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DEVIATIONS FROM THE NORM:
VITAL SIGNS AFFECTING ATTRIBUTIONS OF
ORGANIZATIONAL CITIZENSHIP BEHAVIOR MOTIVES

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DEVIATIONS FROM THE NORM:
VITAL SIGNS AFFECTING ATTRIBUTIONS OF
ORGANIZATIONAL CITIZENSHIP BEHAVIOR MOTIVES

A DISSERTATION APPROVED FOR THE
MICHAEL F. PRICE COLLEGE OF BUSINESS

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I first visited the University of Oklahoma campus on February 11, 2005, and after spending a day interviewing with faculty members, meeting the other doctoral students, and walking around the campus with Dr. Bolino, who would become my advisor and dissertation chair, I knew this was where I wanted to pursue my Ph.D. I said as much to Elaine, my wife, via cell phone as I walked back to my car to start the trip back to Lubbock late that afternoon.

These last four years have only served to confirm that initial assessment. For reasons too numerous to list here, I am very thankful to have been given the opportunity to study at this fine school and to work with faculty and doctoral students who have become respected colleagues and friends. Though completion of my degree means I will be moving on, I know these relationships will endure, and I look forward to continuing to work with you over the coming years.

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I also appreciate my wife's parents, Tom and Sheryl Black, for their encouragement over these last four years. I am sorry, Tom, that I could not use any of

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ABSTRACT

Since the organizational citizenship behavior (OCB) construct was introduced twenty-five years ago (Bateman & Organ, 1983; Smith, Organ, & Near, 1983), researchers have directed a great deal of research effort toward understanding the antecedents and outcomes of these behaviors. Less attention, however, has been devoted to the underlying motivation for engaging in such behaviors, how peers evaluate coworkers' OCB, how peers' and supervisors' evaluations of these behaviors might differ, and the role played by OCB norms (Ehrhart & Naumann, 2004) in these evaluative processes. The purpose of this dissertation, therefore, is to examine specific hypotheses related to research questions arising from these gaps in the OCB literature. By addressing these questions, I hope to make four contributions.

First, this research addresses the peer evaluation gap in the OCB literature. Whereas most previous research has focused on supervisors' evaluation of OCB, markedly less research has addressed peer evaluations of coworkers' OCB. Second, this research addresses potential differences between supervisor and peer evaluations of others' OCB that may arise due to the different perspectives held by each of these types of observers. Third, this research addresses the role of attributions of motive about others' OCB. Though most prior research has downplayed the role of attributed motive, it may be that motive affects the relationship between OCB and its outcomes. Fourth, this research addresses a nascent topic in OCB research: OCB norms. Specifically, I examined the effect of deviation from OCB norms on the motives employees attributed to their coworkers' OCB.

I examined these questions in a sample of 51 employees. The results derived from this study do not support most of the hypotheses I constructed. OCB appears to be a strong predictor of prosocial motive, but there is only a little support for the hypothesized supervisor-peer differences. Furthermore, deviation from OCB norms does not significantly affect attributions of prosocial motive, nor does prosocial motive moderate the relationship between OCB and individual-level outcomes. These results appear to have been influenced by spuriously-high correlation between OCB and prosocial motive; the possible reasons for this correlation – as well as other aspects of the study that may have affected the results – are the focus of the Discussion.

CHAPTER 1:

INTRODUCTION

OCB Briefly: The Construct, Its Antecedents, and Its Consequences

Organizational citizenship behavior (OCB) is "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1988: 4). Generally speaking, employees who engage in OCBs are "good soldiers" – employees who go above and beyond what is required. Since the OCB construct was introduced twenty-five years ago (Bateman & Organ, 1983; Smith et al., 1983), researchers have directed a great deal of research effort toward further refining Organ's definition of the behavior as well as toward understanding the antecedents and outcomes of these behaviors (for a review, see Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Before addressing those aspects of OCB research, however, it may be useful to briefly review the origins of the construct.

The idea that satisfied workers are productive workers gained some measure of prominence during the time in which the Human Relations school of management thought dominated organizational studies (Wren, 2007). Researchers in this tradition generally emphasized the importance of understanding human behavior and motivation. Though the writers who belonged to the Human Relations school did not explicitly propose the satisfaction-causes-performance relationship (Organ, 1977), this idea is certainly consistent with their perspective. Despite the general plausibility of the relationship, however, consistent empirical evidence in favor of this hypothesis failed to materialize (Iaffaldano & Muchinsky, 1985; Organ, 1977).

Organ (1977) argued that the emphasis on required job performance in most studies, rather than discretionary employee behaviors (which he later referred to as organizational citizenship behaviors) might help account for the inconsistent empirical link between job satisfaction and job performance. What Organ described was a "criterion problem" (Austin & Villanova, 1992) in which an expected relationship fails to materialize not because it does not exist but because there is a problem – in this case, a deficiency – with the criterion measure. Organ simply proposed that commonly-used measures of job performance were deficient (i.e., they did not capture the broader "performance" criterion space), and this kept the expected empirical relationship between the predictor (satisfaction) and the criterion (performance) from emerging consistently.

In subsequent research with his students (e.g., Bateman & Organ, 1983; Smith et al., 1983), Organ more formally developed and introduced the construct of OCB, drawing upon the work of Barnard (1938) and Katz (1964) who, long before such behaviors were labeled OCB, had discussed them – and their importance for organizational functioning. Barnard, in his theory of formal organization, proposed that effective organizations depend most fundamentally on the willingness of employees to cooperate – to contribute their personal efforts on behalf of the organization. He described this willingness as loyalty and *esprit de corps* not associated with an employee's position or compensation, which parallels Organ's (1988) conceptualization of OCB as discretionary, not necessarily formally rewarded, and important for organizational effectiveness. Similarly, Katz (132) argued that organizations rely on "innovative and spontaneous activity" that extends beyond

formal job requirements not merely for organizational effectiveness but perhaps even for the very survival of the organization. These activities are acts of cooperation that facilitate the effective functioning of organizations, but are not typically included as a part of employees' formal job requirements. Again, this is very similar to Organ's (1988) definition of OCB.

Over the years, many different types of behavior have been identified as OCB. Indeed, in their review of the OCB literature, Podsakoff and colleagues (2000) found that researchers had identified nearly 30 behaviors as OCBs. Podsakoff et al. (2000) grouped them into seven categories including interpersonal helping, being a good sport in the face of inconveniences and impositions (i.e., sportsmanship), promoting and defending the organization to outsiders (i.e., organizational loyalty), complying with organizational rules and regulations even when no one is watching (i.e., organizational compliance), going beyond basic work requirements to an almost-voluntary degree (i.e., individual initiative), participating fully in organizational life (i.e., civic virtue), and improving oneself in ways valuable to the organization (i.e., self-development).

The seven categories of behaviors identified by Podsakoff and colleagues (2000) do not represent the only attempt to categorize behaviors conceptualized as OCB. For example, Organ (1988) identified five dimensions (altruism, generalized compliance, sportsmanship, courtesy, and civic virtue), while Williams and Anderson (1991) identified only two, classified by the target of the behavior: OCB-I (behaviors targeted at other individuals) and OCB-O (behaviors targeted at the organization in general). Van Dyne, Graham, and Dienesch (1994) found empirical support for their

five-dimensional conceptualization of OCB, which included obedience, loyalty, and three types of participation (social, advocacy, and functional). More recently, Settoon and Mossholder (2002) identified two forms of interpersonal citizenship behavior (task-focused and person-focused) that will figure prominently in my study.

While the specific behaviors that constitute OCB have received a great deal of attention from researchers, so too have the antecedents of these behaviors (see, e.g., Farh, Podsakoff, & Organ, 1990; Moorman, 1991; Niehoff & Moorman, 1993; Organ, 1994; Organ & Konovsky, 1989; Rioux & Penner, 2001). The impetus for research into antecedents of OCB is related to the conceptualization of OCB as behavior that facilitates organizational functioning and, by extension, organizational success. Therefore, by knowing what the antecedents are, organizations can encourage employees to engage in these beneficial behaviors or endeavor to hire employees who are more likely to perform them (Bolino & Turnley, 2003b).

Broadly speaking, social exchange theory may provide an overarching explanation for why people engage in OCB. Social exchange relationships are ones in which behaviors are exchanged in a loosely-defined manner (as opposed to economic exchange, which involves the trading of benefits in a well-defined manner) (Blau, 1964; Gouldner, 1960; Homans, 1958). The open-endedness of social exchange makes it well-suited to explain the OCB phenomenon. Simply put, the theory suggests that when organizations treat employees well (e.g., by giving them satisfying jobs, treating them fairly, and providing them with supportive leadership) employees tend to reciprocate by engaging in behaviors that benefit the organization. Subsequent work affirmed the role of social exchange as a theoretical foundation for the motivation of

OCB, and this theory has often been used to help explain how constructs function as antecedents of citizenship behavior (Organ, 1988, 1990).

OCB-related outcomes, too, have been the target of research as well, although somewhat less attention has been paid to outcomes relative to antecedents. In recent years, however, an increasing amount of research effort has been focused on outcomes thought to be related to OCB. Given the conceptual underpinnings of OCB as behavior that facilitates organizational functioning, one focus of this research has been on unit or organization performance. Researchers have theorized that OCBs should enhance the performance of units or organizations because such behaviors in the workplace can make employees and supervisors more productive, free up important resources so that they can be used more productively, facilitate coordination, make it easier to attract and retain workers, and contribute to the development of social capital (Bolino, Turnley, & Bloodgood, 2002; Podsakoff et al., 2000). Generally, empirical research has provided evidence that OCB is positively related to measures of unit or organizational performance.

Research also indicates a positive relationship between OCB and supervisor ratings of employee performance (Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996). Podsakoff et al. (1993) suggest a number of reasons why supervisors may give better performance ratings to employees who perform OCB. For example, norms of reciprocity may lead supervisors to repay employees who are good citizens with higher ratings of job performance, they may implicitly believe that citizenship and overall job performance are related which leads them to give better

ratings to good citizens, or they may simply tend to notice OCB because such behavior is behaviorally distinct and accessible.

Therefore, after roughly twenty-five years of OCB research, we have accumulated a great deal of evidence regarding antecedents and outcomes of this type of behavior. However, there are a number of OCB-related research questions that have not been addressed as completely or, in some cases, have not been addressed at all. Specifically, there are gaps in the OCB literature related to perceived motives for engaging in OCB, the establishment and enforcement of OCB norms, and the different perspectives supervisors and peers might adopt toward these behaviors. Though underlying motives and, to a lesser degree, OCB norms have been the focus of some research, perceived motives for others' OCB has been addressed far less frequently. Additionally, to my knowledge, no one has addressed questions related to deviation from OCB norms at all, nor has anyone linked those deviations to perceived motives for engaging in OCB. Finally, most prior research has focused more on supervisors' evaluations of subordinates' OCB rather than on peers' evaluations of their coworkers' OCB. These gaps, then, are the focus of this dissertation.

Prior Research (and Gaps) Directly Related to This Study

In this part of the Introduction, I will briefly review prior research that does address these less-examined areas within the broader spectrum of OCB research that are directly related to my study. These brief reviews serve to set the stage for more detailed discussions in Chapter 2, where those details will serve as background and support for the arguments leading to my hypotheses.

Supervisors have been the focus of most OCB research dealing with how this type of behavior is perceived by others. For example, MacKenzie, Podsakoff, and Fetter (1991) found that helping and civic virtue, two forms of OCB, were positively related to overall evaluations of insurance agents. Similar findings were reported in MacKenzie, Podsakoff, and Fetter (1993) in multiple samples involving insurance agents, petrochemical salespeople, and pharmaceutical sales managers. Additional studies report similar outcomes (see, e.g., MacKenzie, Podsakoff, & Paine, 1999; Podsakoff & MacKenzie, 1994). In each of these studies, the unique contribution of OCB to the overall evaluation was greater than the unique contribution of objective task performance to the overall evaluation (Organ, Podsakoff, & MacKenzie, 2006). Examination of the unique contributions of OCB and subjective ratings of task performance reveals similar results. That is, supervisor ratings of OCB contributed more to supervisors' overall evaluations of subordinates than did subjective ratings of task performance (see, e.g., Borman, White, & Dorsey, 1995; Van Scotter & Motowidlo, 1996).

Research involving peer ratings related to others' OCB and task performance, however, is relatively rare. Two studies have examined these ratings relative to subjective measures of overall performance. Borman, White, and Dorsey (1995) reported findings similar to those in the studies involving supervisor ratings: OCB contributed more to overall evaluations than did subjective ratings of task performance. Van Dyne and LePine (1998), however, report the opposite effect, although this could possibly be the result of common method bias (Organ et al., 2006). Additionally, Lievens, Conway, and DeCorte (2008) compared ratings of OCB by

supervisors and peers and found that they provided significantly-different ratings of others' OCB, and Rioux and Penner (2001) examined the relationship between peer ratings of OCB and peer-rated motives for engaging in that behavior. The Rioux and Penner (2001) study, then, combines two elements that are central to my study: perceived motives and peer evaluations of others' OCB. As such, their findings are discussed in greater detail in the next chapter.

In recent years, researchers have begun to adopt a motivational perspective on OCB (Borman & Penner, 2001; Hanson & Borman, 2006). The result has been an increasing amount of empirical research directed toward helping us understand the reasons why employees decide to engage in OCB (Penner, Midili, & Kegelmeyer, 1997). Though the focus on motive has been gaining momentum lately, the concept of motive for engaging in OCB is not new. Organ (1990) discussed motives for engaging in OCB, but that discussion was aimed at highlighting what motivation could tell us about antecedents of OCB rather than how motives attributed by observers of others' OCB might fit into the nomological network surrounding OCB.

Motives or, more precisely, perceived motives, for engaging in OCB are important because at least one study indicates that different outcomes result depending on the motive attributed to the behavior. In particular, Eastman (1994) created multiple scenarios consisting of behavioral logs that contained both task-related and extra-role behaviors, the latter of which were constructed using Jones' (1964) ingratiation typology. Despite being based on ingratiation concepts, more subjects perceived these behaviors to be OCB than ingratiation. Eastman's results indicate that overall performance rating and pay allocation were indeed the highest when the

attribution of motive was good citizenship and lowest when ingratiation was deemed to be the motive. In another study, the causal motive (altruism or instrumentality) attributed by the manager for the employee's OCB mediated the relationship between OCB and overall evaluation (Allen & Rush, 1998). This provides some evidence that employees may not necessarily engage in OCB due to prosocial or altruistic motives only.

I will more fully review these and a handful of other studies that deal with perceived motives for engaging in OCB in Chapter 2, but for the purpose of this Introduction, these studies provide evidence that perceived motives influence outcomes such as performance ratings and compensation decisions and highlight the potentially-important role played by perceived motives for OCB.

Finally, researchers have begun to address the role of citizenship norms with respect to individuals' performance of OCB (Bommer, Dierdorff, & Rubin, 2007; Bommer, Miles, & Grover, 2003; Ehrhart, Bliese, & Thomas, 2006; Ehrhart & Naumann, 2004), but investigations of OCB norms remains in an early stage of development. Norms are "rules and standards that are understood by members of a group, and that guide and/or constrain social behavior without the force of laws" (Cialdini & Trost, 1998: 152). They develop through social interaction and are enforced via social reward or sanction rather than formal channels. This social-interaction foundation provides ample cause for expectations of the existence of OCB norms.

The OCB norms concept arose out of research in which work group outcomes were theorized to be related to levels of OCB within the work group. This research is

based on the aggregation of individual OCB to the group level. Ehrhart and Naumann (2004) introduced OCB norms as a conceptualization of OCB at the group level and provided a model in which they suggested how OCB norms are developed, maintained, and related to individual, group, and task characteristics. Though I do not test relationships proposed in their model, I will draw heavily from their conceptualization of OCB norms (see Chapter 2) and suggestions for measuring them (see Chapter 3).

In summary, extant research on differential evaluations of others' OCB depending on observers' role-based perspectives, the motives observers perceive for others' OCB, and the role of OCB norms is limited, even within the bounds of each of these individual topics (role-based perspectives, perceived motives, and OCB norms). Furthermore, no published research has yet addressed the intersection of these phenomena. Gaps, however, are not necessarily inherently interesting or important. These particular gaps, though, are both interesting and important because they have the potential to affect the social interaction of employees in the workplace in ways that I will now discuss in the context of the research questions that motivated this study.

Research Questions and Potential Contributions

There is a single, overarching research question that I will address in this dissertation: With respect to OCB, how do supervisors and peers respond when they perceive a discrepancy between individuals' actual OCB and OCB norms? This general question gives rise to more specific questions: Do deviations from OCB norms prompt attributions about whether the performance of OCB is motivated by prosocial concerns? Do supervisors and peers make different attributions about the motivation

of others' OCB? Do the motive attributions made by supervisors and peers affect individual-level outcomes such as likeability and ratings of general performance? Finally, with regard to the attributions of peers and supervisors, does it matter if OCB are task- or person-focused in nature? By addressing these questions, I hope to make at least four contributions to the OCB literature.

First, this research addresses the peer-evaluation gap in the OCB literature. Most previous research has focused on supervisors' (rather than peers') evaluation of OCBs (Podsakoff et al., 1993), probably because these evaluations are related to ratings of overall job performance, and understanding performance appraisal processes in organizations is an important area of research within the human resource management literature (Bennett, Lance, Bennett, & Woehr, 2006; Borman et al., 1995). Little research, however, has addressed peer evaluations of OCB, even though peer reactions to OCB may have meaningful bearing on individual and (ultimately) organizational outcomes as well.

Second, this research addresses the potential differences between supervisor and peer evaluations of others' OCB and seeks to determine if their different perspectives result in different evaluations of those behaviors. For example, the "good soldier" from the supervisor's perspective may be the "rate buster" in the eyes of peers (Dalton, 1948). In other words, behaviors that may be rewarded by supervisors may be the source of agitation among peers, with potentially detrimental effects on group dynamics and productivity (Bolino, Turnley, & Niehoff, 2004).

Third, this research expands our knowledge about the influence of perceived motives for engaging in OCBs. While most research conceptualizes OCB as a

prosocial behavior (Organ, 1988), some researchers have noted that engaging in OCB can be impression enhancing and in fact may be motivated, at least partially, by self-interest (e.g., Bolino, 1999; Fandt & Ferris, 1990). Though the behaviors may not be qualitatively different (this is an open empirical question as well (Bolino, 1999)) and may appear identical, it is still possible for two observers to witness the behavior and draw very different conclusions that may influence their future interaction with the person they observed. I suggest that perception of deviation from OCB norms influences perceived motive for the behavior.

Fourth and finally, this research also expands our knowledge about the relationship between actual and normative OCB. The very notion of citizenship norms is a relatively new focus of OCB research (see, e.g., Bommer et al., 2007; Ehrhart & Naumann, 2004), but it has relevance for OCB motive attributions because unexpected actions (i.e., deviation from norms) increase the salience of behavior (Hastie, 1984; Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981) which, in turn, increases the likelihood of observers making conscious, evaluative attributions (Malle, 2004). I contend that those attributions will include perceived motives for the behavior and that the perceived motive affects other judgments made by the perceiver.

In the next chapter, I introduce my theoretical model and discuss the hypotheses I will test.

CHAPTER 2:

THEORY AND HYPOTHESES

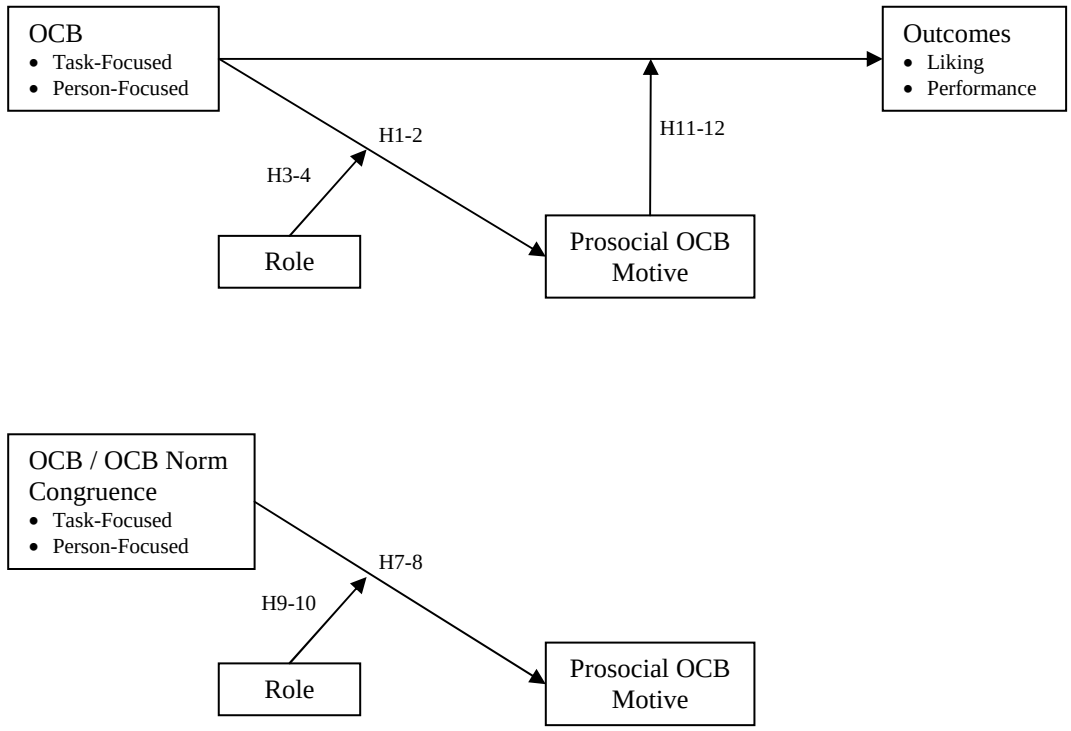
In this chapter, I first briefly explain a model depicting relationships among OCB, OCB norms, perceived prosocial motive for engaging in OCB, and two outcome variables: ratings of liking for coworker and performance of coworker. Next, I define terms that will play an important role in the remainder of this dissertation, and then I address the role that social exchange theory plays in helping to explain the existence of norms as well as recognition of and reactions to deviations from those norms. Finally, having laid the general foundation for the theoretical perspective I am applying, I then present a series of specific hypotheses based on the research questions discussed in Chapter 1.

The Model

My proposed model appears in Figure 2.1. Whereas Ehrhart and Naumann's (2004) model of OCB norms deals primarily with the effects of the various types of norms on individual group members' performance of OCB, my model deals with outcomes of types of OCB (task- and person-focused), OCB norms (again, task- and person-focused), the role of the perceiver (i.e., supervisor or group member), perceived prosocial motive for engaging in OCB, and outcomes of OCB (liking for coworker, performance rating of coworker).

In summary, I argue that, generally speaking, observers are likely to perceive that others' task- and person-focused OCBs are the result of prosocial motives (Hypotheses 1 and 2). This direct effect may, however, be moderated by the role of the perceiver (Hypotheses 3 and 4). This moderating effect may be the result of a

Figure 2.1
Model and Hypotheses



Note: Hypotheses 5 and 6 do not appear in the Figure.

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role-guided preference for a particular type of OCB (Hypotheses 5 and 6 – not represented in Figure 2.1). The generally-positive relationship between OCB and prosocial motive for engaging in OCB may be altered, however, based on congruence of perceived OCB with perceived OCB norms (Hypotheses 7 and 8). Furthermore, that congruence-based relationship may also be moderated by the role of the perceiver (Hypotheses 9 and 10). Finally, I argue that prosocial motive for engaging in OCB moderates the relationship between OCB and two outcome variables: liking for coworker and performance rating of coworker (Hypotheses 11 and 12).

Definition of Terms

Having presented the model using the terminology that will be used for the rest of this dissertation, it is necessary to define these terms and address some key issues surrounding the focal constructs.

OCB

As mentioned previously, OCB is "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1988: 4). Some researchers have taken issue with Organ's definition of OCB because of the results of empirical investigations. First, some studies have provided evidence that some workers do not perceive OCB to be discretionary. Williams and Anderson (1991) were among the first to observe that, prior to their study, there was a lack of empirical evidence that OCB and in-role (non-discretionary) behavior (IRB) are distinct. Their study provided some evidence to the contrary. Morrison (1994), however, found evidence that both supervisors and subordinates have trouble distinguishing between OCB and IRB. Specifically, employees who defined OCB as part of their job engaged in more of those behaviors than did those who defined their jobs more narrowly.

While Podsakoff and colleagues (2000) took issue with Morrison's methods, other researchers have reached conclusions similar to Morrison's. For example, supervisors appear to have difficulty distinguishing between IRB and some facets of contextual performance (Van Scotter & Motowidlo, 1996). Furthermore, supervisors and subordinates sometimes have different ideas about job role boundaries, with

supervisors tending to define job roles more broadly than do their subordinates (Lam, Hui, & Law, 1999). Various personal and situational characteristics also affect employees' OCB role definitions (Kamdar, McAllister, & Turban, 2006). More recently, researchers have found evidence that OCB and IRB are distinct, though strongly related (Hoffman, Blair, Meriac, & Woehr, 2007). Overall, though, the evidence with regard to the discretionary nature of OCBs is mixed.

Furthermore, researchers have also found that OCB is often rewarded. For example, in sales-oriented jobs some types of OCB appear to be positively related to overall performance ratings and in most cases accounted for more of the variance in those ratings than did measures of objective task performance (MacKenzie et al., 1991, 1993; Organ et al., 2006; Podsakoff & MacKenzie, 1994). Likewise, in an experimental setting, Werner (1994) also found that OCB influenced overall performance evaluations. Others, however, disagree. For example, in a conceptual paper, Bergeron (2007) argues that reward systems typically favor IRB rather than OCB. There is also empirical evidence in favor of this perspective (Lievens et al., 2008).

While definitional issues regarding OCB have often been debated, much of the discussion is the result of researchers focusing on the discretionary and unrewarded aspects of Organ's (1988) definition without paying due attention to Organ's more complete elaboration of the construct. Specifically, when defining OCB, Organ also argued that there is a discretion/reward continuum such that OCB is relatively discretionary in that it varies across employees (i.e., some employees perform more OCB than others do) and that OCB is "relatively less likely to lead to any clear, fixed

path to formal rewards" (5). Organ has reiterated this stance in later work (Organ, 1997; Organ et al., 2006), and I adopt this perspective in this dissertation as well.

Many specific behaviors have been classified as OCB over the years, and various attempts have been made to collapse them into categories or dimensions (see Organ et al., 2006 for a recent and detailed discussion). Because of the specific research questions I am addressing in this dissertation, I will be focusing on two types of OCB. Task-focused OCB involves behavior targeted at getting work done, whereas person-focused OCB involves behavior targeted at getting along with coworkers (Settoon & Mossholder, 2002). Task-focused OCB is less personal and deals with (as expected given its name) characteristics of the task environment in an organizational setting. Person-focused OCB, on the other hand, has more to do with friendship and the social environment in which work is done. So, for example, an employee who listens to coworkers when they have to get something off their chest engages in person-focused OCB, while an employee who takes on extra responsibilities in order to help coworkers when things get demanding at work engages in task-focused OCB.

OCB Norms

Does OCB, then, constitute behavior that warrants the development and maintenance of group OCB norms? A brief review of the OCB literature with respect to empirical findings related to Feldman's (1984) reasons for enforcement of group norms suggests that OCB is important enough for group functioning to prompt norm development and enforcement.

First, prior theory and research suggests that OCBs are behaviors that are important for group performance (Podsakoff, Ahearne, & MacKenzie, 1997;

Podsakoff, MacKenzie, & Ahearne, 1997). Additionally and as mentioned previously, Katz promoted the notion that organizations depend upon "innovative and spontaneous activity" (1964: 132) not only for effective functioning but also for their survival. He reasoned that organizational planners cannot possibly foresee every eventuality and thus must rely on employees to engage in "protective and creative behavior" (132) in order to deal with unforeseen situations. As described in Chapter 1, the findings of prior empirical research examining the relationship between OCB and group or organizational performance largely supports Katz's theoretical perspective. Thus, groups may develop and enforce OCB norms because they facilitate group performance and survival.

In addition to developing and enforcing OCB norms for the purpose of survival, groups may develop and enforce OCB norms in order to make individual group members' behavior more predictable (Feldman, 1984). For example, knowing that group members will take on additional work without complaining (i.e., by engaging in sportsmanship) makes it more acceptable for group members to ask others in the group for help when they possess the expertise to deal with a particular problem.

Groups may also develop and enforce OCB norms in order to avoid embarrassing interpersonal problems (Feldman, 1984). Indeed, as Ehrhart and Naumann (2004) argue, not performing OCB when it is expected could lead to interpersonal problems. For instance, keeping co-workers informed about information and events that may affect the workgroup (i.e., by engaging in courtesy) helps to ensure that no group member is caught in an awkward situation due to lack of

information they are expected to possess. Thus, OCB norms help group members to know what is expected and respond accordingly.

Finally, groups may also develop and enforce OCB norms in order to establish a group identity (Feldman, 1984). As Feldman (1984: 48) observes, "norms serve an expressive function for groups (Katz & Kahn, 1978)." When group members' values are oriented toward getting things done and getting along, then, it follows that these values will find expression in behavior. In this case, that behavior falls within the realm of task- and person-focused OCB. Thus, OCB norms are one way in which the values of the group are impressed upon group members and outsiders, helping the group establish an identity.

Overall, then, groups are likely to create and enforce OCB norms as a means of regulating social behavior in a work setting in an effort to ensure the group's success, make behavior more predictable, avoid undesirable interpersonal situations, and establish the group's identity.

The basic idea of OCB norms, however, raises the possibility that the resulting behaviors are not actually OCBs. After all, the fact that behavior is normative means that it is expected and, therefore, is no longer entirely discretionary. However, employees can view their behavior as being simultaneously discretionary and important for group functioning (George & Jones, 1997). Furthermore, as discussed previously in this chapter, the definition of OCB allows for lack of absolute discretion. Instead, OCB is behavior that is relatively discretionary and which "supports the social and psychological environment" (Organ, 1997: 95) of work.

Additionally, the idea that adherence to (or deviation from) OCB norms carries the consequence of reward (or sanction). The consequences associated with adherence to or deviation from prescribed norms, though, are not formal or explicit. That is, they are brought about through the social system rather than through the authority structure or chain of command (Ehrhart & Naumann, 2004). In other words, then, this is a different sort of consequence than was addressed in the definition of OCB, which contemplated formal rewards (Organ, 1988). Therefore, Ehrhart and Naumann (2004: 962) conclude that "it is certainly possible for norms to form with regard to OCB without violating the definition of OCB".

Based on principles of social exchange, previous theoretical work from the general group norms literature, and recent theorizing regarding OCB norms, I argue that groups have ample cause to develop and enforce OCB norms. There is some empirical evidence in support of this argument, though some of this research does not label the phenomena under investigation as OCB norms. For example, Bommer and colleagues found that the mean level of OCB of others in one's workgroup influenced one's own OCB (Bommer et al., 2003). Furthermore, Bommer et al. (2007) found that group-level OCB moderates the relationship between individual-level OCB and individual-level performance ratings such that high individual OCB in a group where OCB is rare was associated with higher individual-level performance ratings by supervisors (Bommer et al., 2007).

Others have explicitly adopted concepts from the general norms literature (for a review of the general norms literature, see Cialdini & Trost, 1998) and applied them in the context of OCB research (Ehrhart et al., 2006; Ehrhart & Naumann, 2004). Most

notably, Ehrhart and Naumann (2004) developed a conceptual model that incorporates several different types of norms – descriptive, injunctive, subjective, and personal – relating them to individual-level OCB. To date, however, results of tested hypotheses based on their model have not been published.

Perceived OCB Motives

Previous Research on OCB and Motives

Since the introduction of the OCB construct, there seems to have been an implicit assumption that people who engage in OCB are motivated by prosocial motives, or desires to benefit other people (Grant & Mayer, ; Rioux & Penner, 2001). This is evidenced by the frequent references to these employees as "good soldiers" (see, for example, Bateman & Organ, 1983; Organ, 1988 among others). In fact, Organ (1988) discusses the influence prosocial behavior had on early OCB researchers' thinking. Prosocial behaviors are "positive social acts carried out to produce and maintain the well-being…of others" (Brief & Motowidlo, 1986: 710) and there is usually "no apparent prospect of extrinsic reward" (Organ et al., 2006: 4) for the person who engages in them. Prosocial behaviors include helping others in distress, volunteering, and donating to causes deemed worthy of contribution, and the like (Organ, 1988). Certainly these descriptions of prosocial behavior sound very much like behavior identified as OCB, which implies that prosocial motives may very well be one explanation for why people engage in OCB.

However, researchers have also suggested that instrumental motives could be at work. For example, Bolino (1999) proposed that rather than being "good soldiers," employees engaging in OCB could also be "good actors." That is, some employees'

OCBs could be motivated – at least some of the time – by impression management motives (i.e., a desire to portray themselves in such a way as to create a desirable image of themselves in the eyes of others). Rioux and Penner (2001) developed a Citizenship Motives Scale and conducted a study in which they found that OCB is proactive behavior with one or more underlying motives. These motives included both altruistic-oriented ones (organizational concern and prosocial values) as well as an instrumentally-oriented one (impression management). Other research also suggests that employees consistently engage in OCB only when they believe they will be rewarded fairly for their efforts (Allen & Rush, 1998; Borman et al., 1995; Folger, 1993; Haworth & Levy, 2001; Werner, 1994).

For some time now, prosocial and instrumental motives have been cast as opposite ends of a motivational continuum (for a review addressing egoism and altruism as the basis for helping behavior, see Penner, Dovidio, Piliavin, & Schroeder, 2005). Others, however, have suggested that these motives can coexist (Bolino, 1999; De Dreu, 2006; Meglino & Korsgaard, 2004).

Allen and Rush (1998) included both altruistic and instrumental motives in their analysis of the relationship between OCB and overall evaluation and reward recommendation, hypothesizing motive as a mediator of that relationship. Using hierarchical regression and entering the two motive variables as a block, they found support for their mediation hypothesis, but post-hoc analyses indicated that only the altruistic motive variable was responsible for this effect. Allen and Rush seem to have conceptualized these two motives as being independent from each other as well as representative of the entire range of motives that may underlie OCB. Despite their

apparent treatment of these two motives as independent, they still seem to treat them as if people who engage in OCB are motivated only by one or the other, but not both simultaneously (which would have imposed an interaction effect in their analyses, which was absent).

Grant and Meyer examined prosocial and impression management (i.e., instrumental) motives for engaging in OCB. However, in contrast to Allen and Rush (1998), they examined the interaction of these motives. In two studies, they found positive interactions between prosocial and impression management motives when predicting helping, courtesy, and initiative (three behaviors classified as affiliative OCB (Van Dyne, Cummings, & Parks, 1995)), thereby providing support for the idea that these motives are not mutually exclusive.

My conceptualization of the role of perceived OCB motive draws from these previous studies in three ways. First, I view perceived motive as a response to observing another individual's OCB as well as a response to perceived deviation from OCB norms. This is in contrast to Grant and Meyer , who examined motive as a predictor of OCB. Second, I view perceived motive as a moderator of the relationship between OCB and liking and performance evaluations. This is in contrast to Allen and Rush (1998), who examined both motives (in a single block) as mediators of the relationship between OCB and their dependent variables. Finally, I hypothesize and test only perceived prosocial motive, although I do conduct some post-hoc analyses using perceived instrumental motive.

A Theoretical Perspective on Attributions

The question of how people actually attribute a motive to others' behavior has long been a staple of research in psychology (see, e.g., Heider, 1958; Jones & Davis, 1965; Kelley, 1967 for just a few perspectives on attribution). Most variants of attribution theory have a shortcoming that makes them inappropriate for use in this study: the dichotomous person or situation cause. Malle (2004) juxtaposes the folk theory of mind and behavior with more traditional attribution theories and proposes that it provides a framework through which a more complete understanding of how people make sense of others' behavior may be achieved. Indeed, Malle (2004: 127) offers a revealing scenario that illustrates the shortcomings of the person/situation dichotomy:

> Imagine that you were asked by a colleague, "Why didn't you come to the talk yesterday?" and you answered, "It was due to something about me." Even if your colleague were familiar with attribution theory, she would not be satisfied with your response.

Instead, your colleague would want to know more precisely what it was about you that prevented your attendance. A folk theory of mind and behavior provides a more detailed framework than any of these aforementioned theories as well as a means to better understand why specific behavioral choices are made.

A full explanation of this theory is beyond the scope of this discussion, since I am neither testing nor extending this theory – merely using its logic to support my arguments about perceived motives. However, three key elements of the theory deserve elaboration here because they are directly relevant to the research questions I am investigating.

First, and most fundamentally, the theory takes into consideration whether behavior was intentional or not (B. F. Malle & J. Knobe, 1997). This is an important distinction because people tend not to make the more detailed and meaningful attributions contemplated by folk theory about behavior that is not perceived to be intentional. That is, when behavior has an external cause, there is no need for detailed attribution. For example, no attribution is required by the observer who witnesses a person shivering in a cold room; it is evident what brought about the behavior. Relating this intentionality concept to OCB, engaging in OCB can be thought of as intentional behavior. This assumption is consistent with previous work that conceptualizes OCB as behavior that is relatively discretionary (Organ et al., 2006). Indeed, employees do not help each other, take work home with them, or keep each other informed by accident; they must take deliberate, considered action in order to engage in these behaviors.

Second, observers who form reason explanations rely on knowledge structures to arrive at specific reasons for others' behavior. Both Malle (2004) and Abelson (1981) relate knowledge structures and cognitive scripts, which are schemas or cognitive representations, for individuals' own behaviors and for understanding others' behaviors. In the course of social interaction, people encounter cues which may invoke script-based expectations and behavioral responses. In the context of this study, counter-normative behavior can serve as a cue that invokes scripted responses (i.e., making attributions of motive for the deviation from OCB norms).

Third, folk theory does not provide any sort of framework for drawing formulaic, specific attributions, *a la* Kelley's (1967) covariation model. In any event,

the person/situation attributions contemplated by traditional attribution perspectives are inadequate to the present task because the behaviors under consideration are driven by inherently internal motives. Thus, adopting one of the traditional attribution-theory perspectives would not help us decide which specific motive we attribute to another's action – only that such an attribution is "something about the person," and this would provide little clarity with regard to the research question at hand. Combined with other concepts related to making social judgments, then, it is possible to derive some specific motive attributions based on deviation from OCB norms using concepts from folk theory.

My central argument is that knowledge structures provide both the baseline for expected behavior and the relatively programmatic response to deviation from those normative (or expected) behaviors. Norms establish how people should act, but actual behavior deviates from these norms. Although there is some leeway for deviation (Feldman, 1984), adherence to norms is expected, making deviations unexpected in the sense that they are unusual. That is, while observers implicitly know that people sometimes will deviate from norms, when they are confronted with actual deviation they are surprised. This surprise, in turn, functions as a cognitive arousal that prompts evaluation of the counter-normative behavior. In this way, perceived deviation from norms satisfies conditions for which people wonder "why?" (B. F. Malle & J. M. Knobe, 1997), which results in cognitive search for a motive for the observed counter-normative behavior.

Having defined several key terms and discussed previous research that has bearing on this present study, I will now address the final theoretical perspective that

contributes to the arguments in support of my hypotheses: social exchange theory (Blau, 1964; Homans, 1958)[1].

Foundation: Social Exchange Theory

Social exchange theory is founded on the concept of the norm of reciprocity (Gouldner, 1960), which sociologists, social psychologists, and even classical philosophers (e.g., Cicero) have long-posited as a fundamental element of social stability. Put simply, the norm of reciprocity is the expectation that people respond to the actions of others in kind. Thus, when a benefit is received, a benefit should be given in return, and when harm is received harm likewise will be given. I conceptualize conformity to (or deviation from) norms as an act of social exchange. Specifically, conformity to norms is perceived as a benefit that prompts favorable response in return, whereas deviation from norms is perceived as harm that prompts an unfavorable response.

On first glance, the norm of reciprocity seems very transaction-oriented, as if the parties involved are keeping strict, detailed accounts of benefits and harms. In a word, it seems economic. Blau positioned social exchange, however, as an alternative to economic exchange, describing the differences by saying, “Only social exchange tends to engender feelings of personal obligation, gratitude, and trust; purely economic exchange as such does not" (1964: 94). In other words, social exchange affects attitudes and feelings in the parties to an exchange, but it is not predicated on the explicit negotiation of specifics, such as what constitutes a fair exchange or when the implicitly-expected reciprocal action will take place.

[1] Note: I am not testing social exchange theory directly in this study. I am simply adopting concepts from social exchange theory to support my arguments

In fact, as mentioned previously, social exchange theory is prominently featured as a theoretical basis for why employees engage in OCB (Organ, 1988, 1990). Specifically, Organ (1990) discussed how OCB is a social exchange response on the part of employees to, among other things, fair treatment by the organization. Though this exchange (OCB for fair treatment) seems at odds with the definition of OCB as behavior for which one does not receive compensation, Organ (1990: 63) argued that "[w]hereas economic exchange demands a specific quid for a particular quo, fairness in social exchange requires only a sense that the relationship is based on 'good faith' recognition of each other's contributions." Social exchange theory, then, is an appropriate perspective for my investigation because it deals with the nature of ongoing interactions of individuals and has a long history of application in organizational settings.

Group Norms: Social Exchange Phenomena

Cialdini and Trost defined social norms as "rules and standards that are understood by members of a group, and that guide and/or constrain social behavior without the force of laws" (1998: 152). As such, group norms are social exchange phenomena: social norms emerge by way of group members' interactions over time. Group members observe others' behavior, and they use the information they have gathered to guide their own behavior (Bandura, 1977). As they experience more interactions, members of a group learn what behaviors are expected and tend to respond in kind based on the general norm of reciprocity (Gouldner, 1960). Failure to do so often results in sanctions that originate in the social network rather than in some formal authority (Cialdini & Trost, 1998). These sanctions function to motivate the

offender to regulate his or her behavior so that it will be in accordance with group norms (Feldman, 1984). That is, group members are implicitly encouraged to reciprocate normative behavior. In this way, then, group norms are governed by the implicit expectations of reciprocity that are inherent in social exchange relationships.

Norms develop in a number of ways. For example, norms may arise from repeatedly-observed behaviors. Thus they propagate by means of observation and mimicry. For example, if a group member observes that other group members work late in order to meet a deadline for a report, the observer learns that deadlines are taken seriously and that work should be completed on time, no matter what it takes. When that employee encounters a similar situation, then, he or she is likely to do what is necessary to complete the task, including staying late. Norms are also related to behaviors that have social-acceptance consequences. That is, they "characterize the perception of what most people approve or disapprove" (Cialdini, Kallgren, & Reno, 1991: 203). Whether by observation, social sanction, or some combination of the two, norms may be conceptualized as social exchange phenomena because they are linked with the notion of reciprocity, which is itself a general norm that influences behavior in a wide variety of situations.

However, group norms are not established or enforced for every possible situation (Feldman, 1984). Rather, they emerge from behavior that is important to group functioning (Cartwright, 1968). I believe there are good reasons to expect OCB norms to exist, and arguments in favor of this position were provided in the OCB Norms section (above). The larger point argued here is that social exchange theory

provides an appropriate perspective from which to think about group norms generally and OCB norms specifically.

Perceived Motives and Social Exchange

Previous research is consistent with my use of social exchange as a meaningful conceptualization for how perceived motives for OCB emerge and how those motives affect other relationships. For example, perceived motives affect other decisions raters make about those they have rated (Ferris, King, Judge, & Kacmar, 1991). Consistent with this idea, Eastman (1994) examined personnel decisions made by experimental subjects using Kelley's (1967) covariation model of attribution. His findings suggested that consensus (i.e., the degree to which other employees acted similarly) influenced whether helpful behaviors were seen as OCBs (sincere, prosocially-motivated) or as ingratiation (insincere, instrumentally-motivated). Those who were labeled as insincere received lower rewards than those who were deemed to be sincere. Similar effects were reported by Johnson, Erez, Kiker, and Motowidlo (2002). This highlights a social exchange effect: a future reward appears to have been influenced by previous social interaction, in this case, a perceived motive for engaging in OCB.

In the next section, I will develop specific hypotheses based on the model shown in Figure 2.1 (p. 14).

Hypotheses

Perceived Motive for Engaging in OCB

Direct Effect

In general, I expect observers to attribute actors' OCB to prosocial motives. This is based on the idea that OCB is, on the face of it, positive behavior. That is, on

the basis of the behavior itself, there is no reason to make an instrumental (or negative) attribution. After all, being helpful, courteous, or conscientious in one's dealings with others tends to be well-received, absent some reason to think otherwise. Therefore, I propose the following hypotheses:

Hypothesis 1: Task-focused OCB is positively related to attributions of prosocial motive.

Hypothesis 2: Person-focused OCB is positively related to attributions of prosocial motive.

The Perceiver's Role as a Moderator

People make consciously-evaluative attributions about events only when those events are salient (Malle, 2004; Salancik & Conway, 1975), and events become salient due to hedonic relevance. That is, events become salient because the observer perceives some personally-important outcome to be linked to the event in some way. For example, the announcement of a new procedure in the workplace may become salient to employees who will be evaluated, at least in part, based on their compliance with the new procedure. Notably, the same announcement is less likely to be salient to those who are not affected by the altered procedures. Thus, different employees may process and react to the same event differently.

Following the notion of hedonic relevance, certain aspects of events and behaviors may be salient to supervisors and peers due to their different perspectives. It may be useful to think about these different perspectives as being driven by differences in roles. Task roles "facilitate and coordinate team effort in selecting, defining, and solving common problems" (Mumford, Van Iddekinge, Morgeson, &

Campion, 2008: 251). Supervisors are more likely than non-supervisory group members to focus on task roles (Benne & Sheats, 1948) because task roles are more salient to supervisors. Conversely, maintenance roles (Benne & Sheats, 1948), which "are oriented toward strengthening, regulating, and perpetuating the team as a team" (Mumford et al., 2008: 251), are more likely to be salient to non-supervisory group members.

Extending this concept to OCB, different types of OCB are likely to be salient to supervisors and group members based on their perceived importance for achieving desired outcomes. In particular, some types of OCB are more closely related to aspects of task requirements and, therefore, should be more salient with respect to task roles. For example, individual initiative "involves engaging in task-related behaviors at a level that is so far beyond minimally required or generally expected levels that it takes on a voluntary flavor" (Podsakoff et al., 2000: 524). Similarly, self-development behaviors, which are "behaviors employees engage in to improve their knowledge, skills, and abilities" (Podsakoff et al., 2000: 525), have a distinct task-relatedness to them. Other types of OCB appear to be more strongly related to aspects of the social environment and, thus, should be more salient with respect to maintenance roles. One example of this is courtesy, which involves taking measures to prevent problems with group members and considering the effects that one's own actions may have on others.

Previous research indicates that supervisors generally place more emphasis on task performance when rating individuals' performance (see, e.g., Borman et al., 1995; Conway, 1999; Rotundo & Sackett, 2002; Werner, 1994) and when determining individuals' rewards (e.g., Allen & Rush, 1998; Kiker & Motowidlo, 1999; Orr,

Sackett, & Mercer, 1989). If Bergeron's (2007: 1089) assertion that "managers tend to overvalue certain OCB dimensions and undervalue others" is true, then it is likely that they will essentially prefer task-focused OCB over person-focused OCB and that they will prefer task-focused OCB more than will group members (subordinates). This is consistent with the notion that supervisors are more concerned with getting things done than with how supportive group members are to one another.

Peers, however, may care more about getting along than getting things done. Indeed, in contrast to supervisors, research indicates that peers tend to weight citizenship performance more than task performance when rating overall job performance (Lievens et al., 2008). This suggests that group members tend to adopt a more social-focused perspective than do supervisors. Because OCB is generally conceptualized as behavior that contributes to the social environment of the organization, I expect that group members will value person-focused OCB more than do supervisors, and that they will prefer person-focused OCB over task-focused OCB.

The preceding arguments, then, suggest the following hypotheses:

Hypothesis 3: The focal individual's role moderates the relationship between task-focused OCBs and attributions of prosocial motives.

Hypothesis 4: The focal individual's role moderates the relationship between person-focused OCBs and attributions of prosocial motives.

Hypothesis 5: Among supervisors, task-focused OCB will be more strongly related to attributions of prosocial motives than will person-focused OCB.

Hypothesis 6: Among group members, person-focused OCB will be more strongly related to attributions of prosocial motives than will task-focused OCB.

Attribution of Motive for Deviation from OCB Norms

Direct Effect

Norms are expected behaviors, and departures from normative behavior are, therefore, unexpected. When people encounter unexpected behavior, they tend to make conscious attributions about why the behavior occurred (Hastie, 1984). As discussed previously (see the Perceived OCB Motives section above), I conceptualize OCB norms as expected behaviors that are embedded in employees' knowledge structures. Because OCB norms, like other norms, tend not to be formally mandated but socially learned, people incorporate what is expected into their schemas (knowledge structures). Observers take into consideration both the behavior at hand as well as conceivable alternatives when trying to explain behavior (Hastie, 1984).

Because norms are valued behaviors by supervisors and groups, deviation from them is most likely to be viewed as a negative evaluation of the norm, and therefore of the social environment established within the group as well. The reason for this is that the norm would not be developed or enforced unless the behavior was deemed important (Feldman, 1984). Recall that norms are enforced in order to promote survival, reduce uncertainty, avoid embarrassing interpersonal situations, and maintain a valued identity. A person who deviates from established norms threatens the success of the group or perhaps even its survival. At the very least, the deviation serves as a rejection of the group's social structure. I expect deviation, then, to prompt the observer to make less favorable attributions of OCB motive.

However, consistent with Feldman's (1984) discussion of the existence of an acceptable range of deviation from norms, I also expect there to be diminishing returns

for extremes of behavior. Noticeable-but-not-extreme deviation should be associated with prosocial attributions. Go too far, however, and attributors may explain the actor's extreme deviation with lower prosocial attributions in which observers conclude that the actor must have an ulterior motive for deviating from the norm so drastically.

This is reminiscent of the ingratiator's dilemma (Gordon, 1996) in the impression management literature. When someone engages in ingratiatory behavior, the behavior must reach a threshold in order to be perceived and to result in the desired image of likeability (Turnley & Bolino, 2001). However, the behavior must not be so extreme that it exceeds the acceptable level of ingratiation, beyond which an undesired image (i.e., sycophant) is likely to result. Similarly, very small deviations from OCB norms are not likely to prompt drastically different motive attributions, but as the deviation increases, so too does the probability of a lower prosocial motive rating.

Therefore, while attributors tend to give the actor who deviates from norms the benefit of the doubt, they only do so up to a point (Feldman's "this far and no further" (1984: 48)). Therefore, when OCB and OCB norms are deemed congruent, a higher prosocial motive rating will result, but when OCB and OCB norms are incongruent, a lower prosocial motive rating will result.

> Hypothesis 7: The degree of perceived congruence between task-focused OCBs and task-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution.

Hypothesis 8: The degree of perceived congruence between person-focused OCBs and person-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution.

The Perceiver's Role as a Moderator

As with direct evaluations of OCB, perceived deviation from OCB norms will prompt a motive attribution. Applying the arguments in support of Hypotheses 3 through 8, then, group members and supervisors will compare perceived OCB with OCB norms, and as a result of doing so perceive the degree to which they believe prosocial motive was the motivation for the behavior. Consistent with those preceding arguments, group members and supervisors may make different attributions based on their differing roles in the group and the resulting preferences for one type of OCB over the other.

Stated another way, because I expect supervisors to show a preference for task-focused OCB, I expect task-focused OCB norms to be the focal comparative norm when they attribute motives to subordinates' OCB. Similarly, because I expect group members to show a preference for person-focused OCB, I expect person-focused OCB norms to be the focal comparative norm when they attribute motives to subordinates' OCB. For both supervisors and group members, high levels of the non-preferred type of OCB should result in lower prosocial motive ratings when the focal employee perceives others' OCB to deviate from OCB norms.

The foregoing arguments lead to the following hypotheses:

Hypothesis 9: The focal individual's role moderates the relationship between deviation from task-focused OCB norms and attributions of prosocial motives such that supervisors will make less favorable motive attributions than will subordinates for deviations from task-focused OCB norms.

Hypothesis 10: The focal individual's role moderates the relationship between deviation from person-focused OCB norms and attributions of prosocial motives such that subordinates will make less favorable motive attributions than will supervisors for deviations from person-focused OCB norms.

The Moderating Effect of OCB Motive Attributions

Once a motive has been attributed, social exchange shapes the attributor's response. Deviation from the norm is likely to alter exchange relationships adversely since people tend to evaluate counter-normative behavior negatively (Feldman, 1984; Schachter, 1951). Conformity or adherence to norms, on the other hand, is likely to have a neutral or positive effect on exchange relationships, since such behavior reinforces and implicitly validates the norm. Consequently, it is expected that the perceived motive for engaging in OCB may influence the relationship between OCB and both liking and overall performance rating, which is consistent with Eastman's (1994) findings (discussed earlier).

Hypothesis 11: The focal individual's attribution of prosocial motive moderates the relationship between OCB and liking for the rated coworker such that liking for the rated coworker will be higher when the focal individual attributes a higher prosocial motive for the rated coworker's OCB.

Hypothesis 12: The focal individual's attribution of prosocial motive moderates the relationship between OCB and ratings of overall performance for the rated coworker such that the rated coworker's performance will be rated higher when the focal individual attributes a higher prosocial motive for the rated coworker's OCB.

In the next chapter, I will provide details about the sample, research design, measures, and analyses used in testing these hypotheses.

CHAPTER 3:

METHOD

Research Setting

The sample consists of employees of a financial institution in the south-central United States. The organization has branches throughout the region, and ten (10) of these branches permitted their employees to be contacted and invited to participate in this study. Though the analyses involved in this study involve individual-level perception variables, the inclusion of group norms as a focal construct requires that participants be able to identify their workgroup and report their perceptions of OCB norms within that group.

The branch structure of the organization is ideal for this study for several reasons. First, because each branch is relatively small and isolated, the groups are well-defined; there is no question about what constitutes a group in this setting. Second, the relatively small number of employees in each branch increases the likelihood that individual group members will have sufficient contact with other group members to report their perceptions of those group members accurately. Third, because each group is relatively isolated, it is more likely that distinct norms exist, providing some between-group variance and within-group agreement regarding the norms perceived by the group members.

Procedure

Upon receiving consent from the organization to conduct the study, a non-participating employee from the organization provided names and e-mail addresses for potential participants. Additionally, this list identified the employees' branch and role

(supervisor or group member). Based on this information, participant-specific web-based surveys were created since the variability in group size made it impractical to use a generic survey instrument (e.g., some participants needed to rate a different number of coworkers, and a generic survey instrument could have been confusing and error-prone). The surveys were not participant-specific in terms of scale items; rather, each survey identified each coworker to be rated, which guided the participant through to the end of the survey (i.e., rather than asking the participant to complete a generic survey once for each group member, which would have been error-prone). Each individualized survey shared a common consent section highlighting the general purpose of the study as well as assurance of confidentiality for those who chose to participate. I then uploaded these surveys to a web server that I leased for data collection purposes. Survey 1 and Survey 2 are included in Appendices B and C, respectively.

Once these preparations were completed, the same non-participating employee mentioned previously, who was a manager over several of the branches of the organization and known to the potential participants, sent an e-mail message to all of the potential participants informing them that they would receive an invitation to participate in a research project. They were assured that their participation (or lack thereof) would be confidential and that none of their individual information would be revealed to anyone in the organization. Approximately two hours after sending this e-mail, potential participants received an e-mail message from me inviting them to participate in the study. This e-mail message reiterated the assurance of confidentiality and provided each employee with a link to their participant-specific survey.

Potential participants who did not complete Survey 1 were invited a second time one week later and, if necessary, a third time two weeks after the original invitation. Those who did not complete Survey 1 after three invitations were not invited again. Participants who completed Survey 1 were invited to complete Survey 2 two weeks after completing Survey 1, their Survey 1 responses having been recorded with a date-time stamp to indicate when they had completed the survey. Again, those who had not completed Survey 2 one week after having been invited were invited a second time and, if necessary, a third time two weeks after the original invitation. Among those who completed both surveys, the average time between surveys was approximately 21 days. The minimum and maximum numbers of days between surveys were 14 and 34, respectively.

Seven participants were chosen at random to receive one gift card from the five $20 gift cards and two $50 gift cards (to the merchant of their choice) that were offered as inducement to participate in the study. Participants were informed of this inducement in the e-mail invitations. The seven "winning" participants were identified using a randomization function in a spreadsheet that contained participant codes (not names), and I informed each of them separately via an e-mail message.

Sample

Sixty-eight (68) employees were invited to participate in the study, of which 58 (85.3%) responded to the Time 1 survey. Of those who participated at Time 1, 51 (87.9% of Time 1 participants) also responded to the Time 2 survey. Thus, 51 employees consented to participate in the study and completed both survey instruments, resulting in an overall response rate of 75%.

The employees work in groups ranging in size from 6 to 12, with an average size of 7. The mean number of participants per group was 5.6, with a minimum and maximum of 2 and 7, respectively. There were 14 male participants (27.5%), and the mean age in the sample was 27.7 years, with a minimum age of 18.9 years and a maximum age of 58.4 years. The mean tenure of all participating employees with their employer was 36.7 months, with a minimum and maximum of 2 and 456, respectively. Of the 68 potential participants, 20 (29.4%) fulfill a supervisory role; the remainder fulfill a subordinate role. Participants included 17 supervisors (85% of supervisors) and 34 subordinates (70.8% of subordinates).

Though the study involved employees working in group settings, the analyses are at the individual level. That is, I examined individuals' perceptions of multiple individual coworkers' behaviors as well as attitudes of the rater toward the rated coworker. Thus the data were arranged in such a way as to include all information about the rater (i.e., sex, age, role) and ratings of one other group member per record; each participant appears in the dataset once for every coworker they rated. I discuss the rationale for this arrangement in more detail in the Analyses section below but include these comments here in order to explain how 212 observations were created using data from 51 participants.

I examined these 212 observations looking for multivariate outliers using a SAS macro that calculates robust Mahalanobis distances for each observation. These distances are robust in that the macro makes multiple passes through the dataset recalculating Mahalanobis distances without including observations previously identified as outliers. Thus, it iterates through the dataset until no more individual

observations can be identified as multivariate outliers. For an observation to be identified as an outlier, the probability of the Mahalanobis D^2 value had to be less than 0.001. This was a conservative approach to eliminating observations; only the most extreme multivariate outliers were excluded from the final dataset. A total of 5 observations were eliminated using this technique.

The final sample, therefore, consisted of 207 observations: 86 supervisor-subordinate dyads and 121 subordinate-subordinate dyads.

Measures

Descriptive Statistics

Table 3.1 provides descriptive statistics and information about distributional characteristics for the variables included in the study. I will make reference to these statistics as I discuss each measure, focusing mainly on the skewness, kurtosis, and Shapiro-Wilk's *W*. Briefly, skewness refers to the distribution of the data compared to a normal distribution. Positive skewness indicates the data are skewed to the right (piled up on the left), and negative skewness indicates that the data are skewed to the left (piled up on the right). Kurtosis refers to the peakedness of the distribution. Positive kurtosis indicates that observations are bunched around the mean more densely than in a standard normal distribution (taller in the middle), and negative kurtosis indicates that observations are bunched around the mean less densely than in a standard normal distribution (shorter in the middle). Shapiro-Wilk's *W* is a statistic for evaluating univariate normality; a significant test is evidence of departure from normality.

Table 3.1
Descriptive Statistics, Including Distributional Characteristics

Label	Min	Max	Mean	Std Dev	Lower 95% CL for Mean	Upper 95% CL for Mean	Skewness	Kurtosis	Shapiro-Wilk W
Sex [a]	0.00	1.00	0.74	0.44	0.68	0.80	-1.10	-0.80	0.55 ***
Age (yrs) - actual	18.95	58.37	28.82	10.43	27.39	30.25	1.66	1.74	0.76 ***
Distrust of others	1.00	4.75	1.96	0.91	1.84	2.09	1.09	0.87	0.88 ***
Work Interdependence	3.80	7.00	5.89	0.90	5.77	6.02	-0.53	-0.54	0.93 ***
OCB - person-focused	2.13	7.00	5.64	1.10	5.49	5.79	-0.69	0.10	0.94 ***
OCB - task-focused	1.71	7.00	5.35	1.29	5.17	5.52	-0.64	-0.17	0.94 ***
OCB norms - person-focused	2.88	7.00	5.70	0.93	5.57	5.82	-0.52	0.12	0.95 ***
OCB norms - task-focused	2.88	7.00	5.38	1.03	5.24	5.52	0.01	-0.54	0.94 ***
OCB motive - prosocial	2.90	7.00	5.86	0.96	5.72	5.99	-0.68	-0.11	0.93 ***
Likability	3.25	7.00	6.12	0.84	6.01	6.24	-1.01	1.01	0.87 ***
Performance	1.00	7.00	5.45	1.26	5.27	5.62	-0.90	0.68	0.92 ***

Note . N = 207.

[a] 0 = Male, 1 = Female

Additional details about each variable, including information about the scale metrics, scale items and sources, reliability coefficients in the current sample, and distributional characteristics are provided in the text which follows. All survey items are provided in Appendix A, and histograms, QQ plots, and probability plots for each variable as well as a scatter plot matrix of the variables are provided in Appendix D.

Additionally, it is important to note that several measures were completed multiple times by each participant, each time with a different coworker as the ratee. In nine of the ten groups involved in the study, employees in supervisory roles completed the scale for each subordinate in the group, and each group member (i.e., non-supervisory employee) completed the scale for every other group member. The tenth group consisted of 12 employees, which would have involved two supervisors rating ten subordinates each and each of the ten subordinates rating their nine coworkers, which was deemed too time-consuming by the organization. Therefore, in this group supervisors were asked to rate only five of their subordinates, which corresponded to the data collection demands for supervisors in the other groups. These five subordinates were randomly selected from the entire group. Likewise, group members were also asked to rate five randomly-selected coworkers.

The selection process did, however, ensure that every group member was evaluated by at least one other coworker and one supervisor. For each measure that involved the participant rating multiple coworkers using the same scale, these same procedures were followed. In the discussion of each variable below, the number of times the measure was completed (either once per participant or multiple times per participant) will be clearly indicated.

OCB Scale

Items for both OCB and OCB norms were drawn from several scales commonly used in OCB research. The selection of these items was based on the conceptual fit with the types of OCB that are the focus of this research: task-focused OCB and person-focused OCB. Ten items were drawn from Settoon and Mossholder's (2002) 14-item Interpersonal Citizenship Scale, including five items from the person-focused subscale and five items from the task-focused subscale. Three items were drawn from Van Scotter and Motowidlo's (1996) interpersonal facilitation and job dedication scales, which map onto the person-focused and task- focused OCBs, respectively, that are the focus here. Two items were drawn from Bolino and Turnley's (2005) 15-item individual initiative scale. These items fit the conceptualization of task-focused OCB. Finally, one item was drawn from Podsakoff and colleagues' (1990) 24-item scale. Specifically, the item was drawn from the courtesy items, and as such, it corresponds with the person-focused OCB type. The wording of these 16 items was adapted to match both the research setting and the research questions to be addressed. Details of these variations are described below.

Task- and Person-Focused OCB

Participants rated each of their coworkers using the scale items described above. Thus, this was a multiple-measure variable as described at the beginning of the Measures section (above). The participants were instructed to rate the focal person's actual behaviors using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

The task-focused OCB subscale consisted of eight items. The coefficient alpha for this variable was 0.95, and all eight items were retained. As shown in Table 3.1, there was some skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution. The person-focused OCB subscale also consisted of eight items. The coefficient alpha for this variable was 0.93, and all eight items were retained. The distributional characteristics of this variable were very similar to those of the task-focused OCB measure.

Confirmatory factor analysis (CFA) was employed in order to assess whether or not the conceptualization of these measures as distinct constructs was supported in this dataset. To accomplish this, the fit of a one-factor model in which all OCB items, both task- and person-focused, were loaded onto a single factor was compared with that of a two-factor model in which task- and person-focused OCB items were loaded onto separate factors. Using maximum-likelihood estimation and randomly-created item parcels (Floyd & Widaman, 1995), the two-factor model (χ^2 = 34.69, df = 8; GFI = .95, CFI = .98, TLI = .97, RMSEA = .13, RMR = .03) fit these data significantly better than the one-factor model did (χ^2 = 249.52, df = 9; GFI = .66, CFI = .85, TLI = .75, RMSEA = .36, RMR = .08), as determined by a χ^2-difference test.

OCB Norms

Kozlowski and Klein (2000: 38) recommended that "researchers employ measures consistent with the conceptualization of their constructs, using unit-level referents, if possible, to assess shared unit-level constructs" Ehrhart and Naumann (2004: 962) elaborated on how to apply this general recommendation to the

measurement of injunctive (prescriptive) OCB norms, the individual perceptions of which are a focal aspect of this study. Specifically, they suggested that "when measuring injunctive OCB norms, the survey questions should ask about the individual's perceptions of what behaviors their fellow group members think should be performed (e.g., 'members of my group advocate the importance of helping coworkers')." Following these recommendations, the OCB items described above were altered to create scales to measure participants' perception of the OCB task- and person-focused norms within their workgroup.

Participants responded to these items only once rather than once for each group member. Thus, this was a single-measure variable as described at the beginning of the Measures section (above). The task-focused OCB norm subscale consisted of eight items. The coefficient alpha for this variable was 0.93, and all eight items were retained. As shown in Table 3.1, there was some kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution. The person-focused OCB norm subscale also consisted of eight items. The coefficient alpha for this variable was 0.93, and all eight items were retained. The distributional characteristics of this variable indicated some skewness and kurtosis, and again, the test for normality indicated possible departure from normality.

To examine whether or not the conceptualized task- and person-focused dimensionality exists within the current dataset, CFA was again employed. The fit of a one-factor model in which all OCB norm items, both task- and person-focused, were loaded onto a single factor was compared with that of a two-factor model in which

task- and person-focused OCB norm items were loaded onto separate factors. Using maximum-likelihood estimation and randomly-created item parcels (Floyd & Widaman, 1995), the two-factor model (χ^2 = 81.63, df = 8; GFI = .89, CFI = .94, TLI = .89, RMSEA = .21, RMR = .04) fit these data significantly better than the one-factor model did (χ^2 = 216.67, df = 9; GFI = .72, CFI = .84, TLI = .73, RMSEA = .34, RMR = .07), as determined by a χ^2-difference test. However, these fit statistics indicate that even a two-factor model displays less than ideal fit, particularly in regard to the high RMSEA value.

Because the items used in the OCB and OCB norm scales are so closely related, the latter having been adapted from the former only in regard to a different referent, it was necessary to assess the discriminant validity of these measures. Once more, CFA involving several nested models was employed for this purpose. In the first model, all OCB and OCB norm items were loaded on a single factor. In the second model, all of the OCB items were loaded on a single factor and all of the OCB norm items were loaded on a single factor. Finally, in the third model the task- and person-focused items were separated, resulting in a four-factor model where each dimension of each variable loaded on separate factors. The results, summarized in Table 3.2, indicate that the 4-factor model fit the data significantly better than either the 1- or 2-factor models, indicating that OCB norms are statistically distinct from OCBs.

Prosocial OCB Motive

Perceived motives for engaging in OCB were assessed using items and ideas drawn from Allen and Rush (1998), Rioux and Penner (2001), and Grant (2008). Participants responded to these items once for each member in their group. Thus, this

Table 3.2
CFA Results for 1-, 2-, and 4-Factor Models Involving OCB and OCB Norms Items

Model	χ^2	*df*	GFI	CFI	TLI	RMSEA	RMR	χ^2 Difference Test 1	2	3
1	1599.28	54	0.37	0.48	0.36	0.37	0.34	.	.	.
2	568.07	53	0.63	0.83	0.78	0.22	0.10	0.00	.	.
3	175.28	48	0.88	0.96	0.94	0.11	0.05	0.00	0.00	.

Note . Model 1 = 1-factor model, Model 2 = 2-factor model, Model 3 = 4-factor model

was a multiple-measure variable as described at the beginning of the Measures section (above). Participants were instructed to indicate the extent to which they agreed that each item was the reason why the rated employee exhibits behaviors considered above and beyond the call of duty. Their responses were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The variable was comprised of ten items, the coefficient alpha for which was 0.94; all ten items were retained in the aggregated variable. As shown in Table 3.1, there was some skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution.

Liking

Liking for coworkers was assessed using the 4-item measure from Wayne and Ferris (1990). Participants responded to these items once for each member in their group. Thus, this was a multiple-measure variable as described at the beginning of the Measures section (above). Participants were instructed to indicate the extent to which they agreed or disagreed about the item's content with regard to a particular coworker.

Their responses were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The variable was comprised of four items, and the coefficient alpha for this measure was 0.92; all four items were retained in the aggregated variable. As shown in Table 3.1, there was a fair amount of skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution.

Performance

Employee job performance was assessed using a variation of Wayne and Liden's (1995) 4-item measure (see also Bolino & Turnley, 2003a). Participants responded to these items once for each member in their group. Thus, this was a multiple-measure variable as described at the beginning of the Measures section (above). Participants were instructed to indicate the extent to which they agreed or disagreed about the item's content with regard to a particular coworker. Their responses were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The coefficient alpha for these four items was 0.90; all four items were retained in the aggregate variable. As shown in Table 3.1, there was a fair amount of skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution.

Control Variables

Four control variables were included in the analyses based on prior OCB research and factors distinct to this particular study. I include sex as a control variable based primarily on Organ and Ryan's (1995) contention that men and women might

vary in regard to the amount and type of OCB in which they engage. Though their analyses did not bear this out, there are good reasons to believe that such an effect is plausible. For example, Heilman and Chen (2005) found support for their hypotheses concerning differential outcomes for men and women who engaged in (or withheld) particular forms of OCB relative to sex-role expectations for these behaviors. I also included age as a control variable based on initial conversations with the organization's representative, who indicated that age would vary a great deal among the employees invited to participate in this study; indeed, the age range of participants covered a span of some 40 years.

Work interdependence was assessed as a measure of the degree to which participants depend upon each other in the course of getting their work done. A low degree of interdependence among coworkers might indicate that work is accomplished independently, calling into question the validity of ratings of others behaviors and the participants' assessments of coworkers' liking and performance. Work interdependence was measured using Pearce and Gregersen's (1991) five-item scale. Participants responded to these items only once; therefore, it was single-measure variable as described at the beginning of the Measures section (above). Participants were instructed to indicate the extent to which they agreed or disagreed about the item's content. Their responses were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The coefficient alpha for these five items was 0.93; all five items were retained in the aggregate variable. As shown in Table 3.1, there was some skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal

distribution. The mean for this variable was well above the midpoint of the scale (mean = 5.89, midpoint = 4), indicating a high degree of interdependence among workgroup members.

Because this study deals with perceptions of motive, liking, and ratings of performance and the relationship of these constructs with OCB, it is possible that people who are predisposed not to trust others would tend to rate others lower on these variables because of that predisposition rather than because of deviations from OCB norms (in the case of prosocial motive as outcome) or because of the motive attributed to the behavior (in the case of liking and ratings of performance). For this reason, then, distrust of others was included as a control variable in the analyses. The five items were drawn from Dahling, Whitaker, and Levy's (2009) distrust of others subscale of their Machiavellianism scale. Participants responded to these items only once; therefore, it was single-measure variable as described at the beginning of the Measures section (above). Participants were instructed to indicate the extent to which they agreed or disagreed with each item. Their responses were recorded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The coefficient alpha for the original five items was 0.70, but by dropping the first item from the scale ("People are only motivated by personal gain"), the coefficient alpha rose to 0.76; therefore, only four items were retained in the aggregate variable. As shown in Table 3.1, there was some skewness and kurtosis in evidence for this measure, and the Shapiro-Wilk *W* statistic was significant, indicating the possibility of a non-normal distribution. The mean for this variable was well below the midpoint of

the scale (mean = 1.96, midpoint = 4), indicating a low degree of distrust among workgroup members.

I also collected information about the size of each group based on Bommer and colleagues (2003). However, there was very little variance in group size among the groups involved in this study, which reduced the value of including it as a control variable in the analyses. Thus, I omitted group size as a control variable in my analyses.

Summary

Table 3.3 provides a summary of the variables involved in this study, including the number of times each measure was completed by each participant.

Table 3.3
Summary of Measures

Measure	Survey #	Number of Times Completed By Supervisor	Group Member
OCB	1	N	N
OCB Norms	2	1	1
Prosocial OCB Motive	1	N	N-1
Liking	2	N	N-1
Rating of Job Performance	2	N	N-1
Work Interdependence	1	1	1
Distrust of Others	1	1	1

Key .
1 = Completes this measure one time
N = Completes this measure for each member of the group, excluding supervisor
N - 1 = Completes this measure for each member of the group, excluding self and supervisor

Analyses

Because participants in the study completed several of the measures more than once, it was advisable to conduct analyses in such a way as to account for the lack of

independence of observation inherent in the dataset (Bliese, 2000). This was accomplished by conducting all hypothesis tests, except those for Hypotheses 5 and 6, using the MIXED procedure in SAS, which accounts for the clustered nature of the data. Furthermore, it is ideal for analyses on data from an unbalanced design, which is appropriate in the context of this study due to different group sizes and the voluntary nature of the study (not every group member chose to participate).

The data were structured by observation. That is, each participant was represented in the dataset once for every coworker for whom they provided ratings. Therefore, in a group consisting of five peers and two supervisors, a group member who completed both surveys in full would be represented four times (once for each peer), and a supervisor would be represented five times (once for each subordinate).

The following pseudo-code demonstrates how SAS PROC MIXED was used to conduct these analyses:

```
PROC MIXED COVTEST METHOD=ML;
CLASS ParticipantID;
MODEL DV = Controls IV(s) / SOLUTION DDFM=SAT;
RANDOM INTERCEPT / SUBJECT=ParticipantID TYPE=UN;
RUN;
```

There are two critical elements of this code in relation to the lack of independence of observation that exists in this dataset. These are the inclusion of the ParticipantID (a unique identifier for each participant in the study) in relation to the CLASS and SUBJECT keywords. This tells the software where the lack of independence of observation lies. Additionally, because the hypotheses tested in this study are all related to fixed effects (denoted by variables to the right of the equal sign in the

MODEL statement, it is necessary to specify maximum likelihood estimation (METHOD=ML in the PROC statement). Otherwise, SAS would use restricted maximum likelihood (REML) estimation, which is more appropriate for hypothesis tests about covariance parameters.

Table 3.4 provides the equations used for testing Hypotheses 1 through 4 and 7 through 12. Hypotheses 1 through 4 involve straightforward analyses: direct effects only (in Hypotheses 1 and 2) and interaction effects (in Hypotheses 3 and 4). The equations for Hypotheses 7 through 10, however, are more complex due to the congruence element of these predictions. Congruence is the term used to describe the degree of agreement between two variables as a predictor of one or more outcomes. Specifically, the congruence under examination in these hypotheses is between OCB and OCB norms. Historically, congruence analyses have utilized difference scores. That is, a simple algebraic difference between the two variables is calculated and analyzed. However, there are problems with this approach (Edwards, 1994; Edwards & Parry, 1993) that are avoided by employing polynomial regression analysis and three-dimensional surface plot analysis (see, e.g., Edwards & Cable, 2009; Jansen & Kristof-Brown, 2005).

Jansen and Kristoff-Brown (2005) specifically dealt with hierarchical data and utilized SAS' MIXED procedure to conduct polynomial regression analyses. Furthermore, their article included SAS syntax for polynomial models that I have adapted for use in the analyses of Hypotheses 7 through 10. This syntax also includes CONTRAST statements that allow for significance testing of specific parameters estimated by the model that are, in turn, used for construction of three-dimensional

Table 3.4
Equations for Hypothesis Tests (1 through 4, 7 through 12)

Hyp #	Equation
H1	$M = b_0 + b_1 O_{TF} + e$
H2	$M = b_0 + b_1 O_{PF} + e$
H3	$M = b_0 + b_1 O_{TF} + b_2 R + b_3 O_{TF} R + e$
H4	$M = b_0 + b_1 O_{PF} + b_2 R + b_3 O_{PF} R + e$
H7	$M = b_0 + b_1 O_{TF} + b_2 N_{TF} + b_3 O_{TF}^2 + b_4 O_{TF} N_{TF} + b_5 N_{TF}^2 + e$
H8	$M = b_0 + b_1 O_{PF} + b_2 N_{PF} + b_3 O_{PF}^2 + b_4 O_{PF} N_{PF} + b_5 N_{PF}^2 + e$
H9	$M = b_0 + b_1 O_{TF} + b_2 N_{TF} + b_3 O_{TF}^2 + b_4 O_{TF} N_{TF} + b_5 N_{TF}^2 + b_6 R + b_7 O_{TF} \mathrm{R} + b_8 N_{TF} R + b_9 O_{TF}^2 R + b_{10} O_{TF} N_{TF} R + b_{11} N_{TF}^2 R + e$
H10	$M = b_0 + b_1 O_{PF} + b_2 N_{PF} + b_3 O_{PF}^2 + b_4 O_{PF} N_{PF} + b_5 N_{PF}^2 + b_6 R + b_7 O_{PF} \mathrm{R} + b_8 N_{PF} R + b_9 O_{PF}^2 R + b_{10} O_{PF} N_{PF} R + b_{11} N_{PF}^2 R + e$
H11	$L = b_0 + b_1 O + b_2 M + b_3 OM + e$
H12	$P = b_0 + b_1 O + b_2 M + b_3 OM + e$

Legend.
L = Liking for coworker
M = Prosocial Motive
N_{TF} = Task-focused OCB norm
N_{PF} = Person-focused OCB norm
O = OCB (combined task- and person-focused)
O_{TF} = Task-focused OCB
O_{PF} = Person-focused OCB
P = Performance Rating
R = Role

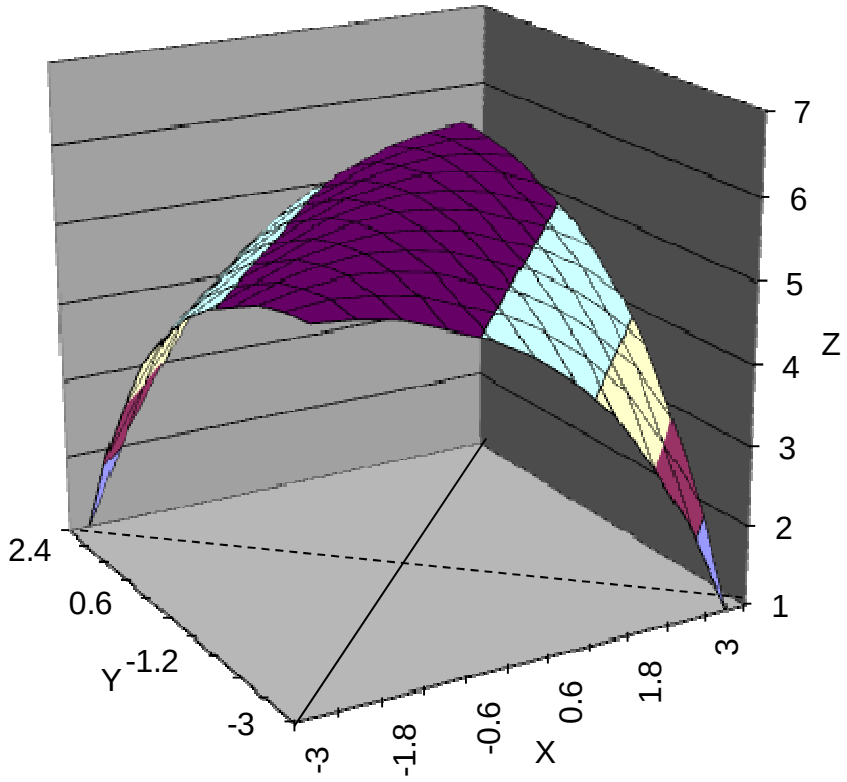
surface plots that provide a more detailed graphical representation of the hypothesized congruence relationship.

These three-dimensional plots can be described generically for all four hypotheses. The variables involved in the congruence relationship – in this specific study, OCB and OCB norms – are represented by two perpendicular horizontal axes, and the dependent variable (Prosocial Motive) is represented on the vertical axis. Figure 3.1 demonstrates the appearance of a theoretically-idealized value congruence relationship wherein the dependent variable values remain constant and maximized when congruence is perfect. The congruence line, along which the two variables involved in the congruence relationship are equal, is represented by a solid line along the floor of Figure 3.1, while the incongruence line, along which the absolute values of the two variables are equal but the actual values are opposite in sign, is represented by a dashed line along the floor of the figure. As shown in Figure 3.1, values in the shaded response surface decrease along the incongruence line.

The slope and curvature along the congruence and incongruence lines aid in interpretation. Specifically, they aid in assessing whether a congruence effect is supported by the results of the analysis (Edwards & Cable, 2009). The downward curve along the incongruence line in Figure 3.1 indicates that as variables X and Y differ in either direction, the value of the dependent variable decreases. This is evidence in support of a congruence effect. Additionally, the fact that the peak of the surface runs along the congruence line is also supportive of a congruence effect. Finally, the surface is flat along the congruence line, indicating that the level of the

outcome is invariant to the level of X and Y, so long as X and Y are equal. Again, this is evidence in favor of a congruence effect.

Figure 3.1
Sample Response Surface with Congruence and Incongruence Lines



These surface features can be described in terms of the parameter estimates generated by the MIXED procedure in SAS. Specifically, if the surface has a downward curvature along the incongruence line, then $b_3 - b_4 + b_5$ should be negative (see Figure 3.1). Also, when a line along the surface's ridge matches the congruence line, then the first principle axis is equivalent to the congruence line (X = Y) and has a

slope of 1 and an intercept of 0. Finally, when a surface is flat along the congruence line, then $b_1 + b_2$ and $b_3 + b_4 + b_5$ should both equal 0 (all three of these conditions are specified in Edwards & Cable, 2009). By using CONTRAST statements in the MIXED procedure in SAS, it is possible to perform significance testing on these combinations of parameters (Jansen & Kristof-Brown, 2005).

As previously stated, the surface in Figure 3.1 is an idealized one; finding a congruence effect that matches the idealized surface in every respect would be extraordinary. However, as Edwards and Cable (2009: 660-661) write with respect to congruence of individual and organizational values:

> …it would be misleading to conclude that failure to support all three conditions rejects the hypothesized value congruence effect. The first condition, which requires downward curvature along the incongruence line, is necessary to claim support for a value congruence effect. The second condition ensures that the dependent variable is maximized when individual and organizational values are congruent, but failure to support this condition does not necessarily preclude a value congruence effect. For instance, if the surface in Figure 2 was rotated but its ridge crossed the congruence line, then a value congruence effect would be supported at the level of individual and organizational values where the ridge intersects the congruence line. Finally, if the third condition is rejected, meaning the height of the surface varies along the congruence line, but the first two conditions are met, then support can be inferred for a value congruence effect with the caveat that the maximum value of the outcome depends on whether individual and organizational values are low or high.

Therefore, in my hypothesis tests, I will follow the guidelines laid out by Edwards and Cable (2009: 661):

> …we prioritized the three conditions such that if the first and second conditions were met, we inferred support for a value congruence effect (Edwards, 2007). If the first condition was met, but the second condition was not, we examined how the ridge deviated from the congruence line by examining the slope and intercept of the first principal axis (Edwards & Parry, 1993). These tests determined

> whether a congruence effect was obtained at particular levels of individual and organizational values. The third condition was tested to assess deviation from the idealized surface in Figure 2, but failure to support this condition was not considered grounds to reject a value congruence hypothesis.

For each congruence hypothesis, I calculated the slope and curvature values along the congruence and incongruence lines using equations specified in Edwards and Parry (1993). I also tested the significance of these combinatorial terms using CONTRAST statements in the SAS code for the hypothesized model.

As mentioned previously, Hypotheses 5 and 6 were not tested with the MIXED procedure since the tests were of simple correlations. For these hypotheses, the tests were conducted using Fisher's z', which allows for the analysis of differences in Pearson correlations by transforming them into z', which is a normally-distributed variable with a known standard error (Cohen, Cohen, West, & Aiken, 2003). The z' value can then be assessed to determine whether or not a significant difference in correlations exists.

CHAPTER 4:

RESULTS

Table 4.1 contains means, standard deviations, scale coefficient alphas, and intercorrelations among variables included in the study. The scale coefficient alphas ranged from 0.76 to 0.95, which indicates that all were above the generally-accepted value of 0.70.

However, there are some correlations that provide evidence of problems within the data. First, notice that person- and task-focused OCB are correlated (0.84). This is an extremely high correlation, which may indicate that despite the CFA results that indicate that the dimensions are distinct, participants may not actually think of the two types of OCB as being distinct. Second, this may also be the case with person- and task-focused OCB norms, which are also very strongly correlated (0.79). Third, both types of OCB are very highly correlated with prosocial motive (0.89 for person-focused OCB, 0.85 for task-focused OCB). Because the relationship between OCB and motive is a focal part of this study – several hypotheses deal with the relationship – this extremely high correlation may be a problem. A fourth peculiarity revealed in the correlation matrix is the relationship between OCB and OCB norms. Though the correlations between these variables are not extreme in terms of magnitude, the pattern of relationships is unexpected: task-focused OCB norms are more highly correlated with person-focused OCB than is person-focused OCB norms. This seems to provide additional support for the interpretation that participants did not consistently distinguish between person- and task-focused OCB and person- and task-focused OCB norms.

Table 4.1
Means, Standard Deviations, Scale Alphas, and Intercorrelations Among Study Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Sex [a]	0.74	0.44	—										
2 Age (yrs)	28.82	10.43	0.09	—									
3 Distrust of others	1.96	0.91	-0.22 **	-0.37 ***	*0.76*								
4 Work Interdependence	5.89	0.90	0.08	0.14 *	-0.16 *	*0.76*							
5 OCB - person-focused	5.64	1.10	-0.14 *	0.16 *	-0.15 *	0.16 *	*0.93*						
6 OCB - task-focused	5.35	1.29	-0.23 **	0.21 **	-0.15 *	0.09	0.84 ***	*0.95*					
7 OCB norms - person-focused	5.70	0.93	0.21 **	0.09	-0.31 ***	0.28 ***	0.16 *	0.11	*0.93*				
8 OCB norms - task-focused	5.38	1.03	0.15 *	0.07	-0.23 **	0.26 ***	0.27 ***	0.33 ***	0.79 ***	*0.93*			
9 OCB motive - prosocial	5.86	0.96	-0.14	0.21 **	-0.18 **	0.25 ***	0.89 ***	0.85 ***	0.20 **	0.30 ***	*0.94*		
10 Liking	6.12	0.84	0.12	0.07	-0.22 **	0.19 **	0.46 ***	0.38 ***	0.31 ***	0.30 ***	0.43 ***	*0.92*	
11 Performance	5.45	1.26	-0.03	-0.04	-0.04	0.03	0.45 ***	0.48 ***	0.13	0.21 **	0.40 ***	0.66 ***	*0.90*

Note . N = 207. Where appropriate, coefficient alphas appear on the diagonal.

[a] 0 = Male, 1 = Female

$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

In the tables that contain information about hypotheses tested using the MIXED procedure in SAS, at least two comparison models are included along with the hypothesized model. Because these two comparison models and other features of these tables appear repeatedly in the reporting of results, it is more efficient to describe them once at the outset than to describe them each time they appear below.

The first of these comparison models is the null model in which the criterion variable is modeled without any predictors whatsoever. This model estimates one parameter: the mean of the criterion variable (Singer, 1998). The second comparison model is the null model plus control variables. By providing additional models for comparison, it is possible to assess whether or not the hypothesized model explains additional variance beyond that of a null model, a controls-only model, and (wherever applicable) other more parsimonious models. Published studies tend to compare the hypothesized model against a null model only (e.g., Jansen & Kristof-Brown, 2005), but I have included additional models of interest as well.

The presentation in these tables is similar to the presentation of hierarchical regression models. The terms included in the models appear in the left-most column, and the parameter estimates and stars indicating significant *p*-values appear in succeeding columns which are headed with a label for identifying the model. Thus, in every table reporting results from the MIXED procedure below, the first model is the null model (no predictors) and the second model is the controls-only model. Additional models appear as warranted by the complexity of the analysis but tables culminate in the hypothesized model.

In addition to the parameter estimates for the terms included in the model, fit statistics appear below the estimates and are labeled as such in the left-most column of the table. The -2 Residual Log Likelihood values are used for model comparisons by calculating the difference in that statistic between models to be compared, dividing that difference by the change in the number of estimated parameters, and comparing the resulting value with the appropriate critical value from the χ^2 distribution. If the calculated value exceeds the critical value, the model fit is significantly better than the comparison model's fit. Actual *p*-values for these model comparisons were calculated using the CHIDIST function in Microsoft Excel, which I used to produce all the tables that appear in this chapter.

The MIXED procedure does not produce an R^2 statistic, so of course it is not possible to provide a true ΔR^2 for different models, as is commonly provided in ordinary least squares regression. However, R_1^2, provides a conceptually-similar statistic (Bickel, 2007) that represents the proportional reduction in errors of prediction between the two models being compared. The R_1^2 statistic is calculated by dividing the sum of the estimated covariance parameters of the current model by the sum of the estimated covariance parameters of the comparison model and subtracting the resulting value from 1. The covariance parameters do not appear in the tables, but the R_1^2 statistic appears on the line labeled Variance Reduction or, in cases where multiple model comparisons are considered, in a matrix of values under the Variance Reduction heading.

Additionally, for each analysis I have included a Figure that contains a histogram of the residuals, QQ plot of the residuals, and a scatter plot of the residuals

and predicted values. Both the residuals and predicted values were standardized prior to creating these plots, which aid in evaluating whether or not normality, linearity, and homoscedasticity assumptions have been met.

Hypothesis 1

In Hypothesis 1, I predicted that task-focused OCB is positively related to attributions of prosocial motive. To test this hypothesis, I regressed prosocial motive on the set of control variables and task-focused OCB using the equation specified in the Analyses section above. The results of these analyses are provided in Table 4.2, which contains information about three models in order to provide a means for comparison of fit with the data. The hypothesized model fit the data significantly better than either of the comparison models, reducing unexplained variance by 71% over the controls-only model. The unstandardized coefficient for the predictor, task-focused OCB, was significant ($p < .001$) and positive, as predicted. Thus, Hypothesis 1 was supported.

Hypothesis 2

In Hypothesis 2, I predicted that person-focused OCB is positively related to attributions of prosocial motive. To test this hypothesis, I regressed prosocial motive on the set of control variables and person-focused OCB using the equations specified in the Analyses section above. The results of these analyses are provided in Table 4.3, which again contains information about three models in order to provide a means for comparison of fit with the data. The hypothesized model fit the data significantly better than either of the comparison models, reducing unexplained variance by 78% over the controls-only model. The unstandardized coefficient for the predictor, task-

focused OCB, was significant ($p < .001$) and positive, as predicted. Thus, Hypothesis 2 was supported.

Table 4.2
Hypothesis 1 Model Comparisons

Dependent variable	Prosocial Motive		
	Null Model w/o Controls	Null Model w/ Controls	H1 Model
Intercept	5.86 ***	6.23 ***	5.82 ***
Control variables			
Sex		-0.47 *	0.05
Age		0.15	0.00
Distrust of others		-0.11	-0.02
Work interdependence		0.22 *	0.16 ***
Independent variable			
Task-focused OCB			0.79 ***
Fit Statistics			
-2 Res Log Likelihood	516.50	502.20	261.40
AIC	522.50	516.20	277.40
AICC	522.70	516.80	278.10
BIC	528.30	529.70	292.90
Variance reduction [a b c]		0.14 **	0.71 ***
Estimation method	ML	ML	ML
N	207	207	207

[a] Compared to previous (immediate left) model

[b] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[c] Significance determined by χ^2 difference between models

Figure 4.1
Hypothesis 1: Graphical Presentations of Standardized Residuals

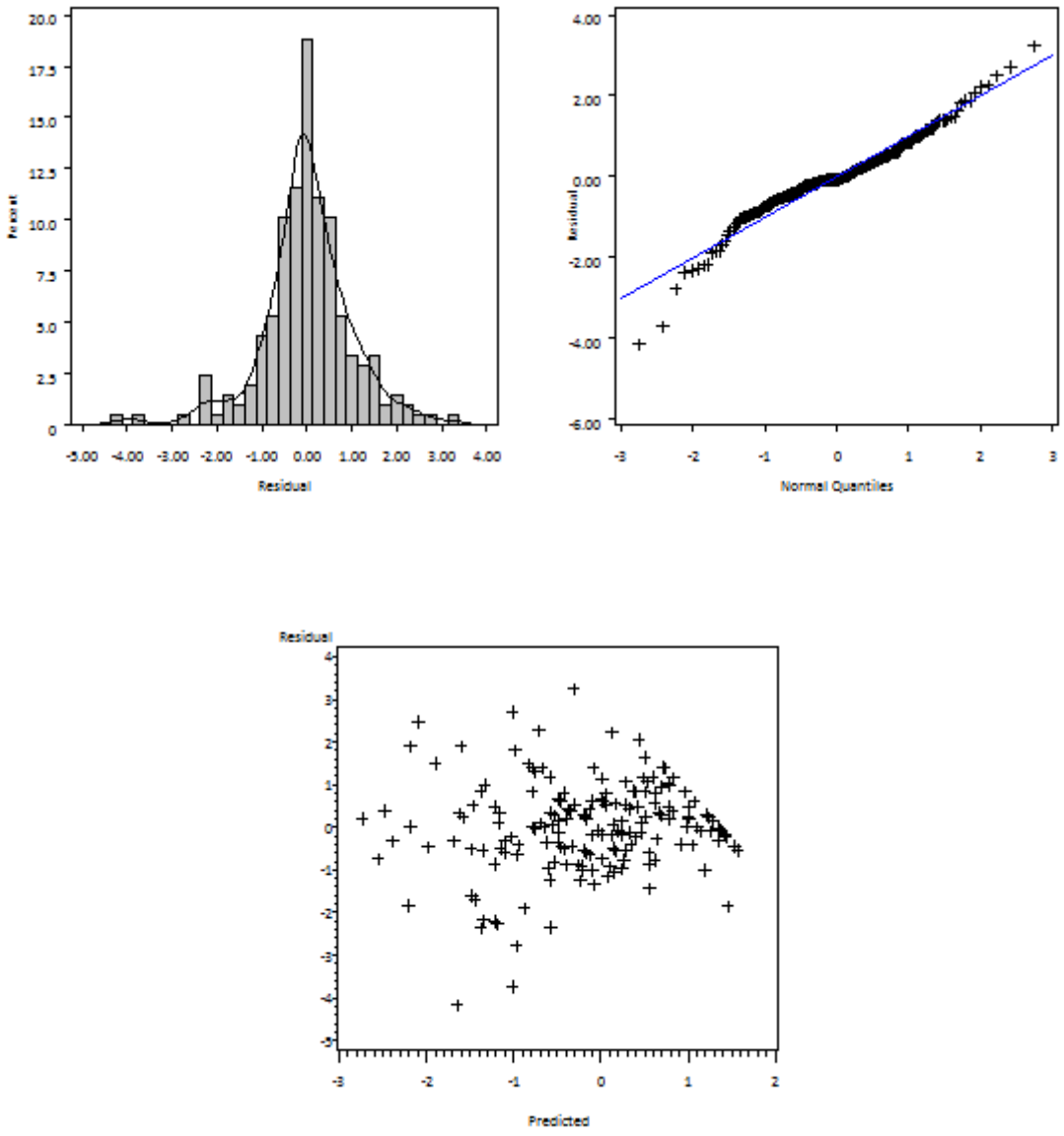


Table 4.3
Hypothesis 2 Model Comparisons

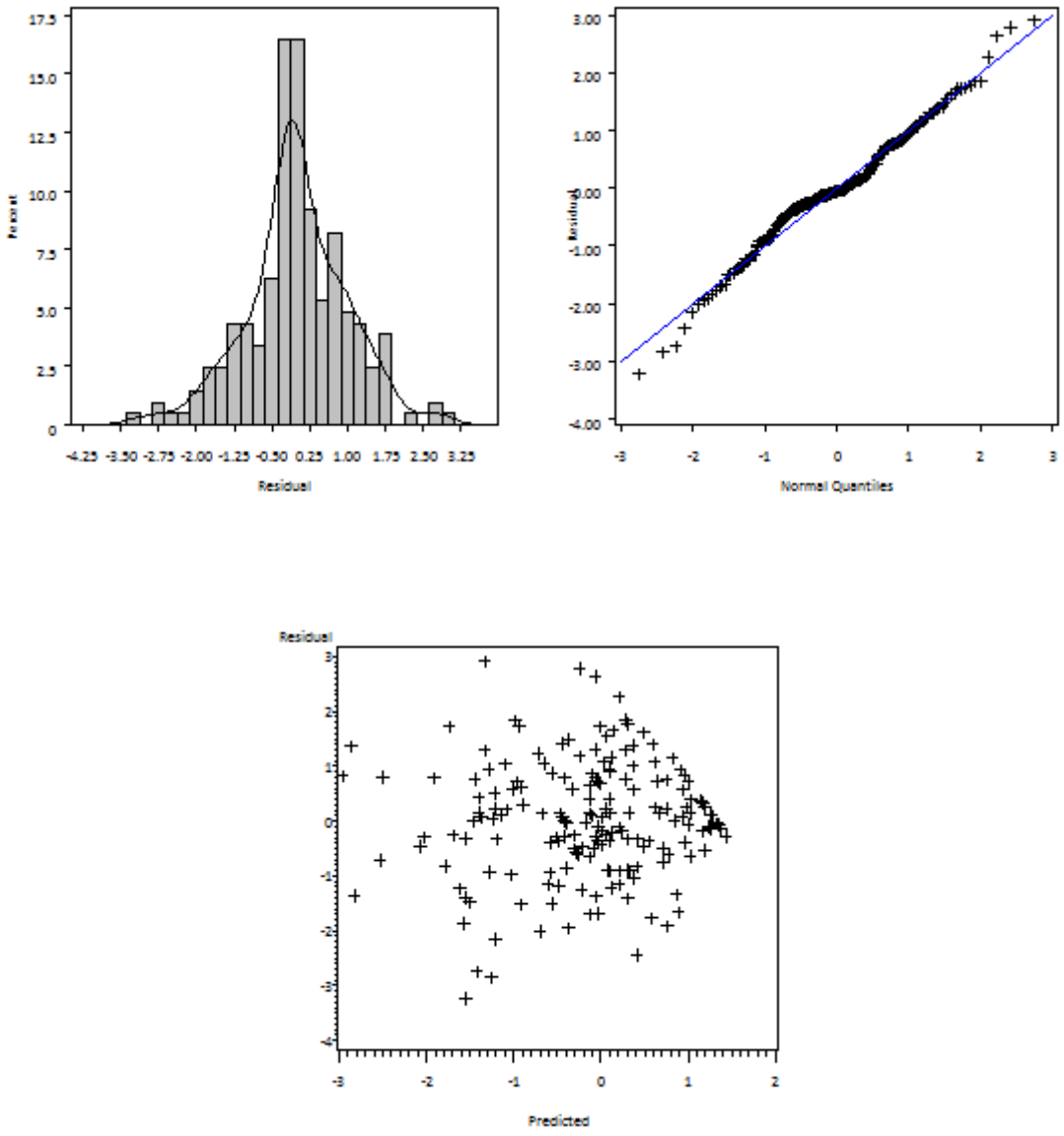
Dependent variable	Prosocial Motive		
	Null Model w/o Controls	Null Model w/ Controls	H2 Model
Intercept	5.86 ***	6.23 ***	5.91 ***
Control variables			
Sex		-0.47 *	-0.07
Age		0.15	0.04
Distrust of others		-0.11	-0.03
Work interdependence		0.22 *	0.09 **
Independent variable			
Person-focused OCB			0.83 ***
Fit Statistics			
-2 Res Log Likelihood	516.50	502.20	218.20
AIC	522.50	516.20	234.20
AICC	522.70	516.80	234.90
BIC	528.30	529.70	249.60
Variance reduction [a b c]		0.14 **	0.78 ***
Estimation method	ML	ML	ML
N	207	207	207

[a] Compared to previous (immediate left) model

[b] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[c] Significance determined by χ^2 difference between models

Figure 4.2
Hypothesis 2: Graphical Presentations of Standardized Residuals



Hypothesis 3

In Hypothesis 3, I predicted that the focal individual's role moderates the relationship between task-focused OCBs and attributions of prosocial motives. To test this hypothesis, I regressed prosocial motive on the set of control variables, task-focused OCB, role, and the multiplicative term formed by task-focused OCB and role using the equations specified in the Analyses section above. Before creating the multiplicative interaction term, task-focused OCB was grand mean centered and the standardized using the grand standard deviation. The results of these analyses are provided in Table 4.4, which contains information about four models in order to provide a means for comparison of fit with the data. The hypothesized model fit the data significantly better than all other comparison models, reducing unexplained variance by 72% over the controls-only model and by 3% over the task-focused direct effect model. The unstandardized coefficient for the interaction term was significant ($p < .05$) and positive, as predicted.

Figure 4.3 contains a plot of the interaction in order to aid interpretation of this significant interaction term. The plot demonstrates that the slopes of the two lines representing the relationship between task-focused OCB and prosocial motive are significantly different, with supervisors rating subordinates' prosocial motive for engaging in task-focused OCB higher than did group member at the arbitrary level of task-focused OCB (one standard deviation above the mean). This is in agreement with the prediction; thus, Hypothesis 3 was supported.

Table 4.4
Hypothesis 3 Model Comparisons

Dependent variable	Prosocial Motive			
	Null Model w/o Controls	Null Model w/ Controls	IV Model	H3 Model
Intercept	5.86 ***	6.23 ***	5.85 ***	5.80 ***
Control variables				
Sex		-0.47 *	0.05	0.09
Age		0.15	0.00	-0.02
Distrust of others		-0.11	-0.03	-0.02
Work interdependence		0.22 *	0.15 **	0.13 **
Independent variables				
Task-focused OCB			0.79 ***	0.72 ***
Role			-0.04	-0.05
Interaction				
Task-focused OCB X Role				0.16 *
Fit Statistics				
-2 Res Log Likelihood	516.50	502.20	261.30	256.70
AIC	522.50	516.20	279.30	276.70
AICC	522.70	516.80	280.20	277.80
BIC	528.30	529.70	296.60	296.00
Variance reduction (compared to specified model) [a b]				
Null model w/o controls		0.14 **	0.75 ***	0.76 ***
Null model w/ controls			0.71 ***	0.72 ***
IV model				0.03 *
Estimation method	ML	ML	ML	ML
N	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.3
Hypothesis 3 Interaction Plot (Task-focused OCB x Role)

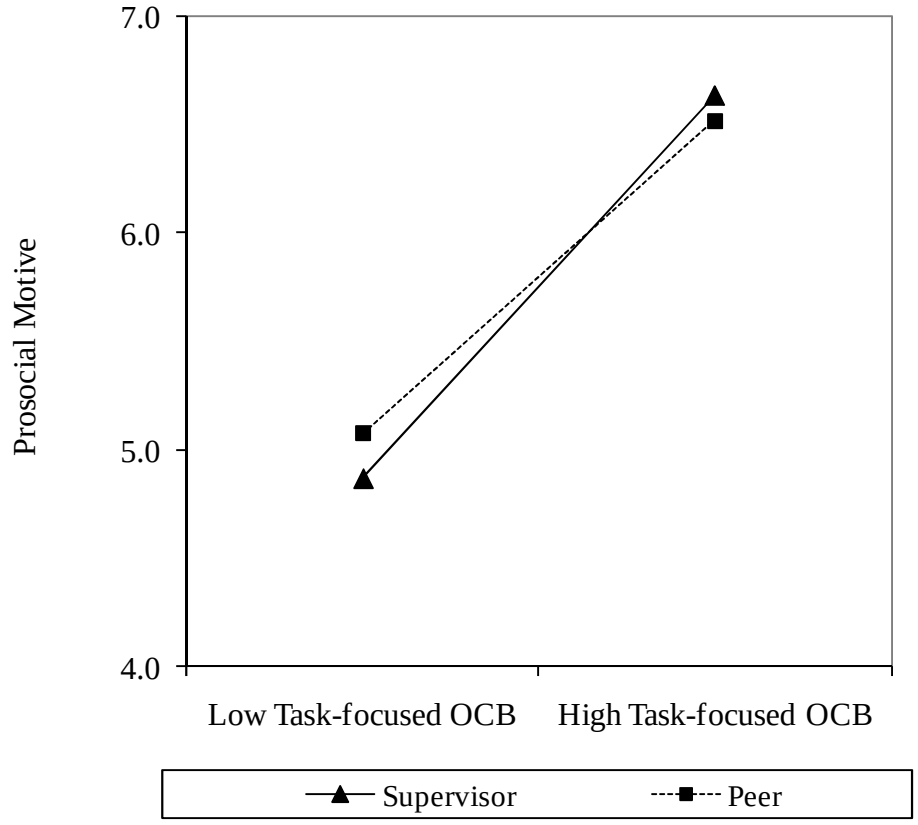
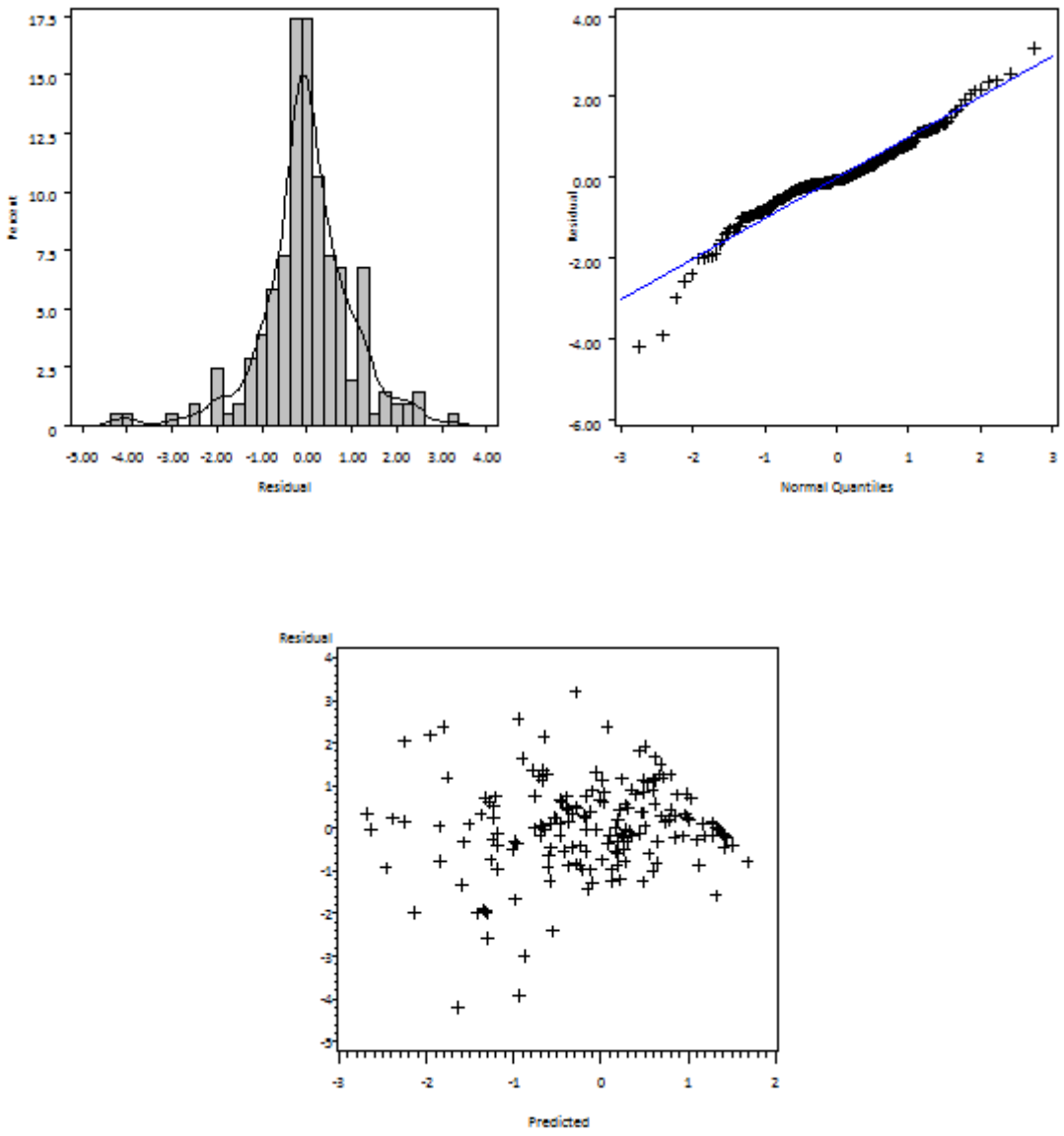


Figure 4.4
Hypothesis 3: Graphical Presentations of Standardized Residuals



Hypothesis 4

In Hypothesis 4, I predicted that the focal individual's role moderates the relationship between person-focused OCBs and attributions of prosocial motives. To test this hypothesis, I regressed prosocial motive on the set of control variables, person-focused OCB, role, and the multiplicative term formed by person-focused OCB and role using the equations specified in the Analyses section above. Before creating the multiplicative interaction term, person-focused OCB was grand mean centered and then standardized using the grand standard deviation. The results of these analyses are provided in Table 4.5, which contains information about four models in order to provide a means for comparison of fit with the data. The hypothesized model fit the data significantly better than the null model and the controls-only model, but it did not fit significantly better than the person-focused direct effect model. Furthermore, the unstandardized coefficient for the interaction term was non-significant at the $p < .05$ level. Thus, Hypothesis 4 was not supported.

Hypothesis 5

In Hypothesis 5, I predicted that among supervisors, task-focused OCB will be more strongly related to attributions of prosocial motives than will person-focused OCB. To test this hypothesis, I examined the correlations between task- and person-focused OCB and prosocial motives among supervisors using Fisher's z'. Results of this analysis appear in Table 4.6, which reports the correlation between task-focused OCB and prosocial motive to be 0.79 ($p < .01$) and between person-focused OCB and prosocial motive to be 0.86 ($p < .01$). Fisher's z' was non-significant, and even had it been, the direction would have been counter to the hypothesized direction; the

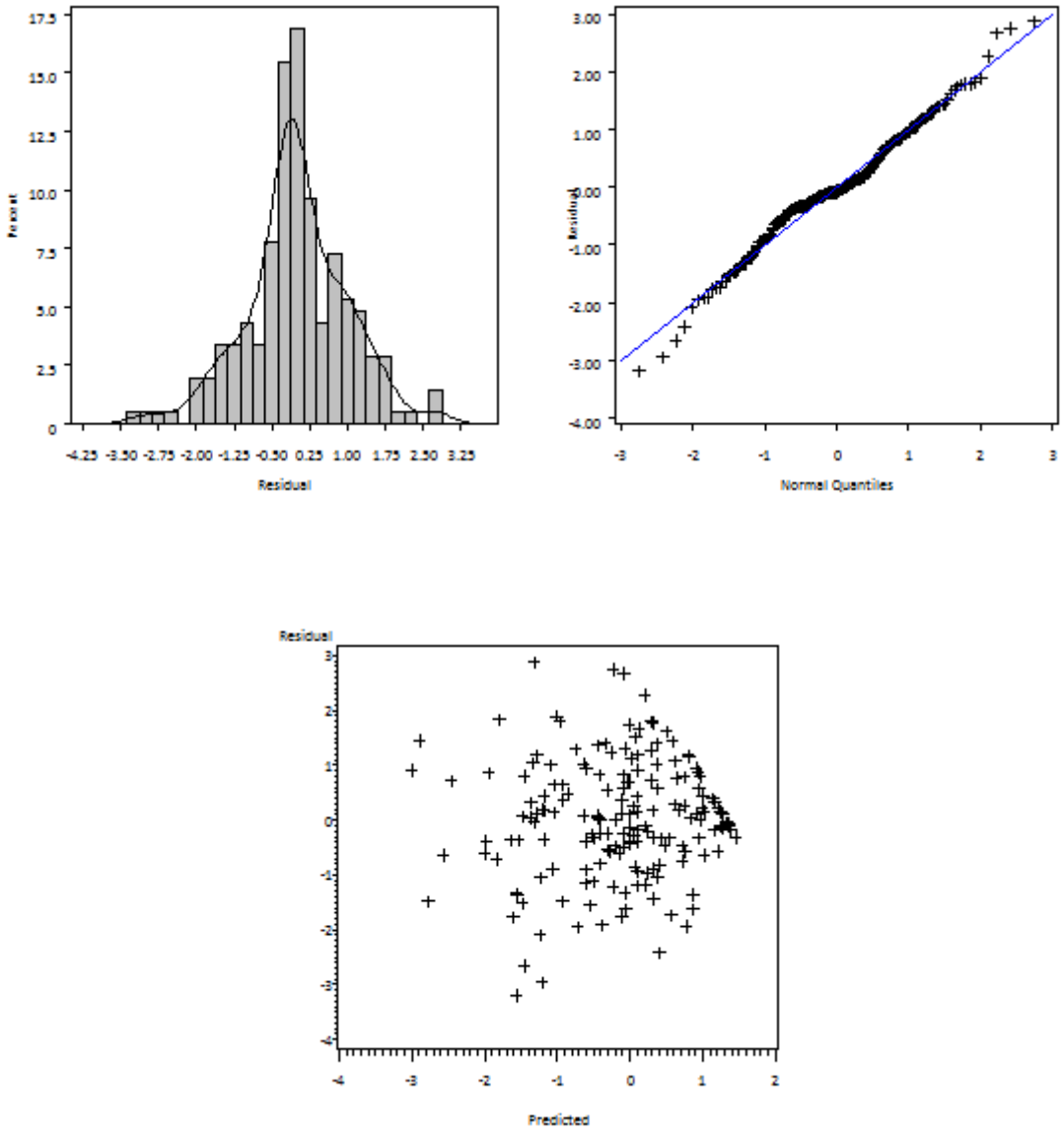
Table 4.5
Hypothesis 4 Model Comparisons

Dependent variable	Prosocial Motive			
	Null Model w/o Controls	Null Model w/ Controls	IV Model	H4 Model
Intercept	5.86 ***	6.23 ***	5.88 ***	5.89 ***
Control variables				
Sex		-0.47 *	-0.06	-0.07
Age		0.15	0.05	0.05
Distrust of others		-0.11	-0.03	-0.03
Work interdependence		0.22 *	0.10 **	0.10 **
Independent variables				
Person-focused OCB			0.82 ***	0.84 ***
Role			0.04	0.04
Interaction				
Person-focused OCB X Role				-0.04
Fit Statistics				
-2 Res Log Likelihood	516.50	502.20	217.90	217.60
AIC	522.50	516.20	235.90	237.60
AICC	522.70	516.80	236.80	238.70
BIC	528.30	529.70	253.30	256.90
Variance reduction (compared to specified model) [a b]				
Null model w/o controls		0.14 **	0.81 ***	0.81 ***
Null model w/ controls			0.78 ***	0.78 ***
IV model				0.00
Estimation method	ML	ML	ML	ML
N	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.5
Hypothesis 4: Graphical Presentations of Standardized Residuals



prediction was that the relationship among supervisors would be stronger for task-focused OCB than for person-focused OCB. Thus, Hypothesis 5 was clearly not supported.

Hypothesis 6

In Hypothesis 6, I predicted that among group members, person-focused OCB will be more strongly related to attributions of prosocial motives than will task-focused OCB. To test this hypothesis, I again employed the Fisher z' statistic to examine the correlations between task- and person-focused OCB and prosocial motives among group members. Results of this analysis appear in Table 4.7, which reports the correlation between person-focused OCB and prosocial motive to be 0.91 ($p < .01$) and between task-focused OCB and prosocial motive to be 0.89 ($p < .01$). As in the test of Hypothesis 5, Fisher's z' was non-significant. Thus, Hypothesis 6 was not supported.

Table 4.6
Correlations Between Task- and Person-Focused OCBs and Supervisors' Motive Attributions

	OCB Focus	
Measure	Task	Person
N	86	86
M	4.81	5.29
SD	1.32	1.07
	Correlation Between Focused OCBs and Motive Attribution	Fisher's Z Value
Prosocial motive	.79 **	.86 **	-1.33

Note. * $p < .05$. ** $p < .01$. Fisher's Z value is non-significant at $p < .05$.

Table 4.7
Correlations Between Task- and Person-Focused OCBs and Group Members' Motive Attributions

	OCB Focus		
Measure	Task	Person	
N	121	121	
M	5.73	5.90	
SD	1.13	1.05	
	Correlation Between Focused OCBs and Motive Attribution		Fisher's Z Value
Prosocial motive	.89 **	.91 **	-0.72

Note. * $p < .05$. ** $p < .01$. Fisher's Z value is non-significant at $p < .05$.

Hypothesis 7

In Hypothesis 7, I predicted that the degree of perceived congruence between task-focused OCBs and task-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution. To test this hypothesis, I scale-centered the scale-measured variables by subtracting the scale midpoint (i.e., 4 on a 7-point scale) from the aggregated value as recommended by Edwards and Parry (1993). Then I regressed prosocial motive on the set of control variables and the fit-related terms (task-focused OCB, task-focused OCB norms, task-focused OCB squared, task-focused OCB × task-focused OCB norms, and task-focused OCB norms squared) using the equations specified in the Analyses section

above. Table 4.8 reports the model comparisons and the fixed effects estimates for the polynomial regression analysis.

The hypothesized model did reduce unexplained variance significantly compared to both the null and controls-only models. Although the hypothesized model did not reduce unexplained variance compared to the model with the two independent variables (i.e., task-focused OCB and task-focused OCB norms), the more appropriate comparisons for evaluating polynomial models involve the null and controls-only models, since the five fit terms are treated as a block (i.e., as if they are one model component) (Edwards & Parry, 1993; Edwards & Rothbard, 1999). In terms of model significance, then, the hypothesized model fits significantly better than the comparison models, and investigation of the response surface characteristics is warranted in order to determine whether or not there is support for the hypothesized relationship between the congruence of task-focused OCB with task focused OCB norms and prosocial motives.

As noted previously, there are three key conditions that contribute to the interpretation of the response surface. First, I expected ratings of prosocial motive to decrease when the rater perceives incongruence between the ratee's OCB and OCB norms. This would be characterized by downward curvature along the incongruence line in the response surface plot, which corresponds with a negative value for the curvature element in the X = -Y Fit Line section of Table 4.8. Though the value is negative, it is not significantly different from zero, as determined by a CONTRAST analysis appended to the MIXED procedure in SAS. Second, I expected the ridge of

Table 4.8
Hypothesis 7 Model Comparisons

Dependent variable	Prosocial Motive			
	Null Model w/o Controls	Null Model w/ Controls	IV Model	H7 Model
Intercept	5.86 ***	6.23 ***	5.01 ***	4.90 ***
Control variables				
Sex		-0.47 *	0.06	0.10
Age		0.15	0.00	-0.01
Distrust of others		-0.11	-0.03	-0.03
Work interdependence		0.22 *	0.17 ***	0.15 **
Independent variables				
Task-focused OCB (X)			0.62 ***	0.57 ***
Task-focused OCB norms (Y)			-0.02	0.14
Quadratic Terms				
X^2				0.03
XY				0.00
Y^2				-0.06
Fit Statistics				
-2 Res Log Likelihood	516.50	502.20	261.20	257.50
AIC	522.50	516.20	279.20	281.50
AICC	522.70	516.80	280.20	283.10
BIC	528.30	529.70	296.60	304.70
Variance reduction (compared to specified model) [a b]				
Null model w/o controls		0.14 **	0.75 ***	0.76 ***
Null model w/ controls			0.71 ***	0.72 ***
IV Model				0.03
Response Surface Features				
X = Y Fit Line				
Slope (X + Y)				0.72 ***
Curvature ($X^2 + XY + Y^2$)				-0.03
X = -Y Fit Line				
Slope (X - Y)				0.43 **
Curvature ($X^2 - XY + Y^2$)				-0.04
Estimation method	ML	ML	ML	ML
N	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.6
Hypothesis 7: Graphical Presentations of Standardized Residuals

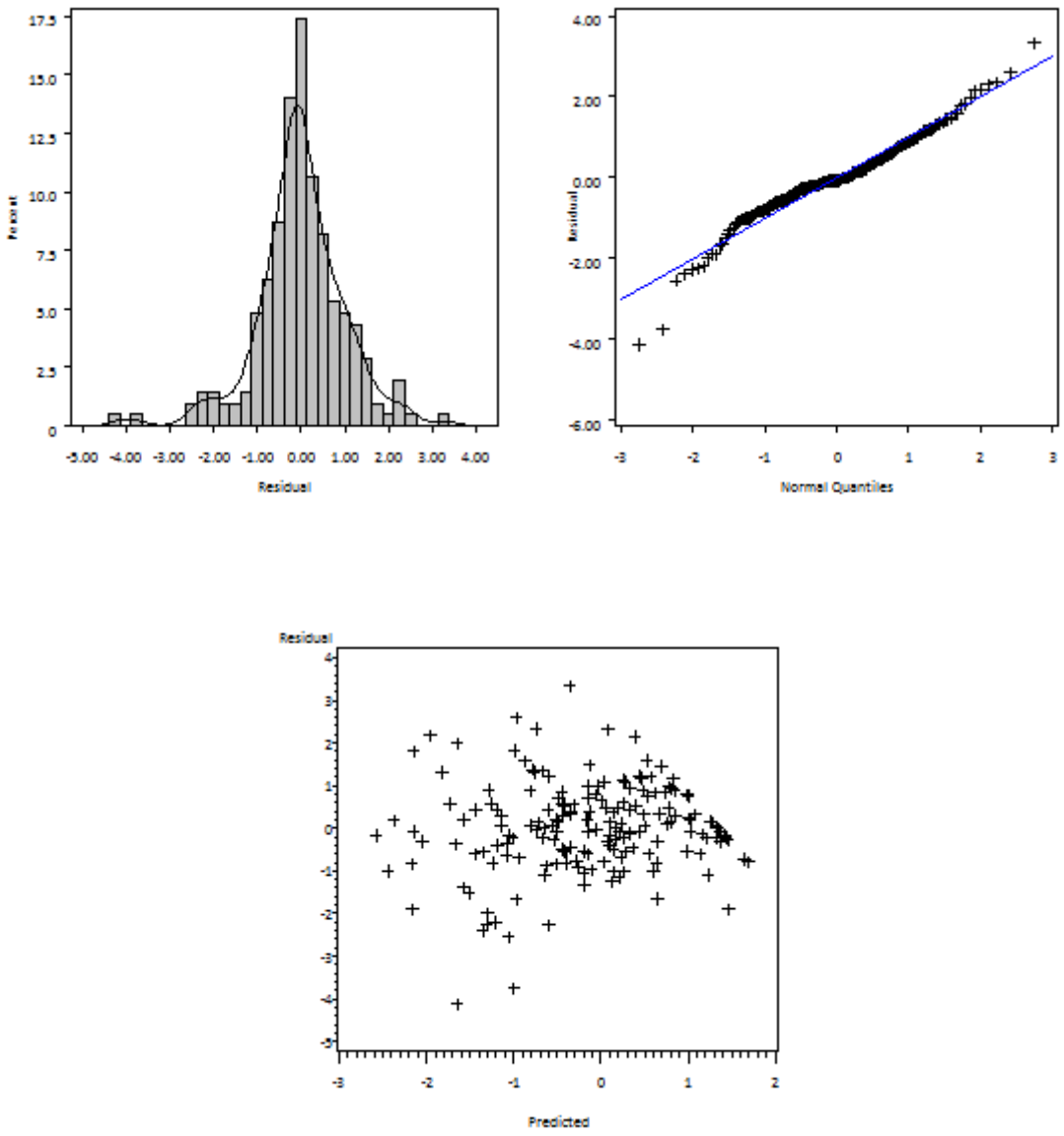
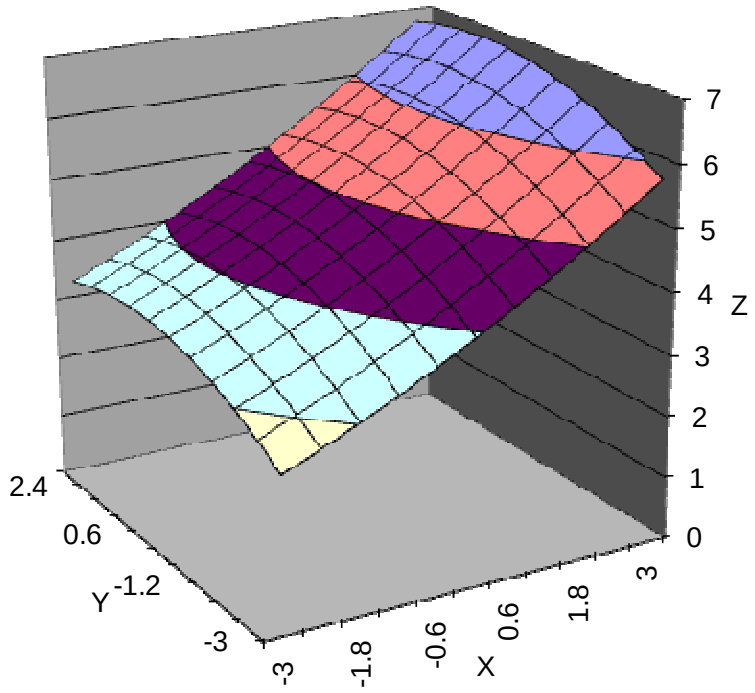


Figure 4.7
Hypothesis 7 Surface Plot



Note:
X-axis = Task-focused OCB
Y-axis = Task-focused OCB norms
Z-axis = Prosocial Motive

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the surface to follow the congruence line in the response surface plot, which would correspond to the first principal axis (not visible in Figure 4.7) following the congruence line. The first principal axis line, however, roughly falls at Y = 1 for all values of X, which indicates that the plot is rotated clockwise roughly 45 degrees. Finally, for a strict congruence hypothesis to be supported, both the slope and curvature along the congruence line should be zero. However, as shown in Table 4.8,

the slope along this line was significantly different from zero. Taken together, these indicators fail to provide support for Hypothesis 7.

The response surface indicates that the task-focused OCB has a very strong relationship with prosocial motive, independent of task-focused OCB norms, as seen in the steep slope along the X axis and the rotation of the first principal axis line described earlier. There is some evidence of a congruence effect, however, in that as both X and Y increase, so also does Z, and there is some curvature such that when task-focused OCB is high and task-focused OCB norms are low, ratings of prosocial motive are lower than when both OCB and norms are high.

Hypothesis 8

In Hypothesis 8, I predicted that the degree of perceived congruence between person-focused OCBs and task-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution. To test this hypothesis, I scale-centered the scale-measured variables by subtracting the scale midpoint (i.e., 4 on a 7-point scale) from the aggregated value as recommended by Edwards and Parry (1993). Then I regressed prosocial motive on the set of control variables and the fit-related terms (person-focused OCB, person-focused OCB norms, person-focused OCB squared, person-focused OCB × person-focused OCB norms, and person-focused OCB norms squared) using the equations specified in the Analyses section above. Table 4.9 reports the model comparisons and the fixed effects estimates for the polynomial regression analysis.

Table 4.9
Hypothesis 8 Model Comparisons

Dependent variable	Prosocial Motive			
	Null Model w/o Controls	Null Model w/ Controls	IV Model	H8 Model
Intercept	5.86 ***	6.23 ***	4.63 ***	4.52 ***
Control variables				
Sex		-0.47 *	-0.08	-0.10
Age		0.15	0.05	0.04
Distrust of others		-0.11	-0.02	-0.02
Work interdependence		0.22 *	0.08 *	0.07 *
Independent variables				
Person-focused OCB (X)			0.75 ***	0.84 ***
Person-focused OCB norms (Y)			0.03	0.05
Quadratic Terms				
X^2				-0.01
XY				-0.05
Y^2				0.03
Fit Statistics				
-2 Res Log Likelihood	516.50	502.20	217.60	213.70
AIC	522.50	516.20	235.60	237.70
AICC	522.70	516.80	236.50	239.30
BIC	528.30	529.70	252.90	260.90
Variance reduction (compared to specified model) [a b]				
Null model w/o controls		0.14 **	0.81 ***	0.82 ***
Null model w/ controls			0.78 ***	0.79 ***
IV Model				0.02
Response Surface Features				
X = Y Fit Line				
Slope (X + Y)				0.89 ***
Curvature ($X^2 + XY + Y^2$)				-0.03
X = -Y Fit Line				
Slope (X - Y)				0.79 ***
Curvature ($X^2 - XY + Y^2$)				0.07
Estimation method	ML	ML	ML	ML
N	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.8
Hypothesis 8: Graphical Presentations of Standardized Residuals

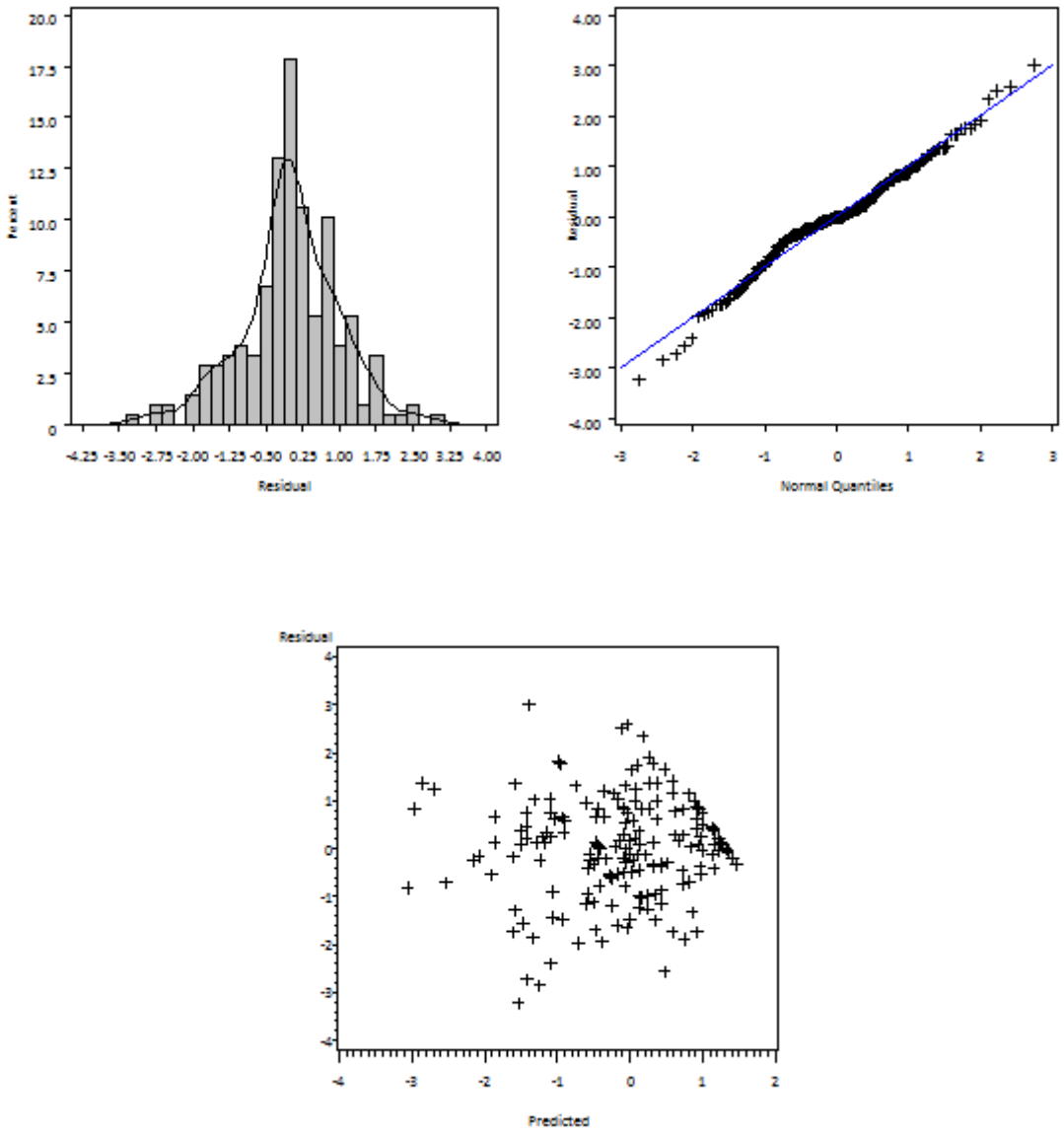
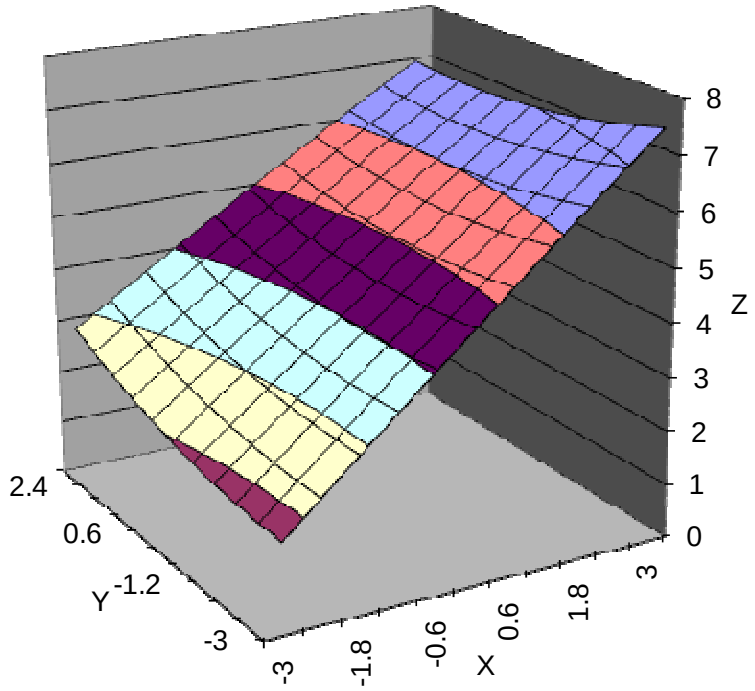


Figure 4.9
Hypothesis 8 Surface Plot



Note:
X-axis = Person-focused OCB
Y-axis = Person-focused OCB norms
Z-axis = Prosocial Motive

The results of the model comparisons were very similar to those from Hypothesis 7: the hypothesized model did reduce unexplained variance significantly compared to both the null and controls-only models. In terms of model significance, the hypothesized model fits significantly better than the comparison models, and investigation of the response surface characteristics is warranted in order to determine whether or not there is support for the hypothesized relationship between the

congruence of person-focused OCB with person-focused OCB norms and prosocial motives.

With regard to the expectation of downward curvature along the incongruence line, the curvature element in the X = -Y Fit Line section of Table 4.9 is not statistically different from zero. Therefore, this condition was not met. Regarding the ridge of the surface, the first principal axis (again, not visible in Figure 4.9) indicates that the plot is rotated clockwise in a similar fashion as with the surface for Hypothesis 7. Finally, with regard to the slope and curvature along the congruence line (which should both be zero), the slope was significantly different from zero. Taken together, these indicators fail to provide support for Hypothesis 8.

The response surface is virtually a plane (no curvature) which indicates a very strong relationship between person-focused OCB and prosocial motive. Unlike the response surface in Hypothesis 7, this relationship seems to overwhelm any effect of person-focused OCB norms.

Hypothesis 9

In Hypothesis 9, I predicted that the focal individual's role moderates the relationship between deviation from task-focused OCB norms and attributions of prosocial motives. I expected that supervisors would rate subordinates who exhibited congruence between task-focused OCB and task-focused OCB norms higher in prosocial motive than would group members. To test this hypothesis, I scale-centered the scale-measured variables by subtracting the scale midpoint (i.e., 4 on a 7-point scale) from the aggregated value as recommended by Edwards and Parry (1993). Then I regressed prosocial motive on the set of control variables, the fit-related terms (task-

focused OCB, task-focused OCB norms, task-focused OCB squared, task-focused OCB × task-focused OCB norms, and task-focused OCB norms squared), role, and the role × fit-related terms using the equations specified in the Analyses section above. Table 4.10 reports the model comparisons and the fixed effects estimates for the polynomial regression analysis.

The relevant model comparison pits the quadratic model against the hypothesized model (Edwards & Rothbard, 1999). Table 4.10 indicates that the hypothesized model does not reduce unexplained variance relative to the quadratic model and, therefore, there is not a significant interaction. Thus, Hypothesis 9 is not supported, and there is no need to examine a response surface.

Hypothesis 10

In Hypothesis 10, I predicted that the focal individual's role moderates the relationship between deviation from person-focused OCB norms and attributions of prosocial motives. I expected that group members would rate subordinates who exhibited congruence between person-focused OCB and person-focused OCB norms higher in prosocial motive than would supervisors. To test this hypothesis, I scale-centered the scale-measured variables by subtracting the scale midpoint (i.e., 4 on a 7-point scale) from the aggregated value as recommended by Edwards and Parry (1993). Then I regressed prosocial motive on the set of control variables, the fit-related terms (person-focused OCB, person-focused OCB norms, person-focused OCB squared, person-focused OCB × person-focused OCB norms, and person-focused OCB norms squared), role, and the role × fit-related terms using the equations specified in the Analyses section above. Table 4.11 reports the model comparisons and the fixed

Table 4.10
Hypothesis 9 Model Comparisons

Dependent variable	Prosocial Motive					
	Null Model w/o Controls	Null Model w/ Controls	IV Model	Quadratic Model	Mod Model	H9 Model
Intercept	5.86 ***	6.23 ***	5.01 ***	4.90 ***	4.86 ***	4.59 ***
Control variables						
Sex		-0.47 *	0.06	0.10	0.09	0.13
Age		0.15	0.00	-0.01	-0.02	-0.03
Distrust of others		-0.11	-0.03	-0.03	-0.03	-0.04
Work interdependence		0.22 *	0.17 ***	0.15 **	0.14 *	0.12 *
Independent variables						
Task-focused OCB (X)			0.62 ***	0.57 ***	0.57 ***	0.74 ***
Task-focused OCB norms (Y)			-0.02	0.14	0.16	0.23
Quadratic Terms						
X^2				0.03	0.03	0.02
XY				0.00	0.00	-0.05
Y^2				-0.06	-0.06	-0.05
Moderator						
Role					0.06	0.39
Moderator x Quadratic Terms						
Task-focused OCB (X) x Role						-0.22 *
Task-focused OCB norms (Y) x Role						-0.05
X^2 x Role						0.01
XY x Role						0.06
Y^2 x Role						-0.05
Fit Statistics						
-2 Res Log Likelihood	516.50	502.20	261.20	257.50	257.30	250.00
AIC (smaller is better)	522.50	516.20	279.20	281.50	283.30	286.00
AICC (smaller is better)	522.70	516.80	280.20	283.10	285.20	289.70
BIC (smaller is better)	528.30	529.70	296.60	304.70	308.40	320.80
Variance reduction (compared to specified model) [a b]						
Null model w/o controls		0.14 **	0.75 ***	0.76 ***	0.76 ***	0.77 ***
Null model w/ controls			0.71 ***	0.72 ***	0.72 ***	0.73 ***
IV model				0.03	0.03	0.08
Quadratic model					0.00	0.05
Mod model						0.04
Response Surface Features						n/a
Estimation method	ML	ML	ML	ML	ML	ML
N	207	207	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.10
Hypothesis 9: Graphical Presentations of Standardized Residuals

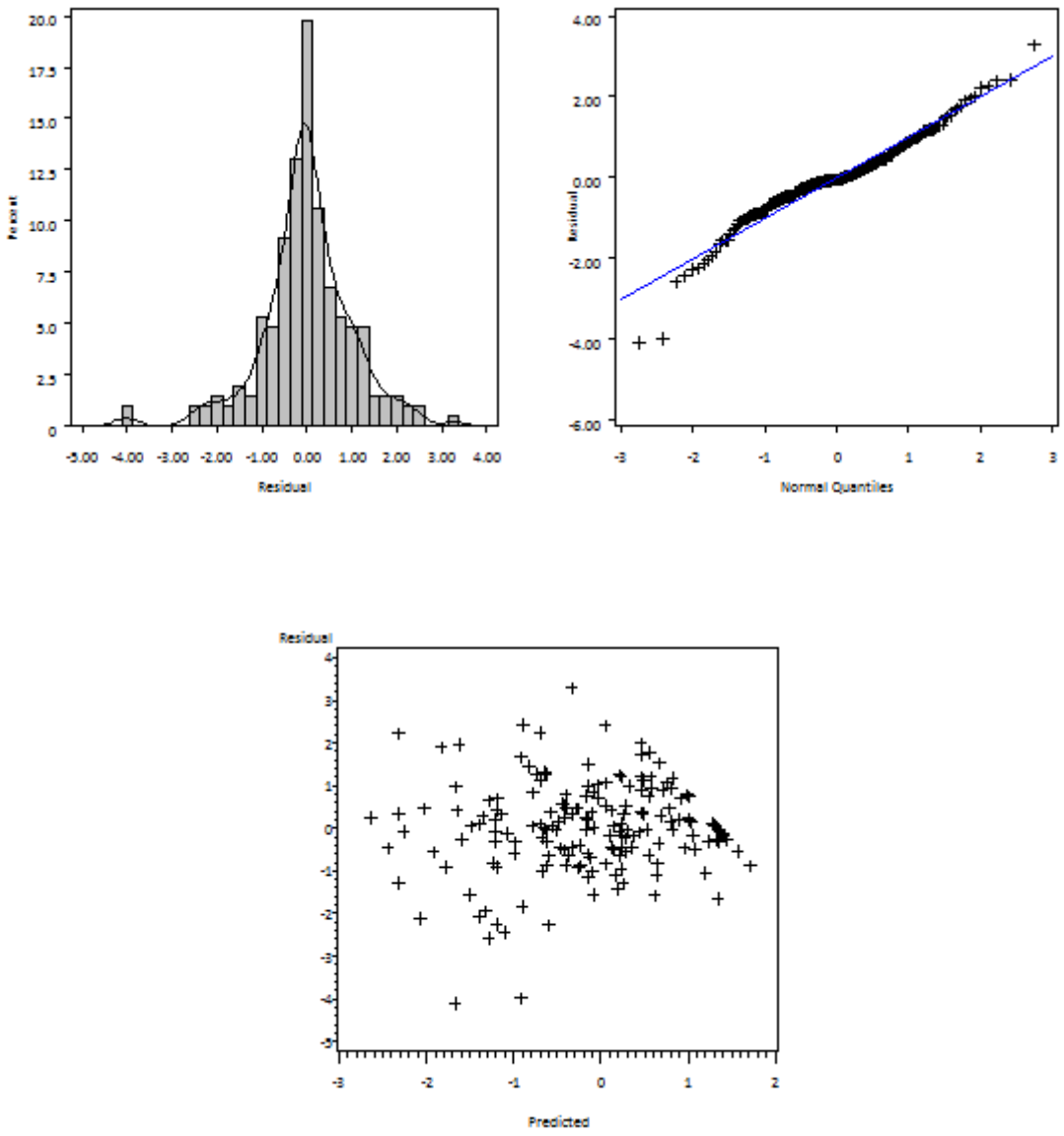


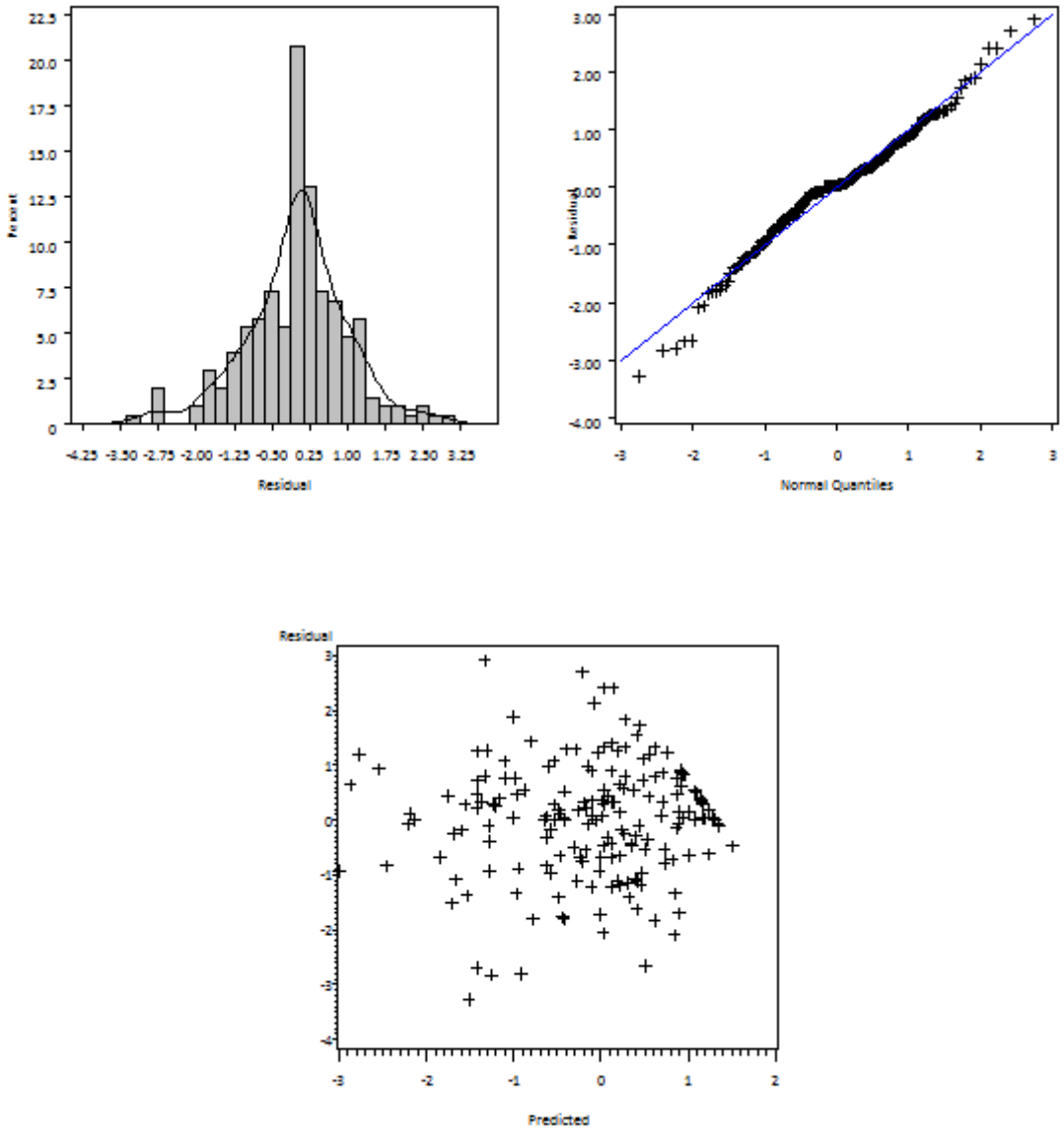
Table 4.11
Hypothesis 10 Model Comparisons

Dependent variable	Prosocial Motive					
	Null Model w/o Controls	Null Model w/ Controls	IV Model	Quadratic Model	Mod Model	H10 Model
Intercept	5.86 ***	6.23 ***	4.63 ***	4.52 ***	4.55 ***	4.83 ***
Control variables						
Sex		-0.47 *	-0.08	-0.10	-0.09	-0.10
Age		0.15	0.05	0.04	0.05	0.06
Distrust of others		-0.11	-0.02	-0.02	-0.02	0.00
Work interdependence		0.22 *	0.08 *	0.07 *	0.08 *	0.08 *
Independent variables						
Person-focused OCB (X)			0.75 ***	0.84 ***	0.84 ***	0.91 ***
Person-focused OCB norms (Y)			0.03	0.05	0.05	-0.21
Quadratic Terms						
X^2				-0.01	-0.01	-0.07
XY				-0.05	-0.05	0.02
Y^2				0.03	0.03	0.05
Moderator						
Role					-0.04	-0.61 *
Moderator x Quadratic Terms						
Person-focused OCB (X) x Role						0.00
Person-focused OCB norms (Y) x Role						0.36
X^2 x Role						0.07
XY x Role						-0.11
Y^2 x Role						0.01
Fit Statistics						
-2 Res Log Likelihood	516.50	502.20	217.60	213.70	213.50	203.60
AIC (smaller is better)	522.50	516.20	235.60	237.70	239.50	239.60
AICC (smaller is better)	522.70	516.80	236.50	239.30	241.40	243.20
BIC (smaller is better)	528.30	529.70	252.90	260.90	264.60	274.40
Variance reduction (compared to specified model) [a b]						
Null model w/o controls		0.14 **	0.81 ***	0.82 ***	0.82 ***	0.83 ***
Null model w/ controls			0.78 ***	0.79 ***	0.79 ***	0.80 ***
IV model				0.02	0.02	0.07
Quadratic model					0.00	0.05
Mod model						0.05
Hypothesized model						
Response Surface Features						n/a
Estimation method	ML	ML	ML	ML	ML	ML
N	207	207	207	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.11
Hypothesis 10: Graphical Presentations of Standardized Residuals



effects estimates for the polynomial regression analysis. Again, the relevant model comparison pits the quadratic model against the hypothesized model (Edwards & Rothbard, 1999). Table 4.11 indicates that the hypothesized model does not reduce unexplained variance relative to the quadratic model and, therefore, there is not a significant interaction. Thus, Hypothesis 10 is not supported, and there is no need to examine a response surface.

Hypothesis 11

In Hypothesis 11, I predicted that the focal individual's attribution of prosocial motive moderates the relationship between OCB and liking for the rated coworker. To test this hypothesis, I regressed liking for the rated coworker on the set of control variables, OCB (no task/person distinction), prosocial motive, and the multiplicative term formed by OCB and prosocial motive using the equations specified in the Analyses section above. Before creating the multiplicative interaction term, both OCB and prosocial motive were grand mean centered and then standardized using the grand standard deviation. The results of these analyses are provided in Table 4.12, which contains information about six models in order to provide a means for comparison of fit with the data. Consistent with prior research, the OCB-only model indicated a significant direct effect of OCB on ratings of liking (unstandardized $\gamma = 0.42$). However, although the hypothesized model fit the data significantly better than both the null model and the control-only model, it did not fit better than any other comparison model. Additionally, the unstandardized coefficient for the interaction term was non-significant at the $p < .05$ level. Thus, Hypothesis 11 was not supported.

Table 4.12
Hypothesis 11 Comparison Models

Dependent variable	Liking for Coworker		
	Null Model w/o Controls	Null Model w/ Controls	OCB Model
Intercept	6.12 ***	6.08 ***	5.89 ***
Control variables			
Sex		0.07	0.32
Age		-0.01	-0.08
Distrust of others		-0.15	-0.11
Work interdependence		0.14	0.09
Independent variables			
OCB			0.42 ***
Motive			
Interaction			
OCB x Motive			
Fit Statistics			
-2 Res Log Likelihood	486.80	478.20	429.10
AIC	492.80	492.20	445.10
AICC	492.90	492.80	445.80
BIC	498.60	505.70	460.60
Variance reduction (compared to specified model) [a b]			
Null model w/o controls		0.08	0.27 ***
Null model w/ controls			0.20 ***
OCB model			
Motive model			
IV model			
Hypothesized model			
Estimation method	ML	ML	ML
N	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

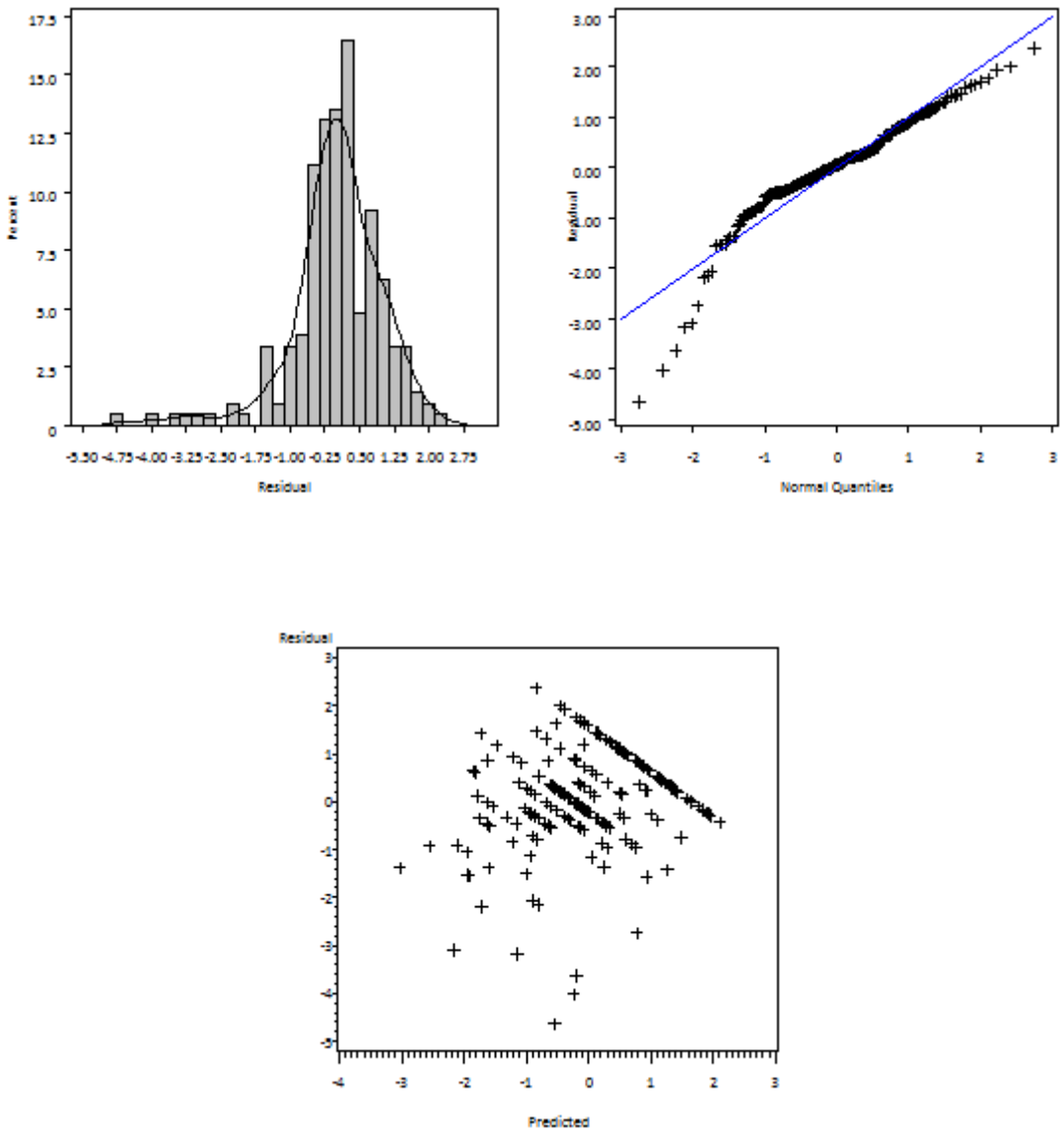
Table 4.12 (cont')
Hypothesis 11 Comparison Models

Dependent variable	Liking for Coworker		
	Prosocial Motive		
	Motive Model	IV Model	H11 Model
Intercept	5.94 ***	5.89 ***	5.94 ***
Control variables			
Sex	0.25	0.32	0.31
Age	-0.07	-0.08	-0.08
Distrust of others	-0.11	-0.11	-0.11
Work interdependence	0.06	0.09	0.11
Independent variables			
OCB		0.42 ***	0.43 ***
Motive	0.37 ***	-0.01	-0.04
Interaction			
OCB x Motive			-0.04
Fit Statistics			
-2 Res Log Likelihood	440.50	429.10	428.40
AIC	456.50	447.10	448.40
AICC	457.20	448.00	449.50
BIC	472.00	464.50	467.70
Variance reduction (compared to specified model) [a b]			
Null model w/o controls	0.24 ***	0.26 ***	0.26 ***
Null model w/ controls	0.18 ***	0.20 ***	0.20 ***
OCB model	n/a	0.00	0.00
Motive model		n/a	0.03
IV model			0.00
Hypothesized model			
Estimation method	ML	ML	ML
N	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.12
Hypothesis 11: Graphical Presentations of Standardized Residuals



Hypothesis 12

In Hypothesis 12, I predicted that the focal individual's attribution of prosocial motive moderates the relationship between OCB and ratings of overall performance for the rated coworker. To test this hypothesis, I regressed overall performance ratings for the rated coworker on the set of control variables, OCB (no task/person distinction), prosocial motive, and the multiplicative term formed by OCB and prosocial motive using the equations specified in the Analyses section above. Again, before creating the multiplicative interaction term, both OCB and prosocial motive were grand mean centered and then standardized using the grand standard deviation. The results of these analyses are provided in Table 4.13, which contains information about six models in order to provide a means for comparison of fit with the data. Consistent with prior research, the OCB-only model indicated a significant direct effect of OCB on ratings of performance (unstandardized $\gamma = 0.69$, $p < .001$). Additionally, the interaction term was significant (unstandardized $\gamma = 0.16$, $p < .05$). However, although the hypothesized model fit the data significantly better than both the null model and the control-only model, it did not fit better than any other comparison model. Thus, Hypothesis 12 was not supported.

Table 4.13
Hypothesis 12 Model Comparisons

Dependent variable	Performance		
	Null Model w/o Controls	Null Model w/ Controls	OCB Model
Intercept	5.47 ***	5.57 ***	5.25 ***
Control variables			
Sex		-0.13	0.27
Age		-0.09	-0.20
Distrust of others		-0.08	0.00
Work interdependence		0.06	-0.03
Independent variables			
OCB			0.69 ***
Motive			
Interaction			
OCB x Motive			
Fit Statistics			
-2 Res Log Likelihood	669.80	668.70	611.20
AIC	675.80	682.70	627.20
AICC	675.90	683.20	627.90
BIC	681.60	696.20	642.60
Variance reduction (compared to specified model) [a] [b]			
Null model w/o controls		0.01	0.26 ***
Null model w/ controls			0.25 ***
OCB model			
Motive model			
IV model			
Hypothesized model			
Estimation method	ML	ML	ML
N	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

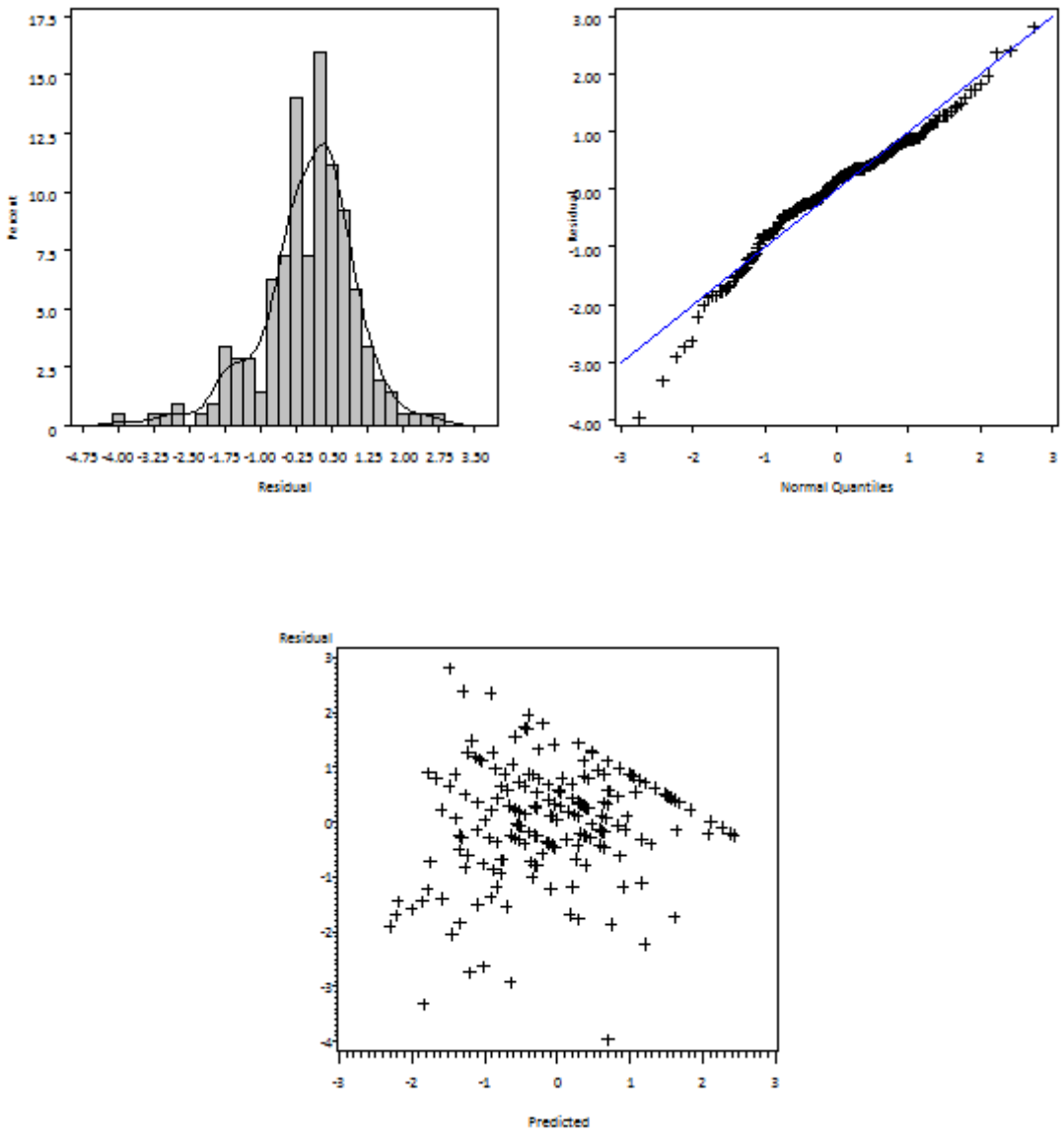
Table 4.13 (cont')
Hypothesis 12 Comparison Models

Dependent variable	Performance		
	Prosocial Motive		
	Motive Model	IV Model	H12 Model
Intercept	5.36 ***	5.25 ***	5.09 ***
Control variables			
Sex	0.14	0.28	0.29
Age	-0.17	-0.19	-0.20 *
Distrust of others	-0.01	0.00	0.03
Work interdependence	-0.08	0.00	-0.05
Independent variables			
OCB		0.89 ***	0.86 ***
Motive	0.57 ***	-0.22	-0.10
Interaction			
OCB x Motive			0.16 *
Fit Statistics			
-2 Res Log Likelihood	631.00	609.80	605.80
AIC	647.00	627.80	625.80
AICC	647.80	628.70	626.90
BIC	662.50	645.20	645.10
Variance reduction (compared to specified model) [a b]			
Null model w/o controls	0.18 ***	0.26 ***	0.29 ***
Null model w/ controls	0.17 ***	0.26 ***	0.28 ***
OCB model	n/a	0.01	0.04
Motive model		n/a	0.13
IV model			0.03
Hypothesized model			
Estimation method	ML	ML	ML
N	207	207	207

[a] Calculated as 1 - (Sum of covariance parameters$_{\text{curr model}}$ / Sum of covariance parameters$_{\text{comparison model}}$)

[b] Significance determined by χ^2 difference between models

Figure 4.13
Hypothesis 12: Graphical Presentations of Standardized Residuals



CHAPTER 5:

DISCUSSION

Summary of Results

The lack of support for most of my hypotheses is, of course, disappointing, and because of this lack of support, in this chapter I will spend more time discussing possible reasons for these results, alternatives I pursued all analyzing these data, and finally some directions for future research including alternative approaches to investigating these same hypotheses. First, however, I will briefly summarize the results of this study.

As summarized in Table 5.1, only three of the twelve hypotheses were supported by the data. Hypotheses 1 and 2, which had to do with the relationship between Task-Focused and Person-Focused OCB and prosocial motive, were supported. This is a somewhat mundane finding. After all, OCBs are "good behaviors." That is, absent some reason to think otherwise, someone who engages in OCBs is likely to be seen in a positive light. Thus it is not surprising that this relationship was found to be strong and positive.

Furthermore, support for these two hypotheses does not constitute a unique contribution from this study. In fact, this finding is entirely consistent with the general assumption that seems to have been present in OCB research since the very beginning. Other studies that have examined prosocial motive and OCB have produced similar findings, at least with regard to a positive relationship between OCB and prosocial motive (e.g., Allen & Rush, 1998; Johnson et al., 2002).

Table 5.1
Summary of Results

Hyp #	Result	Hypothesis
1	Supported	Task-focused OCB is positively related to attributions of prosocial motive.
2	Supported	Person-focused OCB is positively related to attributions of prosocial motive.
3	Supported	The focal individual's role moderates the relationship between task-focused OCBs and attributions of prosocial motives.
4	Not supported	The focal individual's role moderates the relationship between person-focused OCBs and attributions of prosocial motives.
5	Not supported	Among supervisors, task-focused OCB will be more strongly related to attributions of prosocial motives than will person-focused OCB.
6	Not supported	Among group members, person-focused OCB will be more strongly related to attributions of prosocial motives than will task-focused OCB.
7	Not supported	The degree of perceived congruence between task-focused OCBs and task-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution.
8	Not supported	The degree of perceived congruence between person-focused OCBs and person-focused OCB norms is positively related to attributions of prosocial OCB motive. That is, the higher the perceived congruence of behavior with norms, the higher the prosocial motive attribution for the behavior, and the lower the perceived congruence, the lower the prosocial motive attribution.
9	Not supported	The focal individual's role moderates the relationship between deviation from task-focused OCB norms and attributions of prosocial motives such that supervisors will make less favorable motive attributions than will subordinates for deviations from task-focused OCB norms.
10	Not supported	The focal individual's role moderates the relationship between deviation from person-focused OCB norms and attributions of prosocial motives such that subordinates will make less favorable motive attributions than will supervisors for deviations from person-focused OCB norms.
11	Not supported	The focal individual's attribution of prosocial motive moderates the relationship between OCB and liking for the rated coworker such that liking for the rated coworker will be higher when the focal individual attributes a higher prosocial motive for the rated coworker's OCB.
12	Not supported	The focal individual's attribution of prosocial motive moderates the relationship between OCB and ratings of overall performance for the rated coworker such that the rated coworker's performance will be rated higher when the focal individual attributes a higher prosocial motive for the rated coworker's OCB.

The other supported hypothesis, Hypothesis 3, is somewhat more interesting. I expected role to moderate the relationship between OCB and prosocial motive such that supervisors would rate subordinates prosocial motivation higher for task-focused OCB than would group members (peers). The rationale for this expectation was that task-focused OCBs are more directly productivity-related and that supervisors would respond more favorably to this type of OCB because of their interest in getting things done.

However, Hypothesis 4 – the parallel hypothesis involving person-focused OCB and prosocial motive moderated by role – was not supported. I expected group members to rate each other higher in prosocial motivation for person-focused OCB than would supervisors. The rationale for this expectation was that person-focused OCB are more directly related to social aspects of the group, and that as such, group members would respond more favorably to this type of OCB because of their interest in getting along with one another. This does not appear to be the case, however.

Hypotheses 5 and 6 dealt with perceptions of different types of OCBs by supervisors and group members, respectively. These hypotheses were based on the same expectation that supervisors and group members in essence "prefer" one type of OCB over the other, and that this preference, in turn, would affect ratings of prosocial motive. However, again, the data did not support the notion of role-based preference for one type of OCB over another.

Hypotheses 7 and 8 brought under consideration a second characteristic that might lead to differential evaluations of prosocial motive beyond the simple "good behaviors" effect. That second characteristic was deviation from group OCB norms

for both task-focused and person-focused OCBs. Hypotheses 9 and 10 extended this concurrence-oriented perspective to include role as a moderator. None of these hypotheses was supported, either.

Finally, Hypotheses 11 and 12 proposed that prosocial motive moderates the relationship between OCB and two commonly-examined outcomes of OCB, liking and ratings of overall performance. Previous research indicates a positive relationship between OCB and liking and between OCB and ratings of overall performance (Podsakoff et al., 2000). Though not hypothesized in this study, these relationships were supported in these data. However, the moderating role of prosocial motive was not supported.

Having briefly summarized the results of this study, I will now turn my attention to discussion of possible reasons for these results. The reasons fall into three broad classes: statistical problems, research design flaws, and theoretical deficiencies. However, the former two types of problems make it difficult, if not impossible, to draw reliable conclusions about the theory. Therefore, I will confine the discussion of possible explanations to issues related to statistical problems and the research design.

Possible Explanations for Results

Statistical Problems

Extreme Correlations

Extremely high correlations between variables conceptualized to be different were the most prominent statistical problem with that data collected for this study. Task- and person-focused OCB were correlated at 0.84, and each of those variables, in turn, were correlated with prosocial motive at 0.89 and 0.85, respectively. Given that a

number of the hypotheses dealt with the different types of OCB as predictors of prosocial motive this very strong correlation appears to have overwhelmed any other hypothesized effects.

There are at least two problems presented by such high correlations. First, when other variables are involved in the analysis, the extremely high correlation between OCB and prosocial motive makes it difficult to interpret the analysis. For example, Hypothesis 3 involved task-focused OCB, role, and their interaction (product) as predictors and prosocial motive as the dependent variable. In both the direct effects model (each independent variable is entered but not the interaction term) and the interaction model, task-focused OCB is a significant predictor of prosocial motive. However, role is not a predictor of prosocial motive on its own, but the interaction term is a significant predictor of prosocial motive. Under normal circumstances, this pattern of relationships would not be troubling. In the presence of the extremely high correlation between task-focused OCB and prosocial motive, however, the significance of the interaction term is called into question. Is the relationship just an artifact of the very strong relationship between task-focused OCB prosocial motive? It is a possibility that must be considered.

Second, and more generally, whenever such high correlations exist, the distinctions conceptualized to exist between the constructs under consideration are called into question. The high correlation between task- and person-focused OCB is less troubling than the high correlation between each of those constructs and prosocial motive. The types of OCB are, after all, two dimensions of the same focal construct. Indeed, Settoon and Mossholder (2002), whose scale constitutes the bulk of the items

used to measure task- and person-focused OCB, reported a correlation between them of 0.79 in a sample roughly five times larger than mine.

The correlations of 0.85 and 0.89 between task- and person-focused OCB and prosocial motive are more troubling because of the expectation that they are two very different things: behavior and motive for behavior. Such a strong correlation between these variables indicates that, mathematically speaking, they are very nearly identical.

Several items on the prosocial motive scale in this study were drawn from the work of Rioux and Penner (2001), with some alterations. In their study, they were examining the relationship between motives and the five "classic" dimensions of OCB: helping, conscientiousness, civic virtue, courtesy, and sportsmanship. None of these OCB dimensions were related to their construct of prosocial values (motive) at more than 0.24. While the prosocial motive scale I used and their prosocial values scale were not identical, they do not appear to be so different as to have such a different relationship with types or dimensions of OCB. Therefore, the extremely high correlations noted in this study are unexpected. Unfortunately, there is no statistical remedy for this problem.

I do not want to dismiss entirely the high correlation between task- and person-focused OCB. Despite evidence provided by confirmatory factor analysis (CFA) indicating that task- and person-focused OCB are distinct types of OCB, the high correlation between the two types of OCB calls into question whether or not individuals do, for all practical purposes, make such a fine distinctions when observing or reporting such behaviors. Stated another way, even though the two types

are statistically different, there is some question as to whether or not they are meaningfully different.

One option, then, would be to collapse the two dimensions into a single, aggregated variable and rerun hypothesis tests wherever possible. Although it is unlikely that such an action would bring about different results, given that the correlation between the aggregate OCB variable and prosocial motive is 0.91 (even higher than either of the separate variables' correlation with prosocial motive), in order to be thorough, I retested Hypotheses 1 and 2, 3 and 4, 7 and 8, and 9 and 10 using this aggregated variable (the aggregation of the OCB variable means that there is now only one hypothesis for each of these hypothesis pairs). The results were very nearly identical: Hypotheses 1 and 2 still receive support, but none of the others did. Therefore, the only real difference is the loss of role as a moderator of the OCB-prosocial motive relationship that was previously supported for task-focused OCB.

The other correlation anomaly that stands out has to do with the relationships between OCB and OCB norms. Conceptually, one would expect person-focused OCB to be more highly correlated with person-focused OCB norms than with task-focused OCB norms and for task-focused OCB to be more highly correlated with task-focused OCB norms than with person-focused OCB norms. The expected pattern held true for task-focused OCB but not for person-focused OCB. Person-focused OCB was more highly correlated with task-focused OCB norms than it was with person-focused OCB norms. I have no explanation for this unexpected relationship.

On a more positive note, the relationship between task-focused OCB and corresponding norms and person-focused OCB and corresponding norms do not

appear to have been exceptionally influenced by using the same items (with alterations for the norms-oriented versions) to measure the constructs. The task-focused variations were correlated at 0.33, and person-focused variations were correlated at 0.16. Both values constitute statistically significant correlations, but that is to be expected; that the variables were not extremely correlated (as were OCBs and prosocial motive, discussed above) and that confirmatory factor analysis supports a four-factor structure involving all OCB and OCB norms items (see Table 3.2, p. 50) provides some evidence of discriminant validity. It is worth noting that OCBs and OCB norms were collected at different points in time.

Normality of Variables

Even so, another problematic aspect of the data was that of normality, or, more specifically, the lack thereof. Every focal variable included in the study tested as non-normal (see Table 3.1, p. 44) according to the Shapiro-Wilk's *W* test. I attempted to transform the variables, but all the transformations I tried were ineffective; the variable remained non-normal and, more importantly, the transformed variables used in analyses failed to yield normally-distributed residuals. Cohen, Cohen, West, and Aiken (2003: 250) say that, "in psychological research (e.g., when our dependent variables are rating scales with small range), transformations will have little effect," which I found to be true in the analysis of these data. Because the transformations were ineffective, I retained the variables in their raw form and then centered the variables as recommended for particular analyses.

Origins of the Problems

Having discussed these problematic aspects of the data, the next topic to address is how these problems came to be. Several possibilities come to mind. The first and most likely explanation for the problematic data is percept-percept inflation. Percept-percept inflation occurs when the same individuals provide data for both the independent and dependent variables in an analysis. This is the case in this study, although I did try to minimize the effects by collecting data at two points in time (Crampton & Wagner, 1994).

However, due to the relationships examined in this study, collection at two points in time did not provide an opportunity to collect all of the independent variables and dependent variables for all analyses at different points in time. For example, I collected perceptions of others' task- and person-focused OCBs at time 1, along with prosocial motive and measures of individual characteristics (distrust of others) and perceptions of group characteristics (work interdependence). At time 2, I collected ratings of both liking and performance, as well as assessments of group norms for task- and person-focused OCB. As previously noted, despite the OCB and OCB norm items being only slightly different, their correlations were not extreme, whereas the correlations between task- and person focused OCB and prosocial motive collected at the same point in time were very extreme.

The problem may have been exacerbated further by the presentation of the survey instrument. For example, items intended to measure a specific coworker's OCB were immediately followed by items intended to measure the degree to which the rater attributed those behaviors to prosocial motive. Though the sections were separated by

instructions that set the frame for the participants to answer the questions, it is possible that the proximity of the items is partially responsible for the extremely high correlations between the two variables.

Perhaps if each of the focal variables had been collected at a different point in time I could have avoided some of the problems with the data. By presenting the survey items separately, it is possible that less problematic data would have resulted. However, doing so would almost certainly have reduced the response rate even though the total amount of time involved would have been roughly equivalent. Given that it may have proved impractical to collect the data at more than two points in time, then, at the very least, the OCB and prosocial motive items should have been separated in the survey.

A second possibility is that the collection methodology employed to obtain the data may have influenced participants' responses. Potential participants were informed of the study by a Regional Manager, who encouraged them to participate. They were then invited to complete an online (web-based) survey via an e-mail message sent to their work e-mail address.

Although participants were assured that accessing the web-based survey would leave no traceable information on the machine they used to access the survey and that I would maintain the confidentiality of their response, it is possible that completing a survey about their coworkers via a computer and network connection provided by their employer may have resulted in inflated responses. In essence, some participants may have engaged in socially-desirable responding out of fear of being observed by

one of their coworkers or of their responses somehow being intercepted by their employer.

A third possibility is that the results were influenced by self-selection. That is, it is possible that the employees who consented to participate in this voluntary study were themselves "good citizens" – perhaps even disproportionately so. These "good citizens," due to self-serving bias, may attribute their own behavior to prosocial motives ("I do all these good things because I am a good person motivated to do good things") and then transfer that attribution to others' similar behaviors in accordance with the false consensus effect (Ross, Amabile, & Steinmetz, 1977).. The false consensus effect describes the phenomenon whereby individuals use their own behavior, attitudes, and beliefs to make sense of others' behaviors. Thus, people who view their own OCB as being prosocially motivated would be more likely to attribute the same motive to others' OCB.

In order to see if this might be the case, I calculated each rated individual's mean task- and person-focused OCB and stored it in a separate dataset. Then I created an additional categorical variable in this dataset which was set to a value of 1 if the rated individual participated in the study (i.e., also rated others in addition to being rated) and it was set to a value of 0 if the rated individual did not participate (i.e., was rated by others but did not complete the surveys). I then ran a one-way ANOVA model with this dichotomous variable as the predictor of each type of OCB, and I specified an analysis of the means in order to see if participants and non-participants were rated differently, as represented by the means on the measures of task- and person-focused OCB. Though the means were higher for participants in an absolute

sense (5.26 to 4.87 for task-focused OCB and 5.59 to 5.42 for person-focused OCB), these means were not significantly different (p = .28 and p = .56, for task- and person-focused means, respectively). This is certainly not a perfect test of the false-consensus explanation for the results, but it does indicate that, in terms of perceptions of task- and person-focused OCBs, participants and non-participants were not significantly different.

A fourth possibility is that the sample is a convenience sample rather than a probabilistic one, which brings into question the degree of randomness in the sample. By calling this sample a convenience sample, I mean that it was not selected in such a way as to be an accurate representation of some specific population. In fact, it was not a truly random sample even from among the employees of the organization that granted me access to their personnel. Rather, I was provided access to ten branches, but without my having any say in how these branches were selected. Seven of the ten branches were under the direct supervision of my contact person, and three other branches were selected without my input.

Without additional access to the company's other employees, I am unable to assess whether my sample is representative of the company's population of employees. Any suggestions that I might offer as to the difference between my sample and the organization's employees as a whole would simply be speculation on my part. However, when enumerating the potential reasons for the results of my study, it seems appropriate to note this characteristic of the sample. Perhaps the lack of randomness is somehow to blame for the problematic data. Of course, this is not a problem unique to

this study, and some statisticians have bemoaned the difficulty of ever obtaining a truly random sample (Feller, 1967).

So far in this Discussion, I have dealt with problems specific to the data itself, primarily having to do with unexpectedly-strong correlations between some focal variables. Of course, even had those correlations not existed in the data, the results of the hypothesis tests might not have been different. It may be, for example, that the effect sizes of the phenomena I wanted to examine are smaller than I expected, and so the sample size was insufficient to detect the hypothesized effects.

I conducted *a priori* power analyses based on using multiple regression as the method of data analysis. SAS' MIXED procedure, of course, is not the same as multiple regression, but the way it was employed in this study made multiple regression-based power analysis appropriate. Specifically, the data were not analyzed in a multilevel way; the MIXED procedure was simply employed as a sort of control for participants' completion of the same instrument multiple times. The actual analyses were performed at the observation level of analysis.

From the beginning, I expected a medium effect size, which I operationalized as 0.15, following Cohen (1992). Using G*Power 3.0.9 (Erdfelder, Faul, & Buchner, 1996), I set the alpha level at 0.05, desired power to 0.90, and the number of predictors to 15 (the maximum used by any hypothesis test in this study). Based on these settings, the total sample size required was 171. My final dataset contained 207 records. Therefore, it appears that if the hypothesized effects exist, they are smaller than anticipated, and my sample size was insufficient to find them.

Research Design Flaws

Although collecting data from employees in a real-world work setting is desirable for a number of reasons, it may be that the survey instructions and questions did not prompt participants strongly enough to think about behaviors and motives in the way I intended. It is possible that, as a result, the measures simply did not capture what they were intended to capture. For example, without having a specific context in which to frame their responses, people tended to attribute higher prosocial motive to others' OCB whether or not they perceived others to have deviated from OCB norms. In other words, the main effect hypothesized in the first two hypotheses – the "OCB, absent some reason to think otherwise" hypotheses ruled the day. Perhaps if some context were supplied, as in an experiment, the hypothesized effect might appear. This is not to say that deviation from OCB norms is insufficient to prompt a less-prosocial motive perception. Rather, it is to say that in order for such a perception to occur, it might be necessary to make the norm deviation more immediately salient when capturing participants' responses.

Also, perhaps pre-existing relationships among the participants might account for the lack of support for my hypotheses. Admittedly, this may be less of a design flaw and more of a theoretical one. Regardless of how it is classified, though, pre-existing relationships may have confounded accurate ratings of OCB, prosocial motive, and the dependent variables. That is, because someone already liked a group member, they rated them higher on OCB, prosocial motive, and liking, and all I really captured was a kind of OCB halo driven more by interpersonal affect than by the phenomenon of interest.

In order to account for this possibility, it would be necessary to control for it in some way. Of course, this could be accomplished easily in an experimental setting. In a field setting, however, it may be more complicated – involving longitudinal data collection or, perhaps, by conducting the study in newly-formed groups. That way, perhaps some data collection could be conducted prior to any group members having contact with each other and then, after sufficient time has passed to allow for the establishment of group norms, data collection could proceed.

In my study, I measured tenure with the organization in an attempt to account for some effects of prior relationships. Tenure with the group would capture the concept more accurately, but group tenure is notoriously difficult to conceptualize and measure (Sorenson, 2002). For example, when group-member turnover is frequent, what constitutes group tenure? One possibility is the time since the most recent addition to the workgroup, but this ignores the fact that the carry-over group members had some amount of history between them that would be lost by using that measure.

I opted for a less-complicated variable that would err in the other extreme: tenure with the organization. However, when I included it as a control variable in the hypothesis-testing analyses the results were unchanged. Given that it was not an ideal measure for the concept I was trying to capture and that the results of the analyses were unchanged whether it was in the model or not, I removed it from the final analyses.

Alternative Analyses

In addition to the post-hoc tests I have mentioned previously in this Discussion, I also conducted some other analyses using other variables collected

alongside the focal variables that have been the presented in the Methods and Results sections. I will briefly report the results of these analyses now; an expanded correlation matrix that includes these additional variables appears in Table 5.2.

Though this study was intended from the outset to examine the role of prosocial motive, I also constructed a measure for instrumental motive. Conceptually, this measure was intended to capture the degree to which the rater perceives the rate to be motivated by selfish concerns such as ulterior motives, desire for rewards or attention, or to create a favorable impression. Because this motive was less-strongly correlated with the task- and person-focused OCB predictors than was prosocial motive, I decided to run some exploratory analyses.

I re-analyzed the hypotheses, replacing prosocial motive with instrumental motive, in order to see if the relationships might emerge using a different motive. Because an instrumental motive represents a self-seeking attitude, it follows that deviation from OCB norms would be perceived as more instrumental. Therefore, whereas I expected deviation from OCB norms to prompt a decrease in perceived prosocial motive, I expected deviation from OCB norms to prompt an increase in perceived instrumental motive. However, none of the hypotheses were supported.

Additionally, I reexamined Hypotheses 11 and 12 looking for evidence of mediation rather than moderation, as originally hypothesized. Allen and Rush (1998) previously examined overall evaluations of performance as predicted by OCB, controlling for task performance and mediated by perceived motives, including both altruistic and instrumental motives. They found direct effects of both OCB and altruistic motives on performance evaluations, indicating a partially-mediated

Table 5.2

Means, Standard Deviations, Scale Alphas, and Intercorrelations Among Study Variables, Including Exploratory Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Sex [a]	0.74	0.44	—													
2 Age (yrs) - actual	28.82	10.43	0.09	—												
3 Distrust of others	1.96	0.91	-0.22 **	-0.37 ***	*0.76*											
4 Work Interdependence	5.89	0.90	0.08	0.14 *	-0.16 *	*0.76*										
5 OCB	5.50	1.14	-0.20 **	0.20 **	-0.15 *	0.13	*0.96*									
6 OCB - person-focused	5.64	1.10	-0.14 *	0.16 *	-0.15 *	0.16 *	0.95 ***	*0.93*								
7 OCB - task-focused	5.35	1.29	-0.23 **	0.21 **	-0.15 *	0.09	0.96 ***	0.84 ***	*0.95*							
8 OCB norms	5.54	0.93	0.19 **	0.08	-0.28 ***	0.28 ***	0.24 ***	0.23 ***	0.24 ***	*0.96*						
9 OCB norms - person-focused	5.70	0.93	0.21 **	0.09	-0.31 ***	0.28 ***	0.14 *	0.16 *	0.11	0.94 ***	*0.93*					
10 OCB norms - task-focused	5.38	1.03	0.15 *	0.07	-0.23 **	0.26 ***	0.32 ***	0.27 ***	0.33 ***	0.95 ***	0.79 ***	*0.93*				
11 OCB motive - prosocial	5.86	0.96	-0.14	0.21 **	-0.18 **	0.25 ***	0.91 ***	0.89 ***	0.85 ***	0.27 ***	0.20 **	0.30 ***	*0.94*			
12 OCB motive - instrumental	3.69	1.01	-0.14 *	-0.44 ***	0.33 ***	-0.07	-0.07	-0.09	-0.05	-0.25 ***	-0.28 ***	-0.20 **	-0.05	*0.71*		
13 Likability	6.12	0.84	0.12	0.07	-0.22 **	0.19 **	0.44 ***	0.46 ***	0.38 ***	0.32 ***	0.31 ***	0.30 ***	0.43 ***	-0.10	*0.92*	
14 Performance	5.45	1.26	-0.03	-0.04	-0.04	0.03	0.48 ***	0.45 ***	0.48 ***	0.18 **	0.13	0.21 **	0.40 ***	0.03	0.66 ***	*0.90*

Note . N = 207. Where appropriate, coefficient alphas appear on the diagonal.

[a] 0 = Male, 1 = Female

$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

relationship. However, as shown in Table 4.12 and Table 4.13, there is no evidence of mediation in these data. Both OCB and prosocial motive have significant direct effects on Liking and Ratings of Performance, but when both are included in the model, motive becomes non-significant, leaving only the direct effect of OCB on both dependent variables.

Directions for Future Research

Given that the current hypotheses were largely unsupported and that there may have been problems with how the data were collected, the first direction for future research would be to attempt to re-examine these hypotheses in a different dataset collected in such a way as to minimize the negative effects discussed earlier in this chapter. The most important thing to do without changing the research design entirely (e.g., to an experiment rather than a field study) would be to collect each of the focal constructs at a different point in time. This should reduce the percept-percept inflation threat dramatically (Crampton & Wagner, 1994). It would also be important to acquire a larger sample in order to have sufficient power to detect what appear to be fairly small effect sizes (although this is more difficult to assess due to the problems with the current data).

Alternatively, examining these hypotheses in an experimental setting might be worthwhile as well. This would provide the opportunity to manipulate deviation from OCB norms to see if making the deviation salient reveals the hypothesized effects. While this would not be quite so natural a test, it might provide insight that would be difficult to come by in a field setting.

Several hypotheses related to the ideas presented in this dissertation may be worthy of consideration, as well. With regard to the idea that supervisors and group members have a preference for one type of OCB over another, it seems plausible that task-focused OCB should predict performance better than it predicts liking, and that person-focused OCB should predict liking better than it predicts performance. Similarly, task-focused OCB should predict performance better than does person-focused OCB, and person-focused OCB should predict liking better than does task-focused OCB.

In my hypotheses in this study, I proposed that any deviation from OCB norms – whether that involved behavior in excess of the norm or behavior below the norm – would result in a lower perceived prosocial motive rating. However, perhaps more of the right type of OCB would not have that kind of negative effect. That is, more task-focused OCB might not have negative effects on prosocial motive attribution among supervisors, and more person-focused OCB might not have negative effects on prosocial motive attribution among group members.

There are several other possibilities for future research related to OCB norms. Building on Ehrhart and Naumann's (2004) ideas about different types of norms, it may be that OCB norms are also multidimensional. That is, groups may develop and enforce OCB norms based on specific characteristics of OCB. In particular, a number of more specific norms may exist based on the nature of OCBs.

Bolino (1999) argued that citizenship behaviors have several features, and that it is useful for researchers to consider the type, target, audience, and magnitude of OCBs in their work. In this dissertation, I addressed OCB norms based on types of

OCB (task- and person-focused), but OCB norms may be developed and enforced for these other OCB characteristics as well.

Based on this idea, groups may develop and enforce OCB norms for different targets of OCBs. For example, some groups' OCB may be more targeted at group members (i.e., Williams and Anderson's (1991) notion of OCB-I – behaviors directed toward individuals). Alternatively, a strong customer-service orientation may encourage employees to direct OCB toward customers. As a final example, employees in boundary-spanning units (Thompson, 1967) may direct OCB at key individuals in other organizations in order to secure resources for their own organization. Therefore, there are a number of potential targets of OCB that might become normative for any given group.

Also, groups may develop and enforce OCB norms based on the audience of OCBs. For example, it may be normative to help people with their work when the supervisor is not around, but people may not appreciate receiving that help when the supervisor is there due to impression management concerns (i.e., employees do not want to appear incompetent in front of their supervisor). Thus, an audience norm may develop within a workgroup.

Additionally, groups may develop and enforce OCB norms based on the timing of OCBs. For example, OCBs may be more expected at critical times such as just before a critical assignment is due. Employees may be expected to stay late (i.e., individual initiative), be flexible in order to help other group members meet the deadline (i.e., sportsmanship), and keep each other informed about their progress on key elements of the task (i.e., courtesy). These expectations may be specific to the

deadline situation but not in regular, day-to-day situations. Thus, OCB timing norms may exist.

Finally, groups may develop and enforce OCB norms based on the magnitude of the behavior. Though OCBs are sometimes described as small, seemingly-trivial behaviors that – taken individually – do not have substantial impact (Organ, 1988), they cannot be so minor as to be completely irrelevant. Therefore, OCBs may vary in their magnitude. One might argue, in fact, that the heroes discussed in the context of organizational culture are frequently "good soldiers" who performed extraordinary OCBs. For example, O'Reilly and Pfeffer (2000) describe several instances of Southwest Airlines employees who go far beyond the call of duty (e.g., caring for a customer's dog for two weeks, accompanying an elderly customer in order to make sure they found their connecting flight at the next stop, arranging for an earlier flight so a customer could see a sick and, as it turned out, dying relative). According to O'Reilly and Pfeffer, these acts of citizenship are commonplace at Southwest. This indicates a norm for OCBs of great magnitude.

Likewise, there is another possibility for future research related to perceived motives for others' OCB. Perhaps the most interesting possibility is that of the motives themselves. That is, what is the relationship between prosocial and instrumental motives? As mentioned previously, Grant and Mayer (2009) found evidence that both motives may guide behavior at the same time. Perhaps, however, there are circumstances in which one or the other motive is dominant. As this relates to perceived motives, then, how might observers go about making an attribution in these different circumstances?

Conclusion

Despite the lack of support for most of the hypotheses put forward in this dissertation, there are sound theoretical reasons to expect that perceived motive influences other judgments made by the attributor and that behavior that deviates from normative behavior provides a setting in which such an attribution will be made. Perhaps future analyses based on less-problematic data will provide support for these ideas.

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APPENDIX A: SURVEY ITEMS

General Notes About Response Scales

Unless otherwise noted, all scales use the following anchors:

1 – Strongly disagree

2 – Disagree

3 – Slightly disagree

4 – Neither disagree nor agree

5 – Slightly agree

6 – Agree

7 – Strongly agree

Specific Instruments

OCB

Sources (Legend)

[1] Settoon and Mossholder (2002)

[2] Bolino and Turnley (2005)

[3] Podsakoff, MacKenzie, Moorman, Fetter (1990)

[4] Van Scotter and Motowidlo (1996)

Person-Focused OCB Items

This group member listens to coworkers when they have to get something off their chest.[1]

This group member shows concern and courtesy toward coworkers, even under the most trying business situations.[1]

This group member tries to cheer up coworkers who are having a bad day.[1]

This group member goes out of the way to make newer employees feel welcome in the work group.[1]

This group member takes time to listen to coworkers' problems and worries.[1]

This group member is mindful of how his/her behavior affects other people's jobs.[3]

This group member says things to make people feel good about themselves or the work group.[4]

This group member encourages others to overcome their differences and get along.[4]

Task-Focused OCB Items

This group member takes on extra responsibilities in order to help coworkers when things get demanding at work.[1]

This group member helps coworkers with difficult assignments, even when assistance is not directly requested.[1]

This group member rearranges or alters his/her personal plans because of work.[2]

This group member volunteers for special projects in addition to his/her normal job duties.[2]

This group member assists coworkers with heavy work loads even though it is not part of job.[1]

This group member helps coworkers who are running behind in their work activities.[1]

This group member goes out of his/her way to help coworkers with work-related problems.[1]

This group member puts in extra hours to get work done on time.[4]

OCB Norms

The sources for these items are the same as for the OCB items listed above. They have simply been altered to reflect the conceptualization of group norms.

Person-Focused OCB Items

Members of this work group advocate listening to coworkers when they have to get something off their chest.[1]

Members of this work group advocate showing concern and courtesy toward coworkers, even under the most trying business situations.[1]

Members of this work group advocate trying to cheer up coworkers who are having a bad day.[1]

Members of this work group advocate going out of the way to make newer employees feel welcome in the work group.[1]

Members of this work group advocate taking time to listen to coworkers' problems and worries.[1]

Members of this work group advocate being mindful of how behavior affects other people's jobs.[3]

Members of this work group advocate saying things to make people feel good about themselves or the work group.[4]

Members of this work group advocate encouraging others to overcome their differences and get along.[4]

Task-Focused OCB Items

Members of this work group advocate taking on extra responsibilities in order to help coworkers when things get demanding at work.[1]

Members of this work group advocate helping coworkers with difficult assignments, even when assistance is not directly requested.[1]

Members of this work group advocate rearranging or altering personal plans because of work.[2]

Members of this work group advocate volunteering for special projects in addition to their normal job duties.[2]

Members of this work group advocate assisting coworkers with heavy work loads even though it is not part of their job.[1]

Members of this work group advocate helping coworkers who are running behind in their work activities.[1]

Members of this work group advocate going out of his/her way to help coworkers with work-related problems.[1]

Members of this work group advocate putting in extra hours to get work done on time.[4]

Perceived OCB Motives

Based on items and ideas drawn from Allen and Rush (1998), Rioux and Penner (2001), and Grant (2008).

Prosocial Motive

This group member wants the group to succeed.

This group member values relationships with other group members.

This group member is concerned about other group members.

This group member enjoys interacting with other group members.

This group member values cooperation.

This group member believes going "above and beyond the call of duty" is the right thing to do.

This group member wants to help other group members any way they can.

This group member genuinely wants to be a good group member.

This group member finds their work engaging.

This group member enjoys being a good group member.

Instrumental Motive

This group member often has ulterior motives for going “above and beyond the call of duty.”

This group member wants to impress higher-level managers.

This group member only wants to be recognized and/or rewarded.

This group member wants to avoid looking bad in front of others.

This group member wants to look better than other group members.

This group member wants to impress co-workers.

This group member wants to make other group members look bad.

Liking

Source: Wayne and Ferris (1990)

I like this coworker.

I get along well with this coworker.

I think this coworker would make a good friend.

Working with this coworker is a pleasure.

Ratings of Overall Performance

Source: Wayne and Liden (1995)

This coworker is superior to other coworkers I have worked with before.

This coworker's overall level of performance is excellent

This coworker is highly effective

This coworker has been effectively fulfilling his/her roles and responsibilities.

Work Interdependence

Source: Pearce and Gregersen (1991)

I work closely with others in doing my work

I frequently must coordinate my efforts with others

My own performance is dependent upon receiving accurate information from others

The way I perform my job has a significant impact on others

My work requires me to consult with others fairly frequently

Distrust of Others

These items were drawn from Dahling, Whitaker, and Levy's (2009) distrust of others subscale of their new Machiavellianism scale.

People are only motivated by personal gain.

I dislike committing to groups because I don't trust others.

Team members backstab each other all the time to get ahead.

If I show any weakness at work, other people will take advantage of it.

Other people are always planning ways to take advantage of the situation at my expense.

APPENDIX B: WEB SURVEY – INFORMATION/CONSENT SHEET

INFORMATION SHEET FOR CONSENT TO PARTICIPATE IN A RESEARCH STUDY

My name is Bruce Gilstrap, and I am a doctoral candidate in the Management division of the Price College of Business at the University of the Oklahoma. I am requesting that you volunteer to participate in a research study titled Behavior Perceptions of Peers and Supervisors. You were selected as a possible participant because characteristics of your employing organization are appropriate for the research study. Please read this information sheet and contact me to ask any questions that you may have before agreeing to take part in this study.

Purpose of the Research Study: The purpose of this study is to gain a better understanding of how people perceive the behaviors of others with whom they work.

Procedures: If you agree to be in this study, you will be asked to complete electronic surveys at two points in time. Survey questions focus on your perceptions of your own behavior as well as that of others with whom you work.

Risks and Benefits of Being in the Study: The primary potential risk of participating in this study is that confidentiality could be compromised, leading to employment or occupational risk. However, steps to mitigate this risk have been incorporated into the study design. First, your employer will have no means of knowing who participated in the study and who did not. Also, participants will be identified by a code not associated with any identifying information (rather than by name) in the data files used for analysis. Additionally, data collection will be electronic, and data thus collected will not be stored on the organization's computer network in any form. Finally, the methods used in constructing the web survey ensure that no information can be captured on the local machine; all responses are stored only on password-protected computers accessible only to the researcher. Therefore, this potential risk is minimal.

Some research designs require that the full intent of the study not be explained prior to participation. Although we have described the general nature of the tasks that you will be asked to perform, the full intent of the study may not be explained to you until after the completion of the study. At that time, we may provide you will a full debriefing which will include an explanation of the hypotheses that were tested and other relevant background information pertaining to the study. You will also be given an opportunity to ask any questions you have about the hypotheses and the procedures used in the study.

There are no expected benefits to participation in this study.

Compensation: You will not be compensated for your time and participation in this study.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not result in penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free not to answer any question or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Length of Participation: Participation in this study should require no more than one hour of your time – roughly 30 minutes or less for each of the two collection times.

Confidentiality: The records of this study will be kept private; your individual responses will not be shared with anyone else in your organization. In published reports, there will be no information included that will make it possible to identify you as a research participant. Research records consisting solely of computer files containing voluntary responses to survey questions will be stored securely on password-protected computers. Only approved researchers will have access to the records.

Contacts and Questions: If you have concerns or complaints about the research, the researcher(s) conducting this study can be contacted via telephone or e-mail. You may reach Mark Bolino at 405-325-3982 or mbolino@ou.edu. Alternatively, you may reach Bruce Gilstrap at 405-325-3137 or bruce.gilstrap@ou.edu. In the event of a research-related injury, contact the researcher(s). You are encouraged to contact the researcher(s) if you have any questions. If you have any questions, concerns, or complaints about the research and wish to talk to someone other than the individuals on the research team, or if you cannot reach the research team, you may contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at (405) 325-8110 or irb@ou.edu.

Please keep this information sheet for your records. By clicking the "I Agree to Participate" button below, you are agreeing to participate in this study.

Thank you for your consideration!

Sincerely,

Bruce Gilstrap, Ph.D. Candidate
Department of Management
Price College of Business
University of Oklahoma
307 W Brooks
Norman, OK 73019

I Agree to Participate I Do Not Agree to Participate

APPENDIX C: WEB SURVEY – TIME 1

Part 1

Specify your sex: ○ Male ○ Female

Birth month and year: Month Year

Hire month and year (current employer): Month Year

Using the following scale, please indicate the degree to which you agree or disagree with each statement.

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

#	Statement	1	2	3	4	5	6	7
1.	I work closely with others in doing my work	○	○	○	○	○	○	○
2.	I frequently must coordinate my efforts with others	○	○	○	○	○	○	○
3.	My own performance is dependent upon receiving accurate information from others	○	○	○	○	○	○	○
4.	The way I perform my job has a significant impact on others	○	○	○	○	○	○	○
5.	My work requires me to consult with others fairly frequently	○	○	○	○	○	○	○

6.	People are only motivated by personal gain.	○	○	○	○	○	○	○
7.	I dislike committing to groups because I don't trust others.	○	○	○	○	○	○	○
8.	Team members backstab each other all the time to get ahead.	○	○	○	○	○	○	○
9.	If I show any weakness at work, other people will take advantage of it.	○	○	○	○	○	○	○
10.	Other people are always planning ways to take advantage of the situation at my expense.	○	○	○	○	○	○	○

Part 2

Focal Coworker: Co-worker 1

Specify a short code or phrase to identify this coworker, but do not use their name. If you decide to complete Survey 2 when invited, this code or phrase will appear on that survey to remind you which coworker should be the focus of your ratings. Please be sure to enter a unique code for each coworker.

Code or phrase: sample code 1

Using the following scale, please indicate the degree to which you agree or disagree with each statement about your coworker (whose name is shown in the section header immediately above).

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

#	Statement	1	2	3	4	5	6	7
1.	This group member listens to coworkers when they have to get something off their chest.	○	○	○	○	○	○	○
2.	This group member takes on extra responsibilities in order to help coworkers when things get demanding at work.	○	○	○	○	○	○	○
3.	This group member shows concern and courtesy toward coworkers, even under the most trying business situations.	○	○	○	○	○	○	○
4.	This group member helps coworkers with difficult assignments, even when assistance is not directly requested.	○	○	○	○	○	○	○
5.	This group member tries to cheer up coworkers who are having a bad day.	○	○	○	○	○	○	○
6.	This group member rearranges or alters his/her personal plans because of work.	○	○	○	○	○	○	○
7.	This group member goes out of the way to make newer employees feel welcome in the work group.	○	○	○	○	○	○	○
8.	This group member volunteers for special projects in addition to his/her normal job duties.	○	○	○	○	○	○	○
9.	This group member takes time to listen to coworkers' problems and worries.	○	○	○	○	○	○	○

10.	This group member assists coworkers with heavy work loads even though it is not part of their job.	○	○	○	○	○	○	○
11.	This group member is mindful of how his/her behavior affects other people's jobs.	○	○	○	○	○	○	○
12.	This group member helps coworkers who are running behind in their work activities.	○	○	○	○	○	○	○
13.	This group member says things to make people feel good about themselves or the work group.	○	○	○	○	○	○	○
14.	This group member goes out of his/her way to help coworkers with work-related problems.	○	○	○	○	○	○	○
15.	This group member encourages others to overcome their differences and get along.	○	○	○	○	○	○	○
16.	This group member puts in extra hours to get work done on time.	○	○	○	○	○	○	○

Using the same scale, and with respect to the same coworker, please indicate the degree to which you agree or disagree with each statement about your coworker.

#	Statement	1	2	3	4	5	6	7
1.	This group member wants the group to succeed.	○	○	○	○	○	○	○
2.	This group member values relationships with other group members.	○	○	○	○	○	○	○

3.	This group member often has ulterior motives for going “above and beyond the call of duty.”	○	○	○	○	○	○	○
4.	This group member is concerned about other group members.	○	○	○	○	○	○	○
5.	This group member wants to impress higher-level managers.	○	○	○	○	○	○	○
6.	This group member only wants to be recognized and/or rewarded.	○	○	○	○	○	○	○
7.	This group member enjoys interacting with other group members.	○	○	○	○	○	○	○
8.	This group member wants to avoid looking bad in front of others.	○	○	○	○	○	○	○
9.	This group member values cooperation.	○	○	○	○	○	○	○
10.	This group member believes going "above and beyond the call of duty" is the right thing to do.	○	○	○	○	○	○	○
11.	This group member wants to look better than other group members.	○	○	○	○	○	○	○
12.	This group member wants to help other group members any way they can.	○	○	○	○	○	○	○
13.	This group member genuinely wants to be a good group member.	○	○	○	○	○	○	○

14.	This group member wants to impress co-workers.	○	○	○	○	○	○	○
15.	This group member finds their work engaging.	○	○	○	○	○	○	○
16.	This group member wants to make other group members look bad.	○	○	○	○	○	○	○
17.	This group member enjoys being a good group member.	○	○	○	○	○	○	○

Repeat Part 2 as necessary for each coworker to be rated.

APPENDIX D: WEB SURVEY – TIME 2

Part 1

Using the following scale, please indicate the degree to which you agree or disagree with each statement.

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

#	Statement	1	2	3	4	5	6	7
1.	Members of this work group advocate listening to coworkers when they have to get something off their chest.	○	○	○	○	○	○	○
2.	Members of this work group advocate taking on extra responsibilities in order to help coworkers when things get demanding at work.	○	○	○	○	○	○	○
3.	Members of this work group advocate showing concern and courtesy toward coworkers, even under the most trying business situations.	○	○	○	○	○	○	○
4.	Members of this work group advocate helping coworkers with difficult assignments, even when assistance is not directly requested.	○	○	○	○	○	○	○
5.	Members of this work group advocate trying to cheer up coworkers who are having a bad day.	○	○	○	○	○	○	○
6.	Members of this work group advocate rearranging or altering personal plans because of work.	○	○	○	○	○	○	○

7.	Members of this work group advocate going out of the way to make newer employees feel welcome in the work group.	○	○	○	○	○	○	○
8.	Members of this work group advocate volunteering for special projects in addition to his/her normal job duties.	○	○	○	○	○	○	○
9.	Members of this work group advocate taking time to listen to coworkers' problems and worries.	○	○	○	○	○	○	○
10.	Members of this work group advocate assisting coworkers with heavy work loads even though it is not part of their job.	○	○	○	○	○	○	○
11.	Members of this work group advocate being mindful of how behavior affects other people's jobs.	○	○	○	○	○	○	○
12.	Members of this work group advocate helping coworkers who are running behind in their work activities.	○	○	○	○	○	○	○
13.	Members of this work group advocate saying things to make people feel good about themselves or the work group.	○	○	○	○	○	○	○
14.	Members of this work group advocate going out of his/her way to help coworkers with work-related problems.	○	○	○	○	○	○	○
15.	Members of this work group advocate encouraging others to overcome their differences and get along.	○	○	○	○	○	○	○

16. Members of this work group advocate putting in extra hours to get work done on time. ○ ○ ○ ○ ○ ○ ○

Part 2

Using the following scale, please indicate how much the behavior described in each statement occurs in your workgroup.

Very little	Little	A moderate amount	Much	Very much
1	2	3	4	5

#	Statement	1	2	3	4	5
1.	How much friction is there among members in your work unit?	○	○	○	○	○
2.	How much are personality conflicts evident in your work unit?	○	○	○	○	○
3.	How much tension is there among members in your work unit?	○	○	○	○	○
4.	How much emotional conflict is there among members in your work unit?	○	○	○	○	○
5.	How often do people in your work unit disagree about opinions regarding the work being done?	○	○	○	○	○
6.	How frequently are there conflicts about ideas in your work unit?	○	○	○	○	○

7.	How much conflict about the work you do is there in your work unit?	○	○	○	○	○	
8.	To what extent are there differences of opinion in your work unit?	○	○	○	○	○	

Part 3

Using the following scale, please indicate the degree to which you agree or disagree with each statement.

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

#	Statement	1	2	3	4	5	6	7
1.	I feel a lot of pressure to go the extra mile by doing a lot of things that, technically, I don't have to do.	○	○	○	○	○	○	○
2.	Generally speaking, it is worth it for me to "burn the midnight oil" even if I don't get formal rewards.	○	○	○	○	○	○	○
3.	In this organization, the people who are seen as "team players" are the ones who do significantly more than what is technically required of them.	○	○	○	○	○	○	○
4.	There is a lot of pressure to take on additional responsibilities and volunteer for extra assignments in this organization.	○	○	○	○	○	○	○

5.	It is beneficial to my career, overall, to go above and beyond the call of duty at work.	○	○	○	○	○	○	○
6.	Simply doing your formally-prescribed job duties is not enough to be seen as a good employee in this organization.	○	○	○	○	○	○	○
7.	My coworkers often go "above and beyond" the call of duty, and there is a lot of pressure for me to do so as well.	○	○	○	○	○	○	○
8.	In this organization, it is expected that employees will come in early, work late, or take work home with them.	○	○	○	○	○	○	○
9.	Management expects employees to "voluntarily" take on extra duties and responsibilities that aren't technically required as a part of their job.	○	○	○	○	○	○	○
10.	It is worthwhile to go beyond the call of duty even though it is not technically required.	○	○	○	○	○	○	○
11.	It seems like there is a lot of pressure to take on more and more if you want to be seen as an employee who is willing to go the extra mile.	○	○	○	○	○	○	○
12.	Just doing your job these days is not enough--there is a lot of pressure to go above and beyond the bare minimum.	○	○	○	○	○	○	○
13.	I feel a lot of pressure to work beyond my formally-prescribed duties for the good of the organization.	○	○	○	○	○	○	○

14.	In general, I find it valuable to "go the extra mile" at work.	○	○	○	○	○	○	○
15.	I feel a great deal of stress because of my job.	○	○	○	○	○	○	○
16.	Generally speaking, I like my job.	○	○	○	○	○	○	○

Part 4

Focal Coworker: Co-worker 1

Using the following scale, please indicate the degree to which you agree or disagree with each statement about the coworker you identified in the first survey using the following code or phrase:

sample code 1

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

#	Statement	1	2	3	4	5	6	7
1.	I like this coworker.	○	○	○	○	○	○	○
2.	This coworkers is superior to other coworkers I have worked with before.	○	○	○	○	○	○	○
3.	I get along well with this coworker.	○	○	○	○	○	○	○
4.	This coworker's overall level of performance is excellent.	○	○	○	○	○	○	○

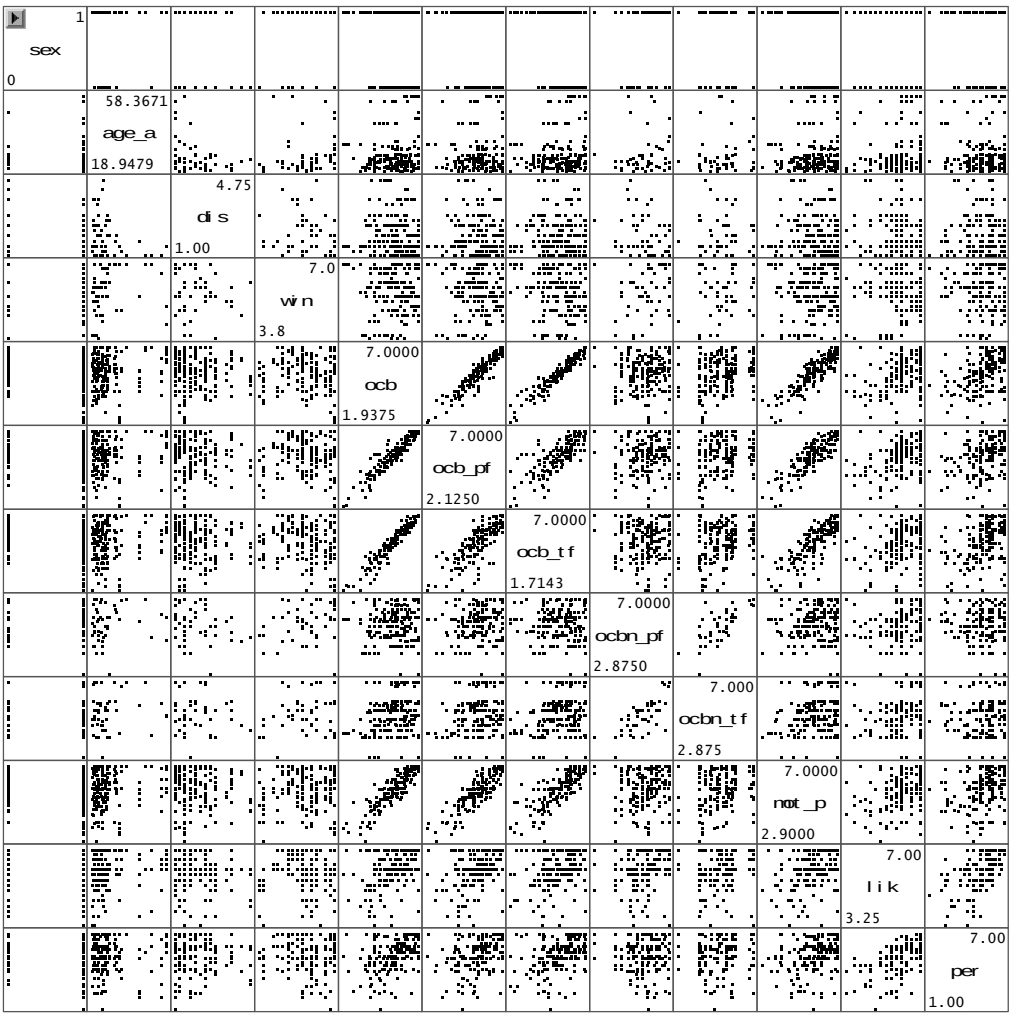
5.	Working with this coworker is a pleasure.	○	○	○	○	○	○	○
6.	This coworker is highly effective.	○	○	○	○	○	○	○
7.	I think this coworker would make a good friend.	○	○	○	○	○	○	○
8.	This coworker has been effectively fulfilling his/her roles and responsibilities.	○	○	○	○	○	○	○

Repeat Part 4 as necessary for each coworker to be rated.

APPENDIX E: VARIOUS PLOTS FOR ALL VARIABLES

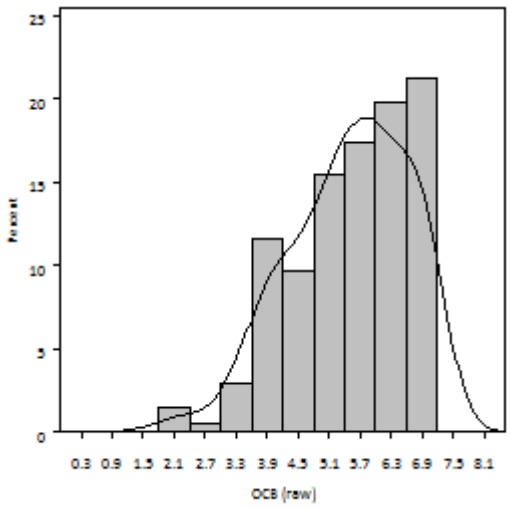
Scatter Plot Matrix of Focal Variables

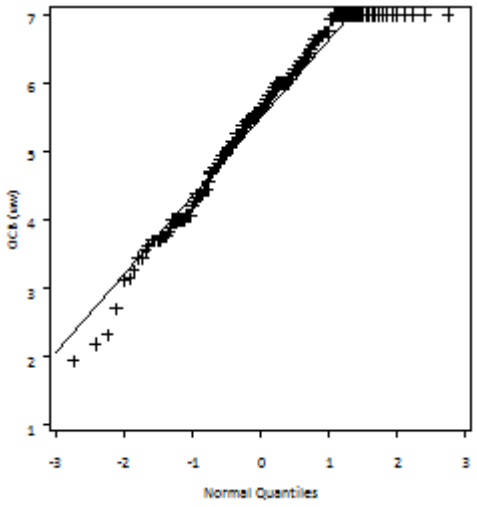
Figure D.1
Scatter Plot Matrix of the Variables Included in the Study

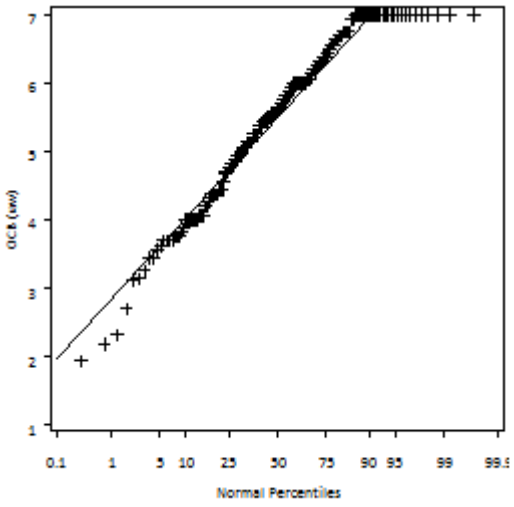


Legend	Scale	Description
sex	0-1	Sex
age_a	-	Age in decimal years
dis	1-7	Distrust of others
win	1-7	Work interdependence
ocb	1-7	Perceived OCB
ocb_tf	1-7	Perceived task-focused OCB
ocb_pf	1-7	Perceived person-focused OCB
ocbn_tf	1-7	Task-focused OCB norms
ocbn_pf	1-7	Person-focused OCB norms
mot_p	1-7	Prosocial motive attribution for OCB
lik	1-7	Liking for coworker
per	1-7	Performance of coworker

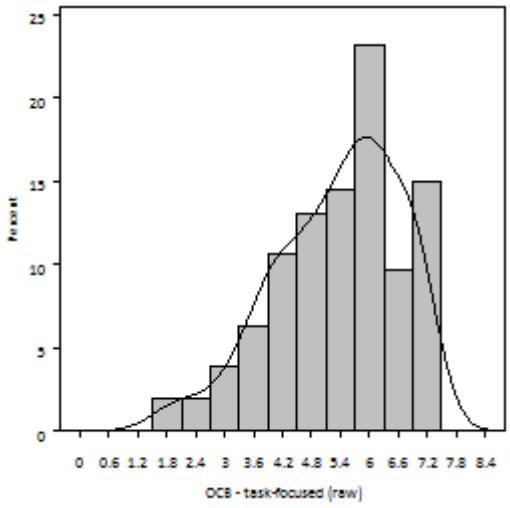
OCB (Combined Task- and Person-Focused)

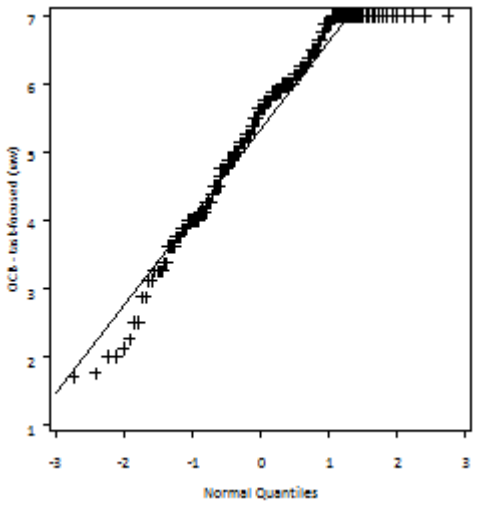


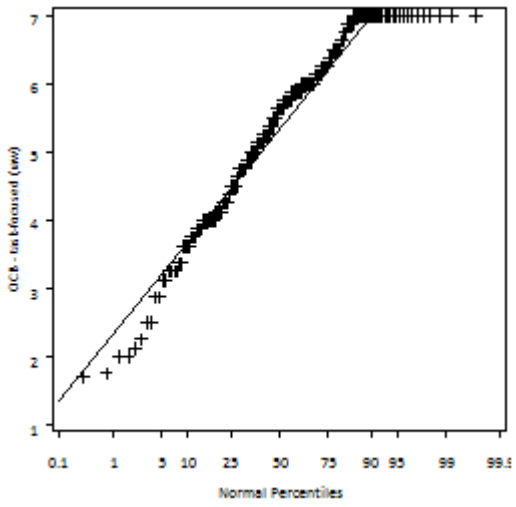




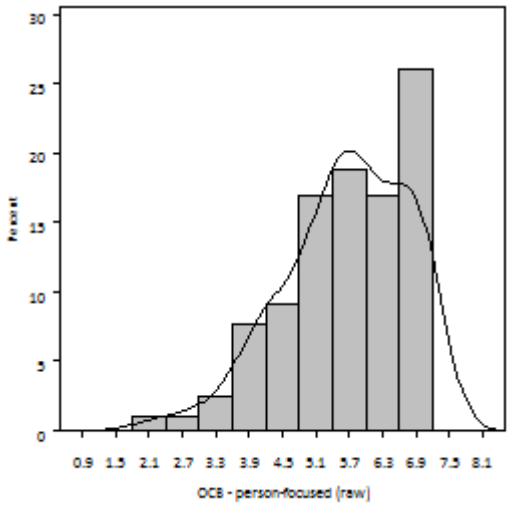
Task-Focused OCB

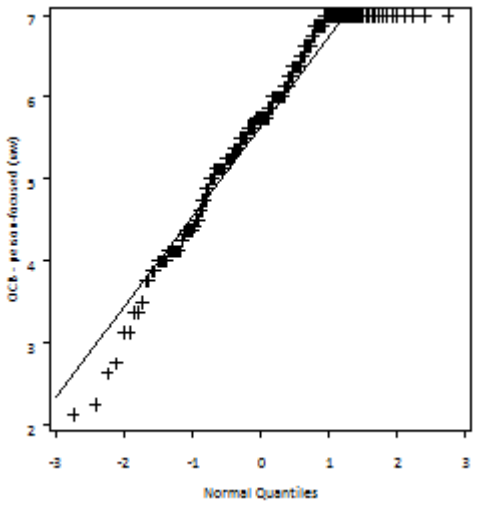


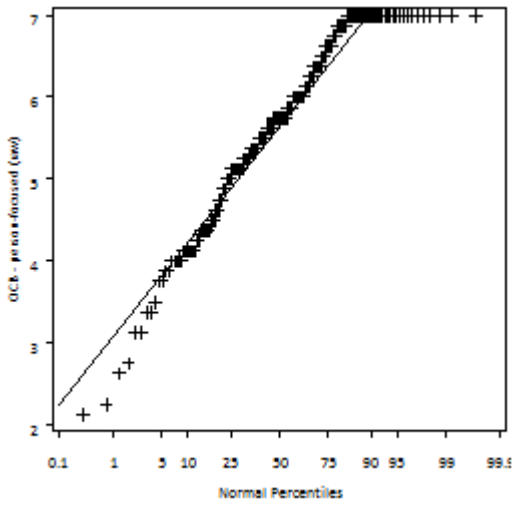




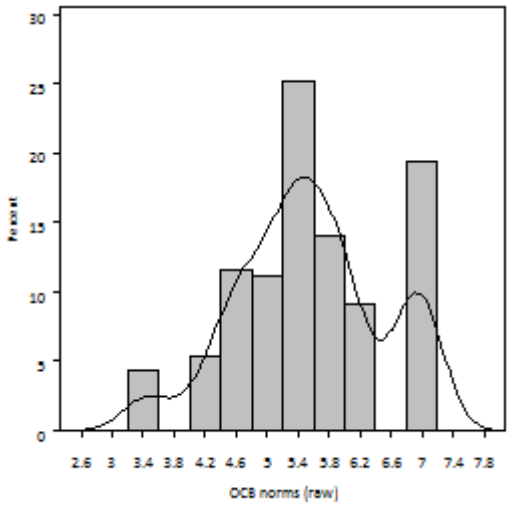
Person-Focused OCB

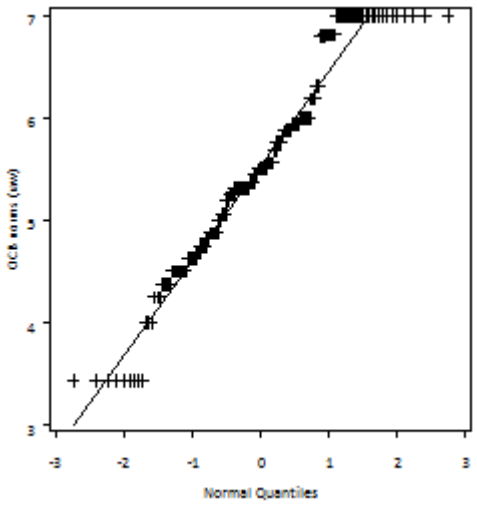


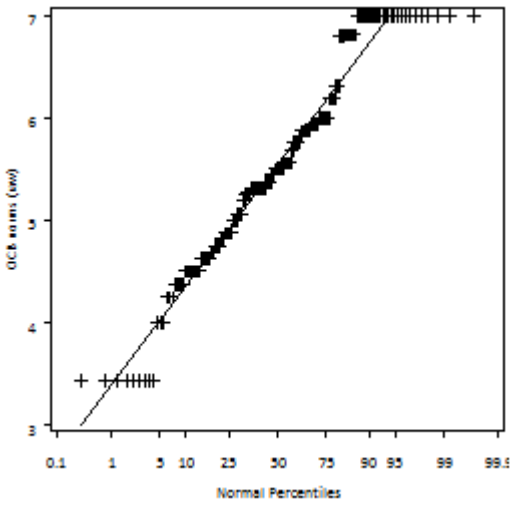




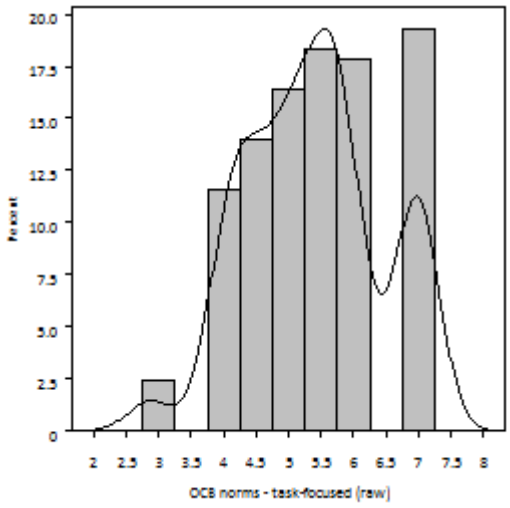
OCB Norms (Combined Task- and Person-Focused)

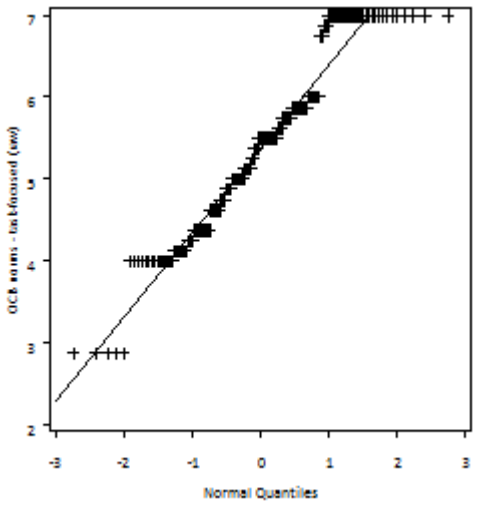


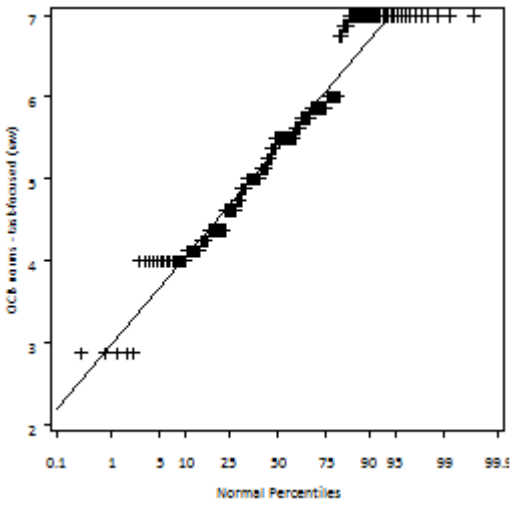




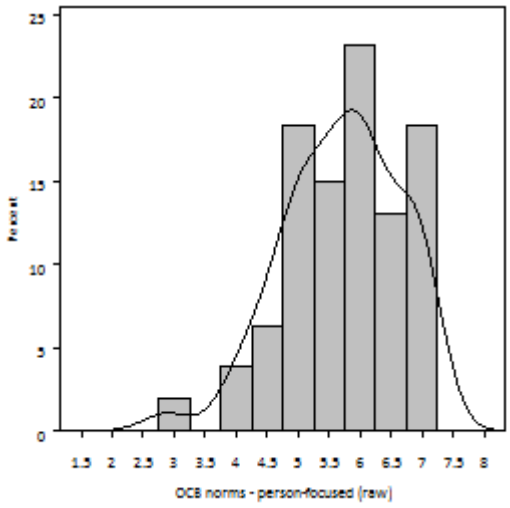
Task-Focused OCB Norms

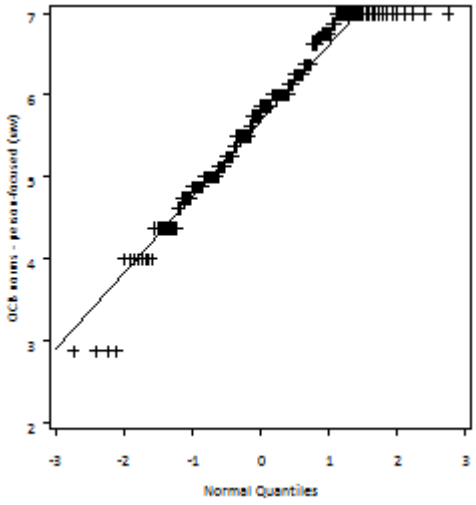


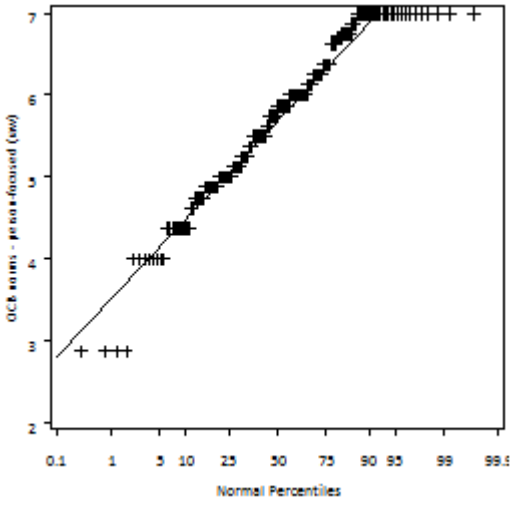




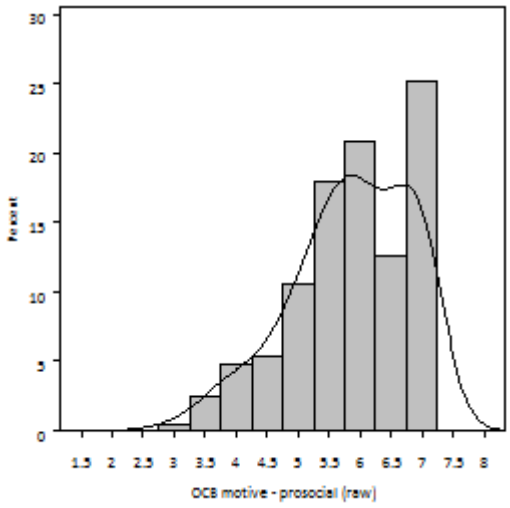
Person-Focused OCB Norms

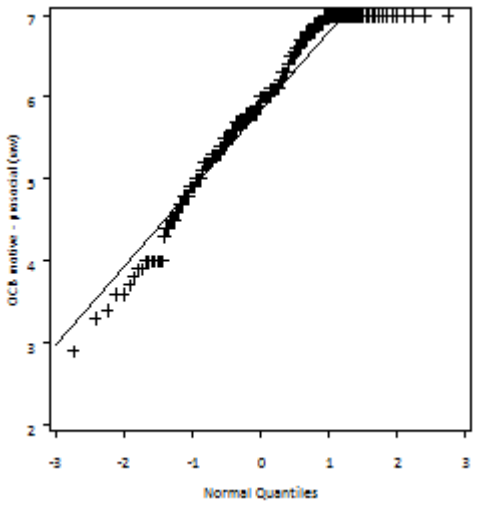


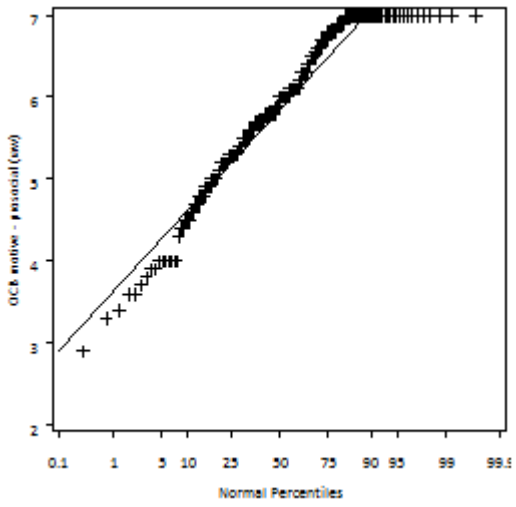




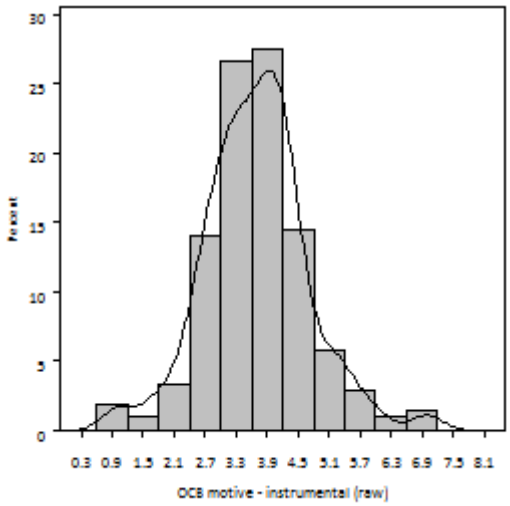
Prosocial OCB Motive

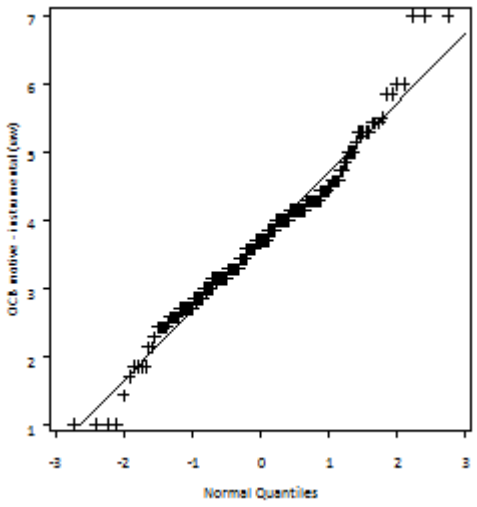


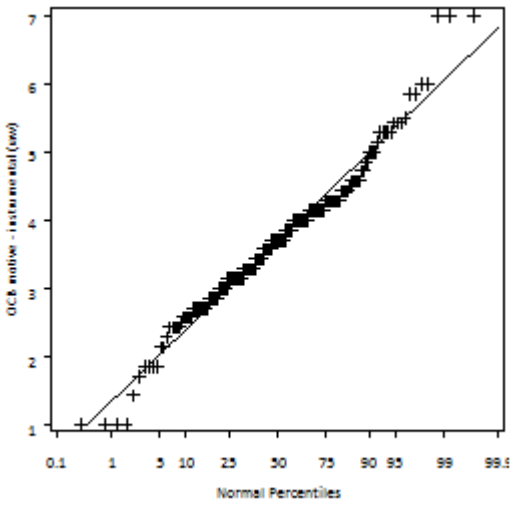




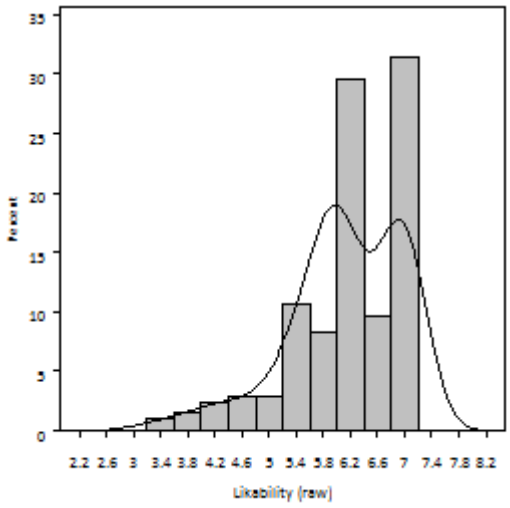
Instrumental OCB Motive

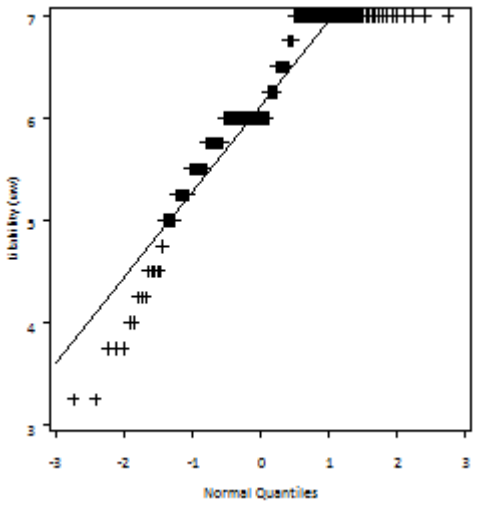


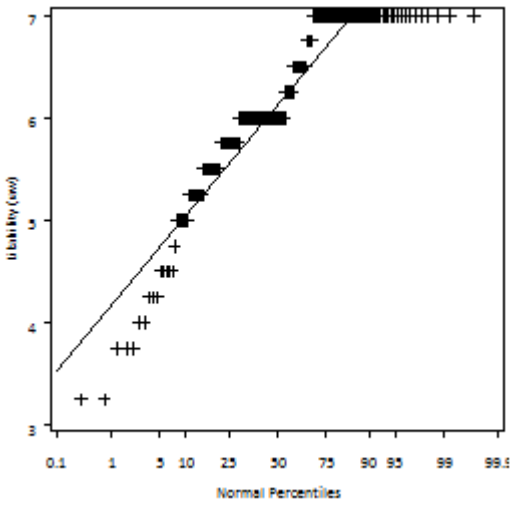




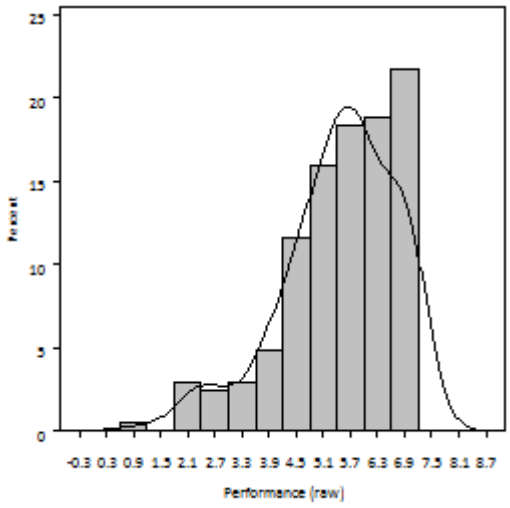
Liking

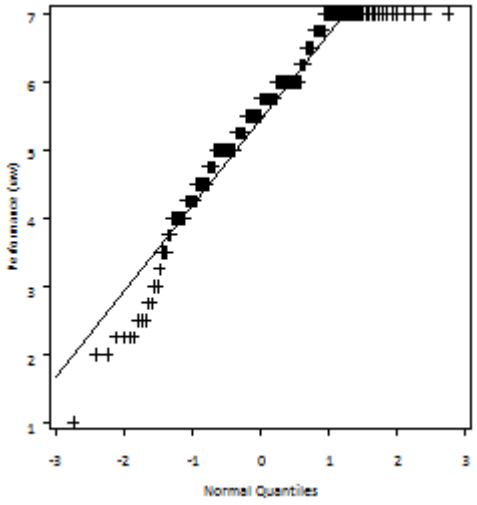


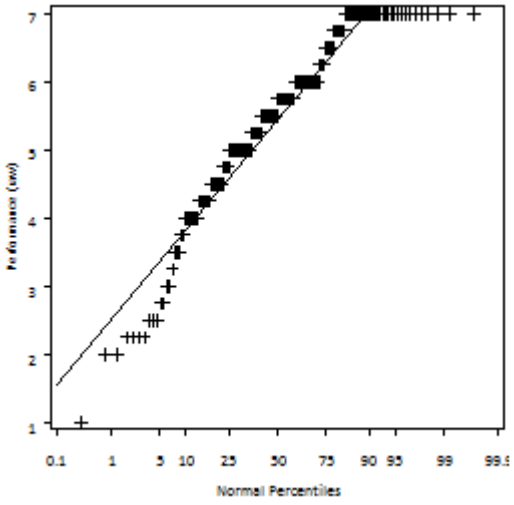




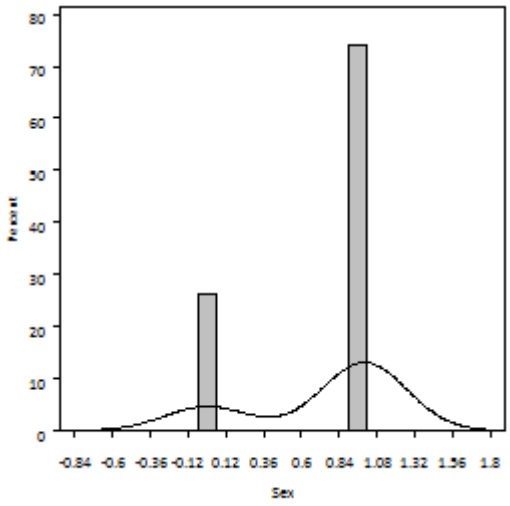
Performance

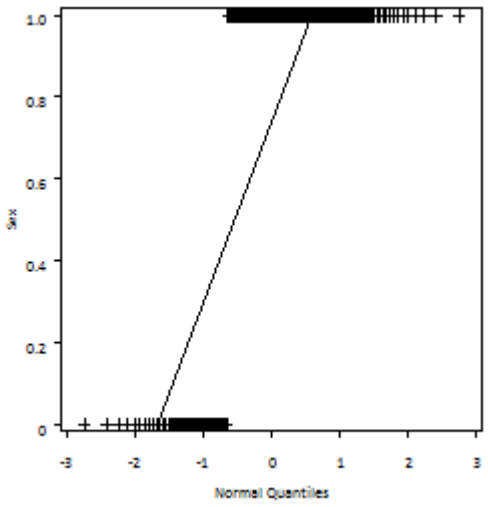






Sex


80
70
60
50
40
30
20
10
0
Percent
-0.84 -0.6 -0.36 -0.12 0.12 0.36 0.6 0.84 1.08 1.32 1.56 1.8
Sex


1.0
0.8
0.6
0.4
0.2
0
Sex
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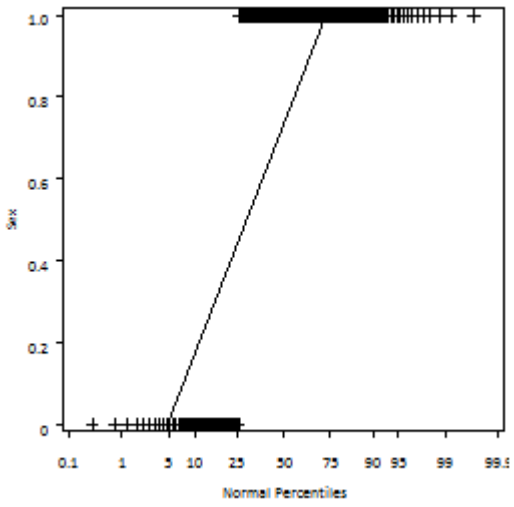
Normal Quantiles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0.8
0.6
0.4
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0
Sex
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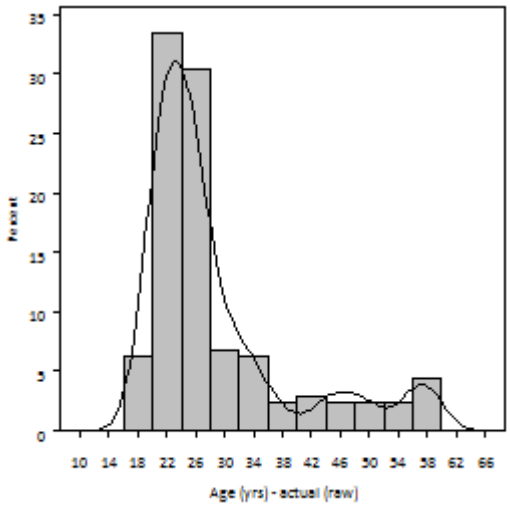
Normal Percentiles

Age


Percent
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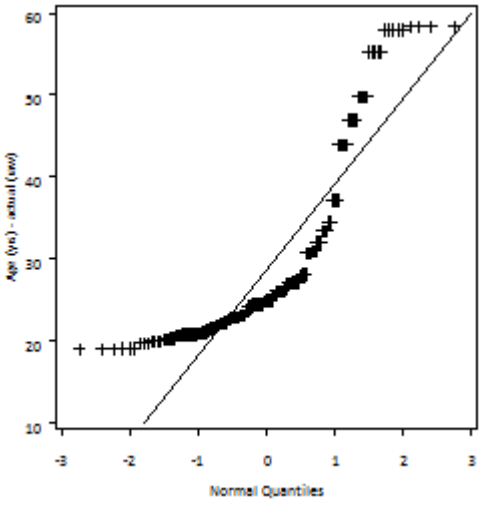
30
25
20
15
10
5
0
10 14 18 22 26 30 34 38 42 46 50 54 58 62 66
Age (yrs) - actual (raw)


Age (yrs) - actual (raw)
60
50
40
30
20
10
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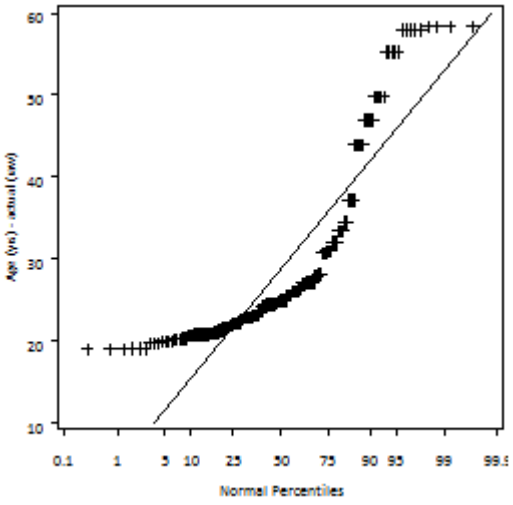
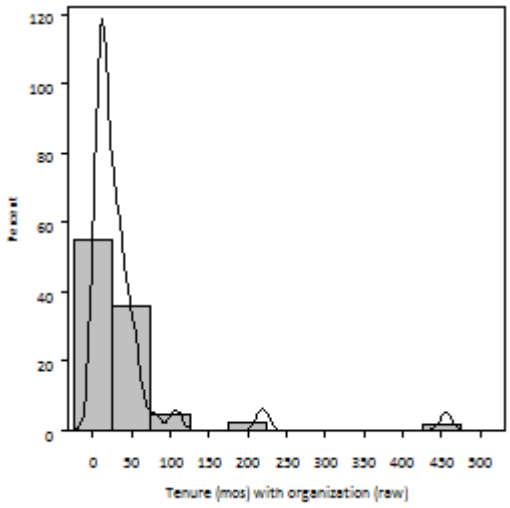
Normal Quantiles


Age (yrs) - actual (raw)
60
50
40
30
20
10
0.1 1 5 10 25 50 75 90 95 99
Normal Percentiles

Tenure


Percent
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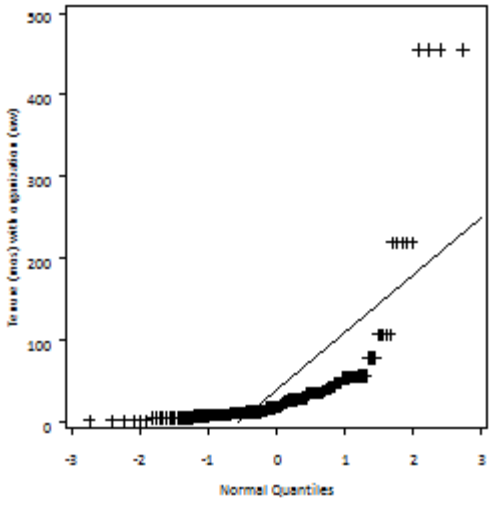
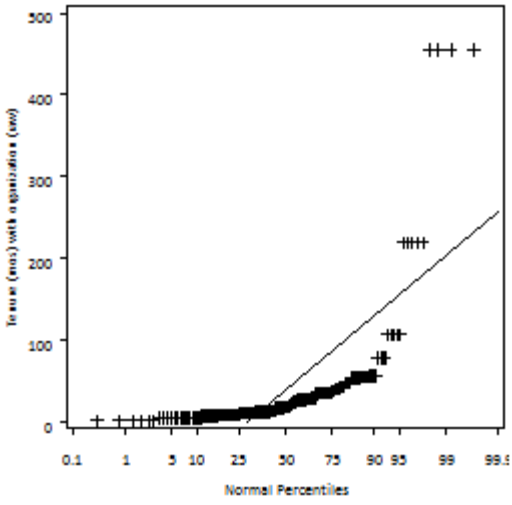
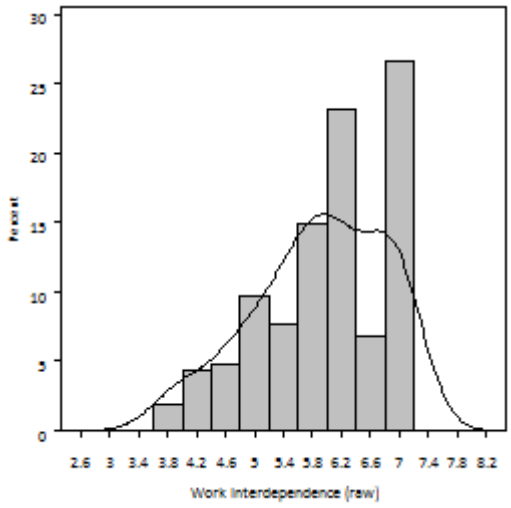
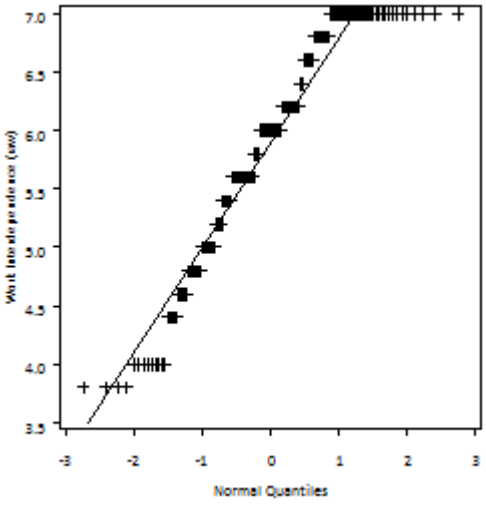
100
80
60
40
20
0
0 50 100 150 200 250 300 350 400 450 500
Tenure (mos) with organization (raw)

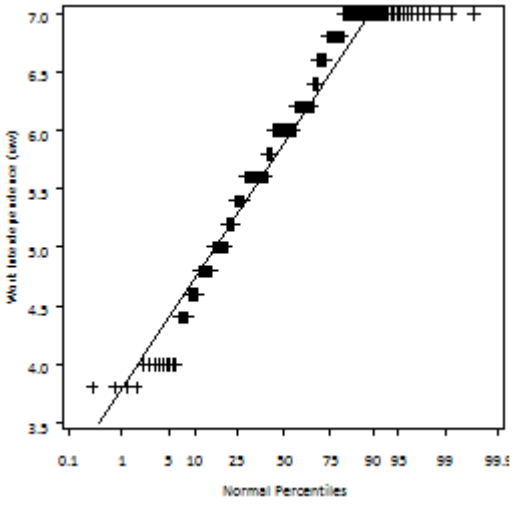

Tenure (mos) with organization (raw)
500
400
300
200
100
0
-3 -2 -1 0 1 2 3
Normal Quantiles


Tenure (mos) with organization (raw)
500
400
300
200
100
0
0.1 1 5 10 25 50 75 90 95 99
Normal Percentiles

Work Interdependence







Distrust of Others