will be able to do his/her job in an acceptable manner is:	1	2	3	4	5	6	7
62.	...is reliable – I can rely on what he/she tells me -- is:	1	2	3	4	5	6	7
63.	...will do the job without causing other problems is:	1	2	3	4	5	6	7
64.	...will think through what he/she is doing on the job is:	1	2	3	4	5	6	7

Section 3: How You Feel About Your Job Performance

The items in this section ask you to think about your attitudes about your ability and current level of performance at work. Keep in mind that this information is for research purposes only and will not be used in your performance evaluation. Try to be as honest with yourself as possible.

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

In general, I feel confident in my ability to...

Circle Your Response

65.	...work collaboratively and effectively with others on my team.	1	2	3	4	5	6	7
66.	...understand and anticipate the needs of internal/external customers.	1	2	3	4	5	6	7
67.	...complete quality work that is accurate and thorough.	1	2	3	4	5	6	7
68.	...manage my time so I can work with a sense of urgency.	1	2	3	4	5	6	7
69.	...develop new and unique ideas when I'm working on a task and/or problem-solving.	1	2	3	4	5	6	7
70.	...stay focused by accepting and fulfilling all of my responsibilities.	1	2	3	4	5	6	7
71.	...express my ideas verbally and in writing.	1	2	3	4	5	6	7
72.	...use my knowledge about [company name]and the industry to address problems and opportunities.	1	2	3	4	5	6	7
73.	...make thoughtful decisions that benefit [company name].	1	2	3	4	5	6	7
74.	...plan and organize my work activities so I can better anticipate future events.	1	2	3	4	5	6	7
75.	...learn and maintain current technical or functional knowledge and skills related to my job.	1	2	3	4	5	6	7
76.	...support others I work with to maintain quality interpersonal relationships.	1	2	3	4	5	6	7
77.	...perform well overall in my job.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Your Current Job Performance

Circle Your Response

78.	As far as I'm concerned, I don't see any major problems with my job performance that need changing: I'm doing my job just right.	1	2	3	4	5	6	7
79.	I think I might be ready for some self-improvement, so I can perform better at work.	1	2	3	4	5	6	7
80.	I am finally doing some work on improving my performance.	1	2	3	4	5	6	7
81.	I've been thinking that I might want to change something about my performance at work.	1	2	3	4	5	6	7

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The following items refer to Your Current Job Performance

Circle Your Response

82.	At times my performance makes my job difficult, but I'm working on improving.	1	2	3	4	5	6	7
83.	I'm hoping that my performance evaluation will help me to better understand myself.	1	2	3	4	5	6	7
84.	I guess that I have faults, but there's nothing that I really need to change.	1	2	3	4	5	6	7
85.	I am really working hard to improve my performance at work.	1	2	3	4	5	6	7
86.	I have a problem with some areas of my performance and I really think I should work at it.	1	2	3	4	5	6	7
87.	Even though I'm not always successful in changing, I am at least working on doing my job better.	1	2	3	4	5	6	7
88.	I may be part of the problem at work, but I really don't think I am.	1	2	3	4	5	6	7
89.	I hope that my supervisor will have some good advice for me when we discuss my performance evaluation.	1	2	3	4	5	6	7
90.	Anyone can talk about improving their performance; I'm actually doing something about it.	1	2	3	4	5	6	7
91.	I have some concerns about my performance, but so does everyone else. Why spend time worrying about it?	1	2	3	4	5	6	7
92.	I would rather cope with my faults than try to change them.	1	2	3	4	5	6	7

Section 4: How You Feel About Your Most Recent Performance Evaluation

Keep in mind that this information is for research purposes only to understand attitudes towards performance appraisals and will not be used in your next performance evaluation.

Using the following 7-point scale, circle the number that *best* represents your level of agreement with each item.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

After receiving the results of my most recent performance evaluation, I felt that...

Circle Your Response

93.	...my performance evaluation was an accurate reflection of my job performance.	1	2	3	4	5	6	7
94.	...I was angry with the performance appraisal results.	1	2	3	4	5	6	7
95.	...the information I received about my performance was helpful and useful to me.	1	2	3	4	5	6	7
96.	...I was satisfied with the performance evaluation as a whole.	1	2	3	4	5	6	7
97.	...I was happy with the results of my performance appraisal.	1	2	3	4	5	6	7
98.	...my next performance evaluation will be a good opportunity for furthering my development.	1	2	3	4	5	6	7

BACKGROUND INFORMATION: This section is for statistical purposes only and will be used to study how major groups of people view performance management at [company name]. Do not supply your name. Your responses are kept confidential.

Your answers to all of the following questions are greatly appreciated.

1. My job classification is:
   1 = Salaried (exempt)
   2 = Hourly (non-exempt)
   3 = Other

2. My gender is:
   1 = Male
   2 = Female

3. As of today, I work for [company name] during the:
   1 = Full-time Day shift
   2 = Full-time Second shift
   3 = I work part-time for [company name] (less than 40 hrs per week)
   4 = Other (rotate shifts, on contract, etc.)

4. I have an individual (not a group) email address at [company name]:
   1 = Yes
   2 = No

5. As of today, I have worked at [company name] for:
   1 = Less than 1 year
   2 = 1 to 5 years
   3 = 6 to 10 years
   4 = 11 to 15 years
   5 = More than 15 years

6. I am a member of the following business unit (indicate the business unit from which you will receive your performance appraisal):_____

7. I currently supervise the activities of at least one full-time employee in my organization:
   1 = Yes
   2 = No

8. As of my last birthday, I am:
   1 = Under 20 years of age
   2 = 21 to 30 years of age
   3 = 31 to 40 years of age
   4 = 41 to 50 years of age
   5 = 51 to 60 years of age
   6 = over 60 years of age

THANK YOU FOR COMPLETING THIS SURVEY!

APPENDIX C: Time 1 and 2 Consent Forms

Dear Participant,

Today you will be participating in an informational session about [company name]'s new performance management system. In order to make sure that the system is meeting [company name]'s needs, employees will be asked to fill out a short survey before and after experiencing the new system. The survey data is being collected by a researcher who is not affiliated with [company name] to ensure that employees feel comfortable answering the survey questions in an honest manner. The survey asks a series of questions about employee attitudes towards [company name], your supervisor, and your job. The survey is also designed to gather information about you and your perceptions about the work environment that might help us understand why some people feel differently about performance evaluations than others, and how that difference might influence how you feel about the fairness of the procedures involved in evaluating your performance. The title of the survey project is, "Fairness Perceptions of Performance Management Systems."

Your responses will be kept confidential from your supervisor, your peers, human resource staff, and anyone else at [company name]: Only the researcher collecting the data will see your responses. Additionally, your responses will NOT affect your performance evaluation or your employment status at [company name]—the data will be used for program evaluation and research purposes only. To protect your confidentiality, you will be asked to generate a unique ID number so that your responses can be linked to the survey you complete after your performance evaluation. Only the researchers will see your ID number, and your name will NOT be linked in any way to your ID number. Research results will be reported a few months after all performance appraisals have been completed, in an aggregate form so that individual responses will not be identifiable in the report. The results of the survey will be compiled into a report, which will be submitted to the Director of Organizational Development.

It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. Questions about participants' rights may be directed to Celia S. Walker at (970) 491-1563.

Thank you in advance for your willingness to complete the survey. The survey will take you approximately 20 minutes to complete. By completing the survey, you are acknowledging that you have read the above information and willingly consent to participate. Please remember that your responses will only been seen by the researcher, and will be kept in the strictest of confidence. If you have any questions about the survey or would like more information, please contact the researcher via phone or email.

Carolyn Mohler, M.S.
(970) 491-3788
cmohler@lamar.colostate.edu

Dear Participant,

In order to make sure that the new performance management system is meeting [company name]'s needs, employees will be asked to fill out a short survey that can be obtained electronically. The survey data is being collected by a researcher is who not affiliated with [company name] to ensure that employees feel comfortable answering the survey questions in an honest manner. The survey asks a series of questions about employee attitudes towards [company name], your supervisor, and your job. The survey is also designed to gather information about you and your perceptions about the work environment that might help us understand why some people feel differently about performance evaluations than others, and how that difference might influence how you feel about the fairness of the procedures involved in evaluating your performance. The title of the survey project is, "Fairness Perceptions of Performance Management Systems." This survey is very similar to the survey you filled out before your performance evaluation. The survey and additional instructions can be obtained by going to the following website:

http://lamar.colostate.edu/~zinta/[company name]survey.htm.

Your responses will be kept confidential from your supervisor, your peers, human resource staff, and anyone else at [company name]. Only the researcher collecting the data will see your responses. Additionally, your responses will NOT affect your performance evaluation or your employment status at [company name]—the data will be used for program evaluation and research purposes only. To protect your confidentiality, you will be asked to recall the unique ID number that you generated on the survey before your evaluation (in case you forgot, instructions are supplied on the survey to generate your ID number). Only the researchers will see your ID number, and your name will NOT be linked in any way to your ID number. Research results will be reported a few months after all performance appraisals have been completed, in an aggregate form so that individual responses will not be identifiable in the report. The results of the survey will be compiled into a report, which will be submitted to the Director of Organizational Development.

Thank you in advance for your willingness to complete the survey. The survey will take you approximately 15-20 minutes to complete. By completing the survey, you are acknowledging that you have read the above information and willingly consent to participate in this study. Please remember that your responses will only been seen by the researcher, and will be kept in the strictest of confidence. If you have any questions about the survey or would like more information, please contact the researcher via phone or email.

Carolyn Mohler, M.S.
(970) 491-3788
cmohler@lamar.colostate.edu

APPENDIX D: Scale Items

Organizing Arrangements Measures

Distributive Justice Scale*

To what extent do you agree that your last performance evaluation...

1...reflected the effort you put into your work.
2...was appropriate for the work you completed.
3...reflected what you contributed to [the organization].
4...was justified, given your performance.

Procedural Justice Scale*

To what extent do you agree that your last performance evaluation...

1...allowed you to express your views and feelings during the performance evaluation procedure.
2...allowed you influence over the evaluation arrived at by the performance evaluation procedure.
3...was applied consistently.
4...was free of bias.
5...was based on accurate information.
6...allowed you to appeal your evaluation arrived at by the performance appraisal process.
7...upheld ethical and moral standards.

Social Factors Measures

Organizational Climate Scale, Reward Dimension*

1. We have a promotion system here that helps the best person rise to the top.
2. In [company name], the rewards and encouragements you get usually outweigh the threats and the criticism.
3. In [company name] people are rewarded in proportion to the excellence of their job performance.
4. There is a great deal of criticism about people's job performance in [company name].
5. There is not enough reward and recognition given in [company name] for doing good work.
6. If you make a mistake in [company name] you will be punished.

Organizational Climate Scale, Standards Dimension*

1. In [company name] we set very high standards for performance.
2. Our management believes that no job is so well done that it couldn't be done better.
3. Around here there is a feeling of pressure to continually improve our personal and group performance.
4. Management believes that if the people are happy, productivity will take care of itself.
5. To get ahead in [company name] it's more important to get along than it is to be a high

producer.
6. In [company name] people don't seem to take much pride in their performance.

Psychological Contract with the Organization Scale*
1. [Company name] has made a significant investment in me.
2. The things I do on the job today will benefit my standing in [company name] in the long run.
3. There is a lot of give and take in my relationship with [company name].
4. I worry that all my efforts on behalf of [company name] will never be rewarded.
5. I don't mind working hard today – I know I will eventually be rewarded by [company name].
6. My relationship with [company name] is based on mutual trust.
7. I try to look out for the best interest of [company name] because I can rely on [company name] to take care of me.
8. Even though I may not always receive the recognition from [company name] that I deserve, I know my efforts will be rewarded.

Interpersonal Justice Scale*
During my last performance evaluation, my Supervisor...
1...treated me in a polite manner.
2...treated me with dignity.
3...treated me with respect.
4...refrained from improper remarks or comments.
5...was candid in his/her communications with me.

Informational Justice Scale*
During my last performance evaluation, my Supervisor...
1...explained the procedures thoroughly.
2...gave reasonable explanations regarding the procedures.
3...communicated details in a timely manner.
4...seemed to tailor his/her communication to my specific needs.

Exchange Ideology Scale*
1. My willingness to help my supervisor depends partly on his/her behavior toward me.
2. If I am treated badly by my supervisor, I would probably reduce how much I do for him or her.
3. How much I help my supervisor does not depend on how he/she treats me.
4. My effort to assist my supervisor has nothing to do with how much he/she assists me.
5. The failure of my supervisor to appreciate my assistance does not reduce my willingness to offer him/her help.

Individual Behavior Measures

Readiness for Change Scales*
Precontemplation Stage
1. As far as I'm concerned, I don't see any major problems with my job performance that

need changing: I'm doing my job just right.
2. I guess that I have faults, but there's nothing that I really need to change.
3. I may be part of the problem at work, but I really don't think I am.
4. I have some concerns about my performance, but so does everyone else. Why spend time worrying about it?
5. I would rather cope with my faults than try to change them.

Contemplation Stage

1. I think I might be ready for some self-improvement, so I can perform better at work.
2. I've been thinking that I might want to change something about my performance at work.
3. I'm hoping that my performance evaluation will help me to better understand myself.
4. I have a problem with some areas of my performance and I really think I should work at it.
5. I hope that my supervisor will have some good advice for me when we discuss my evaluation.

Action Stage

1. I am finally doing some work on improving my performance.
2. At times my performance makes my job difficult, but I'm working on improving.
3. I am really working hard to improve my performance at work.
4. Even though I'm not always successful in changing, I am at least working on doing my job better.
5. Anyone can talk about improving their performance; I'm actually doing something about it.

Self-Efficacy Scale*

In general, I feel confident in my ability to...

1...work collaboratively and effectively with others on my team.
2...understand and anticipate the needs of internal/external customers.
3...complete quality work that is accurate and thorough.
4...manage my time so I can work with a sense of urgency.
5...develop new and unique ideas when I'm working on a task and/or problem-solving.
6...stay focused by accepting and fulfilling all of my responsibilities.
7...express my ideas verbally and in writing.
8...use my knowledge about [company name]and the industry to address problem and opportunities.
9...make thoughtful decisions that benefit [company name].
10...plan and organize my work activities so I can better anticipate future events.
11...learn and maintain current technical or functional knowledge and skills related to my job.
12...support others I work with to maintain quality interpersonal relationships.
13...perform well overall in my job.

Individual Reactions Scale*

After receiving the results of my most recent performance evaluation, I felt that...

1...my performance evaluation was an accurate reflection of my job performance.
2...I was angry with the performance appraisal results.
3...the information I received about my performance was helpful and useful to me.
4...I was satisfied with the performance evaluation as a whole.
5...I was happy with the results of my performance appraisal.
6...my next performance evaluation will be a good opportunity for furthering my development.

*All scales in the study used the following 7-point response scale: 1-Strongly Disagree; 2-Disagree; 3-Somewhat Disagree; 4-Neutral; 5-Somewhat Agree; 6-Agree; 7-Strongly Agree.

TABLES

Table 1

Frequencies and Percentages for Demographic Variables for Time 1 Sample, N = 690

Sex	Freq.	%		Freq.	%
Female	189	27.4	Male	480	69.6
Age					
21-30	147	21.3			
31-40	237	34.3	51-60	86	12.5
41-50	186	27.0	Over 60	10	1.4
Job Classification					
Salaried	386	55.9	Hourly	282	40.9
Tenure					
< 1 year	49	7.1			
1 to 5 years	367	53.2	11 to 15	58	8.4
6 to 10 years	165	23.9	15 + years	28	4.1
Shift					
Full-time day shift	615	89.1	Part-time (< 40 hours)	9	1.3
Full-time second shift	42	6.1	Other (on contract)	1	.1
Supervisory level					
Supervisor	212	30.7	Non-Supervisor	453	65.7

Table 2

Frequencies and Percentages for Demographic Variables for Time 2 Sample, N = 242

Sex	Freq.	%		Freq.	%
Female	64	26.4	Male	169	69.8
Age					
21-30	45	18.6			
31-40	83	34.3	51-60	32	13.2
41-50	67	27.7	Over 60	5	2.1
Ethnicity					
White/Caucasian	198	81.8	Black/African Amer.	2	.8
Asian/Pacific Islander	7	2.9	Native American	2	.8
Hispanic/Latino(a)	11	4.5	Other	10	4.1
Job Classification					
Salaried	151	62.4	Hourly	83	34.3
Tenure					
< 1 year	1	.4			
1 to 5 years	112	46.3	11 to 15	23	9.5
6 to 10 years	83	34.3	15 + years	14	5.8

Table 2, Cont.

Frequencies and Percentages for Demographic Variables for Time 2 Sample, N = 242

Shift	Freq.	%		Freq.	%
Full-time day shift	223	92.1	Part-time (< 40 hours)	4	1.7
Full-time second shift	6	2.5	Other (on contract)	1	.4
Supervisory level					
Supervisor	75	31.0	Non-Supervisor	156	64.5

Table 3

Frequencies and Percentages for Demographic Variables: Matched Samples, N=154

	Time 1 Sample		Time 2 Sample	
Sex	Freq.	%	Freq.	%
Female	42	27.3	44	28.6
Male	104	67.5	104	67.5
Age				
21-30	32	20.8	25	16.2
31-40	54	35.1	57	37.0
41-50	39	25.3	42	27.3
51-60	17	11.0	19	12.3
Over 60	4	2.6	4	2.6
Ethnicity				
White/Caucasian	--	--	128	83.1
Asian/Pacific Islander	--	--	4	2.6
Hispanic/Latino(a)	--	--	7	4.5
Black/African Amer.	--	--	0	0.0
Native American	--	--	2	1.3
Other	--	--	6	3.9

Table 3, Cont.

Frequencies and Percentages for Demographic Variables: Matched Samples, N=154

	Time 1 Matched Sample		Time 2 Matched Sample	
Job Classification	Freq.	%	Freq.	%
Salaried	99	64.3	103	66.9
Hourly	47	30.5	45	29.2
Tenure				
< 1 year	13	8.4	70	45.5
1 to 5 years	70	45.5	50	32.5
6 to 10 years	37	24.0	17	11.0
11 to 15	16	10.4	0	0.0
15 + years	10	6.5	11	7.1
Supervisory level				
Supervisor	48	31.2	46	29.9
Non-Supervisor	97	63.0	100	64.9

Table 4

Means and Standard Deviations for Scales at Time 1, Time 2, and Matched Samples

	Time 1[a]		Time 2[b]		Matched Time 1[c]		Matched Time 2[c]	
	M	SD	M	SD	M	SD	M	SD
1. Psychological contract	4.62	1.02	4.39	1.19	4.65	.98	4.44	1.13
2. Reward climate	4.04	.89	3.94	.96	4.14	.84	4.00	.92
3. Standards climate	4.68	.85	4.63	.85	4.66	.67	4.65	.67
4. Overall climate	4.33	.71	4.26	.77	4.40	.61	4.32	.66
5. Distributive justice	4.99	1.48	5.06	1.54	5.17	1.45	4.96	1.58
6. Procedural justice	4.67	1.15	4.84	1.20	4.83	1.12	4.77	1.27
7. Interpersonal justice	6.04	.94	6.21	.84	6.22	.82	6.24	.88
8. Informational justice	5.27	1.23	5.37	1.28	5.33	1.22	5.33	1.28
9. Exchange ideology	3.70	1.31	3.80	1.37	3.66	1.38	3.77	1.39
10. Self-efficacy	5.87	.56	5.91	.61	5.93	.50	5.95	.57

Note: [a] Time 1 sample size = 690 [b] Time 2 sample size = 242 [c] Matched samples sample size = 154

Table 4, Cont.

Means and Standard Deviations for Scales at Time 1, Time 2, and Matched Samples

	Time 1[a]		Time 2[b]		Matched Time 1[c]		Matched Time 2[c]	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
11. Individual reaction	5.07	1.33	5.10	1.30	5.12	1.32	5.04	1.32
12. Precontemplative stage	3.35	.73	3.26	.70	3.23	.68	3.28	.67
13. Contemplative stage	4.60	.98	4.28	.92	4.64	.93	4.26	.96
14. Action stage	4.52	.83	4.32	.80	4.43	.76	4.31	.81

Note: [a] Time 1 sample size = 690 [b] Time 2 sample size = 242 [c] Matched samples sample size = 154

Table 5
Internal Consistency Reliabilities and Correlations for Time 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	---	.06	.10**	.09**	.05	.09*	.03	.02	-.08	.04	-.13**	.01	.04	.01	.03
2. Sex		---	.00	-.08*	.05	-.03	-.03	-.03	-.05	-.04	-.09*	.01	.00	.05	.08*
3. Psychological contract			(.86)	.67**	.34**	.64**	.39**	.41*	.34*	.37**	-.16**	.28**	-.13**	.18**	.18**
4. Reward climate				(.70)	.34**	.86**	.44**	.47**	.35**	.37**	-.14**	.18**	-.12**	.07	.07
5. Standards climate					(.61)	.77**	.23**	.28**	.19**	.19**	-.04	.14**	-.14**	.19**	.13**
6. Overall climate						(.74)	.43**	.47**	.34**	.35**	-.12**	.20**	-.16**	.15**	.12**
7. Distributive justice							(.97)	.70**	.51**	.50**	-.09*	.12**	-.10**	.07	.04
8. Procedural justice								(.90)	.57**	.62**	-.11**	.18**	-.09*	.03	.03
9. Interpersonal justice									(.94)	.68**	-.06	.25**	-.11**	.09*	.06
10. Informational justice										(.87)	-.06	.22**	-.03	.05	.10*
11. Exchange ideology											(.87)	-.13**	.09*	-.03	-.07
12. Self-efficacy												(.84)	-.01	-.05	.10*

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 5, Cont.
Internal Consistency Reliabilities and Correlations for Time 1

	16
1. Age	.09*
2. Sex	-.02
3. Psychological contract	.42**
4. Reward climate	.43**
5. Standards climate	.26**
6. Overall climate	.43**
7. Distributive justice	.85**
8. Procedural justice	.79**
9. Interpersonal justice	.55**
10. Informational justice	.57**
11. Exchange ideology	-.10**
12. Self-efficacy	.17**

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 5, Cont.
Internal Consistency Reliabilities and Correlations for Time 1

	13	14	15	16
13. Precontemplative stage	(.48)	-.14**	-.04	-.10*
14. Contemplative stage		(.72)	.64**	.11**
15. Action Stage			(.72)	.06
16. Individual Reaction				(.92)

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 6
Internal Consistency Reliabilities and Correlations for Time 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	---	.11	-.05	.09	.04	.18**	.11	.07	.10	.05	.08	-.11	.11	.07	-.02
2. Sex		---	-.01	.03	-.03	.10	.03	.01	.05	-.04	-.02	-.01	.09	-.08	-.01
3. Ethnicity			---	.04	.01	-.06	-.02	.10	.06	.06	.06	-.05	.11	-.02	.10
4. Psychological contract				(.90)	.66**	.48**	.69**	.40**	.46**	.27**	.38**	-.28**	.26**	-.16*	.28**
5. Reward climate					(.76)	.43**	.89**	.47**	.50**	.30**	.34**	-.20**	.13*	-.14*	.27**
6. Standards climate						(.59)	.79**	.14*	.26**	.11	.16*	-.19**	.10	-.08	.24**
7. Overall climate							(.78)	.39**	.46**	.26**	.31**	-.23**	.14*	-.13*	.30**
8. Distributive justice								(.97)	.75**	.58**	.53**	-.01	.19**	-.15*	.23**
9. Procedural justice									(.92)	.53**	.56**	-.10	.22**	-.08	.28**
10. Interpersonal justice										(.95)	.65**	-.03	.18**	-.07	.29**
11. Informational justice											(.87)	-.03	.18**	-.07	.17**
12. Exchange ideology												(.89)	-.06	.04	-.13*

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 6, Cont.
Internal Consistency Reliabilities and Correlations for Time 2

	16	17
1. Age	-.01	.05
2. Sex	.01	-.02
3. Ethnicity	.11	.02
4. Contract w/ organization	.15*	.41**
5. Reward climate	.09	.45**
6. Standards climate	.15*	.20**
7. Overall climate	.13*	.41**
8. Distributive justice	-.02	.83**
9. Procedural justice	.04	.74**
10. Interpersonal justice	.02	.59**
11. Informational justice	-.03	.57**
12. Exchange ideology	-.09	-.07

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 6, Cont.
Internal Consistency Reliabilities and Correlations for Time 2

	13	14	15	16	17
13. Self-efficacy	(.89)	-.03	-.06	.03	.24**
14. Precontemplative stage		(.40)	-.12	.02	-.13*
15. Contemplative stage			(.69)	.66**	.34**
16. Action stage				(.67)	.03
17. Individual reaction					(.90)

Note. Sex was coded 1=male, 2=female. Internal consistency reliabilities appear in the diagonal. * = $p < .05$, ** = $p < .01$.

Table 7
Correlations Among Repeated Measures Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Psychological contract T1	---	.72**	.66**	.54**	.25**	.19*	.36**	.39**	.36**	.41**	.32**	.33**	.31**	.35**
2. Psychological contract T2		---	.53**	.65**	.26**	.33**	.37**	.47**	.28**	.50**	.11	.29**	.18*	.45**
3. Reward climate T1			---	.59**	.31**	.31**	.47**	.42**	.48**	.42**	.35**	.36**	.33**	.34**
4. Reward climate T2				---	.21**	.35**	.41**	.59**	.35**	.59**	.21*	.33**	.23**	.36**
5. Standards climate T1					---	.55**	.12	.12	.16*	.24**	.03	.07	.04	.06
6. Standards climate T2						---	.20*	.07	.17*	.20*	-.03	.05	.04	.09
7. Distributive justice T1							---	.43**	.64**	.39**	.53**	.39**	.54**	.37**
8. Distributive justice T2								---	.35**	.80**	.24**	.63**	.29**	.58**
9. Procedural justice T1									---	.42**	.61**	.28**	.65**	.34**
10. Procedural justice T2										---	.29**	.55**	.32**	.58**
11. Interpersonal justice T1											---	.43**	.70**	.40**
12. Interpersonal justice T2												---	.33**	.66**

Note. T1 = Time 1, T2 = Time 2 * = $p < .05$, ** = $p < .01$.

Table 7, Cont.
Correlations Among Repeated Measures Variables

	15	16	17	18	19	20	21	22	23	24	25	26
1. Psychological contract T1	-.11	-.12	.17*	.17*	-.23**	-.05	.25**	.21*	.25**	.15	.37**	.35**
2. Psychological contract T2	-.21**	-.23**	.18*	.20*	-.16*	-.14	.22**	.37**	.18*	.24**	.37**	.45**
3. Reward climate T1	-.15	-.10	.07	.07	-.11	-.07	.08	.18*	.11	.05	.45**	.34**
4. Reward climate T2	-.13	-.15	-.01	.04	-.17*	-.14	.17*	.36**	.03	.17*	.41**	.52**
5. Standards climate T1	-.04	-.12	.19*	.04	-.11	.04	.19*	.20*	.14	.19*	.16	.19*
6. Standards climate T2	-.12	-.22**	.11	.01	-.06	.00	.09	.18*	.07	.15	.19*	.14
7. Distributive justice T1	-.10	-.08	-.05	.07	-.10	-.09	.10	.17*	.05	.14	.84**	.42**
8. Distributive justice T2	-.07	.05	-.05	.18*	-.13	-.20*	.09	.30**	.05	-.01	.45**	.86**
9. Procedural justice T1	-.10	-.07	.08	.12	-.11	-.04	.09	.10	.06	.09	.72**	.39**
10. Procedural justice T2	-.04	-.05	-.08	.18*	-.21**	-.16	.05	.33**	.06	.09	.43**	.80**
11. Interpersonal justice T1	-.01	-.01	.09	.06	-.10	-.04	.06	.03	.07	-.05	.54**	.23**
12. Interpersonal justice T2	-.08	-.01	.01	.18*	-.17*	-.06	.18*	.30**	.19*	-.01	.38**	.63**

Note. T1 = Time 1, T2 = Time 2 * = $p < .05$, ** = $p < .01$.

Table 7, Cont.
Correlations Among Repeated Measures Variables

	15	16	17	18	19	20	21	22	23	24	25	26
13. Informational justice T1	-.06	-.05	.15	.18*	-.03	.05	.02	.07	.13	.05	.55**	.25**
14. Informational justice T2	-.19*	-.03	.16*	.26**	-.04	-.01	.10	.23**	.19*	-.01	.55**	.25**
15. Exchange Ideology T1	---	.67**	-.22**	-.14	-.03	.02	.03	-.02	-.07	.00	-.08	-.08
16. Exchange Ideology T2		---	-.04	.05	.16*	.05	.04	-.13	.03	-.13	-.08	-.02
17. Self-efficacy T1			---	.59**	.01	.05	.00	-.08	.19*	.10	-.03	-.02
18. Self-efficacy T2				---	.00	-.07	.01	-.07	.20*	.05	.08	.18*
19. Precontemplative stage T1					---	.40**	-.15	-.23**	-.07	-.16	-.14	-.15
20. Precontemplative stage T2						---	-.08	-.15	.03	-.03	-.08	-.22*
21. Contemplative stage T1							---	.51**	.59**	.46**	.16*	.15
22. Contemplative stage T2								---	.29**	.69**	.26**	.37**
23. Action stage T1									---	.44**	.10	.10
24. Action stage T2										---	.21**	.06

Note. T1 = Time 1, T2 = Time 2 * = $p < .05$, ** = $p < .01$.

Table 7, Cont.

Correlations Among Repeated Measures Variables

	25	26
25. Individual reaction T1	---	.46**
26. Individual reaction T2		---

Note. T1 = Time 1, T2 = Time 2 * = $p < .05$, ** = $p < .01$.

Table 8

Repeated Measures Univariate and Multivariate Analysis of Variance Results, Hypotheses 1 – 3

			Univariate					
	Multivariate		Distributive	Procedural	Reward	Standards	Psychological	Interpersonal
Source	*df*	F^a	Justice[b]	Justice[b]	Climate[b]	Climate[b]	Contract[b]	Justice[b]
		T1 Mean (SD)	5.17 (1.45)	4.83 (1.12)	4.14 (.84)	4.66 (.67)	4.65 (.98)	6.22 (.82)
		T2 Mean (SD)	4.96 (1.58)	4.78 (1.27)	4.00 (.92)	4.65 (.67)	4.44 (1.13)	6.24 (.88)
Time	1	3.50 ***	2.80	.34	3.88	.03	9.65**	.06
MSE			1.32	.85	.32	.21	.33	.42

Note. T1 = Time 1; T2 = Time 2. Multivariate *F* ratios were generated from Pillai's statistic. * $p < .05$. ** $p < .01$. *** $p < .001$.

[a]Multivariate $df = 11, 136$. [b]Univariate $df = 1, 146$

Table 8, Con't.

Repeated Measures Univariate and Multivariate Analysis of Variance, Hypotheses 1 – 3

		Univariate				
Source		Informational Justice[b]	Contemplative Stage[b]	Action Stage[b]	Self-Efficacy[b]	Individual Reactions[b]
	T1 Mean (SD)	5.33 (1.22)	4.64 (.93)	4.43 (.76)	5.93 (.50)	5.12 (1.32)
	T2 Mean (SD)	5.33 (1.28)	4.26 (.96)	4.31 (.81)	5.95 (.57)	5.04 (1.32)
Time		.07	25.81***	2.22	.04	.97
MSE		.77	.44	.35	.12	.93

Note. T1 = Time 1; T2 = Time 2. Multivariate *F* ratios were generated from Pillai's statistic.

[a]Multivariate $df = 9, 137$. [b]Univariate $df = 1, 146$

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9

Moderation Effects of Psychological Contract on Fairness Perceptions to Individual Reactions

	β	*F*	R^2	ΔR^2
Step 1		2.75	.01	.01
Sex	-.03			
Age	.09*			
Step 2		266.70	4.77	.76***
Distributive justice	.63***			
Procedural justice	.19***			
Interpersonal justice	.04			
Informational justice	.08**			
Contract w/organization	.05*			
Step 3		132.83	.77	.00
Distributive justice x	.03			
Contract w/organization				
Procedural justice x	-.06			
Contract w/organization				
Interpersonal justice x	.01			
Contract w/organization				
Informational justice x	.01			
Contract w/organization				

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 10

Moderation Effects of Exchange Ideology on Fairness Perceptions to Individual Reactions

	β	*F*	R^2	ΔR^2
Step 1		2.75	.01	.01
Sex	-.02			
Age	.09*			
Step 2		266.74	.77	.76***
Distributive justice	.64***			
Procedural justice	.20***			
Interpersonal justice	.04			
Informational justice	.09***			
Exchange ideology	-.01			
Step 3		132.83	.77	.00
Distributive justice x Exchange ideology	.01			
Procedural justice x Exchange ideology	.02			
Interpersonal justice x Exchange ideology	-.02			
Informational justice x Exchange ideology	.01			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 11

Moderation Effects of Exchange Ideology on Readiness to Self-Efficacy

	β	*F*	R^2	ΔR^2
Step 1		.07	.00	.00
Sex	.01			
Age	.01			
Step 2		5.92	.05	.05***
Contemplative stage	-.20***			
Action stage	.23***			
Exchange ideology	-.13***			
Step 3		4.27	.06	.00
Contemplative stage x Exchange ideology	.00			
Action stage x Exchange ideology	-.07			

Note. $*p < .05$ $**p < .01$ $***p < .001$.

Table 12

Repeated Measures Analysis of Variance for Post Hoc Tests

Multivariate Tests		
Effect	F (11, 135)	η^2
Between Subjects		
Supervisor	1.44	.11
Within Subjects		
Time	2.68**	.18
Time X Supervisor	.64	.05

Note. Multivariate F ratios were generated from Pillai's statistic.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12, Con't.

Repeated Measures Analysis of Variance for Post Hoc Tests

Univariate Tests	Within Subjects Measures				
Source	Distributive Justice[a]	Procedural Justice[a]	Reward Climate[a]	Standards Climate[a]	Psychological Contract[a]
Time	2.11	.02	1.93	.04	6.40*
Time X Supervisor	.02	2.57	.93	.02	.49
MSE	1.33	.84	.32	.21	.33

Univariate Tests	Within Subjects Measures					
Source	Interperson. Justice[a]	Information. Justice[a]	Contemp. Stage[a]	Action Stage[a]	Self-Efficacy[a]	Individual Reactions[a]
Time	.07	.01	15.92***	.53	.00	.76
Time X Supervisor	.01	.49	2.50	2.33	.29	.00
MSE	.42	.78	.44	.35	.12	.93

Note. Multivariate *F* ratios were generated from Pillai's statistic.

* $p < .05$. ** $p < .01$. *** $p < .001$.

[a]Univariate $df = 1, 14$

FIGURES

Figure 1. A Theoretical Model of the Dynamics of Planned Organizational Change, from Robertson, Roberts, & Porras, (1993).

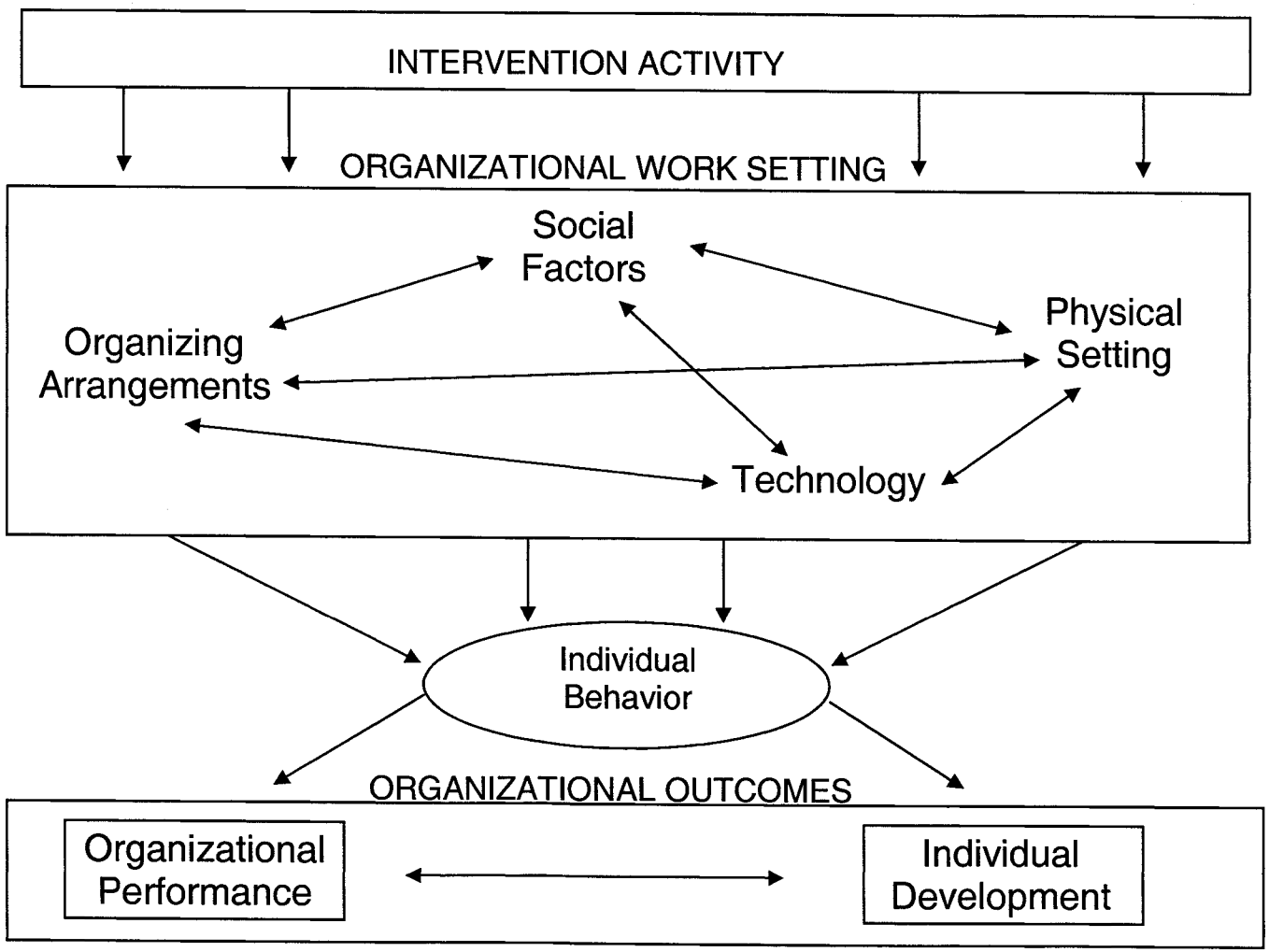

Figure 2. Adaptation of Porras and Robertson (1992) model tested in the present study, demonstrating Hypotheses 1 - 3.

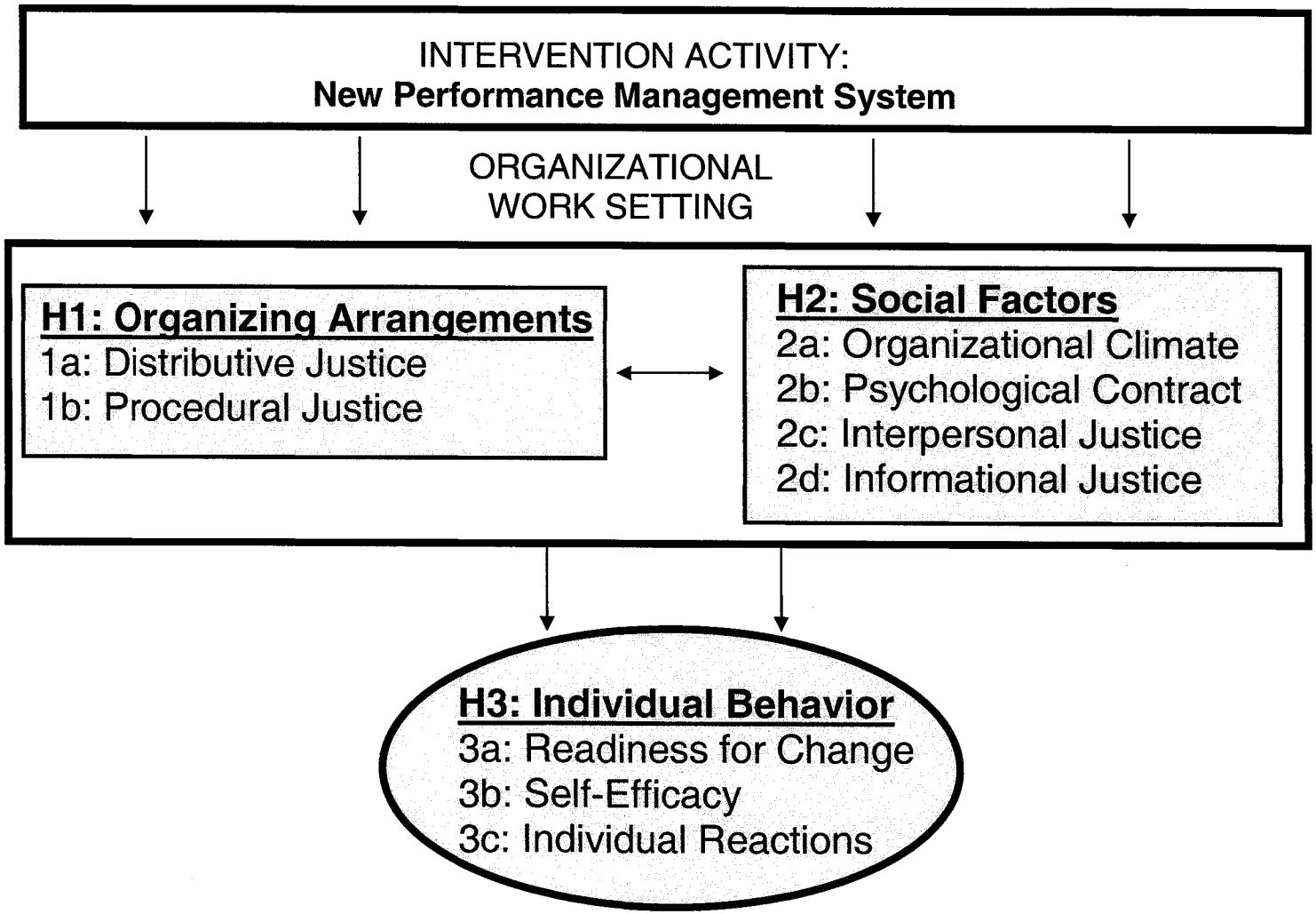

Figure 3. Figure demonstrating Hypotheses 4 and 5.

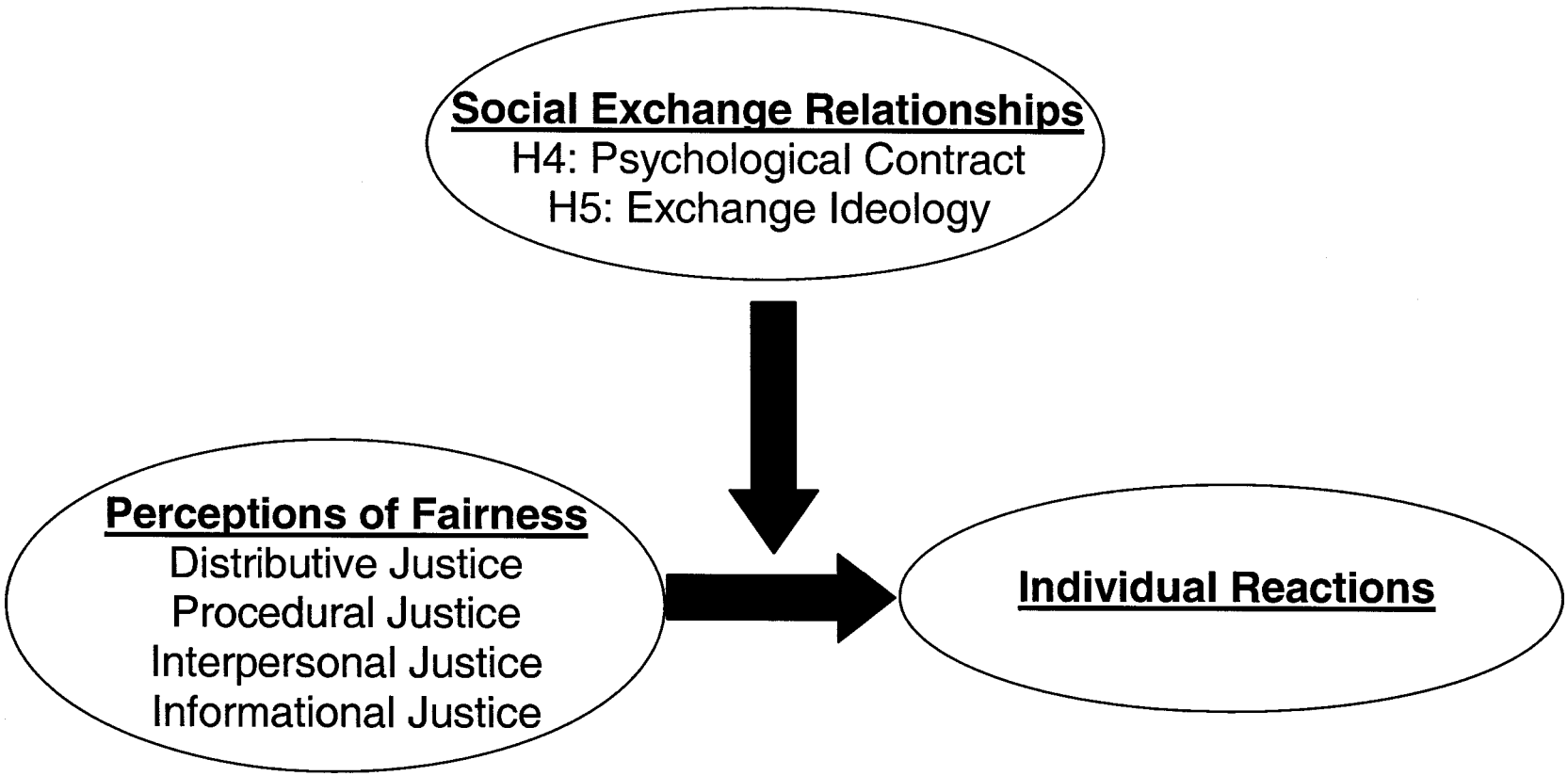

Figure 4. Figure demonstrating Hypothesis 6.