Contingencies between organizational identification and professional employee performance

David R. Hekman

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy

University of Washington

2007

Program Authorized to Offer Degree:
Business Administration

University of Washington
Graduate School

This is to certify that I have examined this copy of a doctoral dissertation by

David R. Hekman

and have found that it is complete and satisfactory in all respects,
and that any and all revisions required by the final
examining committee have been made.

Chair of the Supervisory Committee:

H. Kevin Steensma

Reading Committee:

H. Kevin Steensma

Gregory A. Bigley

Thomas W. Lee

Date: 9.26.07

In presenting this dissertation in partial fulfillment of the requirements for the doctoral degree at the University of Washington, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of the dissertation is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for copying or reproduction of this dissertation may be referred to ProQuest Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106-1346, 1-800-521-0600, to whom the author has granted "the right to reproduce and sell (a) copies of the manuscript in microform and/or (b) printed copies of the manuscript made from microform."

Signature 

Date 10.8.07

University of Washington

Abstract

Contingencies between organizational identification and professional employee performance

David R. Hekman

Chair of the Supervisory Committee:
Professor H. Kevin Steensma
Business Administration

Organizational identification research demonstrates only weak support for the central hypothesis that organizational identification motivates employees to pursue organizational goals. I show that the influence of organizational identification on organization-benefiting behaviors is more complex than previously thought and depends on employees' (1) competing types of identification, such as professional identification, (2) perceptions regarding administrative treatment, and (3) perceptions regarding the prescribed organizational goal-attainment strategy. My first two studies show that the *combination* of organizational identification and professional identification influences the degree to which professionals engage in organization-benefiting behaviors. Moreover, I find that the combination of professional and organizational identification also influences the way that professionals behaviorally respond to perceived administrative treatment. In my first study I find that for professional employees who identify strongly with the organization and weakly with the profession, perceived beneficial and detrimental discretionary administrative treatment motivate better performance. In my second study I find that such professional employees are most likely to conform to administrative social influence and adopt technology that enhances organizational profitability and reduces professional service quality. Finally, in my third study, I demonstrate that the influence of organizational identification on professional employee performance depends on each employee's perception of the best organizational goal-attainment strategy. I find that highly organizationally identified professional employees who perceive the organization as prescribing a success-maximizing goal-attainment strategy have the lowest performance quality; whereas highly organizationally

identified professional employees perceive the organization as prescribing a failure-minimizing strategy have the highest performance quality.

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

I wish to express sincere appreciation to the Management and Organization Department for their extended long-term support and especially to Professors Kevin Steensma and Greg Bigley for their vast reserves of patience and knowledge. This dissertation would never have been completed without the encouragement and devotion of my family and friends.

CHAPTER ONE:

Introduction

The simple premise of organizational identification research is that individuals will pursue organizational goals when they identify with the organization. However, the evidence supporting this premise is weak. For example, Riketta's (2005) organizational identification meta-analysis showed that the correlation between organizational identification and supervisor rated performance was only .17. Moreover, no studies have yet linked organizational identification to objective performance outcomes. My dissertation explains why this core premise of organizational identification research is not so simple, and how predictive power goes up as we incorporate greater complexity.

First, the premise is not so simple because employees often have competing types of identification which could also guide work behavior. For example, if accomplishing organizational goals involves doing something unethical, then predicting whether a particular employee will pursue those goals requires knowing about not only organizational identification, but also their identification with moral values (Aquino & Reed, 2002). In the case of my dissertation, the competing identification type is physician professional identification. Specifically, my dissertation shows that moderate organizational identification has little influence on organization-benefiting behaviors (role adoption of secure messaging, quality of care, productivity, patient satisfaction) in the presence of high professional identification. In contrast, moderate organizational identification has a sizable influence on organization-benefiting behaviors (role adoption of secure messaging, quality of care, productivity, patient satisfaction) in the presence of low professional identification. As such, it is the relative, and not absolute, levels of identification which matter when identification types are in competition.

Second, organizational identification leads to employee organization-benefiting behavior depending on perceived employee treatment by organizational administrators. When employees primarily identify with their organization, then they are likely to see themselves as having a sense of solidarity with administrators. In contrast, if employees primarily identify with the profession, then they are likely to

experience a sense of distinction from administrators. Social identity theory (Tajfel & Turner, 1979; Turner, 1987) suggests that behavior is understood differently depending on whether it comes from those whom a sense of solidarity is experienced (Jetten, Spears & Manstead, 1996). I found that administrative actions designed to elicit organization-benefiting behaviors (e.g. monitoring, pressure, and organizational support) have the desired affect only when organizational identification is strong relative to professional identification. In fact, for employees whose professional identification is stronger than organizational identification, such administrative behaviors are counter-productive. I argue that professional employees who strongly identify with the profession and weakly identify with the organization feel a strong sense of distinction from administrators. Such employees are unlikely to reciprocate beneficial treatment and unlikely to forgive detrimental treatment from administrators.

Third, the influence of organizational identification on organization-benefiting behaviors depends on the strategy that employees use to achieve organizational goals. There are two ways to go about achieving something (Higgins, 1987). One can either take a promotion strategy and seek to maximize successes, or a prevention strategy and try to minimize failure. The relative effectiveness of these two strategies depends on contextual features. In my context, a prevention strategy is better for a number of reasons. However, there may be a mismatch between an employee's perceptions about the preferred organizational goal-attainment strategy and the task-context. In such a situation, higher relative organizational identification will lead to behavior that is more consistent with the perceived appropriate goal-attainment strategy, but it won't actually lead to the desirable ends.

Overall, I do not find a strong relationship between organizational identification and organization-benefiting behaviors. However, by including several contingencies (competing identification types, administrative actions, and perceived collective regulatory focus), I find that organizational identification explains substantial variance in important work outcomes.

CHAPTER TWO:

Effects of Social Identification on Reciprocity and Professional Employee Performance

Initial Remarks

I consider when professional employees are more or less likely to adhere to the norm of reciprocity in response to how they feel they are being treated by their organization. I argue that the social identification of professional employees influences the extent to which they reciprocate (1) perceived organizational support with higher job performance and (2) perceived psychological contract violation with lower performance. Using a sample of physicians employed by a large managed care organization, I find that reciprocity dynamics are more complex than has been acknowledged in prior research.

INTRODUCTION

Social exchange is generally regarded as a straightforward approach to employee motivation (Rousseau, 1995). According to social exchange theory, people and groups choose to carry out discretionary acts to the benefit or detriment of others based on the norm of reciprocity—the principle that others should reciprocate in corresponding fashion (Blau, 1964; Gouldner, 1960). Indeed, social exchange-based research has shown that employees usually perform better when they believe that their organization is supportive of them (Rhoades & Eisenberger, 2002), and they perform worse when they feel their organization has broken its work-related promises to them (Robinson, 1996).

Motivating professional employees (e.g., engineers, lawyers, physicians) to pursue organizational goals has long been acknowledged as generally more complicated than motivating other types of workers (Sorensen & Sorensen, 1974). Research on social identification in organizations (Ashforth & Mael, 1989; Hogg & Terry, 2000) suggests that motivating professional employees through social exchange may not be straightforward either. Professional employees typically consider themselves members of both their employing organizations and professions (Gouldner, 1957). Organizational and professional identification are thought to have

powerful effects on how employees interpret and respond to organizational actions (Pratt & Foreman, 2000).

I investigate how organizational and professional identification influence when professional employees reciprocate the treatment they receive from the organization with their job performance. My study contributes to research on social exchange in organizations by incorporating concepts from social identity theory to explain better the nature of professional employee reciprocity behavior. In so doing, I also add to a limited but growing body of work examining when employees are more or less likely to reciprocate organizational treatment—research that has thus far focused mainly on dispositional factors, such as reciprocity wariness (Lynch, Eisenberger & Armeli, 1999). Finally, I add to the social identification literature by specifying and testing the joint effect of organizational and professional identification on employee performance. Although others have considered such an effect (Pratt & Foreman, 2000), it has not been fully explained or empirically validated.

EMPLOYEE SOCIAL IDENTIFICATION AND RECIPROCITY BEHAVIOR

Research on social exchange in organizations proposes that employees generally respond to what they perceive as beneficial and detrimental discretionary treatment by the organization according to the norms of positive and negative reciprocity (Eisenberger et al., 1986; Rousseau, 1995).[1] Positive reciprocity refers to the exchange of beneficial treatment, and negative reciprocity refers to the exchange of detrimental treatment (Gouldner, 1960). For example, an employee may choose to return outstanding job performance after being surprised to receive a coveted developmental opportunity (positive reciprocity) and sub-par job performance after being unexpectedly passed over for promotion (negative reciprocity). Most employees perceive an amalgamation of beneficial and detrimental treatment. Perceived organizational support and perceived psychological contract violation are concepts based on social exchange theory that can be used to investigate employee

[1] An exchange can be characterized in terms of both its basic form (either economic or social) and its general content (either positive or negative reciprocity) (Gouldner, 1960). Economic exchange involves specific and explicit obligations, whereas social exchange involves unspecified and implicit obligations (Blau, 1964; Emerson, 1972). My study focuses on positive and negative reciprocity in social exchange.

responses to the different types of organizational treatment (Aselage & Eisenberger, 2003).

Perceived Organizational Support and Psychological Contract Violation

The human psychological system is characterized by two evaluative channels (Cacioppo & Berntson, 1994; Gray, 1994). One is particularly sensitive to beneficial treatment and motivates pleasure-approaching behavior. The other is especially attuned to detrimental treatment and motivates pain-avoiding behavior. Information regarding beneficial and detrimental treatment is processed in parallel (Cacioppo, Gardner & Bemtson, 1997). Because of this parallel processing, people can maintain contrasting appraisals simultaneously (Priester & Petty, 1996). For example, employees can perceive the organization as treating them beneficially and detrimentally at once (Tekleab, Takeuchi & Taylor, 2005).

Perceived organizational support (POS) is the extent to which an employee believes the organization values his or her contributions and cares about his or her well-being (Eisenberger et al., 1986). POS is a function of the overall level of beneficial treatment the organization delivers to employees (Rhoades & Eisenberger, 2002). Perceived psychological contract violation (PPCV) is the extent to which an employee believes the organization breaks its work-related promises and the accompanying feelings of disappointment (ranging from minor frustration to betrayal) (Morrison & Robinson, 1997). PPCV is perceived detrimental treatment based on the discrepancy between what is promised and delivered to employees by the organization.

According to Aselage and Eisenberger (2003), POS and PPCV have conceptual similarities and differences. The two concepts are both firmly rooted in social exchange theory and the norm of reciprocity (Coyle-Shapiro & Conway, 2005). A common underlying assumption of both research streams is that perceived organizational treatment leads employees to alter their effort toward helping the organization achieve its goals.

However, the two concepts cover somewhat different aspects of the employee-organization relationship. POS research emphasizes that it is the beneficial treatment that goes beyond organizational promises that is particularly consequential to

employee attitudes and behaviors (Rhoades & Eisenberger, 2002). Thus, POS is cast in mainly positive terms. In contrast, PPCV centers on the perceived discrepancy between what is promised and what is delivered to employees by the organization. PPCV is cast exclusively in negative terms, focusing on the extent to which the organization disappoints employees (Morrison & Robinson, 1997). Beneficial treatment that goes beyond what is promised by the organization has been shown to have no influence on PPCV, further suggesting POS and PPCV are empirically distinct (Coyle-Shapiro & Conway, 2005).

POS is generally thought to be the organization's contribution in a positive reciprocity dynamic with employees. Employees tend to perform well in reciprocation for POS (Rhoades & Eisenberger, 2002). PPCV is thought to be the organization's contribution in a negative reciprocity dynamic. Employees tend to perform poorly in reciprocation for PPCV (Robinson, Kraatz & Rousseau, 1994). I maintain, however, that professional and organizational identification together influence the extent to which professional employees adhere to norms of positive and negative reciprocity in their response to POS and PPCV.

Orienting Effects of Professional and Organizational Identification

Employees typically view themselves as members of multiple work-related psychological groups (Ashforth & Johnson, 2001). A psychological group consists of individuals who are perceived as belonging to the same social category (Turner, 1984). Examples of psychological groups include small work teams, larger departments, the organization itself, as well as professions (e.g., accounting, law, and medicine). Psychological groups help employees orient themselves to others in the organization, and provide employees with a frame of reference for interpreting and developing responses to the behavior of others (Ashforth & Mael, 1989).

The degree to which a psychological group membership orients an employee to others depends on the employee's level of social identification with that group (Hogg & Terry, 2000). Social identification is the extent to which a particular group membership is self-defining (Dutton, Dukerich & Harquail, 1994). It refers to employees' sense of oneness with a group and solidarity with fellow members (Ashforth & Mael, 1989). Social identification leads individuals to view other

members as embodiments of the group's goals and values, rather than as individuals possessing unique characteristics (Turner, 1984). Thus, people are more inclined to view other members as similar to themselves and as allies pursuing common goals; whereas they tend to view non-members as dissimilar and as potential antagonists (Brewer & Pierce, 2005a). Individuals who identify strongly with a group care deeply about their status in the group (Tyler & Blader, 2003). Consequently, social identification leads individuals to desire and solicit treatment from others that indicates good standing in the group, such as exchanging favors with other members (Ellemers, Spears & Doosje, 1997).

Employee social exchange with the organization takes place largely through administrators, who are the organization members responsible for creating and maintaining the conditions of employment that promote organizational goal achievement (Mintzberg, 1977; Rhoades & Eisenberger, 2002; Rousseau, 1995). As such, administrators are generally perceived, above all, as the guardians of the organization (Freidson, 2001). Due largely to this perception, professional employees usually view administrators as fellow members of the organization but not as true members of the profession, even when administrators have had professional training and experience (Golden, Dukerich & Fabian, 2000). One major reason for why professional employees do not think of administrators as true professionals is that the goals and values of organizations and professions often conflict and administrators are seen as clearly emphasizing organizational concerns over professional ones (Freidson, 2001). For example, organizations tend to be primarily concerned with profitability, whereas professions care mainly about providing the highest quality service (as defined by the profession), almost regardless of cost or revenue considerations (Freidson, 2001). Administrators are usually seen as promoting profitability at the expense of profession-defined quality (Freidson, 2001). In one notable study, for example, practicing physicians viewed administrators with MDs as "outsiders" to the medical profession because of what the physicians believed to be the administrators' undue emphasis on organizational goals (Hoff, 1999: 336). Remarkably, practicing physicians viewed administrators with MDs more negatively than those without MDs because administrators with MDs were thought to have

"betrayed" the medical profession by assuming an administrator role (Hoff, 1999: 344).

Professional employees' social identification with their organization and profession, while positively correlated, have been shown to vary fairly independently across professional employees (Bamber & Iyer, 2002; Johnson et al., 2006; Lee, Carswell & Allen, 2000; Wallace, 1995). Thus some professionals view themselves as professionals first and foremost and organization members second; others hold the opposite view; and still others see the profession and the organization as more or less equally self-defining (Johnson et al., 2006).

In general, two competing group identification types *jointly* influence people's orientation to others (Settles, 2004; Wang & Pratt, 2007). Accordingly, I maintain that professional and organizational identification together orient professional employees to the organization and its administrators (Golden et al., 2000). When professional employees' level of organizational identification is high and professional identification is low, they will have a more unequivocal sense of solidarity with administrators, because they define themselves primarily on the basis of a group that includes administrators. Professional employees will tend to view administrators as allies in pursuit of common goals. In contrast, when professional employees' level of organizational identification is low and professional identification is high, they will have a more unequivocal sense of distinction from administrators, because they define themselves on the basis of a group that does not include administrators. In this case, professional employees will see administrators as dissimilar to themselves and as potential impediments to their profession-defined goal pursuits. When organizational and professional identification are similarly high, however, professional employees' sense of solidarity with administrators will be equivocal, due to the competing influences of organizational and professional identification (Wang & Pratt, 2007). My hypotheses reflect the idea that professional employees' sense of solidarity with administrators based on organizational and professional identification is clearest when the level of one identification type is high and the level of the other is low.

Professional Employee Response to POS

I propose that professional employees' sense of solidarity with their organization and its administrators, as determined by the combination of their organizational and professional identification, will affect how they respond to beneficial organizational treatment. Professional employees will more strongly adhere to the norm of positive reciprocity in response to POS when their level of organizational identification is high and their level of professional identification is low, because solidarity with administrators will be more unequivocal.

In general, individuals are more likely to reciprocate the beneficial treatment received from others when they expect to trade beneficial treatment with them over time (Blau, 1964). A sense of solidarity with exchange partners leads people to assume that these relationships will be enduring (Sahlins, 1972). People are also more likely to reciprocate beneficial treatment with beneficial treatment as their confidence grows that the other party can be trusted to exchange such treatment equitably (Blau, 1964). Solidarity provides security that an exchange partner will not take more than they give (Sahlins, 1972).

In addition, people are more likely to reciprocate beneficial treatment as their feeling of indebtedness to the provider grows (Cartwright & Zander, 1953). People tend to instill benefits with additional symbolic value (above material worth) when they feel a sense of solidarity with the provider (Hatfield, Utne & Traupmann, 1979). For example, beneficial treatment symbolizes positive regard and trust on the part of the provider (Molm, Schaefer & Collett, 2007). Furthermore, indebtedness can be so uncomfortable and the act of giving so gratifying in closer relationships that individuals often overpay for the beneficial treatment received from others (Parry, 1986).

Finally, individuals are more likely to reciprocate benefits to the degree the benefits come from others that are important to their sense of self (Swann et al., 2004). Receiving benefits conveys good standing with the provider and validates the recipient's self-concept (Tyler & Blader, 2003). Individuals are generally motivated to uphold their contribution to a positive reciprocity cycle to insure continued receipt of self-validating benefits (Ellemers, DeGilders & Haslam, 2004).

In contrast, professional employees will more weakly adhere to the norm of positive reciprocity in response to POS when their level of organizational identification is low and their level of professional identification is high, because solidarity with administrators will be more clearly lacking. Individuals are less likely to reciprocate benefits in social exchange when they do not believe the other party can be counted on to trade fairly over time (Blau, 1964). People tend to see others with whom solidarity is lacking as dissimilar, or as "outsiders," who cannot be trusted (Jetten et al., 1996). People are more likely to presume the existence of incompatible interests and the presence of ulterior and possibly malevolent motives, even for seemingly beneficial treatment (Gregory, 1982). Evidence of benevolent intent is discounted (Sahlins, 1972). Also, because people are more likely to believe that they will receive less than expected at some point by those with whom solidarity is lacking, failing to fully reciprocate beneficial treatment is more easily rationalized as acceptable behavior (Brewer, 2001). For example, in a study of exchange in developing economies, exchanges between family members (where solidarity was high) were characterized by over-repayment and generous benefits, but exchanges between non-family members (where solidarity was low) were characterized by under-repayment (Sahlins, 1972).

> Hypothesis 1. The association between perceived organizational support and professional employee performance will be more positive when professional employees' level of organizational identification is high and level of professional identification is low.

Professional Employee Response to PPCV

I propose that professional employees' sense of solidarity with the organization and its administrators, as determined by social identification with the organization and profession, will also affect how they respond to detrimental organizational treatment. Professional employees will more *weakly* adhere to the norm of negative reciprocity in response to PPCV when their level of organizational identification is high and professional identification is low, because solidarity with administrators will be more unequivocal.

Individuals are inclined to refrain from retaliating after receiving detrimental treatment when it comes from exchange partners with whom they feel a sense of solidarity (Hornsey, Oppes & Svensson, 2002). Individuals tend to assume that their exchange partners are benevolently motivated and trustworthy when there is a sense of solidarity with them (Hornsey & Imani, 2004). Solidarity fosters forgiving attitudes (Perdue et al., 1990). People tend to give allies the benefit of the doubt and view their behavior in a charitable light (Beal, Ruscher & Schnake, 2001). Mistreatment by allies is often viewed by recipients as an aberration or as unintended, thus retaliating for the mistreatment is not warranted (Hornsey et al., 2002).

Detrimental treatment calls into question one's good standing in a group (Tyler & Blader, 2003). Thus, when the detrimental treatment comes from those who are presumed to possess benevolent motives and have one's best interests at heart, the recipient may interpret the detrimental treatment as a signal that the provider somehow feels shortchanged in the relationship (Sutton, Elder & Douglas, 2006). When the recipient accepts at least partial responsibility for bringing on the detrimental treatment in a valued relationship, retaliation is less likely to occur. In fact, the recipient may reciprocate beneficial treatment in response to the detrimental treatment in an attempt to make up for a perceived shortfall the other party seems to have experienced (Hornsey et al., 2002). More generally, people highly desire and solicit treatment from others that indicates good standing in their highly valued relationships (Swann & Ely, 1984). Therefore, they may give back beneficial treatment for detrimental treatment, at least in the short-run, in an effort to gain or regain good standing with valued others (Ellemers et al., 2004).

In contrast, professional employees will more strongly adhere to the norm of negative reciprocity in response to PPCV when their level of organizational identification is low and their level of professional identification is high, because their solidarity with administrators will be more clearly lacking. When solidarity is lacking people are highly vigilant for each other's mistreatment and are more likely to interpret each other's behavior in a harsh light, magnifying the perceived severity of harm (Hornsey, Trembath & Gunthorpe, 2004). In such cases, people retaliate not

only to even the score but also to discourage or preempt future mistreatment (Gouldner, 1960).

Hypothesis 2. The association between perceived psychological contract violation and professional employee performance will be less negative when professional employees' level of organizational identification is high and level of professional identification is low.

METHODS

Sample

My research site is a large, non-profit health maintenance organization, hereafter referred to as CoastCare.[2] CoastCare provides coverage and healthcare for about 350,000 people in the Pacific Northwest region of the United States, and directly employs approximately 800 healthcare providers (both general practitioners and specialists) to care for its members.

My initial sample consisted of all 255 primary-care physicians (i.e., family practitioners) who were directly employed by CoastCare. Although poor response rates are regularly encountered when surveying physicians (Templeton et al., 1997), 185 physicians completed the survey for a response rate of 72.5%. Missing values (primarily due to limited variables recorded by the organization) reduced the number of usable observations to 133 or 52.2% of the initial sample. Within my usable sample, 36.1% were women; the average age was 50.1 years; and the average tenure with the organization was 13.9 years. All respondents had a medical degree. Statistical comparisons between the initial sample and final sample yielded no significant differences in gender, age, or tenure.

Dependent Variables

I measured physician performance along two dimensions. The first is physician productivity, which is the number of patients seen and health issues discussed in a given time period. The second measure is the physician's level of adherence to medical guidelines as put forth by CoastCare, that is, the standardized prescription rates of particular medications for patients that possess precise disease criteria. CoastCare systematically tracks physician performance along these metrics. For each

[2] CoastCare is a pseudonym.

metric, physicians are shown how they compare to the organizational goal and to the organizational average.

Both performance dimensions are highly beneficial to CoastCare. All physicians are compensated equally based only on tenure, specialty, and full-time status and not on performance. Thus, higher physician productivity reduces overall expenses to CoastCare because it reduces the number of physicians CoastCare needs to hire. Adherence to medical guidelines also reduces expenses by delaying the onset of costly patient health events such as strokes and heart attacks. Because patients pay the same premiums regardless of their use of medical resources, these reductions in expenses due to higher physician productivity and their adherence to medical guidelines directly improve CoastCare's bottom line. Because physicians are not rewarded or compensated based on these metrics and because performance standards are not specified in physician-employees' contracts, such performance is highly discretionary and consistent with social exchange. I collected both dependent variables in the same quarter as the survey.

Productivity. Productivity was measured as the average number of patients seen by each doctor in a standardized 8-hour day, adjusted for the difficulty of each visit. These figures were recorded by the organization's scheduling software. CoastCare physicians maintain significant control over the amount of work that they do in a day as they can control the difficulty of each visit (e.g., the number of procedures performed and patient health issues addressed per visit), the number of patients they interact with by choosing or refusing to be "double-booked" (e.g., seeing two patients in one 20-minute slot), and whether they see patients who have shown up late and missed their appointments. CoastCare administrators determine the number of patients in each physician's panel.[3]

My productivity variable was the composite of average face-to-face visits, phone visits, and email consultations per day, adjusted by the average difficulty of

[3] CoastCare administrators, and not physicians, assign patients to panels and determine panel size based on the four biggest predictors of patient demand (patient age, gender, sickness, and panel size). Larger panels, more women patients, older patients, and sicker patients are associated with more patient demand for physician services. CoastCare administrators try to ensure that all physicians have similar demand and so potential workloads. We also statistically control for these four predictors of patient demand in my analysis.

each visit. Difficulty was measured by Relative Value Units (RVUs), which are coded by physicians at the end of each visit according to national coding guidelines. RVUs capture the amount of time involved, the required physical and mental effort, the required judgment and technical skill, and the psychological stress entailed (Hsaio et al., 1988a; Hsaio et al., 1988b). According to quarterly audits by administrators, CoastCare physicians accurately record RVUs in 90 percent of patient visits. Coding errors resulting from physicians coding too many or too few RVUs are normally and equally distributed. The raw measure of productivity was standardized based on the full-time status of the physician and then multiplied by each physician's average visit difficulty to obtain the *average RVU-adjusted patient encounters per day*.

Higher productivity does not necessarily indicate higher quality performance, as the standard productivity-quality tradeoff can come into play. For example, physicians could achieve higher levels of productivity by increasing the number of patients they see each day to the point where they are unable to give some patients the attention they require. Others could achieve higher productivity by striving to cover more problems during each patient visit so that they occasionally neglect to delve down adequately on some of the more critical issues. Thus, physicians can rationalize, at least to themselves, why an increase in productivity would be undesirable.

Policy Adherence. Policy adherence refers to the degree to which those patients eligible for statins or ACE inhibitors are actually prescribed these medications. CoastCare measures and gives feedback to physicians regarding each physician's prescription rate of statins and Angiotensin-converting-enzyme (ACE) inhibitors to patients with cardiovascular disease. Treatment of cardiovascular events such as strokes, clots, and heart attacks is the most costly portion of healthcare delivery in the U.S. (Willerson & Cohn, 2000). These drugs delay cardiovascular events but do not necessarily reduce the number of events over patients' lifetimes (Gerstein et al., 2000). HMOs can avoid, at least temporarily, expensive patient hospital stays and emergency room visits due to cardiovascular events by preventing

them for as long as possible and therefore increasing the HMO's short-term profit margins.

According to CoastCare guidelines, all patients with cardiovascular disease should be regularly taking ACE inhibitors and some form of a statin. ACE inhibitors lower blood pressure, and statins lower cholesterol. These drugs significantly lower the immediate risk of a cardiovascular event (e.g., stroke, heart attack) for all individuals, regardless of gender or previous history of cardiovascular disease (LaRosa, He & Vupputuri, 1999; Yusuf et al., 2000). To promote a higher prescription rate, CoastCare administrators send emails to physicians and letters to cardiovascular disease patients encouraging doctors to prescribe and patients to receive such treatment.

From the physician and patient perspectives, the prescription of such drugs may not be considered uniformly beneficial. These drugs prevent one cardiac event for every nineteen patients treated with statins over a five-year period (Heart-Protection-Study-Collaborative-Group, 2002), or for every eighteen patients treated with ACE inhibitors over five years (Acute-Infarction-Ramipril-Efficacy-Study-Investigators, 1993).[4] Patients are often highly disinclined to take drugs to control high blood pressure and high cholesterol, because the treatments can seem highly unpleasant and the diseases themselves are symptom-less (Heidenreich, 2004). For example, taking a daily regimen of statins or ACE inhibitors can make patients feel old, and it can eventually lead to the experience of some rather distasteful side-effects (Eagle et al., 2004), such as liver, muscle, and memory decay (Davidson & Robinson, 2007; Eagle et al., 2004), which patients may not want to risk. Roughly half of all patients nationwide decline to take statin and ACE inhibitor prescriptions (Dubois et al., 2002). Regardless, some CoastCare physicians invest extra time and

[4] Even though medical research clearly demonstrates that statins and ACE inhibitors are the best way to prevent cardiac events and death, one can see that the drug benefits are somewhat unimpressive. A central characteristic of professions is an aversion to selling treatments which involves, "phrasing their treatments in common language, offering advice on professionally irrelevant issues, indeed promising results well beyond those predicted by the treatment structure itself (Abbott, 1988: 47)." However, market and organizational pressures usually force professionals to engage in at least some level of selling treatments (Abbott, 1988). We would not be surprised therefore if highly professionally identified physicians had lower levels of policy adherence because of their aversion to engage in unprofessional sales tactics regarding statins and ACE inhibitors.

effort calling and reminding patients, on behalf of the organization, to take these drugs.

This variable is the composite of the percent of cardiovascular disease patients eighteen years and older that were dispensed the equivalent of a standard 90-day supply for ACE inhibitors and statins at any time within the 120-day interval closest to the survey date. The denominator of this variable consists of every patient in the physician's panel that should be taking statins or ACE inhibitors. The numerator is the number of eligible patients who have actually been prescribed such appropriate medication within the previous 120 days. CoastCare's electronic medical record-keeping system only includes a patient in the denominator if they meet 13 precise disease criteria (one of which is whether they have previously received side-effects from the drugs). If patients do not meet all of the qualifying criteria, they are ineligible to receive statins or ACE inhibitors, and administrators remove them from the denominator of the dependent variable. CoastCare did not calculate this variable for pediatricians because pediatricians' patient populations are too young for such treatment. The component variables approached normality and were added together. The resulting variable was each physician's overall *prescription rate of statins and ACE inhibitors for cardiovascular disease patients*. Thus, the prescription rate of these drugs is a proxy of physician effort expended on actions that are consistent with organizational policies. The average prescription rate at CoastCare is 50%, equal to the national average.

Independent Variables

Organizational identification. I measured the extent to which physicians identified with their organization using a five-item scale based on Mael and Ashforth's (1992) scale. Because of low item reliability in a pilot survey I sent to a pre-sample of physicians, I omitted the item, "I am very interested in what others think about CoastCare" from my survey. The composite reliability of this measure was .80.

Professional identification. I measured the extent to which physicians identified with the profession using the same five-item scale used to measure organizational identification. The composite reliability of this measure was .75.

Perceived Organizational Support. I measured the physicians' perceptions of beneficial discretionary organizational treatment using Eisenberger et al.'s (1986) eight-item scale of perceived organizational support. The composite reliability of this measure was .94.

Perceived Psychological Contract Violation. I measured physicians' perceptions of detrimental discretionary organizational treatment using Robinson and Morrison's (2000) four-item scale of perceived psychological contract violation. The composite reliability of this measure was .96. Perceived organizational support and perceived psychological contract violation are parallel in the sense that they both target intentional administrator actions (Aselage & Eisenberger, 2003; Eisenberger et al., 1986; Morrison & Robinson, 1997; Robinson & Morrison, 2000).

Control Variables

Physician full-time status. I collected this variable from the archival records of CoastCare. Physicians ranged from working 30 to 100 percent of a full-time position. Physicians who work more hours may feel more fatigued by work than part-time employees (Ozyurt, Hayran & Sur, 2006).

Pediatrician Dummy. All physicians in the sample were family practitioners; however, some dealt only with pediatrics. I created a dummy variable to account for different responses to organizational treatment based on each physician's medical specialty.

Physician continuance commitment. Because physicians' perceptions that they have few alternatives or a high perceived cost for leaving may influence their responses to organizational treatment, I measured continuance commitment using Meyer and Allen's six-item continuance commitment scale (1991). The composite reliability of continuance commitment was .83. Further, I also included the interactions of continuance commitment with POS and PPCV as control variables in the analysis.

Variables that drive patient demand. CoastCare administrators try to spread the patient workload equally between physicians by assigning an equal number of patients to each physician. Four variables drive patient demand, which would increase or decrease productivity and policy adherence rates from the demand side

(patient initiated) rather than the supply side (doctor initiated). Physicians who are assigned large numbers of older, sicker, or female patients by CoastCare administrators have the highest patient demand. I therefore controlled for panel size, panel age, panel average chronic sickness, and percent of panel that is female in my analysis.

Physician demographic variables. Because physician demographics may influence responses to perceived organizational treatment, I controlled for physician age, tenure with CoastCare, and gender.

Measure validity

I used confirmatory factor analysis with LISREL and maximum likelihood estimation to assess the psychometric properties of the scaled items for constructs derived from the survey instrument. A satisfactory fit was achieved ($\chi^2 = 451.03$, $df = 313$, $p < .01$, RMSE = .04, CFI = .97). The ratio of chi-squared to degrees of freedom is 1.44; a value of less than 3 for the ratio indicates a good fit (Carmines & McIver, 1981). The composite reliability values for the constructs range from .75 to .96, all above the cutoff suggested by Bagozzi and Yi (1988).

Table 2.1. Analysis of Discriminant Validity of Predictor Variables

	RMSEA	CFI	Δ CFI from Model 1	χ^2	Δ χ^2 from Model 1[5]
1. Five factor model (professional identification, organizational identification, continuance commitment, POS, PPCV)	.04	.97		451.03	
2. One factor model	.20	.78	.19	3037.42	2586.39***
3. Two factor model (identification/commitment, perceived treatment)	.18	.81	.16	2546.30	2095.27***
4. Three factor model (continuance commitment, identification, perceived treatment)	.14	.86	.11	1622.83	1171.80***
5. Four factor model (organizational and professional identification combined)	.09	.91	.06	957.51	506.48***
6. Four factor model (POS and PPCV combined)	.10	.91	.06	990.41	539.38***

[5] *** $p < .001$

I assessed discriminant validity between constructs by comparing my target measurement model with various nested models, moving from a highly restricted single-factor structure (all items linked to one construct) to a final target structure that contained my five constructs of interest (continuance commitment, organizational and professional identification, perceived organizational support, and violation)(see Table 2.1). Chi-square difference tests for the nested models were consistently large and significant, showing that large improvements in fit were gained as I moved from one factor to five. Most importantly, and consistent with prior research (Tekleab et al., 2005), separating POS and PPCV significantly improved the fit between the items and the constructs (change in $\chi^2 = 539.38$, $p < .001$).

RESULTS

Table 2.2 reports the means, standard deviations, and correlation coefficients between the dependent, independent, and control variables. I used hierarchical moderated regression models to examine the hypothesized interaction effects. To avoid multicollinearity between the predictors and the interaction terms and to enhance the interpretation of the main effects, I centered all variables involved in the interaction terms (Aiken & West, 1991). Table 2.3 presents the results of the analysis.

Table 2.2 Intercorrelation Matrix for Dependent, Independent, and Control Variables[6]

	Variable	*M*	*s.d.*	1	2	3	4	5
1	DV-productivity	23.99	2.86	-				
2	DV-policy adherence	1.00	0.16	.03	-			
3	Pediatrician Dummy	0.11	0.31	-.03	n.a.	-		
4	Full-time status	0.80	0.19	.18	.10	.10	-	
5	Number of patients	1724.12	521.30	.22	.11	-.04	.56	-
6	Average patient age (years)	42.06	12.31	.06	.20	-.93	-.09	.00
7	Percent female patients	0.55	0.16	.06	.02	-.20	-.51	-.25
8	Average panel sickness	1.02	0.13	.10	.05	-.54	-.15	-.09
9	Tenure (years)	14.27	8.52	.11	.14	-.03	.13	.06
10	Gender (0=female, 1=male)	0.64	0.48	.03	-.04	.00	.56	.37
11	Age (years)	50.55	6.93	.19	.05	..01	.13	.17
12	Continuance Commitment	26.54	7.75	.02	-.07	.01	-.02	.03
13	Organizational Identification	24.57	5.17	.08	.03	-.04	.13	.06
14	Professional Identification	22.05	5.09	.06	-.22	.07	.23	.11
15	POS	32.00	9.18	.04	-.03	-.03	.09	.01
16	PPCV	12.24	6.42	-.10	.08	.09	-.11	-.01

[6] All correlations larger than .17 are significant at $p<.05$ (two-tailed), all larger than .20 are significant at $p<.01$; N = 133 for all variables except correlations involving the variable "DV-policy adherence," where N = 122.

Table 2.2 Continued

	Variable	6	7	8	9	10	11	12	13	14	15
7	Percent female patients	.08	-								
8	Average panel sickness	.68	.17	-							
9	Tenure (years)	.33	-.28	-.15	-						
10	Gender (0=female, 1=male)	.20	-.89	.02	.22	-					
11	Age (years)	.28	-.26	.01	.61	.36	-				
12	Continuance Commitment	.18	.01	.03	.16	.01	.14	-			
13	Organizational Identification	.05	-.06	.04	.22	.06	.12	-.01	-		
14	Professional Identification	-.08	-.10	.01	.06	.13	.06	.06	.61	-	
15	POS	.02	-.15	.05	.13	.15	.05	-.33	.46	.28	-
16	PPCV	-.08	.08	-.12	-.07	-.11	-.05	.38	-.30	-.17	-.66

Table 2.3 Analysis Examining Moderating Effects of Social Identification and Organizational Treatment on Physician Policy Adherence and Productivity[7]

	Policy Adherence[8]		
	Model 1	Model 2	Model 3
Controls			
Pediatrician dummy variable	n.a.	n.a.	n.a.
Full time equivalent	.20†	.30**	.36**
Number of patients in panel	.13	.08	.05
Panel age	.20†	.22†	.22†
Panel % female	.00	.10	.11
Chronic sickness of panel	.02	.00	-.02
Tenure with CoastCare (years)	.08	.14	.12
Gender (0=female, 1=male)	-.22	-.12	-.16
Age (years)	-.05	-.07	-.03
Continuance Commitment	-.04	-.11	-.11
Direct effects			
Organizational Identification	.22*	.27*	.29*
Professional Identification	-.37***	-.46***	-.43***
Perceived Organizational Support (POS)	.06	.04	.19
Perceived Psychological Contract Violation (PPCV)	.12	.18	.03
Lower-order Interactions			
Continuance commitment X POS		.03	.10
Continuance commitment X PPCV		.05	.12
Organizational identification X POS		.34**	.28*
Professional identification X POS		-.34**	-.29*
Organizational identification X PPCV		.47**	.37*
Professional identification X PPCV		-.63***	-.57***
Support X Violation		.20†	.21†
Organizational X Professional		-.10	-.07
Hypothesized Interactions			
Organizational X Professional X POS			-.62*
Organizational X Professional X PPCV			-.66*
R^2	.197**	.319*	.350*
ΔR^2 from previous model		.122*	.031*

[7] One tailed t-test used for hypothesized coefficients, two-tailed for non-hypothesized coefficients; †p<.10, * p<.05, ** p<.01, *** p<.001

[8] N=122

Table 2.3 Continued

	Physician Productivity[9]		
	Model 1	Model 2	Model 3
Controls			
Pediatrician dummy variable	.37	.47	.45
Full time equivalent	.19	.20	.18
Number of patients in panel	.18†	.18†	.20†
Panel age	.36	.43	.40
Panel % female	.31	.32	.34
Chronic sickness of panel	.04	.02	.03
Tenure with CoastCare (years)	.00	.00	.05
Gender (0=female, 1=male)	.06	.06	.08
Age (years)	.05	.01	-.03
Continuance Commitment	.20*	.24*	.29**
Direct effects			
Organizational Identification	.04	.12	.13
Professional Identification	-.02	-.03	.00
Perceived Organizational Support (POS)	-.01	.02	-.09
Perceived Psychological Contract Violation (PPCV)	-.09	-.05	-.22†
Lower-order Interactions			
Continuance commitment X POS		-.01	-.05
Continuance commitment X PPCV		-.14	-.15
Organizational identification X POS		.30**	.40**
Professional identification X POS		-.36**	-.42**
Organizational identification X PPCV		.17	.34*
Professional identification X PPCV		-.35*	-.40**
Support X Violation		-.03	-.04
Organizational X Professional		.02	-.14
Hypothesized Interactions			
Organizational X Professional X POS			.17
Organizational X Professional X PPCV			.67**
R^2	.150	.237*	.289*
ΔR^2 from previous model		.087*	.052*

[9] N=133

In Model 1 (Table 2.3), I include all the control variables and the first order effects of social identification and perceived organizational treatment. Model 2 includes all second order effects. Model 3 includes the three-way interactions consistent with my hypotheses. In hypothesis 1, I argued that across employees, higher levels of organizational identification in combination with lower levels of professional identification would enhance the effect that POS has on performance. The overall difference between the Model 2 and Model 3 is significant for both of the dependent measures of performance—policy adherence and physician productivity ($p < .05$). The coefficient for the three-way interaction term involving organizational identification, professional identification, and POS is significant for policy adherence ($p < .05$) but not for physician productivity.

To gain further insight into the nature of the moderation effects, I plotted the interaction effect using one standard deviation above and below the mean level of POS, organizational identification, and professional identification (Aiken & West, 1991). As seen in Figure 1.1, there is a stronger positive relationship between POS and policy adherence when organizational identification is high (+ 1 s.d.) and professional identification is low (- 1 s.d.) compared to all other conditions. I calculated the significance of the simple slopes (Aiken & West, 1991). Only when levels of organizational identification are high and levels of professional identification are low do I find a positive relationship between POS and policy adherence ($p < .01$). In addition, only when levels of professional identification are high and levels of organizational identification are low do I find a significant negative relationship between POS and policy adherence ($p < .05$). My analysis suggests that physician-employees are more likely to reciprocate perceived organizational support with higher performance in terms of policy adherence when their level of organizational identification is high and professional identification is low. My results also provide some evidence that physician-employees are least likely to adhere to the norm of positive reciprocity in social exchanges with the organization when their level of organizational identification is low and professional identification is high. Hypothesis 1 is supported for the first operationalization of performance, policy adherence.

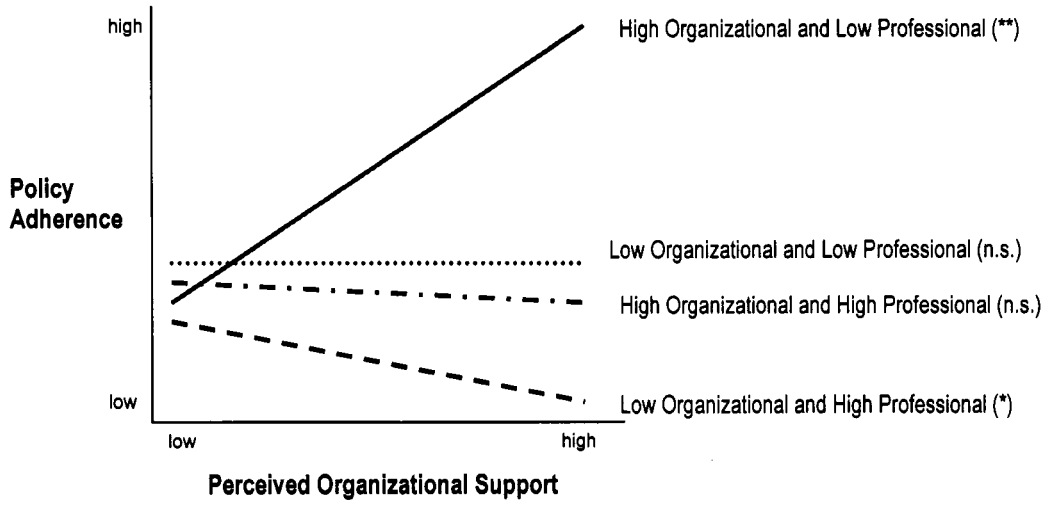

Figure 2.1 The effects of social identification and perceived organizational support on policy adherence

In hypothesis 2, I argued that across employees, PPCV would be less negatively associated with performance at high levels of organizational identification and low levels of professional identification. The coefficients for the three-way interaction terms involving organizational identification, professional identification, and PPCV are significant for both dependent measures of physician-employee performance ($p < .05$). As seen in Figures 1.2 and 1.3, the relationship between PPCV and performance is least negative when the level of organizational identification is high (+ 1 s.d.) and the level of professional identification is low (- 1 s.d.). Indeed, only when the level of organizational identification is high and professional identification is low do I find positive relationships between PPCV and my performance dimensions ($p < .001$ for policy adherence; $p < .05$ for productivity). Physician-employees may be attempting to gain or regain status within their valued psychological group (i.e., CoastCare) by enhanced performance levels in response to perceived detrimental treatment. Figures 1.2 and 1.3 also indicate that the relationship between PPCV and the two measures of performance is most negative when professional identification is high (+ 1 s.d.) and organizational identification is low (- 1 s.d.). Indeed, only when the level of professional identification is high and organizational identification is low do I find negative relationships between PPCV

and my performance dimensions ($p < .05$ for policy adherence; $p < .01$ for productivity). Hypothesis 2 is supported.

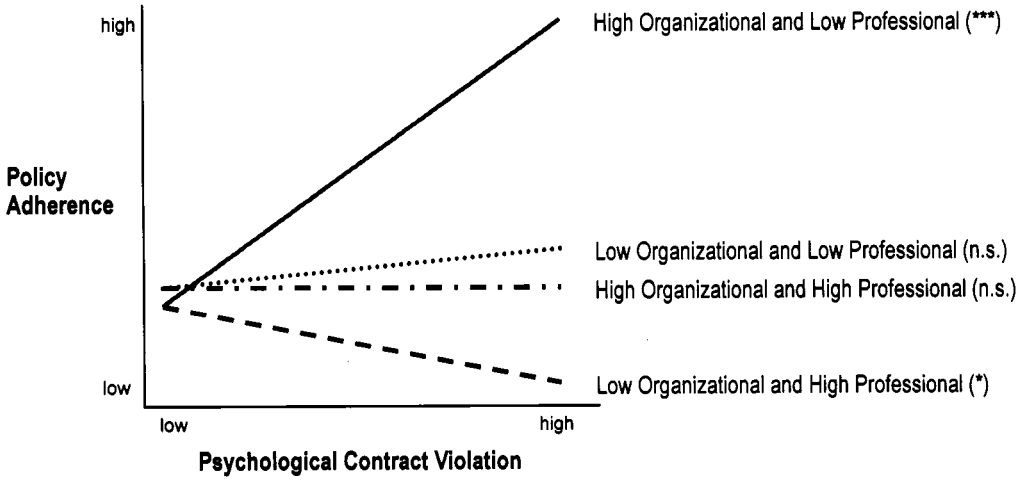

Figure 2.2 The effects of social identification and perceived psychological contract violation on policy adherence

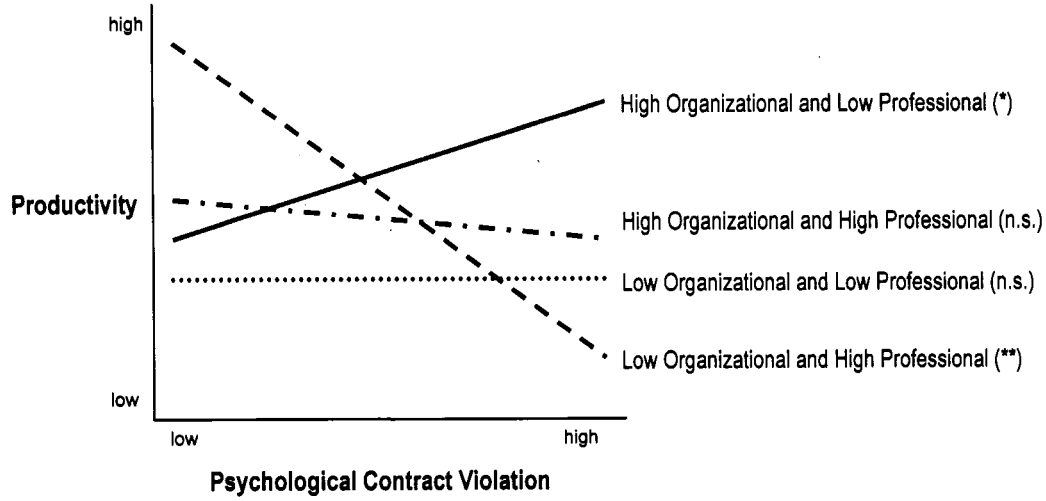

Figure 2.3 The effects of social identification and perceived psychological contract violation on productivity

DISCUSSION

I set out to understand better how professional employees' reciprocity behavior in social exchange with the organization is influenced by their social identification

with the organization and profession. My study focused on physician employees working for a large managed care organization. I found that professional employees were more likely to reciprocate perceived organizational support and less likely to retaliate for perceived psychological contract violation when their level of organizational identification was high and level of professional identification was low. I argued that felt solidarity with the organization leads professionals to more eagerly reciprocate perceived beneficial organizational treatment and to be more forgiving of perceived detrimental organizational treatment. Thus, my study extends the prior research on employee social exchange by showing that employee reciprocation of organizational treatment depends on the combination of organizational and professional identification. I also contribute to social identification research by showing how professional and organizational identification interact to influence employee social exchange behavior.

Theoretical Implications

My study makes several contributions to the research on social exchange and social identification in organizations. First, I add to organizational social exchange research by showing that employee reciprocity depends on social identification. In fact, I found evidence of behavior that seemed to run counter to reciprocity norms. Higher organizational identification together with lower professional identification was associated with improved performance in response to PPCV. My theory suggests that these employees were possibly attempting to gain or regain good standing in a group they considered to be unequivocally self-relevant. The combination of lower organizational identification and higher professional identification was associated with lower performance in response to POS. I argued that employees can perhaps more readily justify backing off a bit in helping the organization achieve its goals when solidarity with the organization and its administrators is clearly lacking.

The few prior studies explicitly addressing the question of when employees are more likely to reciprocate have focused on dispositional factors (Farh, Hackett & Liang, 2007; Lynch et al., 1999). For example, reciprocation wariness refers to the dispositional fear of being exploited in social exchange (Eisenberger, Cotterell & Marvel, 1987). Wary people worry that others will use the norm of reciprocity

against them, eventually taking more than giving. People also purportedly differ in the degree to which they generally endorse positive and negative norms of reciprocity as the proper actions to take in social exchange (Eisenberger et al., 2004; Gouldner, 1960). Reciprocation wariness, propensity to endorse positive reciprocity and propensity to endorse negative reciprocity are related but independent dimensions of personality that influence when employees reciprocate (Eisenberger et al., 1987; Lynch et al., 1999). My study extends this work by linking employees' reciprocity wariness and tendencies for favoring positive and negative reciprocity in social exchanges with the organization to employee social identification.

Second, my study contributes to research on social identification in organizations by suggesting how organizational and professional identification combine to influence professional employee behavior. Prior research on identity conflict has pointed to the possibility of this joint effect (Pratt & Doucet, 2000; Pratt & Foreman, 2000; Wang & Pratt, 2007), but research has yet to wholly explain or empirically validate the nature of the effect (Pratt & Foreman, 2000). I found that the interaction of organizational and professional identification by itself does not influence employee behavior (see lower-order effects in Models 2 and 3 of Table 2.3). Rather, my results suggest that the combined influence of organizational and professional identification on employee behavior occurs through its effect on employees' response to POS and PPCV. Organizational and professional identification together help professional employees make sense of beneficial and detrimental organizational treatment.

Third, my study contributes to research on relational models of how employees attach to and work on behalf of their groups (Brockner, Tyler & Copper-Schneider, 1992; Tyler & Blader, 2003; Tyler & Lind, 1992). These frameworks suggest that when employees receive detrimental treatment (i.e., injustice) from a group (such as an organization), their identification with the group decreases, which in turn leads them to lower performance. However, relational models have not considered how existing levels of social identification with a group may influence performance in response to treatment. Certainly, receipt of detrimental treatment could lead to lower levels of group identification and subsequent performance over time. I maintain,

however, that employees may not immediately abandon highly self-defining group memberships. My research suggests instead that employees may respond to signs of group rejection with attempts to recover full-status membership. These status recovery efforts might be successful in some cases and unsuccessful in others, and social identification with the group may eventually weaken if evidence of good standing (e.g., beneficial treatment from fellow group members) is not eventually forthcoming.

Finally, my research establishes an empirical association between levels of organizational and professional identification, on the one hand, and objectively assessed levels of performance on the other. Prior work in this area has shown that social identification influences self-reported organizational commitment, in-role performance, extra-role performance, job satisfaction, job involvement, and withdrawal and turnover intentions (Riketta, 2005; van Dick et al., 2004; Wright & Bonett, 2002). However, this study is the first to link organizational identification to objective measures of performance.

Practical Implications

My study helps explain that social identification is one reason why professional employees resist administrative controls more than non-professional employees (Gouldner, 1957; Sorensen & Sorensen, 1974; Van Maanen & Barley, 1984). When professional identification is high and organizational identification is low, perceived beneficial organizational treatment at best will have no influence on performance and at worst will be associated with lower levels of performance. One implication is that managers should focus mainly on removing perceptions of detrimental treatment (such as psychological contract violation) for employees whose self-concepts are tied mainly to the profession. Perceived detrimental treatment in the form of PPCV might have represented a type of hygiene factor (Herzberg, Mausner & Snyderman, 1959) for the professional employees I studied. Reducing instances of perceived psychological contract violation may have equated to eliminating workplace de-motivators but not to adding motivators. Social exchange motivators available to organizations in managing employees whose self-concept is aligned mainly with their profession may be limited. My analysis highlights the value of fully

understanding the social identification of professional employees prior to implementing policies.

The practical implications of understanding social identification are also apparent by examining effect size and ramifications within my sample. Previous medical research has shown that some healthcare organizations systematically have higher physician distribution rates of statins and ACE inhibitors to patients than others (Ward et al., 2004). Medical research regarding these drugs is very mature and the relationship between drug distribution and death prevention is well established (Ebrahim et al., 1999; Heart-Protection-Study-Collaborative-Group, 2002; Yeo & Yeo, 2000). These drugs prevent one cardiac event for every nineteen patients treated with statins over five years (Heart-Protection-Study-Collaborative-Group, 2002), or for every eighteen patients treated with ACE inhibitors over five years (Acute-Infarction-Ramipril-Efficacy-Study-Investigators, 1993). These studies also show that these drugs prevent one death for every 56 patients treated over a five year period. Overall, these drugs were found to reduce risk of death by twelve percent over five years (Hitinder & Hoogwerf, 2003). Within my sample, I find that patients failed to receive the proper cardiovascular disease medications 50% of the time. This non-compliance rate is consistent with the national average resulting in roughly 37,000 unnecessary annual deaths out of 20 million people who have cardiovascular disease (Dubois et al., 2002; Kerr et al., 2004). My analysis shows that the more that physicians identify with their organization, the greater their rate of prescription of drugs for cardiovascular disease when deemed appropriate by CoastCare. Applying my model and extrapolating from the national mortality figures, if every CoastCare primary care physician increased his or her current level of organizational identification by one standard deviation, of the 350,000 patients at CoastCare, there would be three fewer vascular events and 1.5 fewer deaths annually. Arguably, many more deaths could be prevented if these results generalize nationally and to other drugs and medications besides statins and ACE inhibitors.

Limitations and Future Research

The implications of this study should be considered in light of its limitations. Causal direction cannot be fully substantiated because I used a cross-sectional

design. However, the relationships I hypothesized are consistent with the numerous longitudinal studies that have shown that POS (for a review, see Rhoades & Eisenberger, 2002) and PPCV (Guzzo, Noonan & Elron, 1994; Robinson & Rousseau, 1994; Turnley & Feldman, 1999) predict employee behavior. In addition, my theoretical model entails somewhat complex interaction effects that minimize the probability of drawing incorrect conclusions (Bowen & Wiersema, 1999). Furthermore, reverse causality is not as theoretically plausible. For example, it seems relatively implausible that performing at high levels will lead employees to feel they are being mistreated when they strongly identify with the organization and weakly identify with the profession. Further, to test for interactions that might indicate reverse causality, I individually ran every possible three-way interaction in models that included all appropriate controls, main effects, and lower-order interactions. Out of the 16 possible three-way interactions, only the three I reported were significant ($p < .05$). Certainly, this additional analysis does not rule out the possibility of reverse causality, but it does show that the model I specified explains my data better than alternatives that could be interpreted as indicating reverse causality. Nevertheless, confidence in my findings would be further enhanced if supported by results from future studies based on longitudinal designs.

Second, I cannot be certain that professional employees viewed the abstract category of administrators as being responsible for professional employees' perceived organizational treatment. Future research investigating the perceived source of organizational treatment is needed. However, consistent with past research, I assumed employees view most organizational treatment to come from administrators (Mintzberg, 1977; Rhoades & Eisenberger, 2002; Robinson et al., 1994). Likewise, all my measures target large, abstract categories (e.g. the profession and the organization) and broad perceptions of organizational treatment (the degree to which the organization provides beneficial and detrimental treatment), and they do not focus on identification with specific individuals or treatment from a particular person. However, future research exploring the interplay between abstract identities and specific relationships may be fruitful (Sluss & Ashforth, 2007).

CHAPTER THREE

How social identification competition and perceived administrative social influence affect professional employee role adoption

Initial remarks

I extend social identification research by showing that the combination of organizational and professional identification influence professional employee behavior. I find that employees who strongly identify with the organization and weakly identify with the profession are most likely to adopt a new role that enhances organizational profitability and undermines professional performance quality. Further, I find that such employees are most likely to conform to administrative social influence attempts.

INTRODUCTION

> "First of all, in some ways I hate the administration. I think they are totally wrong-headed. I think when they have a problem, they look at a number of solutions and pick a solution that is bad, and then go for it. Like reorganizing our [group] and introducing [an altered set of responsibilities] is a good example. [Our work] here is suffering because of what they did. The bottom line is definitely better, but the [skilled employees] are the key commodity. And without [specially skilled employees] who feel good about what they are doing, the quality of [work] will suffer."

Take a look at the above quotation. Can you guess what my sample is? Could it be that I am studying accountants at the failed Arthur Anderson complaining about unethical organizational practices? Could it be that I am studying faculty who are having conflicts with their dean about including fundraising as part of their professorial duties? Could it be that I am studying physician-employees who are concerned about new responsibilities that undermine quality health-care delivery?

It is the last of these which happens to be my sample, and indeed the full quote (included in the footnote below) makes this clear.[10] However, the plausibility of the other two hints that there may be a more pervasive phenomena at work. The extraordinary rise of professional work over the last fifty-odd years represents a major shift in the way work gets done (MacDonald, 1995). In fact, the fastest growing segment of the labor force is professional workers[11] such as doctors, lawyers, and professors. Moreover, according to the Bureau of Labor Statistics, professional occupations will continue to be the fastest growing segment of the U.S. workforce for the foreseeable future (Hecker, 2005). Professionals already comprise over 20% of the workforce and are expected to increase by another 5.3 million by 2014 (Hecker, 2005). And while the histories of individual professions highlight that accident and path-dependence have a role to play (Abbott, 1988), their widespread rise across sectors in the economy suggest that something else is afoot. Specifically, professions are excellent at doing something that the modern economy requires: producing and disseminating high-quality, specialized knowledge (Drucker, 1988; Freidson, 2001). Indeed professions are distinguished from other institutions based on their pursuit of unconstrained quality. As Friedson (2001: 200) writes,

> But the professional ideology also asserts another primary interest [in addition to making a good living]—commitment to the quality of work. We can see this commitment clearly in the case of the academic professions in the United States which, more than elsewhere, are subject to strong economic

---

[10] First of all, in some ways I hate the administration. I think they are totally wrong-headed. I think when they have a problem, they look at a number of solutions and pick a solution that is bad, and then go for it. Like reorganizing our clinic and introducing secure messaging is an example. Healthcare here is suffering because of what they did. The bottom line is definitely better, but the physicians are the key commodity. And without physicians who feel good about what they are doing, the quality of care will suffer.

[11] We use the Bureau of Labor Statistics definition of professional to mean any person engaged in work predominantly intellectual and varied in character as opposed to routine mental, manual, mechanical, or physical work; involving the consistent exercise of discretion and judgment in its performance; of such a character that the output produced or the result accomplished cannot be standardized in relation to a given period of time; requiring knowledge of an advanced type in a field of science or learning customarily acquired by a prolonged course of specialized intellectual instruction and study in an institution of higher learning or a hospital, as distinguished from a general academic education or from an apprenticeship or from training in the performance of routine mental, manual, or physical processes.

> pressures. Their members *do* worry about maintaining the student enrollment which indirectly supports them, but as their administrative superiors often complain, they worry even more about the theories, concepts, and data that are their primary interest, and about publishing articles in journals which yield no income and are read only by each other. Furthermore, in the interest of improving the quality of their work, they sometimes try to raise standards so as to reduce rather than expand the number of their consumers, often to the detriment of their self-interest. Paradoxically, they are criticized for *not* making any effort to realize any income from their work in the ordinary marketplace. (emphasis in the original)."

Professions are intertwined with universities and credentialing institutions that together train and certify professionals as knowledgeable. But the reach of professional institutions extends beyond initial training and socializing. Through continued education requirements, oaths of conduct, peer discipline, conferences, and the allocation of status markers, professional institutions have a lasting ability to produce high-quality knowledge, service, and products (Goode, 1960; MacDonald, 1995).

However, and as Freidson's (2001) quote argues, professionals are not only reliant on their professions. Accountants are embedded in firms that seek to increase profits in addition to complying with regulations. Professors are part of colleges that seek to raise funds and rankings in addition to producing rigorous academic knowledge. Clergy are brought to account by parishioners. And physicians are often located in hospitals where high-quality care is constrained by financial solvency. In short, while the norms of professions are usually fixated on producing and employing knowledge in a rigorous, high-quality manner, the norms of the organizations in which these professionals are embedded usually have a set of foci which may or may not emphasize quality. For example, deans are sometimes concerned with the quality of academic publications only to the extent that they raise the school's profile. Thus, the goals of administrative managers sometimes sit in uneasy relationship with the quality-driven norms of the professionals that they supervise (Friedson, 2001).

Exploring the behavior of such professional employees is the focus of this paper. For professional employees, dual identification with the organization and profession can result in identification competition, which occurs when levels of identification with two groups are similar and strong whereby the pressures of one identification interfere with the performance of the other (Settles, 2004; Van Sell, Brief & Schuler, 1981). In a sample of professionals (physicians and physician assistants) employed by a health maintenance organization, I attempt to understand how social identification competition and perceived administrative social influence interact to shape physicians adoption (or lack of adoption) of a new Internet-mediated communication technology. In the process, I will make arguments that support, extend, and contextualize the literature on organizational identification.

My context is CoastCare (a pseudonym), which is a large, not-for-profit, health maintenance organization based in the Pacific Northwest region of the United States. It competes for consumers as a low cost healthcare provider (Kongstevdt, 1993). At the time of this study, CoastCare employed 1,155 healthcare providers (i.e., general practitioners and specialists) to care for about 400,000 members.

CoastCare administrators introduced a major change to medical professionals' work roles by launching a new Internet-mediated e-mail technology, called secure messaging. This technology was designed to enhance communication between medical professionals and their patients. CoastCare patients can access the secure messaging system by logging in to a web portal designed to educate and empower them about their health. This portal makes available to patients their complete medical chart (including physician notes), an online database with information on over 5,000 health-related topics, links to groups where patients can discuss various health problems, and access to their medical professionals via secure messaging email. Because patients expect a quick reply (Couchman, Forjuoh & Rascoe, 2001), medical professionals at CoastCare are expected to respond to all secure messages within 24 hours. Administrators can monitor the number of secure messages and the timeliness of response. Each secure message is automatically integrated into the patient chart, ensuring that other healthcare providers can access its content. In addition, medical professionals are encouraged to include health

information weblinks in their messages to patients, so that patients can further educate themselves.

Use of secure messaging by medical professionals produces significant cost savings for the organization and is a key part of their strategy of attracting new customers. However, it also substantially alters medical professionals' work roles. Secure messaging is not only a new task for medical professionals to master, but also is a novel and contentious means for patients to access medical knowledge. It supplants traditional face-to-face consultation with a certified medical professional, and there are concerns that this will reduce the quality of care which patients receive (Kleiner et al., 2002; Liederman & Morefield, 2003). Moreover, given that all secure messaging correspondence is archived and reviewed by administrators, this new technology greatly increases administrators' ability to monitor patient-physician interaction. The new technology subjects medical professionals to increased control by administrators (McKinlay & Marceau, 2002). Physicians are not paid for using secure messaging.

My research context thus contains a number of favorable elements. Specifically, I am able to explore how identification with two separate psychological groups (i.e. the organization and profession) that prescribe different behaviors (e.g. adopt or reject a new role behavior) influence behavior. Moreover, because secure messaging was put forth and championed by organizational administrators, who are part of the organization but distinct from the profession (Hoff, 1999), perceptions regarding administrative social influence allow further extension regarding how social identification affects professional employee behavior. But before presenting these ideas, let me present you with another puzzle taken from one of the interviews I conducted with physicians at my sample. The puzzle now is what will this physician do, "I guess I am worried about being inundated with a ton of secure messages, or writing something that gets misinterpreted. Although, I really do think that patients want secure messaging, and that it has the potential to save me time."

I will hypothesize that it is organizational identification strength relative to professional identification strength that determines the sense of solidarity that professional employees share with administrators and therefore how eagerly

professional employees adopt secure messaging. Moreover, the perceived social influence exerted by administrators should be more effective when professional employees have a strong sense of solidarity with administrators due to higher organizational identification and lower professional identification. The purpose of this research is to examine how social identification competition and perceived administrative social influence affects professional employee behavior.

Drawing from social identity (Tajfel & Turner, 1979) and self-categorization theories (Turner, 1987), I suggest that increasing member identification with the group leads group members to engage in group-benefiting behaviors (Turner, 1991). However, these theories are unclear as to how identification competition based on dual identification influences group member behavior (Brewer & Pierce, 2005b). Despite widespread claims about the importance and prevalence of identification competition on employee behavior (Ashforth & Mael, 1989; Foreman & Whetten, 2002; George & Chattopadhyay, 2005; Settles, Sellers & Damas, 2002), research examining the topic has remained rare (see Zhang, George & Chan, 2006 for an exception).

Identification competition and professional employee behavior

As noted above, organizations value profitability, whereas professions value quality, regardless of cost or market value (Bamber & Iyer, 2002; Gouldner, 1957; Hall, 1968; Hoff, 2001; Sorensen & Sorensen, 1974). Professions are buffered by cost concerns and get legitimacy from quality (MacDonald, 1995). Professions are exclusive and are make entry into the profession difficult (Abbott, 1988). The extremely high barriers to entry into a profession increase the pay and prestige of the professionals (Freidson, 2001). Therefore, professionals have a vested interest in insuring quality and maintaining high standards.

Social identification is the extent to which a particular group membership is self-defining (Dutton et al., 1994). It refers to employees' sense of oneness with a group and solidarity with fellow members and group goals (Ashforth & Mael, 1989). Social identification leads individuals take on the group's goals and values as their own (Turner, 1984). Therefore, greater employee identification with the profession will lead employees to be more likely to pursue the professional goal of quality in

their work behavior. Although this idea has been suggested frequently in the professions literature (Gouldner, 1957; Lee et al., 2000; Van Maanen & Barley, 1984), it has not yet been tested.

In contrast, organizations have a vested interest in maintaining financial viability and maximizing profit. Organizations gain legitimacy by being financially successful (Starr, 1982; Suchman, 1995). The more that individuals identify with the organization, the more likely they are to pursue the organization's goal of maximizing profitability.

H1. Professional identification will be negatively associated with adoption of a work role that undermines professional performance quality.

H2. Organizational identification will be positively associated with adoption of a work role that improves organizational profitability.

The simple argument underlying organizational identification research is that employees will pursue organizational goals when they strongly identify with the organization. However, the evidence supporting this party line is weak. Riketta (2005) found in his organizational identification meta-analysis that the correlation between organizational identification and supervisor rated performance was only .17. Moreover, no prior work has examined the influence of organizational identification on objective measures of performance. I explain why the story is not so simple, and how predictive power goes up as we incorporate this complexity.

First, the story is not so simple because employees often have competing types of identification which could also guide work behavior. For example, if accomplishing organizational goals involves doing something unethical, then predicting whether a particular employee will pursue those goals requires knowing about not only organizational identification, but also their identification with moral values (Aquino & Reed, 2002). In my particular context, the competing identification is employee professional identification. Because professional employee behavior is largely directed by the organization and profession (Johnson et al., 2006; Pratt & Rafaeli, 1997), I expect these two groups to *jointly* influence professional employee behavior. Specifically, I argue that moderate organizational identification has little

influence on behaviors that benefit the organization (e.g. role adoption of secure messaging) in the presence of high professional identification. In contrast, moderate organizational identification should have a sizable influence on behaviors that benefit the organization in the presence of low professional identification. As such, it is the relative, and not absolute, levels of identification which matter when identities are in competition.

> *H3: Professional employees who have high levels of organizational identification and low levels of professional identification will be most likely to adopt a work role that improves organizational profitability and undermines professional performance quality.*

Building on the prior argument that the relationship between organizational identification and employees engaging in behaviors that benefit the organization is more complex than previously thought, the identification-behavior relationship also depends on the interaction of employee social identification and how employees are treated by organizational administrators. Professions and organizations have distinct boundaries, as administrators are an integral part of the organization, but considered distinct from the profession (Hoff, 1999). If physicians identify primarily with the profession, they define themselves primarily as professionals, and are therefore unlikely to perceive a sense of solidarity with administrators. In contrast, if they primarily identify with the organization, they primarily define themselves as organizational members, and are likely to feel a sense of solidarity with administrators. Social identity theory suggests that behavior is understood differently depending on if it comes from those with whom individuals experience a sense of solidarity (Jetten et al., 1996). Specifically, I suggest that perceived administrative actions (e.g. perceived monitoring for compliance, normative pressure) designed to elicit organizationally consistent behaviors have the desired affect only when organizational identification is strong relative to professional identification. Moreover, when the professional identification is stronger than organizational identification, perceived administrative social influence may actually tend to result in psychological reactance (Brehm, 1966), with professional employees pursuing organizational goals less rigorously. This idea can be understood best in reference to

social identity theory, where professionals lack solidarity with administrators, and therefore are prone to react negatively to perceived administrative social influence.

Indeed the hypothesis that individuals compete with those whom they perceive to be distinct has been tested in the laboratory, but, on the whole, researchers find unimpressive empirical results supporting this hypothesis (Jetten et al., 1996; Turner, 1982; Turner, 1987; Turner, 1991). I am therefore compelled to test the hypothesis in a field context, where the influence of identification should be more apparent on employee behavior because the groups are long-standing and not created based on arbitrary, laboratory conditions.

> *H4: Perceived social influence from administrators to adopt a new role that improves organizational profitability and undermines professional performance quality will be more positively associated with professional employee actual role adoption when their level of organizational identification is high and their level of professional identification is low.*

METHODS

Sample

My initial sample consisted of all 249 primary-care professionals (i.e., family practitioners) at my research site. I used qualitative methods to determine how the new role fit with the organization and profession. I then sent a survey through inter-office mail to all professionals in my sample to verify the fit with organization and profession and to assess my constructs of interest. While poor response rates are regularly encountered when surveying physicians (Templeton et al., 1997), 198 completed the survey for a response of 79.2%. Missing values reduced the number of usable observations to 173. Within my usable sample, 38.4% were women; the majority of the respondents had a medical degree (80.2%); and the remaining respondents were certified physician assistants.[12] None of the family practitioners

---

[12] Certified physician assistants have two or more years of advanced training followed by a board certification exam. Physician assistants work under the immediate supervision of doctors and provide direct patient care involving the interpretation of findings on the basis of general medical knowledge. Difficult cases are referred to doctors (Washington State Department of Personnel, 2003).

were pediatricians.[13] At the conclusion of this study, 84.3% of the professionals in the sample had sent at least one secure message to a patient since the rollout of the system immediately prior to the administration of the survey. Statistical comparisons between the sample and overall population yielded no significant differences in gender, highest degree earned, or whether or not the professional had sent a secure message.

Organizational and Professional Goal Verification

Before sending out the survey, I conducted a focus group and interviews with professional employees to provisionally assess the alignment between the organization and profession and the role behavior. To ensure a wide range of perspectives, I sought to include medical professionals who had various opinions about the proposed role change. I interviewed seven physicians who were not included in the focus group: two physicians who administrators viewed to be eager role-adopters, two moderate adopters, and three resistors. Interviewees were first asked to provide demographic information and brief professional and educational histories. They were then asked to describe how they felt the role change affected the organization and their medical practice. As the interviews progressed, the relationship between the role behavior and the organization and profession emerged. The interviews each lasted between 30-45 minutes. Based on direct statements from professional employees, I concluded that secure messaging was consistent with the organizational goal of profitability and inconsistent with the professional goal of providing high-quality healthcare, regardless of cost.

Indeed, use of secure messaging appeared in line with organizational emphasis on keeping medical costs low. For example, one physician told us:

> I think secure messaging has a lot of potential to save me time. Actually it saves me a lot of time because I can send a secure message to patients instead of having to call them on the phone. The telephone is a pain. We

---

13 At the time of this study, secure messaging was not compatible with federal confidentiality guidelines for minors. Thus, pediatricians were not allowed to use secure messaging and were not part of the sample.

> [physicians] aren't supposed to leave messages on answering machines because of confidentiality issues so we spend a lot of time playing phone tag regarding pretty minor issues. Secure messaging eliminates phone tag in some cases.

Another physician echoed these thoughts:

> I think secure messaging is a really good thing, even though it might be hard for me at first because I am not good at working on computers. I like secure messaging because I just think the way things are going in medicine, paper and phones are not a good thing. It is much better to be computerized. I think secure messaging is a good idea because overall it saves doctors and patients a lot of time. The administrators are making a good call by introducing this technology.

The organization does not directly compensate healthcare professionals for communicating with patients via secure messaging, even though the initiative is expected to save the organization $8.6 million per year. In addition, the secure message system is intended to provide patients with sufficient health information so that they would presumably have to visit doctors fewer times[14], thereby reducing the demand for patient appointments and referrals. Another physician verified this thought:

> Most of the time secure messaging is faster and more efficient than talking on the phone. Office visits are slowest, then phone visits, then secure messages. I save a visit a day with secure messaging.

To verify the extent to which the role behavior enhanced the organizational value of profitability, my survey asked how strongly professional employees agreed (1= strongly disagree; 7 = strongly agree) with the statement: secure messaging is consistent with the values of the organization. Most professional employees in my

---

[14] Enhancements to efficiency have become particularly critical over time. In 1950, family practitioners at my research site were responsible for 1050 patients. Currently, each family practitioner has over 2000 patients in his or her care.

sample agreed that secure messaging was consistent with the values of the organization (79.1 percent), and only 4.6 percent disagreed.

In contrast, the role behavior was viewed to be inconsistent with the prototypical professional goal of unconstrained quality. Unlike non-professional employees, whose quality is evaluated by customers and markets, professional work quality is expected to be so high that it can only be evaluated through a rigorous peer-review process (Van Maanen & Barley, 1984). Indeed, quality has been identified as a defining value of most professions (Blau & Scott, 1962; Hall, 1968; Kerr & Slocum, 1981). One physician noted that secure messaging did not improve quality of patient care:

> When patients write about their medical problems they usually either give way too much information or not enough—which could lead to some quality failures. The organization should instruct patients about the important information to include when talking about their health problems such as what their blood pressure is and how their blood sugars are doing. If we have to do secure messaging, then secure messages should really be initiated by physicians, not patients, so that we make sure we are catching all the medical problems.

Another physician echoed this idea that secure messaging might jeopardize patient health:

> Patients often write and say, "I am really mad about this and what could you do?" and then I email back and say, "Well we could do this or this and I suggest we do this," and then an hour later the patient writes, "Well I don't like any of those options, how about this other option that I read an article about, what do you think?" and it is this endless thread of crap. It is not doing anybody any good, and because the process is so frustrating, I might actually be missing something important.

Another physician went further and expressed fear that secure messaging would actually reduce the quality of patient care:

> I really think secure messaging will change the nature of my job as a physician, and I don't like it. The idea of typing to patients, rather than talking with them, is anathema to the way I see my relationship with patients. With all these computers now, everyone is looking at the screens and not looking and talking with the patients. So I personally see this real potential for feeling there is a loss with patient relationships especially for physicians who are not computer savvy, like people in my generation and older, you know. I really think the physician relationship with patients is threatened. I think a lot of people are worried about that. An electronic doctor-patient relationship is not how I envision my relationships with patients. And I am not so savvy at the computer. I mean I sort of feel like it is going to get in the way as I am trying to email them. I will be concentrating on the typing and pushing buttons, rather than on the medical condition. And, you know if you are trying to figure out the screen, you are not paying attention to the interaction. And in medicine, a huge part of what we pride ourselves on doing is having those relationships, so I am very nervous about what secure messaging might do.

Use of secure messaging appeared out of line with the medical profession's goal of unconstrained quality. Indeed, 79 percent of the broader population of physicians have no desire to communicate directly with patients via e-mail (Kleiner et al., 2002).

Dependent Variable

In previous research, measures of acceptance of organizational change have primarily been limited to self-reports and third-party raters (e.g. Herscovitch & Meyer, 2002). In this study, the organizational computer server automatically recorded the number of secure messages that each medical professional sent to his or her patients. Medical professionals had a great deal of control over how many secure messages they sent for two reasons: (a) they could choose whether or not to inform their patients about the secure messaging capability, and (b) they could choose whether or not to personally respond to their patients' secure messages. All 249 medical professionals sent a total of 16,063 secure messages over the study period,

13,656 (85.1%) of which were sent by those who filled out my survey. Based on my interviews, I found that the quality of secure messages was fairly homogenous because physicians were only expected to address patient health questions that could be answered in five minutes or less. Physicians were told to ask patients with more in-depth issues to be seen in person, thereby constraining the variance in message quality, therefore making the quantity of secure messages an acceptable measure of physician role adoption.

The 24 primary-care clinics involved in this study began using the secure messaging technology on different dates due to a gradual rollout strategy spread over a one-year time period. On average, each professional had access to the technology for 20 months. I calculated *the number of secure messages sent per day*, taking into account the number of full working days that the technology was available to each medical professional.

Independent Variables

Organizational identification. I measured the extent to which health care professionals identified with their organization using a five-item measure based on Mael and Ashforth (1992). All survey items are listed in Table 3.1. The composite reliability for this measure was .76.

Professional identification. I measured the extent to which health care professionals identified with their profession using the same five-item measure used to measure organizational identification, however, the word "organization" was replaced with "doctor."[15] The composite reliability for this measure was .73.

Administrator influence. From my interviews and an analysis of emails sent to the medical professionals by administrators, I found that social influence from administrators was composed of two dimensions: perceived pressure and perceived monitoring. One notable pressure email was titled, "The top 10 reasons why you should encourage your patients to use secure messaging," with the primary reason being "It's the right thing to do!...taking care of patients the way I want our families taken care of." Each week, the medical professionals were also sent a monitoring

[15] The terminology was changed for physician assistants. Each instance of the word "doctor" was replaced with "physician assistant."

email with an attached excel spreadsheet that listed all medical professionals and the number of patient secure messages that were outstanding (i.e., messages which had not been responded to by their assigned medical professional within the organizationally-required 24-hour turnaround time). A number of professional employees expressed to me that this email was a salient form of monitoring by administrators, whereas others were less aware of being monitored.

I measured the *perceived pressure from administrators* that was felt by the professional employees using a two-item measure adapted from Venkatesh and Davis (2000). The composite reliability was .66.

I developed a four-item measure of *perceived monitoring* (1 to 7, strongly disagree to strongly agree) based on Sharma (1997). The composite reliability was .85.

Control Variables

Clinic membership: Each healthcare provider is associated with a clinic. To account for any unobserved heterogeneity due to clinic membership, I controlled for the clinic fixed effect by creating 23 dummy variables to represent the 24 clinics in my sample.

Physician vs. physician assistant: I constructed a dummy variable to account for differences in patient demand (0 = not MD; 1 = MD).

Length of time secure messaging was available: Professionals that had a greater amount of time to become familiar with the technology might reasonably be expected to have a higher daily average of secure messages sent.

Computer self-efficacy: I accounted for professional employee experience with computers and general attitude toward technology using a ten-item measure developed by Compeau and Higgins (1995).

Perceived usefulness of the technology: A recent meta-analysis of the technology acceptance model found perceived usefulness of technology to be the best predictor of use of individual technologies (Legris, Ingham & Collerette, 2003). I used three constructs to measure each employee's perception of the usefulness of secure messaging to patients, self and the organization. Each construct consisted of four items, and was based on Davis's (1989), measure of perceived usefulness.

***Perceived Ease of use*:** Davis's (1989) measure of perceived ease of use is one of the central components of the technology acceptance model and a major predictor of technology acceptance (Legris *et al.*, 2003).

Colleague Pressure. To fully measure the subjective norm surrounding role adoption, I measured colleague pressure with the same two-items used to measure administrator pressure.

Physician demographics. Physician age, tenure and sex were also obtained from organizational records and entered in the analysis.

Measure Validity

I used confirmatory factor analysis with maximum likelihood estimation to assess the psychometric properties of the scaled items for constructs derived from the survey instrument. A satisfactory fit was achieved ($\chi^2 = 1851.33$, $df = 1052$, $p < .01$, RMSEA = .04, CFI = .95). The ratio of chi-squared to degrees of freedom is 1.76; a value of less than 3 for the ratio indicates a good fit (Carmines & McIver, 1981). A CFI value of .90 or above is also considered an indication of good fit (Bentler & Bonett, 1980). All the items loaded onto their appropriate constructs at an acceptable level (Anderson & Gerbing., 1988). Table 3.1 reports the standardized coefficients, Z-statistics, and composite reliability values for the items and their constructs. The composite reliability values for the constructs are all above the .60 cutoff suggested by Bagozzi and Yi (1988).

I assessed discriminant validity between constructs by comparing my target measurement model with various nested models, moving from a highly restricted single-factor structure (all items linked to one construct) to a final, target structure that contained my four constructs of interest (organizational and professional identification, perceived pressure, and perceived monitoring) and seven scales collected for control purposes. Chi-square difference tests for the nested models were consistently large and significant, showing that large improvements in fit were gained as I moved from one factor to six. For example, combining organizational and professional identification resulted in a significantly inferior model (based on the change in χ^2) relative to dividing them into separate constructs. Likewise, combining

all pressure items or all usefulness items significantly decreased the fit between the items and the constructs.

RESULTS

Table 3.2 reports the means, standard deviations, and correlation coefficients between the dependent, independent, and control variables. Because the dependent variable (use of secure messaging) is constrained and a number of observations have a value of zero, I used Tobit, which is designed explicitly to account for left-censored dependent variables. To avoid multicollinearity between the predictors and the interaction terms and enhance the interpretation of the main effects, I centered all variables involved in the interaction terms (Aiken & West, 1991). Table 3.3 presents the results of the analysis.

Table 3.1 Coefficients, Z-Statistics, and Reliability Values for the Latent Variables

Construct/ Indicator	Standardized Coefficient	Estimate /S.E.	Reliability[16]
Professional Identification			
In general, when someone praises doctors, it feels like a personal compliment.	0.77	11.79	0.73
In general, when someone criticizes doctors, it feels like a personal insult.	0.33	4.39	
When I talk about doctors, I usually say "we" rather than "they."	0.53	7.38	
Medicine's successes are my successes.	0.79	12.23	
If a story in the media criticized doctors, I would feel embarrassed.	0.52	7.25	
Organizational Identification			
When someone praises the organization, it feels like a personal compliment.	0.81	12.78	0.76
When someone criticizes the organization, it feels like a personal insult.	0.56	8.04	
When I talk about the organization, I usually say "we" rather than "they."	0.53	7.48	
The organization's successes are my successes.	0.75	11.66	
If a story in the media criticized the organization, I would feel embarrassed.	0.46	6.39	
Administrative pressure			
Administrators think that I should use secure messaging.	0.81	9.40	0.66
I feel pressure from administrators to use secure messaging.	0.58	7.34	
Perceived monitoring			
The extent to which I use secure messaging will be monitored.	0.70	10.79	0.85
No one will know if I use secure messaging or not (r).	0.65	9.74	
Those who assess my patient care will be aware of the extent to which I use secure messaging.	0.78	12.47	
My use of secure messaging will be tracked.	0.91	15.44	

[16] Denotes composite reliability.

Table 3.1 Continued

Computer efficacy--I could complete the unfamiliar program…			
...if there was no one around to tell me what to do as I go.	0.86	14.91	0.92
...if I had never used a package like it before.	0.82	13.77	
...if I had only the software manuals for reference.	0.78	12.82	
...if I had seen someone else using it before trying it myself.	0.84	14.40	
...if I could call someone for help if I got stuck.	0.76	12.49	
...if someone else helped me get started.	0.70	11.00	
...if I had a lot of time to complete the job.	0.65	9.97	
...if I had just the built-in help facility for assistance.	0.67	10.54	
...if someone showed me how to do it first.	0.60	9.10	
...if I had used similar packages before this one to do the job.	0.68	10.73	
Perceived Usefulness to organization--Secure messaging will…			
…make the organization more efficient.	0.88	15.49	0.90
…increase the organization's quality of healthcare delivery.	0.89	15.78	
…enhance the organization's reputation in the community.	0.81	13.70	
…contribute to the organization's financial well-being.	0.77	12.66	
Perceived Usefulness to patients--Secure messaging will…			
…be more convenient for my patients.	0.83	14.27	0.89
…lower potential barriers between me and my patients.	0.91	16.40	
…improve the quality of my patient care.	0.80	13.44	
…increase my patients' access to medical knowledge.	0.75	12.25	
Perceived Usefulness--Secure messaging will…			
…make my job easier.	0.81	13.84	0.91
…lower my workload.	0.94	17.48	
…reduce the time I spend at work.	0.93	17.05	
…make my job more interesting.	0.66	10.26	
Perceived ease of use--Secure messaging…			
…is clear and understandable	0.83	13.04	0.82
…is rigid and inflexible to work with.(r)	0.50	6.85	
…requires a lot of my mental effort.(r)	0.53	7.18	
…is easy to use.	0.88	14.12	
…is cumbersome.(r)	0.66	9.50	
Colleague pressure			
My colleagues think that I should use secure messaging.	0.97	15.80	0.73
I feel pressure from my colleagues to use secure messaging.	0.50	7.28	

Table 3.2. Intercorrelation Matrix for Dependent, Independent, and Control Variables[17]

		M	SD	1	2	3	4
1	Average daily secure messages	0.32	2.28	-			
2	Male (0=female, 1=male)	0.62	0.49	-.13	-		
3	Full-time	0.81	0.20	-.19	.47	-	
4	Age (years)	49.36	7.35	-.14	.34	.11	-
5	Tenure (years)	12.18	8.36	.05	.27	.17	.58
6	Physician (0=assistant, 1=MD)	0.80	0.38	.33	.07	-.17	-.06
7	Days messaging available	553.19	168.96	.06	.06	.06	.13
8	Computer self-efficacy	49.78	10.27	.13	.17	.11	-.03
9	Perceived usefulness	11.36	5.00	.09	.18	.29	-.04
10	Perceived usefulness to org.	18.88	5.01	.30	-.04	.06	-.14
11	Perceived usefulness to patients	19.95	4.84	.37	.00	.03	-.14
12	Perceived colleague pressure	9.20	2.42	.23	-.09	-.02	-.09
13	Perceived ease of use	21.68	4.72	.20	-.07	.08	-.13
14	Organizational identification	24.97	5.05	.09	.00	.16	.09
15	Professional identification	22.74	5.04	-.20	.03	.19	.09
16	Perceived administrator pressure	12.32	2.00	.12	-.10	-.13	-.10
17	Perceived monitoring	22.71	4.41	.26	.03	.05	-.06

		5	6	7	8	9	10
6	Physician (0=assistant, 1=MD)	.10	-				
7	Days messaging available	.41	-.02	-			
8	Computer self-efficacy	-.03	.14	-.07	-		
9	Perceived usefulness	.14	-.07	.18	.18	-	
10	Perceived usefulness to org.	.07	.08	.15	.32	.61	-
11	Perceived usefulness to patients	.06	.16	.15	.29	.55	.73
12	Perceived colleague pressure	.09	-.03	.06	-.02	.26	.34
13	Perceived ease of use	-.06	-.08	.02	.24	.42	.44
14	Organizational identification	.12	-.05	-.05	.09	.19	.21
15	Professional identification	-.07	-.36	-.06	.12	.15	.05
16	Perceived administrator pressure	.02	.15	-.06	.03	-.22	-.11
17	Perceived monitoring	.11	.07	.05	.00	-.10	-.03

[17] All correlations larger than .16 are significant at $p<.05$ (two-tailed); all larger than .20 are significant at $p<.01$, $N = 173$

Table 3.2 Continued

		11	12	13	14	15	16
12	Perceived colleague pressure	.30	-				
13	Perceived ease of use	.43	.18	-			
14	Organizational identification	.26	.10	.21	-		
15	Professional identification	.07	-.03	.16	.59	-	
16	Perceived administrator pressure	.01	.18	-.07	.19	.03	-
17	Perceived monitoring	.13	.15	-.04	.02	-.09	.42

Table 3.3. Hierarchical Analysis Examining Moderating Effects of Identification and Administrator Social Influence on Adoption of Secure Messaging[18]

	Model 1	Model 2
Controls		
Clinic dummies	.***	.***
Male (0=female, 1=male)	-.05	-.02
Full-time	-.12*	-.13*
Age (years)	-.05	-.05
Tenure (years)	.03	.00
Physician (0=MD assistant, 1=MD)	.21***	.23***
Length of time secure messaging is available	-.15*	-.13
Computer self-efficacy	.06	.07
Perceived usefulness	-.04	-.05
Perceived usefulness to organization	.16*	.24***
Perceived usefulness to patients	-.03	-.07
Perceived pressure from patients	.12*	.10*
Perceived pressure from colleagues	-.05	-.05
Perceived ease of use	.11*	.05
Main Effects		
Organizational identification	.18***	.14**
Professional identification	-.19***	-.10*
Perceived pressure from administrators	-.12**	-.06
Perceived monitoring	.20***	.26***
Non-hypothesized Interactions		
Professional Identification X Pressure from administrators		-.15*
Organizational Identification X Pressure from administrators		.11*
Professional Identification X Monitoring		-.05
Organizational Identification X Monitoring		.01
Pressure X Monitoring		.06
Hypothesized Interactions		
Organizational X Professional		-.18*
Organizational X Professional X Monitoring		-.12*
Organizational X Professional X Pressure		-.33**
Log likelihood	129.96	140.79
-2[$L(\beta previous) - L(\beta full)$]		21.66**

[18] N = 173; *** p < .001; ** p < .01; * p < .05

In hypothesis 1, I argued that professional identification would be negatively associated with adoption of a work role that undermines professional performance quality. Model 2 shows that the coefficient for professional identification is significant ($\underline{b} = -.14$; $p < .01$). Hypothesis 1 is supported.

In hypothesis 2, I argued that organizational identification would be positively associated with adoption of a work role that improves organizational profitability. Model 2 shows that the coefficient for organizational identification is significant ($\underline{b} = .10$; $p < .05$). Hypothesis 2 is supported.

In hypothesis 3 I suggested that professional employees who have high levels of organizational identification and low levels of professional identification would be most likely to adopt a work role that improves organizational profitability and undermines professional performance quality. Model 2 shows that the coefficient for the interaction term of organizational and professional identification is significant ($\underline{b} = -.18$; $p < .05$). I plotted the interaction at one standard deviation above and below the mean of professional and organizational identification (see Figure 3.1). I found that professional employees who were strongly identified with the organization and weakly identified with the profession exhibited the highest levels of role adoption. In contrast, professional employees who were strongly identified with the profession and weakly identified with the organization were least likely to adopt the role behavior. Hypothesis 3 is supported.

In hypothesis 4, I argued that perceived social influence from administrators to adopt a new role that improves organizational profitability and undermines professional performance quality would be more positively associated with professional employee actual role adoption when employees' level of organizational identification is high and their level of professional identification is low. Based on model 2, the coefficient for the three-way interaction term of organizational identification, professional identification, and administrative monitoring is significant ($\underline{b} = -.12$; $p < .05$). To gain further insight into the nature of the interaction effect I plotted it based on one standard deviation above and below the mean level of organizational identification, professional identification, and administrative

monitoring (see Figure 3.2). Based on the significance of the simple slopes (Aiken & West, 1991), I found that administrative monitoring was positively related to professional employee role adoption when organizational identification was high and professional identification was low (b = .23; $p < .01$). In contrast, administrative monitoring was marginally negatively related to professional employee role adoption when professional identification was high and professional identification was low (b = -.09; $p < .10$). However, when professional and organizational identification were relatively equivalent, the simple slope of administrative monitoring was unrelated to professional employee role adoption.

Similarly, the coefficient for the three-way interaction term of organizational identification, professional identification, and administrative pressure is significant (b = -.33; $p < .01$). Figure 3.3 shows the plot of the interaction. Based on the significance of the simple slopes, I found that administrative pressure was positively related to professional employee role adoption when organizational identification was high and professional identification was low (b = .44; $p < .01$). In contrast, administrative pressure was negatively related to professional employee role adoption when professional identification was high and professional identification was low (b = -.15; $p < .05$). However, when professional and organizational identification were relatively equivalent, the simple slope of administrative monitoring was unrelated to professional employee role adoption. Taken together, these results indicate that the combination of professional and organizational identification help professional employees interpret administrative social influence. Hypothesis 4 is supported.

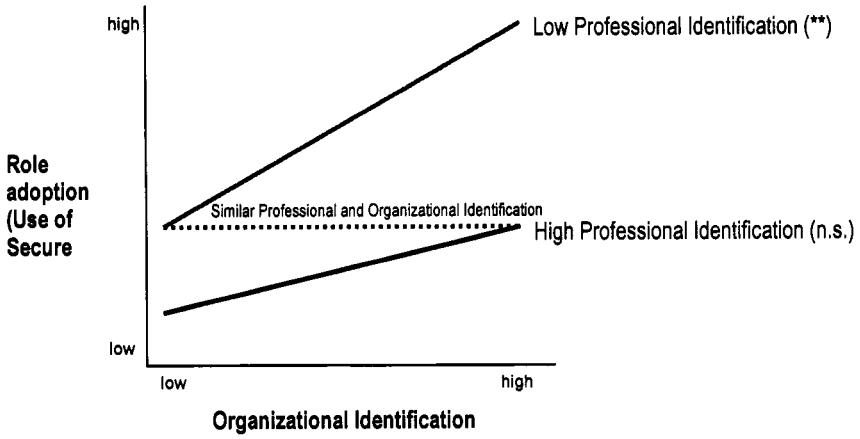

Figure 3.1. The effects of organizational and professional identification on role adoption

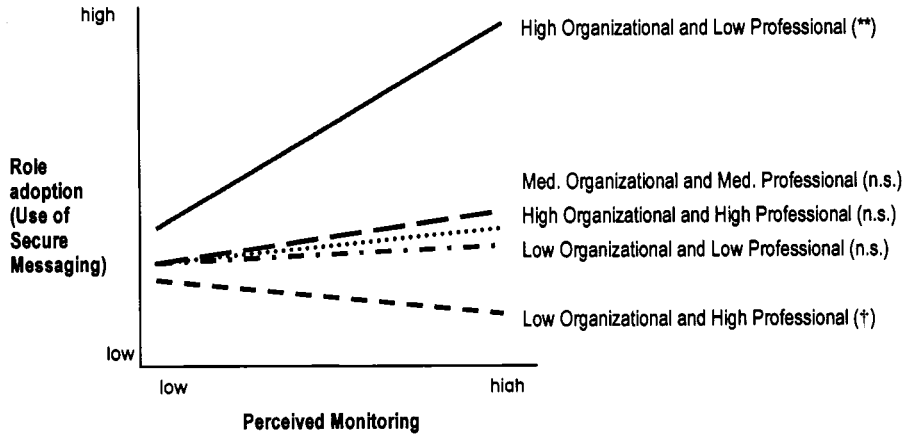

Figure 3.2. The effects of social identification and perceived monitoring on role adoption

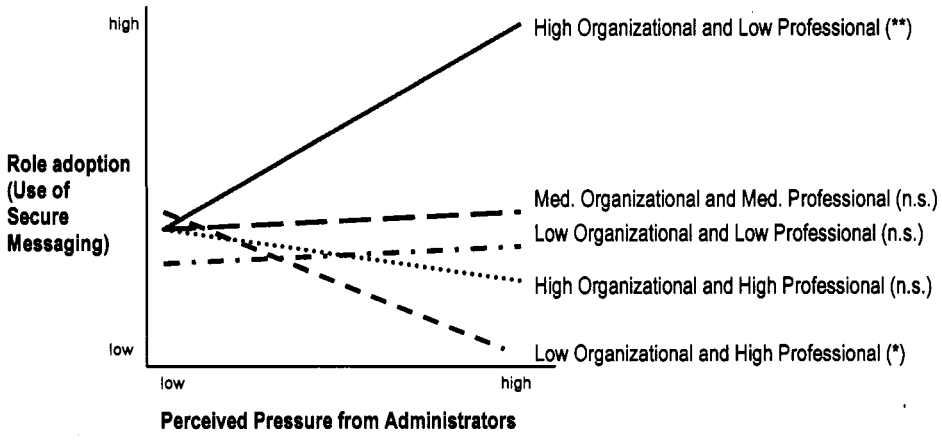

Figure 3.3. The effects of social identification and perceived pressure from administrators on role adoption

Supplementary analysis

One potential problem I need to recognize immediately is that I did not attempt to directly measure professional employee's perceptions regarding the solidarity they felt toward administrators. After analyzing my survey data, and in the spirit of recent calls for richer data in organizational research studies (Rynes, 2007; Weick, 2007), I attempted to address this shortcoming using a supplementary qualitative methodology. I assessed how social identification influenced professional employee behavior by conducting interviews with (1) two professionals who strongly identified with the organization and weakly identified with the profession, (2) two professionals who strongly identified with the profession and weakly identified with the organization, and (3) four professionals who identified strongly with both the organization and profession. I identified these individuals, based on survey responses. I then asked each individual about their perceptions of the administration and how they viewed their work roles. Each interview was recorded and transcribed and lasted approximately 60-90 minutes.

In these interviews, I found that the highly organizationally identified and weakly professional identified physicians tended to view their roles in terms of how much they were costing the organization and empathized with administrators:

> When you think about all the costs associated with the healthcare system, we [physicians] are the most expensive component, so really I think we should bear most of the burden for patient care. We should stay later and come earlier than anyone else to make sure patients are being given good care. We can't expect the lowest-paid people like nurses or medical assistants to be responsible for all the mundane tasks that help patients.

Likewise, another said:

> This organization, like most HMOs, has a real lean, egalitarian flavor. Actually, that is what really attracted me to this organization. And so what we try to do here is "no-frills" medicine—where we give maximum care for a minimal price. I see our organization as being unique from private practice doctors [i.e. physicians who start and own their own practice] because we try to maximize health per dollar rather than maximize dollars per illness. I think a lot of physicians who work here have more of a private practice mentality and don't feel the same way that I do. The private practice guys just hand-out really expensive treatments and MRIs when patients don't really need them. So, I think administrators here have a tough time persuading physicians to stop wasting so many medical resources.

Such highly organizationally identified and weakly professionally identified professionals strictly upheld the organizational goals by promoting organizational profitability and empathizing with administrators.

In contrast, among those whose self-concepts were strongly tied to the profession and weakly tied to the organization, I found that these professional employees viewed their work roles in terms of their valuable expertise and viewed administrators to be clearly outside the professional boundary:

> I think we [physicians] are the most valuable medical resource, so we should only be doing things that fully utilize our skills, like diagnosing and treating patients. I think we should hire other people to do the more mundane tasks

> like lab results, and tests, phone calls. Really, I could use a full-time triage nurse to answer all my secure messages, for example.

She continued by talking about her perceptions of administrators, even in war-like terms:

> You know, I am on the medical staff board, so it is my job to represent the interests of physicians to the administrators. Yesterday, for example, I had my first meeting with the CEO and I was very surprised by how receptive he was to my demands. I mean, I pretty much asked for the moon on behalf of the physicians, and I came away thinking that we [physicians] might actually get everything I asked for. Although, I should be cautious because that first meeting was just one battle, and I am sure he [the CEO] has some tricks up his sleeve.

The other highly professionally identified and weakly organizationally identified physician I talked with gave evidence of psychological reactance to administrative social influence:

> I remember one morning, they [administrators] sent an email telling all of us physicians to clean our desks because some group of medical administrators from Korea was taking a tour of our building that day. For some reason, that email made me so angry. Actually, my desk was clean when I read the email, but as soon as I read it, I just picked up my recycling bin and dumped it all over my desk. I just couldn't believe they were telling us to clean up our desks—like we were little children or something.

Such highly professionally identified and weakly organizationally identified professionals strictly upheld the professional group goals by thinking of their role in terms of providing high-quality service, regardless of cost and by reacting negatively to administrative social influence.

I found that professional employees who strongly identified with both the profession and organization coped their identification competition several different

ways. I found that the physician I quoted at the beginning of this paper seemed to make sense of her identification competition by having a simultaneous strong sense of distinction and solidarity with administrators and a simultaneous commitment to both quality and profitability:

> First of all, in some ways I hate the administration. I think they are totally wrong-headed. I think when they have a problem, they look at a number of solutions and pick a solution that is bad, and then go for it. Like reorganizing our clinic and introducing secure messaging is an example. Healthcare here is suffering because of what they did. The bottom line is definitely better, but the physicians are the key commodity. And without physicians who feel good about what they are doing, the quality of care will suffer. The highest quality of healthcare for the lowest price is what we do here, but the quality is suffering. On the other hand, I totally feel comfortable telling administrators how I feel and they really do listen to me. So, I really think we have some major differences, but they are willing to see my point of view, and I really respect them for doing that.

Another highly professionally identified and highly organizationally identified physician seemed to have a sense of solidarity with one administrator, but feel distinct from another administrator:

> You know, the previous CEO really had an antagonistic attitude toward physicians. She is a nurse by training, so she brought her pro-nurse and anti-doctor attitude with her even when she was leader of the organization. Her approach was to make doctors work as hard as possible for as little money as possible, and if they couldn't handle the pressure, then they should leave. And her attitude was, "good riddance" to physicians who quit. Sure, she did a lot of things right, but she made the medical staff really unhappy in the process. I think the current CEO is much more favorable toward physicians and is trying to re-build the damaged trust between the administration and the medical staff.

Another physician echoed this idea:

> I really like the lower-level administrators, but I think the high-level guys at the corporate office are clueless. I mean, the local administrators are really excellent and keep this place running well. I really think they all deserve a promotion. I just have problems with the central administration because I just don't understand the logic behind most of the central administration decisions. It seems like I get a ton of email from those guys telling me about some obscure system downtime, or asking us to take better notes, or telling us about some new cost-saving system that will take a year to learn and will be one more thing for us physicians to do before we go home at 8pm each night.

Another approach was to alternate perceptions of solidarity and distinctiveness with administrators on an issue-by-issue basis:

> I actually really like secure messaging, but I think their decision to lay-off 30% of the medical staff was awful. I mean the lay-offs definitely won't improve healthcare for patients. And in my opinion they laid off the best doctors and kept the worst ones. But secure messaging is a really good idea. Maybe I just like the fact that it [secure messaging] saves me time, but I think it is good for patients, too. So, overall, I am not sure what I think about the administration's decision-making abilities.

Based on the four interviews with these professional employees who experienced a high level of identification competition, I concluded that depending on the idiosyncrasies of each professional employee, they viewed a portion of administrators as being worthy to direct work role behavior. Likewise, these professional employees seemed to alternate between favoring the professional or organizational goals.

DISCUSSION

In this study, I set out to better understand how identification competition and perceived administrative social influence influenced professional employee

behavior. My supplementary interviews corroborate my theoretical arguments, hypotheses and quantitative analysis. I should also point out that my study has some methodological strong points, such as my use of an objective measure of role adoption, and my inclusion of a large number of control variables that have been shown to influence role adoption, which helps rule out alternative explanations. Likewise, due to the context-dependence of conflicting groups, the vast majority of existing research on dual identification is qualitative (e.g., Padilla, 1994; Phinney & Devich-Navarro, 1997), thereby enhancing the contribution of the quantitative component of my study. Taking into account the strengths of this study in addition to the consistency between my theory, my quantitative analysis and my supplemental qualitative analysis, I have some confidence that the influence of organizational identification on employee behavior depends on level of professional identification as well as perceived administrative social influence.

Implications and Future Research

Professional employees are thought to be especially likely to exhibit psychological reactance in response to attempts at control (Blau & Scott, 1962; Hall, 1968; Kerr & Slocum, 1981; Kerr, Von Glinow & Schriesheim, 1977; Snizek, 1972), however, little is known about why such employees are so resistant. My results suggest that professional employees may be resistant because of their identification with the profession. As professional identification increased and organizational identification decreased, employees were more likely to react negatively to administrative social influence because administrators are not viewed as true members of the profession. Indeed, I found some evidence for a reactance effect. Administrator social influence actually led to a lower adoption of the behavior when organizational identification was low and professional identification was high. The medical professionals in the sample appeared to push back against perceived pressure from individuals whom they viewed to be distinct.

My results suggest the importance of managers identifying the important psychological groups within organizations that direct professional employee behavior. By understanding the extent to which employees identify with their organization or profession, managerial efforts could be targeted where they are likely

to be effective and perhaps withheld for those where they are likely to do more harm than good.

The underlying social meaning behind a given technology is negotiable at the beginning of a technology roll-out and may be actively shaped by those who use it (e.g. Barley, 1986). Administrators may want to actively craft the social meaning of a technology and demonstrate how the technology is consistent with the values of various group identities within the organization.

I predicted that organizational and professional identification would influence the dependent variables differently, perhaps implying that organizational and professional identification should be negatively related. Consistent with past research (r = .45; Lee et al., 2000), I observed a substantial positive correlation between professional and organizational identification (r = .59). However, two constructs that have opposite moderating effects need not be negatively related. For example, conscientiousness and emotional stability, which are two of the "Big Five" personality variables (Barrick & Mount, 1991), are highly positively correlated (r = .54) and also can have opposite moderating effects on employee behavior (Colbert et al., 2004).

CHAPTER FOUR

Preventing your way to quality: The interaction of perceived collective regulatory focus and social identification on employee performance quality

Initial remarks

This paper extends regulatory focus research by introducing two new psychological constructs – perceived collective promotion focus and perceived collective prevention focus. Using a sample of professional employees (i.e. physicians) in a large health-care organization, I find that when employees perceive their collective as prescribing a prevention focus, they have better performance quality. In contrast, when employees perceive their collective as prescribing a promotion focus, they have worse performance quality. In addition, the influence of perceived collective promotion and prevention focus on performance quality is enhanced when professionals strongly identify with the collective. Implications for practice and future research are discussed.

INTRODUCTION

Since Higgins' seminal work (Higgins, 1997; Higgins, 1998), psychological researchers have been captivated by the distinction between promotion and prevention as basic motivators of human behavior (Higgins, 1997). Indeed, in the last decade, nearly 100 academic articles in psychology have employed these two concepts (see Higgins & Spiegel, 2004 for a partial review). And yet, the excitement for promotion/prevention has not spread to organizational research, although there are important exceptions (Brockner & Higgins, 2001; Brockner, Higgins & Low, 2003; Forster, Higgins & Bianco, 2003; Kark & Van Dijk, 2007; Wallace & Chen, 2006).

According to regulatory focus theory, individuals have developed two basic, self-defining strategies for attaining goals; they try to maximize successes, or they try to minimize failures (Higgins, 1997). Individuals who are focused on aligning who they actually are with the person they aspire to become (e.g. their "ideal self") take on a *promotion focus* and pursue goals by trying to maximize successes. Individuals who desire to align who they actually are with the person they feel obligated to become (e.g. their "ought self") take on a *prevention focus* and pursue goals by trying

to minimize failures (Higgins, 1987). Even when considering the same goal, an individual with a promotion focus will pursue the goal very differently than someone with a prevention focus. The promotion focused individual will pursue the goal by eagerly seeking out opportunities. The prevention focused individual will pursue the goal by vigilantly avoiding mistakes (Dweck, Higgins & Grant-Pillow, 2003; Higgins, 1996a). Such promotion and prevention foci provide individuals with an understanding of how to best fulfill basic security and nurturance needs (Higgins, 1996b). Importantly, promotion and prevention focus are separate dimensions and should be considered independently (Lockwood, Jordan & Kunda, 2002; van Kleef, van Trijp & Luning, 2005).

The main aim of this research is to show that regulatory focus plays a role in directing employee behavior. As such, it is important to detail how the distinct behavioral tendencies associated with a promotion or prevention framework can be applied to work behavior. Research indicates that as individuals' prevention focus increases (and as individuals' promotion focus decreases) they tend to avoid making high-risk decisions and to be detail oriented (Crowe & Higgins, 1997; Forster & Higgins, 2005; Forster et al., 2003; Freitas, Liberman & Higgins, 2002a; Friedman & Forster, 2001; Pennington & Roese, 2003). Thus it has been argued that a promotion focus should lead to higher quantity of output, whereas a prevention focus should lead to a higher quality of output (Forster et al., 2003).

Applying this laboratory based psychological research to the organizational realm, I will hypothesize that professional employees will offer better quality performance when acting from a prevention orientation and will offer worse quality performance when acting from a promotion orientation. The next section details the reasons behind the hypothesis that prevention is related to high quality performance and promotion focus is related to low quality performance. I then extend regulatory focus research by testing hypotheses that suggest individuals attribute and conform to perceived group regulatory foci. I argue that a perceived collective prevention focus is related to high quality performance and a perceived collective promotion focus is related to low quality performance. My exclusive focus on quality is a function of

the available data. Future research could productively consider whether and to what degree perceived collective regulatory focus influences quantity produced.

Regulatory Focus and Performance Quality

First, high quality performance can be defined as performance which flawlessly meets a preset standard (Reichheld & Sasser, 1990). A prevention focus should increase quality by motivating a concern for avoiding losses and ensuring against errors of commission. In contrast, because a promotion focus involves a sensitivity to positive outcomes (their presence and absence), the natural strategy is to adopt a risky approach to matching desired end-states (see Higgins et al., 1994). For example, on a word memory recognition task, individuals with either a chronic or induced promotion focus were *more* likely to report that they remembered a word, because they wanted to maximize the positive outcome of getting all possible matches, while those in a chronic or induced prevention focus were *less* likely to report they remembered a word because they wanted to minimize the negative outcome of getting mis-matches (Crowe & Higgins, 1997). In other words, individuals with a prevention focus have a high bar for considering a match to be acceptable, and thus tend to make few mistakes. In an organizational context, this would imply that employees with a strong prevention focus will tend to gather more information and generally put in extra effort to ensure that their actions are not incorrect. Conversely, individuals with a strong promotion focus are more likely to place a premium on speed of task completion and are thus less careful (Forster et al., 2003). For example, on a connect-the-dot task, Forster and colleagues find that those with a promotion focus (whether measured as an individual difference or situationally-induced) made about twice as many mistakes as those with a prevention focus.

Second, as prevention focus increases, individuals attend to task details and are more difficult to distract (Forster & Higgins, 2005; Freitas et al., 2002a; Liberman et al., 1999; Semin et al., 2005). Using a laboratory design, Forster and Higgins (2005) demonstrate the tendency of prevention focused individuals to focus on task details. These researchers briefly flashed on a screen some large letters made out of a number of smaller letters. They then asked subjects to quickly press a button describing

which letter they had seen. Subjects with a prevention orientation tended to recognize the small letters more quickly, while subjects with a promotion orientation recognized the large letter more quickly. Similarly, the research of Semin and colleagues (2005: studies 1 and 2) demonstrates that prevention focused individuals use more concrete language to describe events, whereas promotion focused individuals use abstract language. Moreover, those with a prevention focus are difficult to distract. They persistently pursue tasks to goal completion, and are largely unwilling to switch to alternative tasks which might be more enjoyable (Liberman et al., 1999). In fact, there is suggestive evidence that prevention focused individuals actually find resisting temptation to be enjoyable and motivating (Freitas et al., 2002a). In contrast, promotion focused individuals perform considerably worse in the face of distraction (Freitas et al., 2002a). Applied to professional employees, a strong chronic prevention focus will therefore lead employees to pay more attention to details about the customer, to communicate using specific and concrete language, and to be difficult to distract. Coupled with the tendency to be careful and avoid making mistakes, this suggests that:

> ***Hypothesis 1:*** *An individual's chronic prevention focus will be positively associated with the level of performance quality they provide.*

On the other hand, due to the tendency to take risks, be motivated to pursue speed over accuracy, and to ignore details, it is predicted that:

> ***Hypothesis 2:*** *An individual's chronic promotion focus will be negatively associated with the level of performance quality they provide.*

However, my aspiration is to go beyond replicating Forster and colleagues' (2003) findings about the relationships between individual promotion/prevention focus and quality. Specifically, I introduce two new constructs – perceived collective promotion focus and perceived collective prevention focus – which I believe also direct employee behavior in important ways. This extension is conceptually based on the finding that people are broadly aware of their own regulatory focus, as well as the dominant regulatory focus of other individuals (Shah, 2003). I suggest that group members construct mental representations of the regulatory focus of the collectives of which they are a part. This is premised on people's widespread tendency to view

groups as having uniquely human attributes (Eisenberger et al., 1986; Slaughter et al., 2004; Sluss & Ashforth, 2007). I argue that group members conform to their beliefs about the group's dominant regulatory focus.

Finally, I further extend regulatory focus research by demonstrating that the influence of these perceptions on behavior is especially strong when group members strongly identify with the collective. Perceptions about collectives matter most when the organization doesn't closely monitor and sanction employee behavior, and when the employees instead use internal mechanisms to motivate and monitor themselves (Albert, Ashforth & Dutton, 2000). My research sample is of medical physicians. Physicians are ideal for examining the influence of perceived collective promotion and prevention focus on group member behavior because such professional employees have a great deal of discretion over their work-related behavior, which allows an unobstructed view of the relationship between perceptions about the collective and group member behavior (Hogg & Terry, 2000; Lewis, Marjoribanks & Pirotta, 2003). Moreover, physicians possess (at least) two work identities: that of a professional doctor and that of an organizational employee (Johnson et al., 2006). Due to these dual identities, this sample allows for a replication of my hypotheses about the relationship between physicians' perceptions of the promotion and prevention focus of the groups to which they belong and the provision of high quality performance to patients. Thus, this research examines how member perceptions of collective promotion and prevention focus interact with their level of group identification to influence performance quality. I conclude by outlining how these results inform future regulatory focus research. But before proceeding to these extensions of regulatory focus theory, I review the foundation on which I am building.

Overview of regulatory focus research

Self-discrepancy theory (Higgins, 1987), and its updated incarnation, regulatory focus theory (Higgins, 1997; Higgins, 1998), describe two basic goal-attainment strategies that people use to become what they want to be. These theories suggest that the self consists of three basic domains—the actual, ideal, and ought selves. The actual self reflects how one understands oneself in the present moment

(e.g. who one is), while ideal and ought selves are representations of a person's goals for the future (e.g. what one wants to be). When one is striving, it is towards either an ideal self – which frames goals in terms of accomplishments, achievements, and promotion of one's ideals (i.e. a promotion focus) – or towards an ought self – which frames goals in terms of fulfilling obligations, removing barriers, and preventing mistakes (i.e. a prevention focus). Whether one is striving for an ideal self or an ought self determines *how* one goes about becoming what one wants to be. In a programmatic line of research, Higgins has established that promotion and prevention are two basic goal-attainment strategies which influence behavior (Higgins, 1987, 1997), and that people differ in the extent to which they habitually enact a promotion or prevention focus (Higgins & Spiegel, 2004).

The research on promotion and prevention has produced a fascinating portrait of how these two different types of regulatory focus come into play. For example, anorexics are more likely to have a chronically active prevention focus, whereas bulimics are more likely to have a promotion focus (Strauman et al., 1991). Bulimics pursue the goal of being thin by finding opportunities to lose weight (i.e. purging). Anorexics pursue thinness by avoiding things that will prevent them from being thin (i.e. food). In both cases, individuals with an eating disorder perceive a discrepancy between their actual self and their desired end-state (i.e. being thin), but each condition involves a different strategy for how they go about reducing that discrepancy (i.e. approaching opportunities or avoiding mistakes). Similarly, promotion and prevention affect people's friendships. Individuals with a chronically active promotion focus build friendships by being charming and likable and are alert for opportunities to make new friends (Higgins et al., 1994). In contrast, those with a chronic prevention focus build friendships by avoiding making mistakes that would alienate friends, and by preventing friendships from deteriorating over time. Finally, research in consumer behavior suggests that prevention focused individuals care more about a product's safety, whereas promotion focused individuals are more concerned with comfort features (Werth & Foerster, 2007).

In addition to these between-person comparisons, a promotion or prevention focus can be temporarily induced - either in the laboratory or by a host of contextual

factors (Cesario, Grant & Higgins, 2004; Forster et al., 2001; Forster et al., 2003). Very different mental processes result from inducing a promotion focus, as compared to a prevention focus. Those employing a promotion focus are sensitive to the presence or absence of positive outcomes (Brendl & Higgins, 1996), attempt to insure hits and thus minimize errors of omission (Liberman et al., 2001), adopt goals which are more distal (Freitas et al., 2002b), as well as more abstract (Semin et al., 2005), focus on potential gains more than losses (Shah, Higgins & Friedman, 1998), and optimistically predict that those gains are likely to be realized (Grant & Higgins, 2003). In contrast, those with a prevention focus attempt to ensure correct rejections and thus minimize errors of commission, adopt goals which are proximal and concrete, focus on potential losses, and pessimistically predict that those losses are likely. Thus, as a caricature, our promotion selves are "big picture" thinkers with long-range plans who are optimistic that wins are imminent. Our prevention selves are detail-oriented focusers on today's business and are wary of things going wrong.

These insights from promotion and prevention research have not been incorporated into the field of organizational studies, or examined in organizational contexts. There are notable exceptions. Brockner and colleagues (2003) identify situations in which either a promotion or a prevention focus leads to entrepreneurial success. Wallace and Chen (2006) find that employee regulatory focus mediates the relationship between conscientiousness and employee productivity, as well as the relationship between safety climate and safety performance. Moreover, two prominent theoretical articles have called for increasing organizational research into promotion and prevention. Brockner and Higgins (2001) have argued that promotion focus and prevention focus lead to different sorts of emotional experiences (cheerful-dejection emotions versus quiescent-agitated emotions), and that this has implications for how we understand key organizational issues such as P-O fit, goal-setting, decision-making, and organizational change. Focusing on leadership, Kark and van Dijk (2007) develop a theoretical model which hypothesizes that a promotion focus will lead to transformational leadership behaviors, whereas a prevention focus will lead to transactional leadership behaviors.

Finally, in a piece of research that holds particular promise for organizational research, Levine and colleagues (2000) were able to induce groups to take on either a promotion or prevention strategic focus by varying the way that groups were told about performance compensation. All groups were given the same performance goal (80 percent memory recall of a word list) and the same payment scale (e.g. six dollars for success and three dollars for failure) but the regulatory focus regarding group payment was varied. Specifically, groups that were told that they would be paid six dollars unless they failed to achieve the goal became prevention-focused and made conservative choices and tried to minimize errors. Groups that were told they would be paid three dollars unless they exceeded the goal became promotion focused and made risky choices and tried to maximize successes.

The main insight from this research is that group members attribute a promotion or prevention strategic focus to their groups, and readily conform to this perceived group attribute (Levine, Higgins & Choi, 2000). My research seeks to extend nascent efforts to use promotion/prevention in organizational research, and to particularly build on Levine and colleagues (2000). To do so, I develop two related concepts – perceived collective promotion focus and perceived collective prevention focus – and test their effects in an organizational context.

Perceived collective promotion and prevention focus

I define perceived collective promotion focus as an individual's understanding of the extent that a group, of which they may or may not be a part, seeks the successful accomplishment of ideal outcomes (e.g. ambitions, hopes, aspirations). I define perceived collective prevention focus as an individual's understanding of the extent that a group, of which they may or may not be a part, seeks the successful avoidance of negative outcomes (e.g. losses, setbacks, failures, mistakes). Three aspects of this definition require elaboration.

First, notice the word perception in these definitions. Because group member perceptions about collective promotion or prevention focus are located in the minds of individuals, I am concerned with capturing the degree to which group members believe a promotion and prevention focus is prescribed by their collectives. I do not purport to examine the "actual" regulatory focus of groups – e.g. I do not claim that

there is some group level phenomenon that emerges out of shared points of agreement about how the group goes about accomplishing its aims. Indeed, the existence of an "actual" collective regulatory focus would undoubtedly be a contentious issue. For example, what if group members don't agree about the appropriate regulatory focus, or if there are factions contending to create different understandings of the appropriate regulatory focus? Couldn't an individual's perceptions about collective regulatory focus guide that individual's behavior even if such a perception is not widely shared? Like other researchers who argue that that individual perceptions of collectives are more proximal predictors of individual behavior than group-based measures (Parker et al., 2003; Schulte, Ostroff & Kinicki, 2006), I believe the answer is yes.[19] Thus, I develop and test my measures of perceived collective promotion and prevention focus at the individual level.

A second important aspect of this definition is that it is premised on individual's treating collectives as if they had wills – e.g. as if they were persons. Research indicates that this sort of personification of collectives is pervasive (Boyer, 1996), and describes how people come to understand the organizations that they inhabit (Aaker, 1997; Eisenberger et al., 1986; Lawler, 1992; Slaughter et al., 2004; Sluss & Ashforth, 2007). Indeed, such anthropomorphization is so common that even scholars slip into treating organizations as people from time to time (Staw, 1991). The underlying logic is that people treat collectives as if they were people because the environment in which humans evolved favors that. Some of our most developed brain-structures are those having to do with perceiving and relating to other people (Mithen, 1996). Thus, person based schema are the perennial hammer, which humans use to nail down their environment. So for example, when laboratory subjects who are watching shapes randomly move around a screen are asked what they see the most common response is to interpret the shapes as engaged in "chasing" one another, and to even suggest aggressive, romantic, or playful intentions behind the shapes' actions (Heider & Simmel, 1944). Along with the other scholars cited above, I believe that people may similarly personify the groups to which they are

[19] Note that if we were predicting group outcomes, then group level averages – assessed through the aggregation of group member's perceptions would be the most appropriate measurement technique (Pratt, 2003).

connected, and thus I feel comfortable arguing that employees are likely to develop perceptions about their group's objectives (e.g. identity) and the appropriate tools to use in achieving those objectives (e.g. collective promotion focus and collective prevention focus).

Third, an actor doesn't necessarily have to consider themselves a part of a group in order to perceive a collective regulatory focus. However, perceived collective regulatory focus will likely have the most substantial affect on behavior when an individual is tightly connected to a group. One form of "tight connection" is when an individual identifies with the collective. When identification is high, members understand themselves as prototypes of the collective, and see their role as representing the collective (Hogg & Terry, 2000). But even when identification is weak, the hope of rewards and fear of punishments may compel members to conform with what they perceive to be the wishes of their collectives. These two forces – external incentives that influence weakly identified individuals and internalized standards that influence highly identified individuals – serve to create conformity among group members. With respect to promotion and prevention, I make the argument that, when acting as a representative of a collective, each individual's own regulatory focus will often be suppressed and will be replaced with the regulatory focus that they perceive the collective as prescribing.

Perceived collective regulatory focus and related constructs

In defining promotion and prevention focus, Higgins was careful to distinguish where this construct "fits" in the nomological network of other self-based constructs (Higgins, 1987; Higgins, 1996b). Higgins discussed how regulatory focus overlaps and differs from constructs like self-esteem, self-enhancement, self-consistency, self-presentation, and personal identity, but also how it goes beyond and influences these (Higgins, 1996b). But while the discriminant and convergent validity of promotion and prevention focus is fairly well established, when moving to perceptions of the collective's promotion and prevention focus, there are new cousin constructs to consider. Briefly, I will detail how perceived collective promotion and prevention focus compare to other constructs that measure group member perceptions regarding

groups: specifically, perceived organizational support, psychological climate, and collective identity.

Similar to perceived collective promotion and prevention focus, Eisenberger and colleagues (1986) based perceived organizational support on the premise that employees tend to assign the organization human-like characteristics. Perceived organizational support research proposes that to the degree employees feel they have been treated favorably by their organization, they develop a global belief regarding the extent to which the organization cares for them and values their contributions (Eisenberger et al., 1986). Higher levels of organizational support lead employees to respond with higher performance, greater satisfaction, and increased organizational citizenship behaviors (Rhoades & Eisenberger, 2002). But whereas perceived organizational support involves perceptions of how much the organization cares for employees, collective promotion and prevention focus involve perceptions of the degree to which the collective is focused on attaining ambitions or minimizing failures. So while both involve the personification of collectives, the aspects of those collectives which are being perceived are different – e.g. the organization cares for me versus how the group goes about accomplishing its goals. Finally, although the relationship between perceived organizational support and employee performance is a simple positive one, the relationship between perceived collective promotion and prevention focus and performance is more complex and depends on the type of performance in question (Higgins, 2005). For example, a perception that the organization is dictating a promotion focus should lead group members to work faster, while a perception that a prevention focus is appropriate should lead group members to work more carefully (e.g., Forster et al., 2003; Freitas et al., 2002a).

Psychological climate is individual employee perceptions of the work environment (Jones & James, 1979). Consistent with Lewin's (1936) notion of "life space," psychological climate perceptions provide a cognitive representation of one's work environment that enables individuals to impute meaning to organizational events and determine the actions that will lead to desired outcomes. Perceived collective promotion focus and perceived collective prevention focus are narrower and more focused constructs than psychological climate. Whereas psychological

climate is an umbrella concept that covers perceptions about many different aspects of the workplace, perceived collective promotion focus and perceived collective prevention focus are only about how to accomplish group goals.

Perceived collective promotion focus and perceived collective prevention focus are perhaps most closely connected to perceptions about the collective's identity. Collective identity represents the defining group characteristics that answer, "Who are we?" and "What do we want to be?" as a group (Albert & Whetten, 1985: 265), perceived collective promotion and prevention focus answer, "*How* do we become what we want to be?" Perhaps this distinction can be elaborated through a geographic analogy. If collective identity is about locating where we are and where we want to go, then collective regulatory focus perceptions would describe what kind of mode of transportation (car, bus, etc) we will be using to get there. In addition, even though collective identity can be embodied in individual group member perceptions of the group (Pratt, 2003), it is most commonly viewed as a group-level product of social sharing and negotiation which produces consensus about collective identity. In contrast, no claims are made that there exists widespread agreement or negotiation about perceived collective regulatory focus – only that individuals often have perceptions about the regulatory focus of their groups. This does not preclude the possibility that collective regulatory focus could be usefully employed as a group level construct, but this is a question for future theory and research.

Perceived collective regulatory focus and performance quality

In this section, I suggest that employees' beliefs about their collective's prevention focus and promotion focus influence the degree to which they offer high quality performance. Organizational contexts are characterized by a variety of collectives with which employees can identify and which can influence employee performance (i.e. workgroup, profession, organization, union, or demographic groups). Regardless of the particular values and goals of each these collectives, the degree to which group members perceive each collective as prescribing a promotion or prevention focus should influence the degree to which group members enact the prescribed regulatory focus. For professional employees, two collectives are particularly relevant. Professional employees are members of both their profession

and organization, and professional employees use both groups as a source of direction to guide their behavior (Johnson et al., 2006; Pratt, Rockmann & Kaufmann, 2006). As such, the degree to which professional employees perceive their profession and organization as dictating a promotion or prevention focus will independently determine the quality of performance that such employees provide. Thus, parallel to hypotheses about individual chronic promotion focus and individual chronic prevention focus, it is predicted that:

> ***Hypothesis 3a:*** *Perceived professional collective prevention focus will be positively associated with employee performance quality.*
>
> ***Hypothesis 3b:*** *Perceived organizational collective prevention focus will be positively associated with employee performance quality.*
>
> ***Hypothesis 4a:*** *Perceived professional collective promotion focus will be negatively associated with employee performance quality.*
>
> ***Hypothesis 4b:*** *Perceived organizational collective promotion focus will be negatively associated with employee performance quality.*

Finally, it is suggested that the influence of perceived group regulatory focus on performance quality depends on the degree to which employees identify with each group. The effects of employees' perceptions of collective regulatory focus will be stronger to the extent that the employees identify with the collective. Identification with a group is the degree to which employees view themselves as representatives of the group (Tajfel & Turner, 1985). The greater the identification, the more the individual will experience a sense of oneness with the group, bring their behavior into alignment with group norms, perceive the group's successes and failures as his or her own, and respond to group outcomes as if they were personal (Ashforth & Mael, 1989).

The more an individual identifies with another person or group, the more likely that individual is to take on the other's regulatory focus (Shah, 2003). As identification with the collective increases, employees will increasingly be attuned the collective's interests. Accordingly, highly identified employees will be more likely than weakly identified employees to suppress their own chronic promotion focus and prevention focus and replace it with the focus prescribed by the collective.

Similar to the first two hypotheses, for professional employees, both the profession and organization are especially relevant because both groups are targets of professional employee identification and important sources of direction for professional employee behavior (Johnson et al., 2006; Pratt et al., 2006).

> ***Hypothesis 5a:*** The stronger an employee's identification with their profession, the more positive the association between perceived professional prevention focus and performance quality.
>
> ***Hypothesis 5b:*** The stronger an employee's identification with their organization, the more positive the association between perceived organizational prevention focus and performance quality.
>
> ***Hypothesis 6a:*** The stronger an employee's identification with their profession, the more negative the association between perceived professional promotion focus and performance quality.
>
> ***Hypothesis 6b:*** The stronger an employee's identification with their organization, the more negative the association between perceived organizational promotion focus and performance quality.

METHODS

Sample

The site for this research is a large health maintenance organization, hereafter referred to as CoastCare.[20] CoastCare provides coverage and healthcare for nearly 500,000 people along the United States' west coast. Roughly 1,500 healthcare providers (both general practitioners and specialists) provide service to its members. This study is the final installation of a multi-year research collaboration with Coastcare.

With the cooperation of CoastCare's administration, I surveyed all of the 223 primary-care physicians (i.e., family practitioners) who were directly employed by CoastCare. Although poor response rates are regularly encountered when surveying physicians (Templeton et al., 1997), 136 physicians completed the survey for a response rate of 60.9 percent. Missing values reduced the number of usable observations to 121 or 54.2 percent. Within the usable sample: 34.7 percent were

[20] CoastCare is a pseudonym.

women, the average age was 50.4 years, and the average tenure with the organization was 14.2 years. All respondents had a medical degree. Statistical comparisons between the sample and overall population yielded no significant differences in gender, age, or tenure.

Performance quality

I chose to measure performance quality along three dimensions. The first is physician thoroughness, which assesses the average number of health procedures performed and issues discussed for each patient. The second is the physician's level of accuracy, which is measured by the prescription rates of critical medications for those patients that possess appropriate disease criteria. The third is direct patient ratings of the attention that the physician paid to patients. For all metrics, physicians are provided feedback about how they compare to both the organizational average and the organizational goal. Physician compensation is partially tied to two of the three measures of performance quality. Physicians who exceed the 40th percentile for thoroughness and attention paid are given a special four percent salary bonus for each performance indicator.

Higher levels on all three measures of performance quality are beneficial to patients. Physicians who have higher thoroughness are more likely to catch non-obvious health problems. Higher physician accuracy benefits customers by preventing costly and sometimes deadly health events such as strokes and heart attacks. And the more attention that physicians pay should be a direct contributor to patient wellbeing. All three dependent variables were collected three months after the survey was administered.

Thoroughness. [21] The average number of medical issues discussed and medical procedures performed by each doctor in a standardized 8-hour day was recorded by the organization's scheduling software. Although the number of patients that physicians see each day is controlled by organizational administrators,

---

[21] Although "thoroughness" is measured the same as chapter two's "productivity," they are different variables. "Thoroughness" was measured in 2006 and "productivity" was measured in 2003. In 2003, because of productivity concerns, physicians were required to see at least 24 patients per day, and in 2006, because of quality concerns, were required to see no more than 18 patients per day. Likewise, physicians are no longer able to control the number of patients they see each day.

CoastCare physicians have a great deal of control over how thorough they are with each patient (e.g., the number of procedures performed and patient health issues addressed). For example, physicians who rigorously confirm each diagnosis and rule out alternative diagnoses by asking patients a large number of questions and ordering a large number of tests, biopsies, or MRI's have a high level of visit thoroughness. Thoroughness was measured according to notations made about procedures performed and issues discussed with each patient. This was noted whether the consultation occurred during a face-to-face visit, phone visit, or email consultation. According to quarterly internal audits by administrators, CoastCare physicians accurately record the procedures they perform and the issues they discuss in over 90 percent of patient visits. Procedures and issues discussed are standardized by the hospital administrators according to Relative Value Units (RVUs). RVUs are widely used in the healthcare field, and capture the amount of time involved, the required physical and mental effort, the required judgment and technical skill, and the psychological stress entailed for each physician activity (Hsaio et al., 1988a; Hsaio et al., 1988b). Thus, the thoroughness measure assesses not only how many activities were performed, but also how difficult those activities were. As such, the final thoroughness variable is operationalized as the quarterly average RVU-adjusted number of patient services rendered per day.

Accuracy. Every CoastCare primary care physician is responsible for a panel of member-patients. Of the thousands of possible treatments, prescriptions, and procedures that physicians can perform to benefit patients, CoastCare only measures and gives feedback to physicians regarding each physician's prescription rate of statins and Angiotensin-converting-enzyme (ACE) inhibitors to patients with diabetes. Treatment of cardiovascular events such as strokes, clots, and heart attacks is the most costly portion of healthcare delivery in the U.S. (Willerson & Cohn, 2000). Diabetics are especially prone to heart disease (Snow et al., 2004). These drugs dramatically reduce the frequency of cardiovascular events over patients' lifetimes (Gerstein et al., 2000).

Nationally, only 50 percent of all the diabetic patients that should be treated with statins and ACE inhibitors are actually taking such medications (Dubois et al.,

2002; Ma et al., 2005). According to CoastCare and the Amer. Medical Association guidelines, all diabetic patients aged 55 and older should be regularly taking ACE inhibitors and some form of a statin. ACE inhibitors lower blood pressure, and statins lower cholesterol. These drugs significantly lower the immediate risk of a cardiovascular event (e.g., stroke, heart attack) for all individuals, regardless of gender or previous history of cardiovascular disease (LaRosa et al., 1999; Snow et al., 2004; Yusuf et al., 2000). However, to attain a high-level prescription rate, doctors must check patient records and continually remind patients about the availability of these medications. In fact, some physicians regularly look through their patient panel and systematically call patients who should be on these medications. Thus, making sure that all patients who should be taking these medications are in fact taking them is a function of physician carefulness and accuracy with each patient.

As such, physician accuracy is operationalized as the composite of the percent of diabetic patients 55 years and older who were dispensed a 90-day supply of ACE inhibitors and statins at any time within the quarter following the survey date. The denominator of this variable consists of every patient in the physician's panel that should be taking statins or ACE inhibitors. The numerator is the number of eligible patients who were actually prescribed such appropriate medication within the three months immediately after survey administration. The organizational electronic medical record-keeping system only includes a patient in the denominator if they meet 13 precise disease criteria (e.g. demographic characteristics, or whether they have received side-effects from the drugs). If patients do not meet all of the qualifying criteria, they are ineligible to receive statins or ACE inhibitors, and administrators remove them from the denominator of the dependent variable. The organization only calculated thoroughness and accuracy for physicians who were permanently assigned to a clinic because such physicians have a stable panel of patients assigned to them by CoastCare administrators. The component variables of each physician's ACE inhibitor and statin prescription rates approached normality, and were standardized and added together. The resulting variable was each

physician's overall *prescription rate of statins and ACE inhibitors for diabetic patients.*

Attention Paid. Like other health plans, CoastCare measures customer satisfaction with the Consumer Assessment of Health Plans Survey. This survey was mailed each physician's patients, following doctor visits, selecting the patients from a stratified sample based on the patients' visit utilization rates (to avoid a bias toward those patients with frequent appointments). Patients completed and returned a total of 4,550 surveys for a response rate of 37.6 percent, and because CoastCare sent out exactly 100 surveys per doctor, an average of 37.6 patients rated each physician. The organization only provided me access to the two customer satisfaction survey items. However, these are the items which organizational administrators deem most important. The first captures the attention the provider paid to patients and is the basis of physician appraisal and compensation. The second evaluates patient satisfaction with the organization as a whole. And while having only one item to assess the attention the physician paid to patients is not ideal, this is mitigated by the rating of each doctor by multiple patients—an average of 37.6 respondents per doctor. This measure is an improvement over studies where employee subjective performance is rated by only one person (i.e. the employee's immediate supervisor). Prior studies have demonstrated that a large number of raters provide a reliable subjective performance rating—even for single-item measures (Bracken, Church & Timmreck, 2001; Salam, Cox & Sims, 1997). CoastCare patients rated their physician on a 5-point Likert-scale (1=very poor; 5=excellent) "How would you rate the attention the provider paid to what you had to say?" The resulting variable was each physician's overall *patient rating of attention the physician paid.* Organizational administrators directly link physician bonuses to this item because administrators find that the degree to which patients feel that their voice is heard is the best predictor of patient retention (c.f., Kravitz et al., 2002; Pellegrin et al., 2001). Unfortunately, CoastCare did not provide access to raw patient-level surveys. Instead, they supplied data indicating what percentage of each physician's patients rated the physician as "excellent." Thus, the range on this measure for each physician

was from 0 to 100 percent. Again, while not ideal, this measure does assess high quality performance, my area of focus.

Independent Variables

Perceived individual chronic promotion and prevention focus. Individuals' chronic regulatory focus was measured using a scale based on Lockwood, Jordan, and Kunda's (2002) regulatory focus instrument. For example, I asked physicians to rate how much they agreed on a seven-point Likert scale (strongly disagree to strongly agree), "In general I am focused on attaining ambitions," and "In general, I am focused on avoiding mistakes." These items, and all other survey-based items are provided in Table 4.2. The composite reliability of the chronic promotion focus was .93 and the chronic prevention focus was .90.

Of the available chronic promotion and prevention focus scales, I chose the Lockwood measure because it is most suited for field contexts and most adaptable to non-self targets. One way to measure promotion and prevention focus by calculating differences in the accessibility of ideal and ought self-guides (Higgins, Shah & Friedman, 1997; Shah et al., 1998). This procedure involves participants listing five ideal self goals and five ought self goals and measuring: (1) participant desire to attain each goal, (2) participant perception that the goal has already been attained, (3) the length of time for participants to record each goal and (4) the length of time for participants to record their desire to attain each goal. Because this measure involves measuring response times via computer, and the organization required a paper survey, this measure of regulatory focus was not an option for my study. Moreover, its adaptation to non-self targets (e.g. groups like organizations or professions) is not straightforward. A second measure of regulatory focus involves asking individuals about their subjective experiences of success in obtaining past prevention and promotion goals (Higgins et al., 2001). This scale is not easily adaptable to non-self targets because four of the items ask about one's parents, and the other seven items ask about other types of uniquely human information. For example, the items ask respondents to rate how often they, "got on their parents nerves when they were growing up," or how much they agree that they, "have very few hobbies or activities that capture their interest." I therefore concluded that the

Lockwood scale was best suited for my field context and for adaptation to collective targets.

Perceived organization promotion and prevention focus. The degree to which individuals perceive the organization as prescribing either a promotion or prevention focus was measured based on Lockwood, Jordan, and Kunda's (2002) measure of individual regulatory focus. Because I conceptualize perceived collective regulatory focus as the anthropomorphization of groups, using measures that were originally designed to measure perceptions regarding an individual's regulatory focus are appropriate for measuring perceptions regarding a group's regulatory focus. I converted the original measures by replacing the word "I" with "CoastCare" in each item. For example, physicians rated on a seven-point Likert scale (strongly disagree to strongly agree), "In general, CoastCare is focused on attaining its ambitions." These measures capture individuals' understanding of the regulatory focus prescribed by the organization. The composite reliability of the perceived organization promotion focus was .94 and the perceived organization prevention focus was .89.

Perceived profession promotion and prevention focus. To measure the profession promotion and prevention focus, the items from above were adapted to refer to doctors instead of CoastCare. The composite reliability of the perceived profession promotion focus was .90 and the prevention focus was .91.

Organizational identification. The extent to which physicians viewed themselves as representatives of the organization was measured using Mael and Ashforth's (1992) six-item Likert scale. For example, physicians rated on a seven-point Likert scale (strongly disagree to strongly agree), "When I talk about CoastCare, I say 'we' rather than 'they,'" and, "When someone praises CoastCare, it feels like a personal compliment." Respondents indicated on a seven-point scale the extent to which they agreed with the items. Composite reliability of this measure was .90.

Professional identification. The extent to which physicians viewed themselves as representatives of the profession was measured using the same six-item Likert scale used to measure organizational identification, with the target

changed from "CoastCare" to "doctors." Composite reliability of this measure was .85.

Control Variables

Customer satisfaction with the organization. An average of 35.2 CoastCare patients assigned to each physician rated the following question on a five-point Likert-scale (1=very poor; 5=excellent) "How would you rate the ease of seeing the practitioner you wanted?" Organizational administrators use this item to assess customer satisfaction with the organization because organizationally-imposed constraints on patients' ability to choose their physician are the biggest drivers of patient dissatisfaction with HMOs (Simonet, 2005). Customer satisfaction with the organization may substantially alter patients' perceptions of physician performance.

Physician demographic variables. CoastCare also provided demographic variables (e.g. physician race, age, tenure, and gender, and full-time status) that may alter the influence of perceived collective regulatory focus on physician performance quality. For example, full-time physicians may feel more fatigued than their part-time counterparts and therefore be less responsive to their perceptions regarding the organization or profession. Likewise long-tenured physicians may be more certain of their perceptions regarding the organization than their short-tenured counterparts and therefore be more likely to base their behavior on such perceptions.

Measure validity

Discriminant validity was assessed between constructs by comparing the target measurement model with various nested models, moving from a highly restricted single-factor structure (all items linked to one construct) to a final target structure that contained all eight constructs of interest (i.e. individual chronic promotion and prevention focus, perceived organizational promotion and prevention focus, perceived professional promotion and prevention focus, and organizational and professional identification) (Anderson & Gerbing, 1988). Confirmatory factor analysis with LISREL 8.54 and maximum likelihood estimation was used to assess the psychometric properties of the scaled items for constructs derived from the survey instrument. A satisfactory fit of the eight-factor model was achieved (χ^2 = 853.45, df = 566, $p < .001$, RMSEA = .06, CFI = .97). The ratio of chi-squared to

degrees of freedom is 1.51; a value of less than 3 for the ratio indicates a good fit (Carmines & McIver, 1981). Moreover, a CFI value of .9 or above is also considered an indication of good fit (Bentler & Bonett, 1980). Table 4.1 reports the standardized coefficients, Z-statistics, and composite reliability values for the measurement model. The composite reliability values for the constructs in the eight-factor model range from .85 to .94, all above the cutoff suggested by Bagozzi and Yi (1988).

Table 4.2 shows that Chi-square difference tests for the nested models were consistently large and significant, showing that large improvements in fit were gained as the model moved toward an eight factor model. For example, combining all promotion items into one factor (i.e. chronic promotion focus items, organization promotion focus items, and profession promotion focus items) resulted in a significantly inferior model, based on the change in χ^2, relative to dividing them into separate constructs (χ^2 is 1645.58 greater for the resulting three factor model than the final eight factor model) Likewise, combining professional regulatory focus items on one factor and organizational regulatory focus items on another factor significantly decreased the fit between the items and the constructs (χ^2 is 1239.60 greater for the resulting four factor model than the final eight factor model).

Table 4.1. Coefficients, Z-Statistics, and Reliability Values for the Latent Variables

Construct/ Indicator	Standardized Coefficient	Estimate/ S.E.	Reliability
Individual chronic promotion focus. In general, I am focused on…			
…attaining my ambitions	0.84	11.34	0.93
…becoming the person I hope to become in the future	0.87	12.16	
…attaining the success I hope to achieve in the future	0.92	13.17	
…achieving my hopes and aspirations	0.88	12.17	
Individual chronic prevention focus. In general, I am focused on…			
…avoiding losses	0.88	12.20	0.90
…avoiding setbacks	0.88	12.09	
…avoiding failure	0.84	11.37	
…preventing mistakes	0.69	8.58	
Perceived profession promotion focus. In general, doctors are focused on…			
…attaining their ambitions	0.76	9.80	0.90
…becoming the professionals they hope to become in the future	0.76	9.71	
…attaining the success they hope to achieve in the future	0.93	13.39	
…achieving their hopes and aspirations	0.85	11.46	
Perceived profession prevention focus. In general, doctors are focused on…			
…avoiding losses	0.91	13.05	0.91
…avoiding setbacks	0.95	13.98	
…avoiding failure	0.86	11.80	
…preventing mistakes	0.66	8.08	
Perceived organization promotion focus. In general, CoastCare is focused on…			
…attaining its ambitions	0.77	10.07	0.94
…becoming the organization it hopes to become in the future	0.92	13.44	
…attaining the success it hopes to achieve in the future	0.97	14.56	
…achieving its hopes and aspirations	0.89	12.58	

Table 4.1 Continued

Perceived organization prevention focus. In general, CoastCare is focused on…			
…avoiding losses	0.85	11.48	0.89
…avoiding setbacks	0.95	13.87	
…avoiding failure	0.85	11.51	
…preventing mistakes	0.58	6.83	
Professional identification			
In general, when someone praises doctors, it feels like a personal compliment	0.75	9.35	0.85
In general, when someone criticizes doctors, it feels like a personal insult	0.59	6.84	
I am very interested in what others think about doctors	0.75	9.37	
When I talk about doctors, I usually say "we" rather than "they"	0.65	7.66	
Medicine's successes are my successes	0.77	9.70	
If a story in the media criticized doctors, I would feel embarrassed	0.69	8.41	
Organizational identification			
When someone praises CoastCare, it feels like a personal compliment	0.86	11.65	0.90
When someone criticizes CoastCare, it feels like a personal insult	0.71	8.92	
I am very interested in what others think about CoastCare	0.83	11.04	
When I talk about CoastCare, I usually say "we" rather than "they"	0.66	7.98	
CoastCare's successes are my successes	0.85	11.49	
If a story in the media criticized CoastCare, I would feel embarrassed	0.73	9.11	

Table 4.2. Analysis of Discriminant Validity of Predictor Variables

	RMSEA	χ^2	Degrees of freedom	Change in χ^2 from previous model[22]
All items on one construct	.22	4130.26	594	
All items on three constructs (prevention, promotion, identification)	.16	2499.03	591	1631.23***
All items on four constructs (chronic focus, perceived profession focus, perceived organization focus, identification)	.14	2093.05	588	405.98***
Hypothesized model including all eight constructs	.06	853.45	566	1239.60***

RESULTS

Table 4.3 reports the means, standard deviations, and correlation coefficients between the dependent, independent, and control variables. The finding that promotion and prevention dimensions are substantially positively correlated is consistent with prior regulatory focus research (Lockwood et al., 2002; van Kleef et al., 2005), and is explained in the discussion section. Hierarchical moderated regression models were used to examine the hypothesized interaction effects. To avoid multicollinearity between the predictors and the interaction terms and to enhance the interpretation of the main effects, all variables involved in the interaction terms were mean-centered (Aiken & West, 1991). Table 4.4 presents the results of the analysis.

[22] *** $p < .001$

Table 4.3. Means, standard deviations and correlations between dependent, predictor and control variables[23]

		M	*sd*	1	2	3	4	5	6	7
1	Thoroughness	22.40	3.58	-						
2	Accuracy	0.96	0.73	.27	-					
3	Attention Paid	0.57	0.15	.11	.06	-				
4	Customer org. satisfaction	0.43	0.16	-.14	.09	.55	-			
5	Nonwhite (0=white, 1=nonwhite)	0.17	0.38	-.05	-.04	-.31	-.36	-		
6	Full time equivalent	0.83	0.20	.09	.00	-.14	-.01	-.02	-	
7	Female (0=male, 1=female)	0.35	0.47	-.08	-.22	-.09	-.20	.40	-.43	-
8	Age	50.39	8.35	-.10	.03	.19	.50	-.41	.01	-.31
9	Tenure	14.23	8.61	.03	.14	.33	.47	-.46	-.01	-.33
10	Individual Chronic Promotion	21.92	4.22	-.06	-.17	-.15	-.13	.12	.03	.13
11	Individual Chronic Prevention	22.14	4.40	-.13	-.10	.11	.06	.16	-.15	.20
12	Perceived Organization Promotion	22.70	4.16	-.05	.04	-.07	-.01	-.07	-.29	.19
13	Perceived Organization Prevention	22.29	4.07	.07	.07	-.09	.03	-.15	-.08	.05
14	Perceived Profession Promotion	21.29	4.07	-.13	-.08	-.18	-.07	.04	-.08	.11
15	Perceived Profession Prevention	22.21	4.15	-.25	-.10	.03	.02	.05	-.18	.13
16	Organizational Identification	31.20	6.36	-.08	-.19	.13	.07	.07	-.11	.14
17	Professional Identification	28.22	6.62	-.10	-.07	-.06	-.18	.10	.10	-.08

[23] N=121 for all correlations except those involving productivity and quality; all correlations larger than .20 are significant at $p < .05$

Table 4.3 Continued

		8	9	10	11	12	13	14	15	16
9	Tenure	.80	-							
10	Individual Chronic Promotion	-.09	-.07	-						
11	Individual Chronic Prevention	-.08	-.06	.41	-					
12	Perceived Organization Promotion	-.12	.04	.38	.36	-				
13	Perceived Organization Prevention	.12	.07	.28	.38	.65	-			
14	Perceived Profession Promotion	-.07	-.01	.60	.37	.41	.33	-		
15	Perceived Profession Prevention	-.01	.06	.42	.75	.39	.32	.47	-	
16	Organizational Identification	.03	.01	.32	.13	.27	.17	.32	.08	-
17	Professional Identification	-.21	-.23	.40	.13	.40	.18	.32	.12	.50

Table 4.4. Influence of perceived collective promotion and prevention focus, professional identification, and organizational identification on performance quality[24]

	Thoroughness—Number of patients seen adjusted for difficulty of each visit[25]		
	Model 1	Model 2	Model 3
Controls			
Customer satisfaction with organization	n.a.	n.a.	n.a.
Nonwhite (0=white, 1=nonwhite)	-.09	-.08	-.08
Full time equivalent	.02	-.08	-.02
Female (0 =male, 1=female)	-.07	-.07	-.10
Age	-.34*	-.58**	-.59**
Tenure	.20	.48**	.51**
Organizational Identification		.01	.10
Professional Identification		.02	.03
Main Effects			
H1. Individual Chronic Prevention Focus	-.06	.06	.16
H2. Individual Chronic Promotion Focus	-.02	.11	.07
H3a. Perceived Profession Prevention Focus		-.14	-.19
H3b. Perceived Organization Prevention Focus		.38**	.43**
H4a. Perceived Profession Promotion Focus		-.12	-.13
H4b. Perceived Organization Promotion Focus		-.35*	-.36*
Interactions			
H5a. Prof. Identification X Prof. Prevention Focus			.25*
H5b. Org. Identification X Org. Prevention Focus			-.12
H6a. Prof. Identification X Prof. Promotion Focus			-.37**
H6b. Org. Identification X Org. Promotion Focus			.17
R-Squared	.060	.171*	.262*
Change in R-Squared from previous model		.111*	.091*

[24] *** p < .001; ** p < .01, * p < .05, † p < .10

[25] N=86; the organization calculated productivity and quality only for those physicians who were permanently assigned to a clinic

Table 4.4. Continued

	Accuracy—Prescription rate of statins and ace inhibitors to patients with diabetes		
	Model 1	Model 2	Model 3
Controls			
Customer satisfaction with organization	n.a.	n.a.	n.a.
Nonwhite (0=white, 1=nonwhite)	.07	.13	.11
Full time equivalent	-.06	-.07	-.08
Female (0 =male, 1=female)	-.13	-.11	.03
Age	-.21	-.24†	-.37*
Tenure	.29*	.34*	.56***
Organizational Identification		-.20	-.21†
Professional Identification		.08	.10
Main Effects			
H1. Individual Chronic Prevention Focus	.05	-.05	-.19
H2. Individual Chronic Promotion Focus	-.17	-.10	-.06
H3a. Perceived Profession Prevention Focus		.02	.01
H3b. Perceived Organization Prevention Focus		.25†	.26*
H4a. Perceived Profession Promotion Focus		.05	-.08
H4b. Perceived Organization Promotion Focus		-.03	-.06
Interactions			
H5a. Prof. Identification X Prof. Prevention Focus			.17†
H5b. Org. Identification X Org. Prevention Focus			.57***
H6a. Prof. Identification X Prof. Promotion Focus			-.27*
H6b. Org. Identification X Org. Promotion Focus			-.47***
R-Squared	.073	.140	.358***
Change in R-Squared from previous model		.067	.218***

Table 4.4 Continued

	Attention Paid—Percent of patients rating the attention the physician paid as excellent[26]		
	Model 1	Model 2	Model 3
Controls			
Customer satisfaction with organization	.59***	.61***	.63**
Nonwhite (0=white, 1=nonwhite)	-.14†	-.15*	-.16*
Full time equivalent	-.01	.01	.02
Female (0 =male, 1=female)	-.01	.03	.07
Age	-.18	-.15	-.17
Tenure	.03	.03	.05
Organizational Identification		.03	.02
Professional Identification		.02	-.01
Main Effects			
H1. Individual Chronic Prevention Focus	.05	.02	-.09
H2. Individual Chronic Promotion Focus	.06	.12	.12
H3a. Perceived Profession Prevention Focus		.16†	.24*
H3b. Perceived Organization Prevention Focus		-.14	-.13
H4a. Perceived Profession Promotion Focus		-.32***	-.30***
H4b. Perceived Organization Promotion Focus		.08	.10
Interactions			
H5a. Prof. Identification X Prof. Prevention Focus			.02
H5b. Org. Identification X Org. Prevention Focus			.34***
H6a. Prof. Identification X Prof. Promotion Focus			.02
H6b. Org. Identification X Org. Promotion Focus			-.21*
R-Squared	.361***	.437*	.492*
Change in R-Squared from previous model		.076*	.056*

[26] N=121

In Model 1 (Table 4.4), all the control variables are included. In Model 2, all the control variables and the first order effects of chronic individual promotion focus, chronic individual prevention focus, perceived collective promotion focus, and perceived collective prevention focus and social identification are included. Model 3 includes the proposed interaction effects. I did not find support for hypotheses 1 and 2 arguing that individual chronic promotion focus would be negatively associated with performance quality and individual chronic prevention focus would be positively associated with performance quality.

In hypothesis 3a, it was argued that employees understanding their profession as dictating a prevention focus would be positively associated with performance quality. The relationship between perceived profession prevention focus and attention paid is significant and positive ($b = .24, p < .05$), while the hypothesized relationships for physician thoroughness and accuracy are not supported. Hypothesis 3b suggested that employees understanding their organization as dictating a prevention focus would be positively associated with performance quality. The relationship between perceived organization prevention focus and physician thoroughness is significant and positive ($b = .43, p < .01$) as is the relationship between perceived organization prevention focus and accuracy ($b = .26, p < .05$). The hypothesized relationship between perceived organization prevention focus and attention paid is not supported. These results support hypothesis 3 for three of the six perceived collective promotion focus-performance quality relationships.

In hypothesis 4a, it was proposed that employees understanding their profession as dictating a promotion focus would be negatively associated performance quality. The relationship between perceived profession promotion focus and attention paid is significant and negative ($b = -.30, p < .01$). Hypothesis 4b suggested that perceived organization promotion focus would be negatively associated with performance quality. The relationship between perceived organization promotion focus and physician thoroughness is significant and negative ($b = -.36, p < .05$). These results support hypothesis 4 for two of the perceived collective promotion focus-performance quality relationships.

Hypothesis 5a proposed that as employees' identification with their profession increased, perceived profession prevention focus would be more positively associated with performance quality. The coefficients for the interaction terms involving perceived professional prevention focus and professional identification are positive and significant for physician thoroughness ($b = .25, p < .05$) and accuracy ($b = .17, p < .10$), but not for attention paid. Hypothesis 5b proposed that as employees' identification with their organization increased, perceived organization prevention focus would be more positively associated with performance quality. The coefficients for the interaction terms involving perceived organizational prevention focus and organizational identification are positive and significant for thoroughness ($b = .57, p < .001$) and attention paid ($b = .34, p < .001$), but not for accuracy.

To gain further insight into the nature of the moderation effects, the interaction effects were plotted using one standard deviation above and below the mean level of the perceived collective focus and both types of identification (Aiken & West, 1991). I found that a perceived profession prevention focus is more positively associated with thoroughness and accuracy when professional employees are strongly identified with the profession than when they are weakly identified with the profession. Likewise, a perceived organization prevention focus is more positively associated with accuracy and attention paid when employees are strongly identified with the organization (+ 1 s.d.) than when they are weakly identified with the organization (- 1 s.d.). Thus, hypothesis 5 is supported for the majority of operationalizations of performance quality.

Hypothesis 6a stated that as employees' identification with their profession increased, perceived profession promotion focus would be more negatively associated with performance quality. The coefficients for the interaction terms involving perceived profession promotion focus and professional identification are negative and significant for thoroughness ($b = -.37, p < .01$) and accuracy ($b = -.27, p < .05$), but not for attention paid. I found that perceived profession promotion focus is more negatively associated with thoroughness and accuracy when professional employees are strongly identified with the profession than when they are weakly identified with the profession. Hypothesis 6b stated that as employees' identification

with their organization increased, perceived organization promotion focus would be more negatively associated with performance quality. The coefficients for the interaction terms involving perceived organization promotion focus and organizational identification are negative and significant for accuracy (b = -.47, p < .001) and attention paid (b = -.21, p < .05), but not for physician thoroughness. I found that a perceived organization promotion focus is more negatively associated with accuracy and attention paid when professional employees are strongly identified with the organization (+ 1 s.d.) than when they are weakly identified with the organization (- 1 s.d.). Thus, hypothesis 6 is supported for the majority of operationalizations of performance quality.

DISCUSSION

This research tests the relationship between different regulatory focus variables and the provision of high-quality performance. In the process I introduce two new constructs – perceived collective promotion and perceived collective prevention focus. In a large healthcare organization, this study indicates that employees who perceive that their organization or their profession endorse a prevention focus provide higher-quality performance; while employees who perceive that their organization or their profession endorse a promotion focus provide lower-quality performance. While the largely positive effects of a perceived collective prevention focus may be specific to providing high quality performance, the most important claim is simply that perceived collective promotion and prevention focus do indeed matter in directing employee behavior, and that they do so over and above individual-level chronic promotion and prevention focus.

This study has some methodological strong points. First, three quality measures were used so that the strength of the relationship between perceived collective regulatory focus and performance quality could be clearly observed. Moreover, broadly consistent results were found for two very different target collectives (i.e. the profession and organization). Thus, for each hypothesis about perceived collective regulatory focus, there were multiple opportunities (three dependent variables and two distinct identities) to test these relationships. The fact that most hypotheses were supported (and were never contradicted) across the

different operationalizations conceptually replicates, and increases confidence in my results.

I found that my hypotheses regarding individual chronic promotion and prevention focus were not supported. My measures of chronic promotion and prevention focus (Lockwood et al., 2002) have been shown to provide a reliable and valid measure of chronic regulatory focus in a variety of settings (Keller & Bless, 2006; Lockwood, Chasteen & Wong, 2005; Sullivan et al., 2006). I therefore attribute my non-findings to the fact that work contexts are strong situations that minimize the influence of individual differences on behavior (Mischel, 1977; Weiss & Adler, 1984). Taken together, my results corroborate the idea that organizations can often over-ride individual regulatory focus and induce employees to operate out of a prescribed regulatory focus (Brockner & Higgins, 1997; Levine et al., 2000; Wallace & Chen, 2006).

In light of these methodological strengths, this study provides evidence that a perceived collective prevention focus is best for motivating high-quality employee performance. In terms of regulatory focus theory, a prevention strategy *fits* with high-quality performance behaviors (Higgins, 2004, 2005; Higgins et al., 2003). Indeed, this finding mirrors arguments at the individual level of analysis, which suggest that task performance depends on the fit between the task's strategic orientation and the actor's regulatory focus (Freitas & Higgins, 2002; Liberman et al., 1999; Spiegel, Grant-Pillow & Higgins, 2004). Whereas quality is of supreme importance in some work contexts (e.g. construction, healthcare, or financial services), other contexts (e.g. management consulting, web design) may depend more heavily on creativity and innovation, and thus might fit better with a promotion focus.

It is important to clarify that although promotion focus and prevention focus often influence behavior in opposite directions, they are independent dimensions (Cacioppo, 1999; Carver & Scheier, 1990; Higgins, 1997), and therefore a high promotion focus does not imply a low prevention focus (Higgins, 1989, 1991). People who are very focused on simultaneously maximizing their successes and minimizing their failures should be better off than those who exclusively focus on

either maximizing successes or minimizing failures. Indeed, *both* promotion and prevention are essential for one's survival (Higgins, 1997). Consistent with past research (Lockwood et al., 2005; Lockwood et al., 2002), a substantial positive correlation between promotion and prevention focus was observed in this sample (average correlation = .51). Two constructs that have opposite effects need not be negatively related. For example, conscientiousness and emotional stability, which are two of the "Big Five" personality variables (Barrick & Mount, 1991), are highly positively correlated (r = .54) and also can have opposite effects on employee behavior (Colbert et al., 2004). One of the reasons prevention focus and promotion focus are positively correlated is because individuals naturally vary in the degree to which they want to be successful (e.g., McClelland, 1961). Individuals who perceive themselves and their groups as having a high baseline need to attain their goals will perceive themselves and their groups as high on both promotion and prevention, while individuals who view themselves and their groups as somewhat lethargic about goal attainment will perceive themselves and their groups as low on both promotion and prevention (Higgins, 1987).

Even though prevention and promotion focus are independent dimensions and positively correlated, some researchers measure regulatory focus by subtracting one's promotion focus rating from one's prevention focus rating (Lockwood et al., 2002). I considered this alternative operationalization, and ran a model with all the control and interacting variables, replacing the six regulatory focus variables (i.e. individual-level chronic promotion and prevention focus, perceived profession promotion and prevention focus, and perceived organization promotion and prevention focus) with the three constructed regulatory focus variables (i.e. chronic, organization, and profession regulatory focus) and the results were the same as those presented in Table 4.4, with the only difference being lower explained variance. However, this alternative operationalization is theoretically problematic because it incorrectly treats promotion and prevention as opposite ends of one dimension, and statistically problematic because difference scores violate a number of statistical assumptions (Edwards & Parry, 1993). Therefore the operationalization of regulatory focus used in this paper is more precise than would be one based on difference scores.

Controlling for group members' perceptions of the collective's promotion focus, group members' perceptions of the collective's prevention focus influence their behavior. Likewise, controlling for group members' perceptions of the collective's prevention focus, group members' perceptions of the collective's promotion focus influence their behavior.

This study's findings suggest that, especially when identification with a group is high, there is a positive association between professional employee perceptions that the collective is dictating a prevention focus and the provision of high-quality performance. However, because a prevention focus is generally unpleasant and perhaps unhealthy for individuals (Elliot & Sheldon, 1998; Higgins, Vookles & Tykocinski, 1992; Strauman, 1992), the continuous prevention-generated anxiety regarding fulfillment of obligations which initially leads to increased performance quality may eventually strain professional employees so burnout occurs over time. My cross-sectional study design did not permit me to investigate this possibility. Future research of a longitudinal nature may thus be of use. In addition, a similarly fruitful area of future research may be to examine the techniques that leaders can use to induce group members to perceive the collective regulatory focus which is most optimal for the particular task performance context.

Conclusion

The value of these results becomes especially apparent when examining effect sizes. The main effects and interactions involving perceived collective regulatory focus and identification explained between 13.1 and 28.5 percent of the variance in professional performance quality. Cohen (1988) provides ballpark descriptors of effect sizes based on R-squared values—"large" ($R^2 = .25$), "medium" ($R^2 = .09$), and "small" ($R^2 = .01$). Therefore, the observed effect size of perceived collective promotion and prevention focus on professional performance quality in this sample is between medium and large.

Moreover, previous medical research has shown that some healthcare organizations systematically have higher physician distribution rates of statins and ACE inhibitors to patients than others (Ward et al., 2004). Medical research regarding these drugs is very mature and the relationship between drug distribution

and death prevention is well established (Ebrahim et al., 1999; Heart-Protection-Study-Collaborative-Group, 2002; Yeo & Yeo, 2000). The most definitive study found that one heart attack or stroke death from a vascular event was prevented for every 19 patients treated with these drugs over 5 years (Heart-Protection-Study-Collaborative-Group, 2002). One death from any cause was prevented for every 56 patients treated. Overall, these drugs were found to reduce risk of death by 12 percent over five years (Hitinder & Hoogwerf, 2003). At CoastCare, patients failed to receive the proper medications 32 percent of the time. my results show that the more physicians perceive their collective as prescribing a prevention focus or the less they perceive their collective as prescribing a promotion focus, the greater their prescription rate of appropriate medications to diabetic patients. If every CoastCare primary care physician's perception that the organization prescribed a prevention focus therefore increased by one standard deviation, the CoastCare prescription rate would increase from 68 to 75 percent, thereby preventing ten CoastCare patient vascular events and five deaths annually. Similarly, if every CoastCare primary care physician's perception that the organization prescribed a promotion focus decreased by one standard deviation, the CoastCare prescription rate would increase from 68 to 70 percent, thereby preventing three vascular events and 1.5 patient deaths annually. Arguably, many more deaths could be prevented if these results generalize nationally and to other drugs and medications besides statins and ACE inhibitors.

This paper is a small, but important next step in understanding perceived collective promotion and prevention focus and its consequences. We know little about what produces an individual's understanding of perceived collective promotion and prevention focus. We don't know what produces homogeneity or heterogeneity in members' understanding of perceived collective promotion and prevention focus. We don't know how perceived collective promotion and prevention focus influence employee performance across types of tasks or across large expanses of time. We don't know whether there might be an effect of widely shared agreement about the perceived collective promotion and prevention focus beyond how they direct individual behavior — e.g. strategies, structures, or processes which vary depending on shared perceptions regarding collective regulatory focus. And while this paper

provides only provisional answers, it is hoped that it is helpful in provoking future research into constructs with great potential for increasing our understanding of organizations.

CHAPTER FIVE:

Conclusion

I set out to examine how organizational identification influenced employee behaviors that benefit the organization. Consistent with past research (Riketta, 2005), I did not find a strong relationship between organizational identification and organization-benefiting behaviors. Indeed, the average correlation I observed between organizational identification and my six measures of organization-benefiting behaviors was merely .01 ($r = .03$ for policy adherence, $r = .08$ for productivity, $r = .09$ for secure messaging adoption, $r = -.08$ for thoroughness, $r = -.19$ for accuracy, and $r = .13$ for attention paid). However, I found the degree to which organizational identification led employees to pursue organizational goals depended on (1) a competing type of employee identification, (2) treatment received from administrators, and (3) the strategy that employees used to attain organizational goals. When taking this complexity into account, the predictive power of organizational identification increased.

In chapter two I examined how professional identification and treatment received from administrators altered the degree to which organizational identification led employees to pursue organizational goals. I found that when organizational identification was high and professional identification was low, employees had better work performance in response to beneficial administrative treatment and worse performance in response to detrimental treatment. Because such employees experienced a sense of solidarity with administrators they were eager to reciprocate beneficial treatment and were forgiving of detrimental treatment. In contrast, employees with high levels of professional identification and low levels of organizational identification did not have better performance in response to beneficial administrative treatment and had worse performance in response to detrimental treatment. Because such employees did not experience solidarity with administrators they less eagerly reciprocated beneficial treatment and were less forgiving of detrimental treatment.

In chapter three I again examined how professional identification and administrative treatment influenced the relationship between organizational

identification and employee organization-benefiting behaviors. I used the same theory to make my arguments in chapters two and three, but the measures were different. In chapter two, I measured administrative treatment as being either beneficial or detrimental and measured the outcome as employee performance. In chapter three, I measured administrative treatment as either being monitoring or pressure and measured the outcome as technology adoption. The results between chapters two and three were strikingly similar. When organizational identification was high and professional identification was low, employees complied with administrative social influence and adopted a new role that improved organizational profitability but undermined professional quality. However, when professional identification was high and organizational identification was low, administrative social influence was counter-productive.

In chapter four, I turned my attention to the goal attainment strategy that employees use to attain organizational goals. Employees typically perceive the organization as prescribing one of two strategies to attain group goals (Higgins, 1987). Employees perceive the organization as prescribing a promotion strategy which leads employees to seek to maximize group success or a prevention strategy which leads employees to try to minimize group mistakes. The relative effectiveness of these two strategies depends on contextual features. In my healthcare context, a prevention strategy is better because patient health and satisfaction depends on doctors making very few mistakes. However, many physician employees in my sample perceived that the organization was prescribing a promotion strategy as the best way to achieve organizational goals. Such employees were therefore relatively less competent at performing their jobs and attaining the organizations goals. For such individuals, higher relative organizational identification only led to behavior that was worse for patients and the organization. In contrast, for employees who perceived the organization as prescribing a prevention strategy, organizational identification led to behavior that was better for patients and the organization.

Overall, I did not find a strong relationship between organizational identification and organization-benefiting behaviors. However, by including several contingencies (a competing identification type, administrative treatment and

influence, and employee perceptions about the best organizational goal attainment strategy), I found that organizational identification explains substantial variance in important work outcomes.

Bibliography

Human resource desktop reference physician assistant description; hr.dop.wa.gov/lib/hrdr/specs/50000/51080.htm; December 19, 2003.

Aaker, J. L. 1997. Dimensions of brand personality. ***Journal of Marketing Research***, 34: 347-357.

Abbott, A. 1988. ***The system of professions: an essay on the division of expert labor***. Chicago: University of Chicago Press.

Acute-Infarction-Ramipril-Efficacy-Study-Investigators. 1993. Effect of ramipril on mortality and morbidity of survivors of acute myocardial infarction with clinical evidence of heart failure. ***Lancet***, 342: 821-828.

Aiken, L. S. & West, S. G. 1991. ***Multiple regression: Testing and interpreting interactions***. Newbury Park, CA: Sage Publications.

Albert, S. & Whetten, D. A. 1985. Organizational identity. ***Research in Organizational Behavior***, 7: 263-295.

Albert, S., Ashforth, B. E., & Dutton, J. E. 2000. Organizational Identity and Identification: Charting New Waters and Building New Bridges. ***Academy of Management Review***, 25: 13-17.

Anderson, J. C. & Gerbing, D. W. 1988. Structural equation modeling in practice: A review and recommended two step approach. ***Psychological Bulletin***, 103: 411-423.

Anderson, J. C. & Gerbing., D. W. 1988. Structural equation modeling in practice: A review and recommended two step approach. ***Psychological Bulletin***, 103: 411-423.

Aquino, K. & Reed, A. I. 2002. The self-importance of moral identity. ***Journal of Personality and Social Psychology***, 83: 1423-1440.

Aselage, J. & Eisenberger, R. 2003. Perceived organizational support and psychological contracts: A theoretical integration. ***Journal of Organizational Behavior***, 24: 491-509.

Ashforth, B. E. & Mael, F. 1989. Social identity theory and the organization. ***Academy of Management Review***, 14: 20-39.

Ashforth, B. E. & Johnson, S. A. 2001. Which hat to wear? The relative salience of multiple identities in organizational contexts. In M. A. Hogg & D. J. Terry (Eds.), ***Social identity processes in organizational contexts***: 31-48. Hove, UK: Psychology Press.

Bagozzi, R. P. & Yi, Y. 1988. On the evaluation of structural equation models. ***Journal of the Academy of Marketing Science***, 16: 74-94.

Bamber, E. M. & Iyer, V. M. 2002. Big 5 Auditors' Professional and Organizational Identification: Consistency or Conflict? ***Auditing: A Journal of Practice & Theory***, 21: 21-38.

Barley, S. 1986. Technology as an Occasion for Structuring--Evidence from Observations of CT Scanners and the Social Order of Radiology Departments. ***Administrative Science Quarterly***, 31: 78-108.

Barrick, M. R. & Mount, M. K. 1991. The Big Five personality dimensions and job performance: A meta-analysis. ***Personnel Psychology***, 44: 1-26.

Beal, D. J., Ruscher, J. B., & Schnake, S. B. 2001. No benefit of the doubt: Intergroup bias in understanding causal explanation ***British Journal of Social Psychology***, 40: 531-543.

Bentler, P. & Bonett, D. 1980. Significance tests and goodness of fit in the analysis of covariance structures. ***Psychological Bulletin***, 88: 588-606.

Blau, P. M. & Scott, R. W. 1962. ***Formal Organizations***. San Fransisco: Chandler.

Blau, P. M. 1964. ***Exchange and power in social life***. New York: Wiley.

Bowen, H. P. & Wiersema, M. F. 1999. Matching method to paradigm in strategy research: Limitations of cross-sectional analysis and some methodological alternatives. ***Strategic Management Journal***, 20: 625-636.

Boyer, P. 1996. What makes anthropomorphism natural: Intuitive ontology and cultural representations. ***Journal of the Royal Anthropological Institute***, 2: 83-97.

Bracken, D. W., Church, A. H., & Timmreck, C. W. 2001. ***Handbook of Multisource Feedback: The Comprehensive Resource for Designing and Implementing MSF Processes***. New York, NY: Jossey-Bass.

Brehm, J. W. 1966. ***Response to loss of freedom: A theory of psychological reactance***. New York: Academic Press.

Brendl, C. M. & Higgins, E. T. 1996. Principles of judging valence: What makes events positive or negative? ***Advances in Experimental Social Psychology***, 28: 95-160.

Brewer, M. B. 2001. Ingroup identification and intergroup conflict: When does ingroup love become outgroup hate? In R. Ashmore & L. Jussim & D. Wilder (Eds.), ***Social Identity, Intergroup Conflict and Conflict Reduction***. New York: Oxford University Press.

Brewer, M. B. & Pierce, K. P. 2005a. Social identity complexity and outgroup tolerance. ***Personality and Social Psychology Bulletin***, 31: 428-437.

Brewer, M. B. & Pierce, K. P. 2005b. Social identity complexity and outgroup tolerance. ***Personality & Social Psychology Bulletin***, 31: 428-437.

Brockner, J., Tyler, T., & Copper-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.

Brockner, J. & Higgins, E. T. 1997. Regulatory focus theory: Implications for the study of emotions at work. . ***Organizational Behavior and Human Decision Processes***, 86.

Brockner, J. & Higgins, E. T. 2001. Regulatory focus theory: Implications for the study of emotions at work. ***Organizational Behavior and Human Decision Processes***, 86: 35-66.

Brockner, J., Higgins, E. T., & Low, M. B. 2003. Regulatory focus theory and the entrepreneurial process. ***Journal of Business Venturing***, 19: 203-220.

Cacioppo, J. T. & Berntson, G. G. 1994. Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. ***Psychological Bulletin***, 115: 401-423.

Cacioppo, J. T., Gardner, W. L., & Bemtson, G. G. 1997. Beyond bipolar conceptualizations and measures: The case of attitudes and evaluative space. ***Personality and Social Psychology Review***, 1: 3-25.

Cacioppo, J. T. 1999. Emotion ***Annual Review of Psychology***, 50: 191-214.

Carmines, E. & McIver, J. 1981. Analyzing models with unobserved variables: Analysis of covariance structures. In G. Bohrnstedt & E. Borgatta (Eds.), ***Social Measurement: Current Issues***: 65-115. Beverly Hills, CA: Sage.

Cartwright, D. & Zander, A. 1953. ***Group dynamics: Research and theory***. Evanston, IL: Row Peterson.

Carver, C. S. & Scheier, M. E. 1990. Principle of self-regulation: Action and emotion. In E. T. Higgins & R. M. Sorrentino (Eds.), ***Handbook of motivation and cognition: Foundations of social behavior, Volume 2***: 3-52. New York: Guilford Press.

Cesario, J., Grant, H., & Higgins, E. T. 2004. Regulatory fit and persuasion: Transfer from "feeling right." ***Journal of Personality and Social Psychology***, 86: 388 - 404.

Cohen, J. 1988. ***Statistical power analysis for the behavioral sciences (2nd ed.)***. Hillsdale, NJ: Lawrence Erlbaum.

Colbert, A. E., Mount, M. K., Harter, J. K., Witt, L. A., & Barrick, M. R. 2004. Interactive effects of personality and perceptions of the work situation on workplace deviance. ***Journal of Applied Psychology***, 89: 599-609.

Compeau, D. & Higgins, C. 1995. Computer self-efficacy: Development of a measure and initial test. ***MIS Quarterly***, 19: 189-211.

Couchman, G. R., Forjuoh, S. N., & Rascoe, T. G. 2001. E-mail communications in family practice - What do patients expect? ***Journal of Family Practice***, 50: 414-418.

Coyle-Shapiro, J. A.-M. & Conway, N. 2005. Exchange relationships: Examining psychological contracts and perceived organizational support. ***Journal of Applied Psychology***, 90: 774-781.

Crowe, E. & Higgins, E. T. 1997. Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. ***Organizational Behavior and Human Decision Processes***, 69: 117-132.

Davidson, M. & Robinson, J. 2007. Safety of Aggressive Lipid Management. ***Journal of the American College of Cardiology***, 49: 1753-1762.

Davis, F. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. ***MIS Quarterly***, 13: 319-340.

Drucker, P. F. 1988. The Coming of the New Organization. ***Harvard Business Review***, 66: 45-53.

Dubois, R. W., Alexander, C. M., Wade, S., Mosso, A., Markson, L., Lu, J. D., Nag, S., & Berger, M. L. 2002. Growth in use of lipid lowering therapies: Are we targeting the right patients? ***American Journal of Managed Care***, 8: 81-86.

Dutton, J. E., Dukerich, J. M., & Harquail, C. V. 1994. Organizational Images and Member Identification. ***Administrative Science Quarterly***, 39: 239-263.

Dweck, C. S., Higgins, E. T., & Grant-Pillow, H. 2003. Self-systems give unique meaning to self variables. In M. R. Leary (Ed.), ***Handbook of self and identity***: 239 - 252. New York: Guilford.

Eagle, K. A., Sud, A., Fang, J., Kline-Rogers, E., Erickson, S., Armstrong, D., Rangarjan, K., & Otten, R. 2004. ***Why don't heart patients take their medicine?*** Paper presented at the Annual Scientific Session of the American College of Cardiology, New Orleans, LA.

Ebrahim, S., Davey-Smith, G., McCabe, C., Payne, N., Pickin, M., Sheldon, T. A., Lampe, F., Sampson, F., Ward, S., & Wannamethee, G. 1999. What role for statins? A review and economic model. ***Health Technology Assessment***, 3: 1-91.

Edwards, J. E. & Parry, M. E. 1993. On the use of polynomial regression equations as an alternative to difference scores in organizational research. ***Academy of Management Journal***, 36: 1577-1613.

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

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

Eisenberger, R., Lynch, P., Aselage, J., & Rohdieck, S. 2004. Who Takes the Most Revenge? Individual Differences in Negative Reciprocity Norm Endorsement. ***Personality and Social Psychology Bulletin***, 30: 787-799.

Ellemers, N., Spears, R., & Doosje, B. 1997. Sticking together or falling apart: in-group identification as a psychological determinant of group commitment versus individual mobility. ***Journal of Personality and Social Psychology***, 72: 617–626.

Ellemers, N., DeGilders, D., & Haslam, S. A. 2004. Motivating Individuals and Groups at Work: A Social Identity Perspective on Leadership and Group Performance. ***Academy of Management Review***, 29: 459-478.

Elliot, A. J. & Sheldon, K. M. 1998. Avoidance personal goals and the personality-illness relationship. ***Journal of Personality and Social Psychology***, 75: 1282-1299.

Farh, J. L., Hackett, R. D., & Liang, J. 2007. Individual-level cultural values as moderators of perceived organizational support-employee outcomes relationships: Comparing the effects of power distance and traditionality. ***Academy of Management Journal***, 50: 715–729.

Foreman, P. & Whetten, D. 2002. Member's identification with multiple-identity organizations. ***Organization Science***, 13: 618-635.

Forster, J., Grant, H., Idson, L. C., & Higgins, E. T. 2001. Success/failure feedback, expectancies, and approach/avoidance motivation: How regulatory focus moderates classic relations. ***Journal of Experimental Social Psychology***, 37: 253-260.

Forster, J., Higgins, E. T., & Bianco, A. T. 2003. Speed/accuracy decisions in task performance: Built-in trade-off or separate strategic concerns? ***Organizational Behavior and Human Decision Processes***, 90: 148-164.

Forster, J. & Higgins, E. T. 2005. How global versus local perception fits regulatory focus. ***Psychological Science***, 16: 631-636.

Freidson, E. 2001. ***Professionalism: The third logic***. Chicago: University of Chicago Press.

Freitas, A. L. & Higgins, E. T. 2002. Enjoying goal-directed action: The role of regulatory fit. ***Psychological Science***, 13: 1-6.

Freitas, A. L., Liberman, N., & Higgins, E. T. 2002a. Regulatory fit and resisting temptation during goal pursuit. ***Journal of Experimental Social Psychology***, 38: 291-298.

Freitas, A. L., Liberman, N., Salovey, P., & Higgins, E. T. 2002b. When to begin? Regulatory focus and initiating goal pursuit. ***Personality & Social Psychology Bulletin***, 28: 121-130.

Friedman, R. S. & Forster, J. 2001. The effects of promotion and prevention cues on creativity. ***Journal of Personality and Social Psychology***, 81: 1001-1013.

George, E. & Chattopadhyay, P. 2005. One foot in each camp: The dual identification of contract workers. ***Administrative Science Quarterly***, 50: 68-99.

Gerstein, H. C., Yusuf, S., Mann, J. F. E., Hoogwerf, B., Zinman, B., Held, C., Fisher, M., Wolffenbuttel, B., Bosch, J., Richardson, L., Pogue, J., & Halle, J. P. 2000. Effects of ramipril on cardiovascular and microvascular outcomes in people with diabetes mellitus: Results of the HOPE study and MICRO-HOPE substudy. ***Lancet***, 355: 205-212.

Golden, B. R., Dukerich, J. M., & Fabian, F. H. 2000. The interpretation and allocation of resource allocation issues in professional organizations: A critical examination of the professional-manager dichotomy. ***Journal of Management Studies***, 37.

Goode, W. J. 1960. Encroachment, charlatanism, and the emerging profession: Psychology, sociology, and medicine. ***American Sociological Review***, 25: 902-914.

Gouldner, A. W. 1957. Cosmopolitans and locals: Toward an analysis of latent social roles I. ***Administrative Science Quarterly***, 2: 281-306.

Gouldner, A. W. 1960. The norm of reciprocity: a preliminary statement. ***American Sociological Review***, 25: 161–178.

Grant, H. & Higgins, E. T. 2003. Optimism, promotion pride, and prevention pride as predictors of quality of life. ***Personality and Social Psychology Bulletin***, 29: 1521 - 1532.

Gray, J. A. 1994. Personality dimensions and emotion systems. In P. Ekman & R. J. Davidson (Eds.), ***The nature of emotion: Fundamental questions***: 329-331. New York: Oxford University Press.

Gregory, C. A. 1982. ***Gifts and Commodities***. London: Academic Press.

Guzzo, R. A., Noonan, K. A., & Elron, E. 1994. Expatriate managers and the psychological contract. ***Journal of Applied Psychology***, 79: 617-626.

Hall, R. H. 1968. Professionalization and bureaucratization. ***American Sociological Review***, 33: 195-212.

Hatfield, E., Utne, M. K., & Traupmann, J. 1979. Equity theory and intimate relationships. In R. L. Burgess & T. L. Huston (Eds.), ***Social exchange in developing relationships***: 99-133. New York: Academic Press.

Heart-Protection-Study-Collaborative-Group. 2002. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomised placebo-controlled trial. ***Lancet***, 360: 7-22.

Hecker, D. E. 2005. Occupational employment projections to 2014. ***Monthly Labor Review***, 128: 70-101.

Heidenreich, P. A. 2004. Patient adherence: the next frontier in quality improvement ***The American Journal of Medicine*** 117: 130-132

Heider, F. & Simmel, M. 1944. An Experimental Study of Apparent Behavior. ***American Journal of Psychology***, 57: 243-259.

Herscovitch, L. & Meyer, J. P. 2002. Commitment to organizational change: Extension of a three-component model. ***Journal of Applied Psychology***, 87: 474-490.

Herzberg, F., Mausner, B., & Snyderman, B. 1959. ***The motivation to work***. New York: Wiley.

Higgins, E. T. 1987. Self-discrepancy: A theory relating self and affect. ***Psychological Review***, 94: 319-340.

Higgins, E. T. 1989. Continuities and discontinuities in self-regulatory and self-evaluative processes: A developmental theory relating self and affect. ***Journal of Personality***, 57: 407-444.

Higgins, E. T. 1991. Development of self-regulatory and self-evaluative processes: Costs, benefits, and tradeoffs. In M. R. Gunnar & L. A. Sroufe (Eds.), ***Self processes and development: The Minnesota symposia on child psychology***, Vol. 23: 125 - 165 Hillsdale, N J: Erlbaum.

Higgins, E. T., Vookles, J., & Tykocinski, O. 1992. Self and health: How "patterns" of self-beliefs predict types of emotional and physical problems. ***Social Cognition***, 10: 125-150.

Higgins, E. T., Roney, C. J. R., Crowe, E., & Hymes, C. 1994. Ideal versus ought predilections for approach and avoidance: Distinct self- regulatory systems. ***Journal of Personality and Social Psychology***, 66: 276-286.

Higgins, E. T. 1996a. Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), ***Social psychology: Handbook of basic principles***: 133 - 168. New York: Guilford Press.

Higgins, E. T. 1996b. The "self digest": Self-knowledge serving self-regulatory functions. ***Journal of Personality & Social Psychology***, 71: 1062-1083.

Higgins, E. T. 1997. Beyond pleasure and pain. ***American Psychologist***, 52: 1280-1300.

Higgins, E. T., Shah, J., & Friedman, R. 1997. Emotional responses to goal attainment: Strength of regulatory focus as moderator. ***Journal of Personality and Social Psychology***, 72: 515-525.

Higgins, E. T. 1998. Promotion and prevention: Regulatory focus as a motivational principle. ***Advances in Experimental Social Psychology***, 30: 1-46.

Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N., & Taylor, A. 2001. Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. ***European Journal of Social Psychology***, 31: 3-23.

Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. 2003. Transfer of value from fit. ***Journal of Personality and Social Psychology***, 84: 1140-1153.

Higgins, E. T. 2004. Regulatory fit: An experience that creates value. ***Journal of Cultural and Evolutionary Psychology***, 2: 9-22.

Higgins, E. T. & Spiegel, S. 2004. Promotion and prevention strategies for self-regulation: A motivated cognition perspective. In R. F. Baumeister & K. D. Vohs (Eds.), ***Handbook of self-regulation: Research, theory and applications***: 171-187. New York: Guilford Press.

Higgins, E. T. 2005. Value from regulatory fit. ***Current Directions in Psychological Science***, 14: 209 - 213.

Hitinder, S. G. & Hoogwerf, B. 2003. The heart protection study: High-risk patients benefit from statins, regardless of LDL-C level. ***Cleveland Clinic Journal of Medicine***, 70: 991-997.

Hoff, T. J. 1999. The Social Organization of Physician-Managers in a Changing HMO. ***Work and Occupations***, 26: 324-351.

Hoff, T. J. 2001. Exploring dual commitment among physician executives in managed care. ***Journal of Healthcare Management***, 46: 91-109.

Hogg, M. A. & Terry, D. J. 2000. Social identity and self-categorization processes in organizational contexts. ***Academy of Management Review***, 25: 121-140.

Hornsey, M. J., Oppes, T., & Svensson, A. 2002. It's OK if we say it, but you can't: Responses to intergroup and intragroup criticism. ***European Journal of Social Psychology***, 32: 293-307.

Hornsey, M. J. & Imani, A. 2004. Criticizing groups from the inside and the outside: an identity perspective on the intergroup sensitivity effect. ***Journal of Personality and Social Psychology***, 30: 365-383.

Hornsey, M. J., Trembath, M., & Gunthorpe, S. 2004. You can criticize because you care: Identity attachment, constructiveness, and the intergroup sensitivity effect. ***European Journal of Personality***, 34: 499-518.

Hsaio, W. C., Braun, P., Becker, E. R., & Thomas, S. R. 1988a. The resource-based relative value system. ***Journal of the American Medical Association***, 258: 799-802.

Hsaio, W. C., Braun, R., Dunn, D., & Becker, E. R. 1988b. Resource-based relative values: An overview. ***Journal of the American Medical Association***, 260: 2347-2353.

Jetten, J., Spears, R., & Manstead, A. S. R. 1996. Intergroup norms and intergroup discrimination: Distinctive self-categorization and social identity effects. ***Journal of Personality and Social Psychology***, 71: 1222-1233.

Johnson, M. D., Morgeson, F. P., Ilgen, D. R., Meyer, C. J., & Lloyd, J. W. 2006. Multiple professional identities: Examining differences in identification across work-related targets ***Journal of Applied Psychology***, 91: 498-506.

Jones, A. P. & James, L. R. 1979. Psychological climate: dimensions and relationships of individual and aggregated work environment perceptions. ***Organizational Behavior and Human Performance***, 23: 201-250.

Kark, R. & Van Dijk, D. 2007. Motivation to lead motivation to follow: The role of the self-regulatory focus in leadership processes. ***Academy of Management Review***, 32: 500-528.

Keller, J. & Bless, H. 2006. Regulatory fit and cognitive performance: The interactive effect of chronic and situationally induced self-regulatory mechanisms on test performance. ***European Journal of Social Psychology***, 36: 393-405.

Kerr, E. A., McGlynn, E. A., Adams, J., Keesey, J., & Asch, S. M. 2004. Profiling the Quality of Care in Communities: Results from the Community Quality Index Study. ***Health Affairs***, 23: 247-256.

Kerr, S., Von Glinow, M., & Schriesheim, J. 1977. Issues in the Study of Professionals in Organizations: The Case of Scientists and Engineers. ***Organizational Behavior and Human Performance***: 329-345.

Kerr, S. & Slocum, J. W. 1981. Controlling the performances of people in organizations. In P. C. Nystrom & W. H. Starbuck (Eds.), ***Handbook of Organizational Design***, Vol. 2: 116-134. Oxford: Oxford University Press.

Kleiner, K. D., Akers, R., Burke, B. L., & Werner, E. J. 2002. Parent and physician attitudes regarding electronic communication in pediatric practices. ***Pediatrics***, 109: 740-744.

Kongstevdt, P. R. 1993. ***The Managed Health Care Handbook*** (Second edition ed.). Gaithersburg, MD: Aspen Publishers, Inc.

Kravitz, R. L., Bell, R. A., Azari, R., Krupat, E., Kelly-Reif, S., & Thom, D. 2002. Request fulfillment in office practice: antecedents and relationship to outcomes. ***Medical Care***, 40: 38-51.

LaRosa, J. C., He, J., & Vupputuri, S. 1999. Effect of statins on risk of coronary disease: a meta-analysis of randomized controlled trials. ***Journal of the American Medical Association***, 282: 2340–2346.

Lawler, E. J. 1992. Affective attachments to nested groups: A choice-process theory. ***American Sociological Review***, 57: 327-339.

Lee, K., Carswell, J. J., & Allen, N. J. 2000. A Meta-Analytic Review of Occupational Commitment: Relations With Person- and Work-Related Variables. ***Journal of Applied Psychology***, 85: 799-811.

Legris, P., Ingham, J., & Collerette, P. 2003. Why do people use information technology? A critical review of the technology acceptance model. ***Information & Management***, 40: 191-204.

Levine, J. M., Higgins, E. T., & Choi, H. S. 2000. Development of strategic norms in groups. ***Organizational Behavior and Human Decision Processes***, 82: 88-101.

Lewis, J. M., Marjoribanks, T., & Pirotta, M. 2003. Changing professions: General practitioners' perceptions of autonomy on the frontline. ***Journal of Sociology***, 39: 44-61.

Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. 1999. Promotion and prevention choices between stability and change. ***Journal of Personality & Social Psychology***, 77: 1135-1145.

Liberman, N., Molden, D. C., Idson, L. C., & Higgins, E. T. 2001. Promotion and prevention focus on alternative hypotheses: Implications for attributional functions. ***Journal of Personality and Social Psychology***, 80: 5-18.

Liederman, E. M. & Morefield, C. S. 2003. Web messaging: A new tool for patient-physician communication. ***Journal of the American Medical Informatics Association***, 10: 260-270.

Lockwood, P., Jordan, C. H., & Kunda, Z. 2002. Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. ***Journal of Personality and Social Psychology***, 83: 854-864.

Lockwood, P., Chasteen, A. L., & Wong, C. 2005. Age and regulatory focus determine preferences for health-related role models. ***Psychology and Aging***, 20: 376-389.

Lynch, P. D., Eisenberger, R., & Armeli, S. 1999. Perceived organizational support: Inferior-versus-superior performance by wary employees. ***Journal of Applied Psychology***, 84: 467-483.

Ma, J., Sehgal, N. L., Ayanian, J. Z., & Stafford, R. S. 2005. Trends in Statin Use by Coronary Heart Disease Risk Category. ***Public Library of Science-Medicine***, 2: 434-440.

MacDonald, K. 1995. ***The Sociology of the Professions***. London: Sage Publications.

Mael, F. & Ashforth, B. 1992. Alumni and their alma maters: A partial test of the reformulated model of organizational identification. ***Journal of Organizational Behavior***, 13: 103-123.

McClelland, D. C. 1961. ***The achieving society***. Princeton: Van Nostrand.

McKinlay, J. B. & Marceau, L. D. 2002. The end of the golden age of doctoring. ***International Journal of Health Services***, 32: 379-416.

Meyer, J. P. & Allen, N. J. 1991. A three-component conceptualization of organizational commitment. ***Human Resource Management Review***, 1: 61-89.

Mintzberg, H. 1977. Policy as a Field of Management Theory. ***Academy of Management Review***, 2: 88-103.

Mischel, W. 1977. The interaction of person and situation. In D. Magnusson & N. S. Endler (Eds.), ***Personality at the crossroads: Current issues in interactional psychology***. Hillsdale, NJ: Erlbaum.

Mithen, S. 1996. Anthropomorphism and the evolution of cognition. ***Journal of the Royal Anthropological Institute***, 2: 717-719.

Molm, L. D., Schaefer, D. R., & Collett, J. L. 2007. The Value of Reciprocity. ***Social Psychology Quarterly***, 70: 199-217.

Morrison, E. W. & Robinson, S. L. 1997. When employees feel betrayed: A model of how psychological contract violation develops. ***Academy of Management Review***, 22: 226-256.

Ozyurt, A., Hayran, O., & Sur, H. 2006. Predictors of burnout and job satisfaction among Turkish physicians. ***QJM***, 99: 161-169.

Padilla, A. M. 1994. Bicultural development: A theoretical and empirical examination. In R. Malgady & O. Rodriguez (Eds.), ***Theoretical and conceptual issues in Hispanic mental health***: 20-51. Melbourne, FL: Krieger Publishing Co., Inc.

Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., Lacost, H. A., & Roberts, J. E. 2003. Relationships between psychological climate perceptions and work outcomes: a meta-analytic review. ***Journal of Organizational Behavior***, 24: 389-416.

Parry, J. 1986. The gift, the Indian gift and the 'Indian gift'. ***Management Communication Quarterly***, 21: 453-473.

Pellegrin, K. L., Stuart, G. W., Maree, B., Frueh, B. C., & Ballenger, J. C. 2001. A brief scale for assessing patients' satisfaction with care in outpatient psychiatric services. ***Psychiatric Services***, 52: 816-819.

Pennington, G. L. & Roese, N. J. 2003. Regulatory focus and temporal perspective. ***Journal of Experimental Social Psychology***, 39: 563-576.

Perdue, C. W., Dovidio, J. F., Gurtman, M. B., & Tyler, R. B. 1990. Us and them: Social categorization and the process of intergroup bias. ***Journal of Personality and Social Psychology***, 59: 475-486.

Phinney, J. S. & Devich-Navarro, M. 1997. Variations in bicultural identification among African American and Mexican American adolescents. ***Journal of Research on Adolescence***, 7: 3-32.

Pratt, M. G. & Rafaeli, A. 1997. Organizational dress as a symbol of multilayered social identities. ***Academy of Management Journal***, 40: 862-898.

Pratt, M. G. & Foreman, P. O. 2000. Classifying Managerial Responses to Multiple Organizational Identities. ***Academy of Management Review***, 25: 18-42.

Pratt, M. G. 2003. Disentangling Collective Identity. In J. Polzer & E. Mannix & M. Neale (Eds.), ***Research in Managing Groups and Teams Vol. V***: 161-188. Stamford, CT: JAI Press.

Pratt, M. G., Rockmann, K., & Kaufmann, J. B. 2006. Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. ***Academy Management Journal***, 49: 235-262.

Priester, J. R. & Petty, R. E. 1996. The Gradual Threshold Model of Ambivalence: Relating the Positive and Negative Bases of Attitudes to Subjective Ambivalence. ***Journal of Personality and Social Psychology***, 71: 431-449.

Reichheld, F. F. & Sasser, W. E. 1990. Zero defections: Quality comes to services. ***Harvard Business Review***, 68: 105-111.

Rhoades, L. & Eisenberger, R. 2002. Perceived organizational support: A review of the literature. ***Journal of Applied Psychology***, 87: 698-714.

Riketta, M. 2005. Organizational identification: A meta-analysis. ***Journal of Vocational Behavior***, 66: 358-384.

Robinson, S. L., Kraatz, & Rousseau, D. M. 1994. Changing obligations and the psychological contract: a longitudinal study. ***Academy of Management Journal***, 37: 137-152.

Robinson, S. L. & Rousseau, D. M. 1994. Violating the psychological contract: Not the exception, but the norm. ***Journal of Organizational Behavior***, 15: 245-259.

Robinson, S. L. 1996. Trust and breach of the psychological contract. ***Administrative Science Quarterly***, 41: 574-599.

Robinson, S. L. & Morrison, E. W. 2000. The development of psychological contract breach and violation: a longitudinal study. ***Journal of Organizational Behavior***, 21: 525-546.

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

Rynes, S. L. 2007. Academy of Management Journal Editors' Forum on Rich Research: Editor's Foreword. ***Academy of Management Journal*** 50: 13-13.

Sahlins, M. D. 1972. ***Stone Age Economics***. New York: Aldine Publishing Company.

Salam, S., Cox, J. F., & Sims, H. P., Jr. 1997. In the eye of the beholder: How leadership relates to 360-degree performance ratings. ***Group and Organization Management***, 2: 185-209.

Schulte, M., Ostroff, C., & Kinicki, A. J. 2006. Organizational climate systems and psychological climate perceptions: A cross-level study of climate-satisfaction relationships ***Journal of Occupational and Organizational Psychology***, 79: 645-671.

Semin, G. R., Higgins, E. T., Gil de Montes, L., Estourget, Y., & Valencia, J. 2005. Linguistic signatures of regulatory focus: How abstraction fits promotion more than prevention. ***Journal of Personality and Social Psychology***, 89: 36-45.

Settles, I. H., Sellers, R. M., & Damas, A., Jr. 2002. One role or two? The function of psychological separation in role conflict? ***Journal of Applied Psychology***, 87: 574-582.

Settles, I. H. 2004. When multiple identities interfere: The role of identity centrality. ***Personality and Social Psychology Bulletin***, 30: 487-500.

Shah, J., Higgins, E. T., & Friedman, R. S. 1998. Performance incentives and means: How regulatory focus influences goal attainment. ***Journal of Personality and Social Psychology***, 74: 285 - 293.

Shah, J. 2003. The motivational looking glass: How significant others implicitly affect goal appraisals ***Journal of Personality and Social Psychology***, 85: 424-439.

Sharma, A. 1997. Professional as agent: Knowledge asymmetry in agency exchange. ***Academy of Management Review***, 22: 758-798.

Simonet, D. 2005. Patient satisfaction under managed care. ***International Journal of Health Care Quality Assurance***, 18: 424-440.

Slaughter, J. E., Zickar, M. J., Highhouse, S., & Mohr, D. C. 2004. Personality trait inferences about organizations: Development of a measure and assessment of construct validity ***Journal of Applied Psychology***, 89: 85-103.

Sluss, D. & Ashforth, B. 2007. Relational identity and identification: Defining ourselves through work relationships. ***Academy of Management Review*** 32: 9-32.

Snizek, W. E. 1972. Hall's Professionalism Scale: An empirical reassessment. ***American Sociological Review***, 37: 109-114.

Snow, V., Aronson, M. D., Hornbake, E. R., Mottur-Pilson, C., & Weiss, K. B. 2004. Lipid Control in the Management of Type 2 Diabetes Mellitus: A Clinical Practice Guideline from the American College of Physicians ***Annals of Internal Medicine***, 140: 644-649.

Sorensen, J. E. & Sorensen, T. L. 1974. The conflict of professionals in bureaucratic organizations. ***Administrative Science Quarterly***, 19: 98-106.

Spiegel, S., Grant-Pillow, H., & Higgins, E. T. 2004. How regulatory fit enhances motivational strength during goal pursuit. ***European Journal of Social Psychology***, 34: 39-54.

Starr, P. 1982. ***The Social Transformation of American Medicine***. New York: Basic Books.

Staw, B. M. 1991. Dressing up like an organization: When psychological theories can explain organizational action. ***Journal of Management***, 17: 805-819.

Strauman, T. J., Vookles, J., Berenstein, V., Chaiken, S., & Higgins, E. T. 1991. Self-discrepancies and vulnerability to body dissatisfaction and disordered eating. ***Journal of Personality and Social Psychology***, 61: 946-956.

Strauman, T. J. 1992. Self-guides, autobiographical memory, and anxiety and dysphoria; Toward a cognitive model of vulnerability to emotional distress. ***Journal of Abnormal Psychology***, 101: 87-95.

Suchman, M. 1995. Managing legitimacy: Strategic and institutional approaches. ***Academy of Management Review***, 20: 571-610.

Sullivan, H. W., Worth, K. A., Baldwin, A. S., & Rothman, A. J. 2006. The effect of approach and avoidance referents on academic outcomes: A test of competing predictions ***Motivation and Emotion***, 30: 157-164.

Sutton, R. M., Elder, T. J., & Douglas, K. M. 2006. Reactions to internal and external criticism of outgroups: Social convention in the intergroup sensitivity effect. ***Personality and Social Psychology Bulletin***, 32: 563-575.

Swann, W. B., Jr. & Ely, R. J. 1984. A battle of wills: Self-verification versus behavioral confirmation. ***Journal of Personality and Social Psychology***, 46: 1287–1302.

Swann, W. B., Jr., Polzer, J. T., Seyle, D. C., & Ko, S. J. 2004. Finding value in diversity: Verification of personal and social self-views in diverse groups. ***Academy of Management Review***, 29: 9-27.

Tajfel, H. & Turner, J. C. 1979. An integrative theory of intergroup conflict. In S. Worchel & W. G. Austin (Eds.), ***The social psychology of intergroup relations***. Monterey: Brooks/Cole.

Tajfel, H. & Turner, J. C. 1985. The social identity theory of intergroup behavior. In W. G. Austin & S. Worchel (Eds.), ***Psychology of intergroup relations***: 7-24. Chicago: Nelson-Hall.

Tekleab, A. G., Takeuchi, R., & Taylor, M. S. 2005. Extending the chain of relationships among organizational justice, social exchange, and employee reactions: The role of contract violations. ***Academy Management Journal***, 48: 146-157.

Templeton, L., Deehan, A., Taylor, C., Drummond, C., & Strang, J. 1997. Surveying general practitioners: Does a low response rate matter? ***British Journal of General Practice***, 47: 91-94.

Turner, J. C. 1982. Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), ***Social identity and intergroup relations***: 15–40. Cambridge, England: Cambridge University Press.

Turner, J. C. 1984. Social identification and psychological group formation. In T. H. (Ed.), ***The social dimension: European developments in social psychology***, Vol. 2: 518-538. Cambridge: Cambridge University Press.

Turner, J. C. 1987. ***Rediscovering the Social Group: A Self-categorisation Theory***. Oxford: Blackwell.

Turner, J. C. 1991. ***Social Influence***. Milton Keynes: Open University Press.

Turnley, W. H. & Feldman, D. C. 1999. The impact of psychological contract violations on exit, voice, loyalty, and neglect. ***Human Relations***, 52: 895-922.

Tyler, T. R. & Lind, E. A. (Eds.). 1992. ***A relational model of authority in groups***. (Vol. 25).

Tyler, T. R. & Blader, S. L. 2003. The Group Engagement Model: Procedural Justice, Social Identity, and Cooperative Behavior. ***Personality and Social Psychology Review***, 7: 349–361.

van Dick, R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C., Hauptmeier, M., Hohfeld, C., Moltzen, K., & Tissington, P. A. 2004. Should I stay or should I go? Explaining turnover intentions with organizational identification and job satisfaction. ***British Journal of Management***, 15: 351-360.

van Kleef, E., van Trijp, H. C. M., & Luning, P. 2005. Functional foods: health claim-food product compatibility and the impact of health claim framing on consumer evaluation. ***Appetite***, 44: 299-308.

Van Maanen, J. & Barley, S. 1984. Occupational Communities: Culture and control in organizations. ***Research in Organizational Behavior***, 6: 287-365.

Van Sell, M., Brief, A. P., & Schuler, R. S. 1981. Role conflict and role ambiguity: Integration of the literature and directions for future research. ***Human Relations***, 34: 43-71.

Venkatesh, V. & Davis, F. D. 2000. A theoretical extension of the technology acceptance model: Four longitudinal field studies. ***Management Science***, 46: 186-204.

Wallace, J. C. & Chen, G. 2006. A multilevel integration of personality, climate, regulatory focus, and performance. ***Personnel Psychology***, 59: 529-557.

Wallace, J. E. 1995. Organizational and professional commitment in professional and nonprofessional organizations. ***Administrative Science Quarterly***, 40: 228-255.

Wang, L. & Pratt, M. G. 2007. An Identity-Based View of Ambivalence and its Management in Organizations. In N. Ashkanasy & C. Cooper (Eds.), ***Research Companions to Emotion in Organizations***, Vol. (forthcoming). Boston: Edward Elgar.

Ward, M. M., Yankey, J. W., Vaughn, T. E., & Boots-Miller, B. J. 2004. Physican process and patient outcome measures for diabetes care: Relationships to organizational characteristics. ***Organized Medical Care***, 42: 840-847.

Weick, K. E. 2007. The Generative Properties of Richness. ***Academy of Management Journal*** 50: 14-19.

Weiss, H. M. & Adler, S. 1984. Personality and organizational behavior. ***Research in Organizational Behavior***, 6: 1-50.

Werth, L. & Foerster, J. 2007. How regulatory focus influences consumer behavior ***European Journal of Social Psychology***, 37: 33-51.

Willerson, J. T. & Cohn, J. N. (Eds.). 2000. ***Cardiovascular medicine***. Philadelphia: Churchill Livingstone.

Wright, T. A. & Bonett, D. G. 2002. The moderating effects of employee tenure on the relation between organizational commitment and job performance: A meta-analysis. ***Journal of Applied Psychology***, 87: 1183-1190.

Yeo, W. W. & Yeo, K. R. 2000. Workload implications and cost of statin treatment in the National Service Framework for coronary heart disease. ***British Journal of Cardiology***, Supplement 14: S11-S18.

Yusuf, S., Sleight, P., Pogue, J., Bosch, J., Davies, R., & Dagenais, G. 2000. Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. ***New England Journal of Medicine***, 342: 145-153.

Zhang, Y., George, J. A., & Chan, T. S. 2006. The paradox of dueling identities: The case of local senior executives in MNC subsidiaries. ***Journal of Management***, 32: 400-425.

VITA

David R. Hekman was born in Grand Rapids, MI. Currently he calls Seattle his home. At Grand Valley State University he earned a Bachelor of Arts degree in Business Finance in 2000.