Effects of Organizational and Professional Identification on the Relationship Between Administrators' Social Influence and Professional Employees' Adoption of New Work Behavior

Keywords: organizational identification, professional identification, social influence, new work roles

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Abstract

Administrative social influence is a principal tool for motivating employee behavior. We argue that professional employees' (e.g. doctors) compliance with administrative social influence will depend on the degree to which they identify with their profession and organization. We found that professional employees were most receptive to administrator social influence to adopt new work behavior when they strongly identified with the organization and weakly identified with the profession. In contrast, administrator social influence was actually counter-productive when professional employees strongly identified with the profession and weakly identified with the organization. (89 words)

Administrators'[1] social influence is pivotal in encouraging employees to adopt organizationally prescribed work behavior (Katz & Kahn, 1978). In line with this idea, studies have linked administrators' social influence to increased employee task commitment and to employees' acceptance of organizationally mandated work changes (Higgins, Judge, & Ferris, 2003; Yukl & Falbe, 1990; Yukl & Tracey, 1992). Moreover, administrative social influence tactics, such as normative pressure and monitoring employees for compliance, have been empirically associated with higher levels of technology adoption (Venkatesh & Davis, 2000).

However, professional employees have been shown to be particularly resistant to administrators' social influence attempts when it comes to their adoption of new work behavior (Callister & Wall, 2001; Scott, 1982; Starr, 1982; Zabusky & Barley, 1997). They appear especially prone to actively opposing being controlled by others (Callister & Wall, 2001; Scott, 1982; Zabusky & Barley, 1997). Research on professional employee resistance to administrative control is quite limited (see Ferlie, Fitzgerald, Wood, & Hawkins, 2005 for a notable exception). Yet, as professional employees become increasingly prevalent in many types of organizations (Wallace, 1995), understanding when influence tactics are effective with professional employees becomes more important.

We investigate the relationship between administrators' social influence and professional employee adoption of organizationally prescribed work behavior from the perspective of social identity theory (Tajfel & Turner, 1979). We chose social identity theory as the conceptual lens because research on this topic indicates that a person's identification with a group increases his or her receptivity to social influence from other group members and decreases the focal person's receptivity to social influence from non-group members (Turner, Hogg, Oakes, Reicher, &

[1] Following Mintzberg (1977), we define organizational administrators as authoritative members of the organization who are responsible for creating and maintaining conditions of employment. This group includes managers and others in charge of job descriptions, employee selection, performance management and compensation.

Wetherell, 1987). One main way professional employees are distinguished from other types of employees is that professionals tend to maintain a dual social identity—one associated with their organization and the other associated with their profession (Bamber & Iyer, 2002; Johnson, et al., 2006; Lee, Carswell, & Allen, 2000; Settles, 2004; Wallace, 1995; Wang & Pratt, 2007). Professional employees typically view administrators as members of their organization, but not as true members of their profession (Ferlie, et al., 2005; Golden, Dukerich, & Fabian, 2000; Hoff, 2001; Van Maanen & Barley, 1984). Thus, we investigate how organizational and professional identification affect how professional employees relate to administrators and respond to administrators' attempts to influence their adoption of new work behavior. To our knowledge, the influence of organizational and professional identification on the effectiveness of administrative social influence has not been explored.

This study makes several other contributions. First, we advance research on employee social identification (e.g., Ashforth & Mael, 1989) and dual identification (Johnson, et al., 2006; Wang & Pratt, 2007) by demonstrating how organizational and professional identification jointly influence professional employee responses to administrative social influence. We propose that because organizations and professions are rival groups in many important respects (Freidson, 2001; Starr, 1982; Van Maanen & Barley, 1984), the effects of professional and organizational identification interfere with each other (Pratt & Doucet, 2000; Pratt & Foreman, 2000; Wang & Pratt, 2007). The notion of interference implies an interaction between professional and organizational identification.

In addition, we extend research on organizational change (Armenakis & Bedeian, 1999; Coleman, Katz, & Menzel, 1966; Fox-Wolfgram, Boal, & Hunt, 1998; Herold, Fedor, & Caldwell, 2007; Herscovitch & Meyer, 2002; Rogers, 1995). Qualitative studies suggest that during periods of change, individuals rely on their social identities to guide them through difficult transition

periods (Corley & Gioia, 2004; Fiol, 2002). Yet, quantitative field studies regarding organizational change have yet to incorporate employee social identification constructs.

Finally, we contribute to the research on technology adoption (for a review, see Venkatesh, Morris, Davis, & Davis, 2003). The new work behavior we examine involves the use of new technology. Prior technology adoption research has shown that employee resistance to technologies is primarily influenced by three factors: perceived ease of use, perceived usefulness of the technology, and perceived social influence to adopt the technology (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989; Venkatesh & Davis, 2000; Venkatesh, et al., 2003). However, social identification research suggests that group membership plays a part in social influence (Turner, et al., 1987). Understanding how professional employees respond differently than traditional employees to administrative social influence based on their organizational and professional identification will help to improve the accuracy and generalizability of technology adoption models.

Organizational and Professional Identification and Administrative Social Influence

Organizational identification. Social identification refers to the extent to which an individual experiences a sense of oneness with a group, such as an organization (Ashforth & Mael, 1989; Turner, 1991). Social identification leads people to view themselves and other group members as possessing the values, goals, and attitudes considered standard for members of the group—rather than as possessing unique individual characteristics (Turner, 1984). People tend to perceive fellow group members as "like them"—as basically interchangeable with themselves. Ingroup members are seen as allies sharing a common fate (Kramer, Brewer, & Hanna, 1996; Kramer & Goldman, 1995). Thus, people are inclined to perceive fellow group members as "on their side." Therefore, organizational identification leads to the presumption of a common ingroup perspective on the world and increased relational closeness among ingroup members.

We propose that professional employees' identification with the organization affects their response to administrative social influence by altering professional employees' perceived relationship with their organizational administrators. Administrators are generally perceived as organizational guardians (Freidson, 2001) and as prototypical organization members (Golden, et al., 2000). Consequently, when organizational identification is high, professional employees' sense of self is tied closely to a group that includes administrators. As a result, we contend that organizational identification leads professional employees to believe that organizational administrators are like them and on their side.

Administrator-mandated changes to work behavior may generate conflict with professional employees. However, as members identify more strongly with a group, they tend to become more receptive to influence attempts from fellow group members (Turner & Oakes, 1989). Fellow group members are taken to be part of one's social self-concept and are therefore understood as legitimate participants in the expression of the shared identity (Turner, 1991). Moreover, administrators ordinarily possess the normative authority to make organizational decisions (Mintzberg, 1979), and organizational identification increases members' adherence to group norms (Terry & Hogg, 199). Thus, when organizational identification is high, professional employees are likely to be especially receptive to administrators' social influence.

Professional identification. Professional identification refers to the extent to which a professional employee experiences a sense of oneness with the profession. Social identification not only shapes one's self-perception in relation to other group members, but it also shapes one's self-perception in relation to non-group members (Turner, et al., 1987). Social identification leads one to see non-group members as being less trustworthy, to evaluate them less positively, and to view them as being dissimilar (Jetten, Spears, & Manstead, 1996). Identification with a group leads

people to view non-group members, and especially members of rival groups, as being unlike themselves and unsupportive of their interests (Brewer, 1979; Kramer, et al., 1996; Turner, 1984).

Professional employees typically do not see administrators as true members of the profession, even when administrators have had professional training and experience (Golden, et al., 2000). Further, organizations and professions tend to be rival groups in 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 efficiency and 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, practicing physicians viewed administrators with medical degrees (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). Practicing physicians viewed administrators with MDs more negatively than those without MDs because the former were thought to have "betrayed" the medical profession by assuming administrative roles (Hoff, 1999: 344).

We maintain that professional identification alters professional employees' responses to administrative social influence in a manner opposite that of organizational identification. It decreases professional employees' relational closeness with those who do not belong to the profession, such as administrators. When one does not experience solidarity with another, the other is not considered to be a valid source of behavioral guidance (Turner, 1991). As a consequence, influence from that person is more likely to be either ignored or interpreted as controlling and as a threat to freedom of identity expression (Turner, 1991), perhaps resulting in reactance (Brehm, 1966; Brehm & Brehm, 1981; Wicklund, 1974). On this basis, professional identification leads

professional employees to be less receptive to administrative influence, and perhaps even to act against it.

Organizational and professional identification. We maintain that organizational and professional identification orient professional employees in fundamentally different ways in their relationships with administrators and exhibit essentially counter-moderating effects on the degree to which professional employees comply with administrative social influence. Professional employees vary in the extent to which they identify with both the organization and profession (Bamber & Iyer, 2002; Johnson, et al., 2006; Lee, et al., 2000; Wallace, 1995). 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).

When employees possess similar levels of organizational and professional identification, they are likely to experience identity conflict. Identity conflict occurs when two aspects of self-concept, such as two different types of social identification, direct individuals to engage in incompatible behaviors in a particular situation (Baumeister, 1999). Identity conflict is stressful (Kreiner, Hollensbe, & Sheep, 2006; Pratt, et al., 2006), and can purportedly lead to erratic employee behavior toward the organization (Wang & Pratt, 2007).

Because of their potential to generate identity conflict, we consider organizational and professional identification in combination when investigating employee compliance with administrative social influence. The orienting effects of one type of identification interfere with those of the other. The belief stemming from organizational identification that administrators are similar to them and supportive of their interests is challenged by the belief stemming from professional identification that administrators are dissimilar to them and unsupportive of their interests. Thus, professional employee interpretations of administrative social influence are clear

only when identification with one group is high and the other group is low. Otherwise the interpretations based on organizational or professional identification are contested and, thus, are less definitive as guides to thought and action.

When professional employees' strongly identify with the organization and weakly identify with the profession, they will be most receptive to administrative social influence. Under such conditions, identity conflict is minimal, and professional employees experience a strong sense of relational closeness to administrators. However, when professional employees weakly identify with the organization and strongly identify with the profession, they will be least receptive to administrative social influence, and may even behave counter to it. Under such conditions, identity conflict is minimal, and professional employees do not perceive themselves to be relationally close to administrators.

Because similar levels of organizational and professional identification generate identity conflict, compliance with administrative social influence under such conditions will not be as strong as when organizational identification is high and professional identification is low; or as weak as when organizational identification is low and professional identification is high. On the basis of this logic, we propose a three-way interaction between administrators' social influence and professional employees' organizational and professional identification in their relationship to professional employees' adoption of new work behavior.

Hypotheses: The association between perceived social influence from administrators to adopt new work behavior and professional employees' actual adoption of the new work behavior will be (a) most positive when organizational identification is high and professional identification is low and (b) least positive when organizational identification is low and professional identification is high.

METHODS

Sample

Our context is Healthcorp (a pseudonym), which is a large, not-for-profit health maintenance organization based in the Pacific Northwest region of the United States. Our initial sample consisted of all 249 Healthcorp primary-care professionals (i.e., family practitioners). Using the Dillman (2000) survey distribution method, we sent a confidential survey to all professionals in our sample to assess our constructs of interest. While poor response rates are regularly encountered when surveying physicians (Templeton, Deehan, Taylor, Drummond, & Strang, 1997), 198 completed the survey for a response of 79.2%. Missing values reduced the number of usable observations to 193. Within our usable sample, the majority of the respondents had a medical degree (81.9%), and the remaining respondents were certified physician assistants.[2] None of the family practitioners were pediatricians.[3] Statistical comparisons between the sample and overall population yielded no significant differences in gender, age, tenure, highest degree earned, or new work behavior adoption.

Dependent Variable

Healthcorp administrators introduced a change to medical professionals' jobs by launching a new Internet-mediated e-mail-based technology, called secure messaging. This technology was designed to reduce patient demand for office visits, and thereby lower Healthcorp expenses. Healthcorp medical professionals were expected to respond to secure messages from their patients

[2] 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, Human resource desktop reference physician assistant description, 2003).

[3] At the time of this study, secure messaging, which is the new technology implemented by Heathcorp, 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.

within 24 hours, and information about non-responding providers was shared with their colleagues. Administrators monitored the number of secure messages and the timeliness of response. Use of secure messaging partially supplanted traditional face-to-face consultation with a certified medical professional (Kleiner, Akers, Burke, & Werner, 2002; Liederman & Morefield, 2003). Physicians were not paid for using secure messaging. At the conclusion of this study, 83.4% of the professionals in the sample had sent at least one secure message to a patient.

Our dependent variable is objectively-measured, which is an improvement over previous measures of acceptance of new work behavior that are primarily limited to self-reports and third-party raters (e.g., Herscovitch & Meyer, 2002). Medical professionals had a great deal of control over how many secure messages they sent for two reasons: (a) they could choose not to inform their patients about the secure messaging capability, and; (b) they could choose 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, 13,943 (86.8%) of which were sent by those who filled out our survey. Professionals were only expected to address issues that could be answered in five minutes or less, thereby constraining the variance in message quality, and making secure message quantity an acceptable measure of new work behavior. The secure messaging system was rolled out gradually over the course of one year, so that on average each professional had access to the technology for 20 months. We 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. Our dependent variable is each professional's total messages divided by the total days that the technology was available.

Independent Variables

Organizational and professional identification. We measured the extent to which medical professionals identified with their organization and profession using five-items from Mael and

Ashforth's (1992) six-item scale. Respondents were asked to identify how strongly they agreed or disagreed with the statements (1 = strongly disagree; 7 = strongly agree). Because of low item reliability in a pilot survey we sent to a pre-sample of physicians, we omitted the item, "I am very interested in what others think about Healthcorp (doctors)" from our survey. All survey items are listed in Table 1. The composite reliability for organizational identification was .76 and for professional identification was .73. Composite reliability is generally considered superior to Cronbach's alpha because (1) it is not influenced by the number of items (higher number of items inflates Cronbach's alpha), and; (2) it is appropriate for two-item measures, whereas Cronbach's alpha is not (Netemeyer, Boles, & McMurrian, 1996; Tabachnik & Fidell, 2006).

Perceived administrator social influence. Pressure and monitoring are critical aspects of social influence (Yukl & Tracey, 1992). Administrators sent many e-mails pressuring professionals to adopt secure messaging, and administrators also monitored their use of secure messaging for compliance with the initiative.[4] We measured the *perceived administrator normative pressure* that was felt by the professional employees using Venkatesh and Davis's (2000) two-item measure. We modified Venkatesh and Davis's items to specifically target secure messaging and our research site. The composite reliability was .66, which is consistent with prior research (Venkatesh, et al., 2003). We used Agarwal and Rodhain's (2002) measure of *perceived monitoring* (1 to 7, strongly disagree to strongly agree). The composite reliability of our four-item measure was .85. For both measures, respondents were asked to identify how strongly they agreed or disagreed with the statements (1 = strongly disagree; 7 = strongly agree).

[4] One notable pressuring email sent by administrators to all professionals 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 we want our families taken care of." Each week, the professionals in our sample were also sent a monitoring e-mail with an attached excel spreadsheet that listed all professionals and the number of patient secure messages that had not been responded to by their assigned medical professional within the organizationally-prescribed 24-hour turnaround time.

Control Variables

Clinic membership. To account for any group-level effects on role-adoption, we included 24 dummy variables to represent the 25 clinics in our sample. *Days that secure messaging was available.* Professionals who had more time to become familiar with the technology may have used it more. *Perceived usefulness of the technology to the organization*. Meta-analytic evidence shows that perceived usefulness is the best predictor of technology adoption (Legris, Ingham, & Collerette, 2003). We used Davis' (1989) four-item measure to measure the perceived usefulness of the technology to the organization. *Number of patients in panel.* Professionals who have a larger number of patients for whom they are responsible (i.e., their panel) may have more patients who use secure messaging.

RESULTS

Measure Validity

We 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 ($\chi^2 = 351.03$, $df = 322$, $p < .01$, RMSEA = .03, CFI = .98). The ratio of chi-squared to degrees of freedom is 1.09; 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 1 shows that composite reliability for the constructs are all above the .60 cutoff suggested by Bagozzi and Yi (1988).

We assessed discriminant validity among the five constructs measured with multiple items by comparing our target measurement model with various nested models, moving from a highly restricted single-factor structure (all items linked to one construct) to our proposed five-factor structure (perceived usefulness to the organization, organizational and professional identification,

perceived monitoring, and perceived administrator normative pressure)(see Table 2). Chi-square difference tests for the nested models were consistently large and significant, showing that large improvements in fit were gained as we moved from one to five factors.

Analyses

Table 3 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, we used Tobit, which is designed explicitly to account for left-censored dependent variables (Amemiya, 1973; Tobin, 1958). We centered all variables involved in the interaction terms (Aiken & West, 1991). Table 3 presents the results of the analysis.

Insert Tables 1-4 about here

We predicted that the association between perceived social influence from administrators to adopt a new work behavior and professional employees' actual adoption of the new work behavior would be (a) most positive when employees' level of organizational identification was high and their level of professional identification was low, and (b) least positive when employees' level of organizational identification was low and professional identification was high. Based on Model 3, the coefficients for both three-way interaction terms are significant ($p < .05$). To gain further insight into the nature of the interaction effects, we plotted them based on one standard deviation above and below the mean level of each variable (see Figures 1 and 2). Based on the significance of the simple slopes (Aiken & West, 1991), we found that perceived administrative social influence (both pressure and monitoring) was most positively related to professional employee adoption of new work behavior when organizational identification was high and professional identification was low. We also found that perceived administrative social influence (both pressure and monitoring) was

least positively related to adoption of new work behavior when organizational identification was low and professional identification was high. Indeed, our results provide some evidence that the relationship between social influence and the adoption of new work behavior is negative when professional identification is high and organizational identification is low. However, when professional and organizational identification were relatively equivalent, the simple slopes for the perceived administrative social influence variables (i.e., pressure and monitoring) were not significant. Thus, our hypotheses are supported.

Insert Figures 1 and 2 about here

DISCUSSION

We set out to understand when administrative social influence is most effective for motivating professional employees to adopt new work behavior. Administrator social influence was the principal means by which professional employees were encouraged to perform the new work behavior we studied. We found that the combination of organizational and professional identification was a significant factor in determining whether professional employees would comply with administrative social influence. For professional employees with high levels of organizational identification and low levels of professional identification, administrators' social influence was positively associated with adoption of new work behavior. In contrast, for professional employees with low levels of organizational identification and high levels of professional identification, administrator social influence was negatively associated with adoption of new work behavior. Our study advances research in the areas of social influence, social identification, organizational change, and technology adoption by suggesting how organizational and professional identification jointly influence employee responses to administrative social influence by altering the perceived relationship between employees and administrators.

Supplementary analysis

After analyzing our survey data, and in the spirit of recent calls for richer data in organizational research (Rynes, 2007; Weick, 2007), we used a supplementary qualitative analysis to assess how social identification influenced professional employee behavior. We conducted four interviews with professionals who (1) gave us written permission in their survey response for us to contact them, and (2) were either strongly identified with the organization and weakly identified with the profession (two interviews), or strongly identified with the profession and weakly identified with the organization (two interviews). Each interview was recorded and transcribed and lasted approximately 60-90 minutes. In these interviews, we found that the highly organizationally identified and weakly professional identified physicians tended to view their jobs in terms of how much they were costing the organization and empathized with administrators. For example, one told us:

> 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.

In contrast, those whose self-concepts were strongly tied to the profession and weakly tied to the organization viewed administrators as rivals. For example, one told us:

> The administrators sent an e-mail 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 e-mail made me so angry. Actually, my desk was clean when I read the e-mail, but as soon as I read it, I picked up my recycling bin and dumped it all over my desk. I couldn't believe they were telling us to clean up our desks—like we were little children or something.

Based on these interviews, we have some confidence in our arguments that professional and organizational identification jointly influence professional employees' perceptions of relational closeness to organizational administrators.

Implications and Future Research

Preliminary theorizing in the area of social identification on the topic of identity conflict has pointed to the possibility of a joint effect of organizational and professional identification in predicting a variety of attitudinal and behavioral outcomes (Pratt & Doucet, 2000; Pratt & Foreman, 2000; Wang & Pratt, 2007). However, organization science research has yet to wholly explain or empirically confirm the nature of this effect (Pratt & Foreman, 2000). Our study contributed to this research stream by arguing that organizational and professional identification together shape professional employees' perceived relationship with their administrators. Administrator influence was significant only when one type of identification was relatively high and the other was relatively low. We maintained that when levels of organizational and professional identification are similarly high, the oppositional orienting effects of the two identification types "interfere" with each other (Settles, 2004). An interesting avenue for future research would be to examine more closely the psychological nature of this type of interference. Perhaps, equivalent levels of organizational and professional identification give rise to a state of psychological ambivalence toward administrators that leads to inconsistent or unstable professional employee behavior (Wang & Pratt, 2007).

Our research also contributes to a better understanding of professional employee reactance to organizationally prescribed work behaviors (Blau & Scott, 1962; Hall, 1968; Kerr & Slocum, 1981; Kerr, Von Glinow, & Schriesheim, 1977; Snizek, 1972). For medical professionals, at least, social identification appears to be an important concept for explaining reactance. We found that the major "push back" often associated with reactance occurred when organizational identification was low and professional identification was high. In this case, administrators' influence was negatively associated with professional employees' adoption of organizationally prescribed new work behavior. Conversely, high organizational and low professional identification seemed to actually reverse the reactance effect. Professional employees readily adopted new work behavior in

response to administrator influence when their social self concept was tied mainly to the organization (and not to the profession). We believe our model is generalizable to other professional employee contexts, but future research should explore the boundary conditions of this model in terms of different types of professionals (e.g., lawyers, architects), influence (e.g., explicit coercion) or behaviors (e.g., eliminating, rather than adding behavior).

In addition, our study extends research on technology adoption in organizations (Davis, 1989; Davis, et al., 1989; Venkatesh & Davis, 2000; Venkatesh, et al., 2003). Technology adoption models do not include employee self-perceptions (e.g., professional and organizational identification) that may influence the relationship between employee perceptions of the technology and employee technology adoption behavior (Taylor & Todd, 1995). Perhaps it is not surprising that even the best technology adoption model, which includes the top 22 predictor variables, leaves 64 percent of the variance in actual technology adoption behavior unexplained (Venkatesh, et al., 2003). Our study highlights the potential usefulness of incorporating employee social identification variables in models predicting employee adoption of new technology.

Finally, our findings provide insight into the organizational change literature (e.g., Armenakis & Bedeian, 1999). A growing body of research examines why professional employees, and especially physicians, are often so resistant to role changes (Coleman, et al., 1966; Ferlie, et al., 2005; Rogers, 1995). This prior research shows that physician resistance is influenced by professional peers (Coleman, et al., 1966; Robertson, Swan, & Newell, 1996), features of the new role (Chau & Hu, 2002; Rogers, 1995), and norms within organizational departments (Van de Ven, Polley, Garud, & Venkatraman, 1999). However, employee social identification has not been included in these models.

Limitations and Strengths

The implications of this study should be considered in light of its limitations. A main limitation is that causal direction cannot be substantiated because we used a cross-sectional design. However, the relationships we hypothesized are consistent with longitudinal studies that have shown that social influence predicts employee behavior (Burkhardt, 1994; Venkatesh & Davis, 2000). In addition, our theoretical model consists of complex interaction effects that minimize the probability of drawing incorrect conclusions (Bowen & Wiersema, 1999). Also, reverse causality does not appear as theoretically plausible. For example, it seems less plausible that professionals would perceive high administrator pressure as a function of both adopting (when organizational identification is high and professional identification is low) and resisting (when organizational identification is low and professional identification is high) the new work behavior.

Other important strengths of our study should be noted. Even when we included fifteen additional control variables that have been shown to influence the adoption of new work behavior to help account for alternative explanations to our theory, our results were unchanged. The non-significant control variables which we added and then struck from our analysis because they were not significantly associated with adoption of new work behavior were (1) physician vs. physician assistant dummy, (2) perceived usefulness to patients, (3) perceived usefulness to self, (4) perceived ease of use, (5) perceived colleague normative pressure, (6) perceived patient normative pressure, (7) hours spent in training learning the system, (8) number of training modules completed (as professional employees could skip any of the modules), (9) score on a multiple choice post-training test, (10) average sickness of patients in panel, (11) computer self-efficacy (Compeau & Higgins, 1995), as well as, (12) professional employee age, (13) tenure, (14) full-time status, and (15) gender. Other strengths are that our supplementary interviews corroborate our theoretical arguments, hypotheses, and quantitative results. Furthermore, our dependent variable was

objectively measured. These strengths provide confidence that the influence of administrator social influence on employee behavior depends on employees' levels of professional and organizational identification.

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Table 1. Coefficients, Z-Statistics, and Reliability Values for the Latent Variables

Construct/ Item	Standardized Coefficient	Estimate /S.E.	Reliability[5]
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	
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	
Perceived Administrator Normative 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	

[5] Denotes composite reliability.

Table 2. Analysis of Discriminant Validity of Predictor Variables

	RMSEA	CFI	Δ CFI from Model 1	χ^2	Δ χ^2 from Model 1[6]
1. Five factor model (professional identification, organizational identification, perceived usefulness, perceived monitoring, perceived administrator normative pressure)	.03	.98		351.03	
2. One factor model	.20	.72	.26	3126.25	2775.22***
3. Two factor model (identification, perceived social influence/perceived usefulness)	.18	.77	.21	2346.56	1995.53***
4. Three factor model (perceived usefulness, identification, perceived social influence)	.14	.86	.12	1755.43	1404.40***
5. Four factor model (organizational and professional identification combined)	.10	.90	.08	1027.78	676.75***
6. Four factor model (administrator social influence types combined)	.09	.91	.07	1011.46	660.43***

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

Table 3. Means, Standard Deviations and Correlations among Variables[7]

		M	*s.d.*	1	2	3	4	5	6	7	8
1	Average daily secure messages	.11	.14	-							
2	Organizational identification	25.03	5.01	.10	-						
3	Professional identification	22.74	5.04	-.16	.61	-					
4	Perceived administrator normative pressure	12.32	1.93	.14	.16	.09	-				
5	Perceived monitoring	22.62	4.41	.23	.02	-.05	.36	-			
6	Full-time	.82	.19	-.21	.15	.21	-.13	.03	-		
7	Number of patients in panel	1445.51	716.95	.21	.00	-.15	.00	.01	.17	-	
8	Days secure messaging was available	576.57	121.84	.09	-.04	-.07	-.05	.05	.02	-.04	-
9	Perceived usefulness to organization	18.92	4.96	.29	.23	.08	-.09	-.08	.02	.01	.15

[7] All correlations larger than .15 are significant at $p<.05$ (two-tailed); all larger than .19 are significant at $p<.01$, N = 193

Table 4. Hierarchical Analysis Examining Moderating Effects of Identification and Administrator Social influence on Acceptance of Secure Messaging[8]

	Model 1	**Model 2**	**Model 2**
Controls			
24 Clinic Dummies	.***	.***	.***
Full-time status	-.23***	-.22***	-.19***
Number of patients in panel	.29***	.29***	.31***
Days secure messaging was available	-.17**	-.15*	-.18**
Perceived usefulness to organization	.19***	.20***	.25***
Main Effects			
Organizational identification	.18***	.16**	.14**
Professional identification	-.19***	-.12*	-.10*
Perceived administrator normative pressure	-.12**	-.04	-.06
Perceived monitoring	.20***	.23***	.26***
Two-way Interactions			
Professional Identification X Pressure from administrators		-.08†	-.15*
Organizational Identification X Pressure from administrators		.06†	.11*
Professional Identification X Monitoring		-.11	-.08
Organizational Identification X Monitoring		.07	.07
Organizational X Professional		-.05	-.09
Pressure X Monitoring		.03	.18*
Three-way Interactions			
Organizational X Professional X Monitoring			-.12*
Organizational X Professional X Pressure			-.33**
Log likelihood	129.87	130.26	140.65
-2[L(βprevious) – L(βfull)]		0.78	20.78***

[8] N = 193; *** p < .001; ** p < .01; * p < .05; † p < .10; To enhance ease of interpretation, we report standardized coefficients. Tobit regression does not provide an R-squared statistic.

Figure 1. The effects of social identification and perceived monitoring on adoption of new work behavior

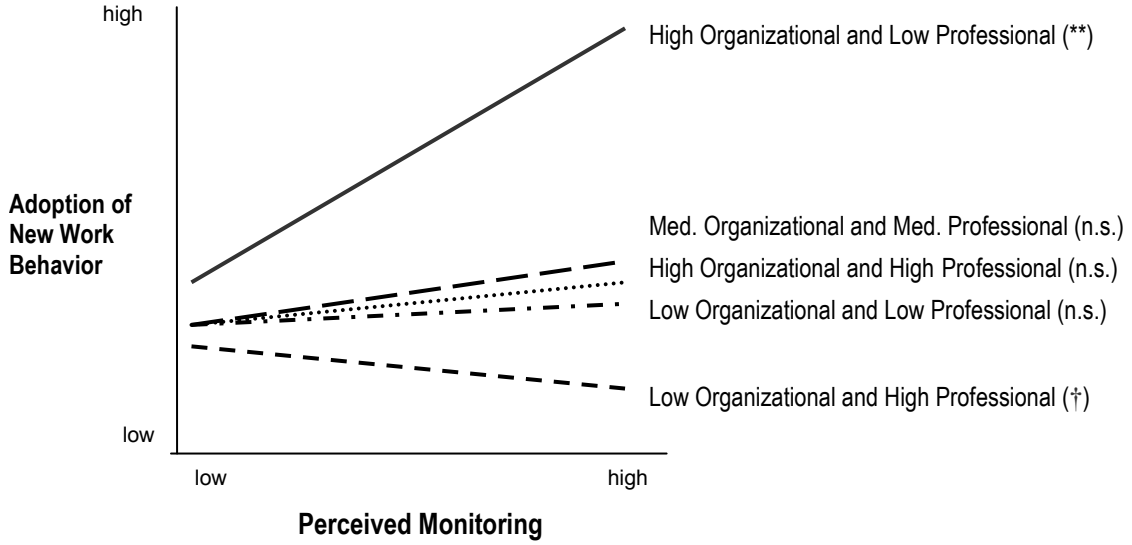
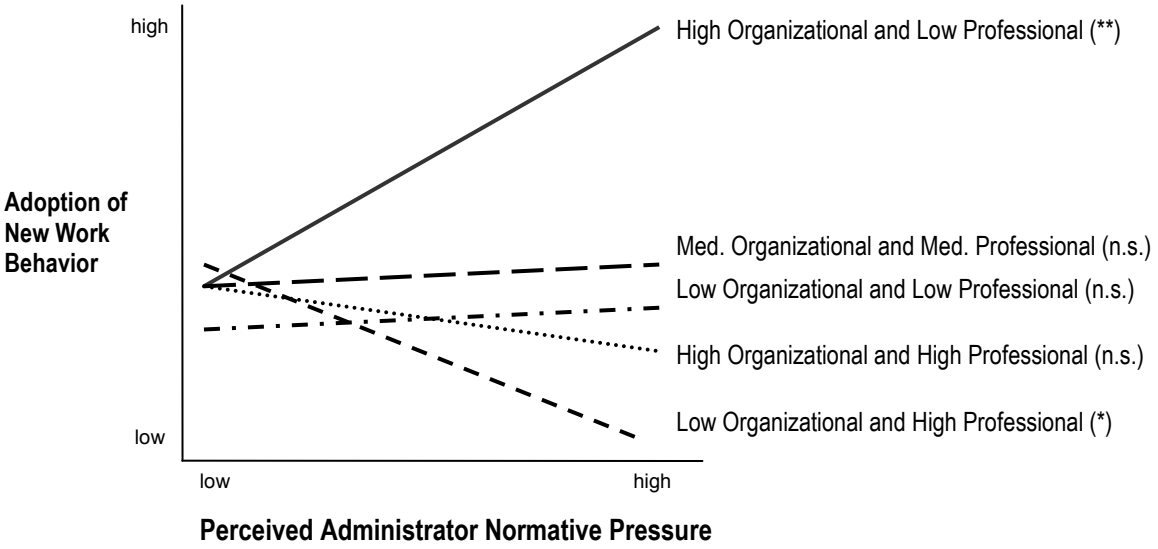


Figure 2. The effects of social identification and perceived pressure from administrators on adoption of new work behavior



** p < .01; * p < .05; † p < .10; n.s. p > .10