

May 2014

Understanding the Role of Workplace Relationships in Employee Commitment and Engagement: A Complementary Fit Perspective

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UNDERSTANDING THE ROLE OF WORKPLACE RELATIONSHIPS IN
EMPLOYEE COMMITMENT AND ENGAGEMENT:
A COMPLEMENTARY FIT PERSPECTIVE

by

Kyle Ehrhardt

A Dissertation Submitted in
Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy
in Management Science

at

The University of Wisconsin-Milwaukee

May, 2014

ABSTRACT
UNDERSTANDING THE ROLE OF WORKPLACE RELATIONSHIPS IN
EMPLOYEE COMMITMENT AND ENGAGEMENT:
A COMPLEMENTARY FIT PERSPECTIVE

by

Kyle Ehrhardt

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Dr. Belle Rose Ragins

For most of us, work is an inherently social experience. We depend on our relationships to accomplish our work tasks. Emerging theory also suggests that work relationships play a role in meeting our social and developmental needs, and in so doing, affect our attitudes toward our jobs and organizations. Specifically, relational systems theory holds that employees have five different ‘relational needs,’ and are more likely to become committed to their organization and engaged in their work when they are embedded in a set of workplace relationships that meet these needs. According to the theory, employees’ experiences of need fulfillment create a state of ‘psychological attachment to others at work’, which subsequently affects their organizational commitment and work engagement (Kahn, 2007).

Drawing on relational systems theory, I develop and test a model that explains how employees’ full array of work relationships shape their organizational commitment and work engagement. To more precisely capture employees’ appraisal of need fulfillment, I also extend relational systems theory by integrating a person-environment fit perspective (Edwards, 1992). This perspective suggests that need fulfillment is best

evaluated by examining ‘needs/supplies fit,’ that is, the congruence between individual preferences and environmental inputs. The model was tested using primary data from 538 employees by means of a multi-wave, web-based survey. I also developed and validated a measure of psychological attachment to others at work using a separate sample of 327 individuals.

Results provided overarching support for the theoretical model. Supporting relational systems theory, individuals’ experiences of need fulfillment across the five relational need dimensions predicted their organizational commitment and work engagement, and these effects were mediated by their psychological attachment to others at work. Psychological attachment to others at work also explained significant variance in organizational commitment and work engagement beyond the influence of perceived organizational support and supplementary person-organization fit. These relationships were further robust to individual differences in employees’ relational-interdependent self-construal. Finally, supporting PE fit perspectives, results revealed that experiencing relational needs as ‘over-met’ versus ‘under-met’ can have different consequences for predicting individuals’ psychological attachment to others at work. Implications for theory, research, and practice are discussed.

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ACKNOWLEDGMENTS

The opportunity to complete a dissertation, like the opportunity to complete a PhD, is not a solo-endeavor. These milestones would not be possible without the support of numerous individuals. Two such individuals deserve particular mention: my wife Sarah, who has encouraged me at every step of the process; and my committee chair and advisor Dr. Belle Rose Ragins, whose countless hours of mentoring and guidance can simply not be repaid. To each of you – reaching this juncture of my career would simply not be possible without your support, and I am forever grateful.

I would also like to extend a special thank you to all of my committee members: Dr. Mark Mone, Dr. Margaret Shaffer, Dr. Sarah Freeman, and Dr. Janice Miller for the time each of you have devoted to helping this project come to fruition. In addition, I would like to thank Dr. Ed Levitas for his counsel over the previous years, as well as acknowledge all those who originally encouraged me to pursue an academic career – and in particular, Dr. Chad McEvoy. Finally, I would like to provide a special note of thanks to Mr. Sossie Yorot for his assistance in translating measures used in this study. This achievement would not be possible without all of you.

Chapter 1: Introduction and Study Background

Interpersonal relationships are both a ubiquitous and significant part of our experiences at work (Allen & Eby, 2012). Through our workplace relationships we accomplish a wide range of professional and personal objectives. We collaborate with others in completing our everyday work tasks (Alper, Tjosvold, & Law, 1998; 2000). We rely on others in the development of our own career competencies (Hall & Kahn, 2002; Kram, 1985). We even depend on our co-workers as a source of social and emotional support in times of personal need (Kanov et al., 2004; Lilius, Worline, Dutton, Kanov, & Maitlis, 2011). Indeed, as Gersick, Bartunek, and Dutton (2000, p. 1026) observed, our workplace relationships truly “constitute the environment in which we live our professional lives.”

Still, even given the salience of workplace relationships for most employees, our understanding of how these relationships may influence individuals’ attitudes and behaviors within organizations is limited. Several scholars have pointed out that the study of workplace relationships is narrow in scope, largely relegated to the background in most existing organizational theory and research (see Ferris et al., 2009; Ragins & Dutton, 2007). This is problematic, especially given that organizations today are continually shifting away from traditional bureaucratic structures to those more collaborative in nature, for example team- and project-based organizational structures, which emphasize the need for interaction and personal connections between individuals (Dumas, Phillips, & Rothbard, 2013; Griffin, Stoverink, & Gardner, 2012; Gittell, 2012; Sluss & Ashforth, 2007; c.f., Grant, 2007).

Fortunately, management researchers have begun to take a more explicit look at the role of workplace relationships in organizational life (Eby & Allen, 2012). This increased focus stems largely from the growing attention devoted to the study of “positive relationships at work” (Ragins & Dutton, 2007), as well as the positive psychology movement more generally (see Cameron & Caza, 2004; Seligman & Csikszentmihalyi, 2000). As Kahn (2007) points out, however, to simply take a greater interest in the role of workplace relationships may be insufficient to fully capture their value for employees. Rather, if scholars are to truly understand the utility of workplace relationships in shaping the attitudes and behaviors of employees, a theoretical shift toward models that place “relationships at the center rather than at the periphery of people’s experiences at work” is necessary (Kahn, 2007, p. 189-190).

Purpose of the Study

Building on these emerging perspectives, the purpose of this study is to extend and test a theoretical model which explains how *relationships with others* at work shape employees’ work-related attitudes and behaviors. Specifically, I take interest in how workplace relationships affect two constructs: employees’ commitment to their organization and engagement in their work. I follow recent research by Klein, Molloy, and Brinsfield (2012) in defining organizational commitment as a volitional psychological bond reflecting dedication to and responsibility for one’s organization. I further follow Kahn (1990; 1992) in defining work engagement as a state in which one harnesses him/herself fully in one’s work role; that is, a state in which an employee expresses him/herself physically, cognitively, and emotionally during one’s role performance. Each of these constructs is addressed in detail in Chapter 2.

In establishing the theoretical foundation for this study, I integrate two theoretical streams in organizational behavior literature: relational systems theory (Kahn, 1998; 2001; 2007) and person-environment (PE) fit theory (Edwards, 1992; 1996). As described in greater detail in Chapters 2 and 3, Kahn's theory of relational systems offers the idea that workplace relationships play a key role in determining individuals' organizational commitment and work engagement. According to the theory, employees' commitment to their organization and engagement in their work occurs when they are embedded in a set of workplace relationships that meet their 'relational needs.' In this context, relational needs do not refer to individuals' fundamental human drives for belongingness and affiliation (see Baumeister & Leary, 1995). Rather, relational needs are defined as what employees wish to obtain through their interactions with others at work. Kahn (2007) identifies five core 'dimensions' of relational needs that may or may not be met on account of the specific interpersonal input employees receive from others at work. These include dimensions which are both task-oriented in nature (e.g., accomplishment of one's job responsibilities) and more personal in nature (e.g., achievement of feelings of validation and obtaining emotional support). Explicitly, relational systems theory suggests that the fulfillment of individuals' relational needs leads employees to develop feelings of interpersonal attachment for others at work. These feelings of interpersonal connectedness are then expected to generalize such that they may influence individuals' attachment to their organization, as well as their investment and engagement in their work (Kahn, 2007). In this study, I empirically examine these proposed relationships.

This study additionally extends current theorizing on relational systems in three important ways. First, although the concept of need fulfillment plays a prominent role in

relational systems theory (Kahn, 2007), the theory is limited in that it does not explain the process by which individuals' appraisal of need fulfillment actually occurs. Here, I integrate a needs/supplies PE fit lens to clarify this appraisal process (Muchinsky & Monahan, 1987). Specifically, I draw on well-established tenets of PE fit theory which suggest that individuals' appraisal of congruence between their needs (i.e. desires) and the degree to which those needs are provided for in their environment is beneficial to well-being (French, Caplan, & Harrison, 1982; Harrison, 1978). I secondly extend relational systems theory by treating individuals' psychological attachment to others at work as a mediating construct in this study's proposed model. As described above, Kahn (2007) positions feelings of interpersonal attachment as an intermediary construct between employees' experience of need fulfillment and their resulting organizational commitment and work engagement; however, this construct's explicit mediating role has not been considered. Finally, I clarify the bounds of relational systems theory by examining whether pertinent individual differences may temper the influence workplace relationships are predicted to impart on employees' organizational commitment and/or work engagement. I expound on each of these elements in Chapters 2 and 3.

Contributions

This study makes several contributions to organizational research and theory, as well as management practice.

Contributions to research and theory. From the perspective of research and theory, this study first addresses the criticism that the field of organizational behavior inadequately accounts for the role of relationships in organizational life (see discussions by Barry & Crant, 2000; Bradbury & Bergmann Lichtenstein, 2000; Gelfand, Major,

Raver, Nishii, & O'Brien, 2006). As noted above, such criticism has become more salient given the increasingly interdependent nature of work in organizations today (Griffin et al., 2012). Ragins and Dutton (2007) have likewise observed that with the rise of the protean career, individuals' loyalty and commitment to organizations may increasingly be rooted in relationships established with others at their workplace. Simply put, in today's environment, "to work is to relate" (Flum, 2001, p. 262). Theoretical models which confer a central role to workplace relationships are thus needed as well.

Second, this study sheds light on underdeveloped aspects of relational systems theory, in particular, individuals' appraisal of the need fulfillment process. As noted above, I use a complementary fit lens to flesh out conceptual underpinnings of this aspect of relational systems theory. In doing so, a better understanding of how individuals form strong attachments to others at work may be developed. This study is additionally among the first empirical examinations of relational systems theory in practice [see Ragins, Lyness, Ehrhardt, & Murphy, (2012) for a related application in the mentoring field; c.f., Kahn, Barton, & Fellows (2013) for a macro-level study involving organizational crises], and as such, can provide new insight for how individuals' constellation of workplace relationships may ultimately contribute to their work-related attitudes and behaviors.

Third, this study contributes to the emerging field of positive relationships at work (see Ragins & Dutton, 2007). In this study, I examine the full range of work relationships, from those that do not provide for employees' needs, to effective constellations of workplace relationships that meet employees' complete battery of relational needs. Positive relationship theorists recognize that employees' interpersonal experiences in organizations fall along a continuum from very positive to dysfunctional,

and while we know quite a bit about the average and dysfunctional range, less is known about positive deviance – that is, the high end of the relationship quality continuum. Here, by taking a need fulfillment lens to understanding relationship quality (i.e., the degree to which employees' needs are indeed met by their constellation of workplace relationships; Kahn, 2007), I offer new insight into how positive interpersonal experiences, as well as how those which may be less than positive, influence employees' organizational commitment and work engagement.

It should be noted that beyond the emerging field of positive relationships at work, this study also contributes to extant research on workplace relationships more generally. As noted above, because of their designation to the periphery in much current research, we know little about the overall impact interpersonal relationships may have on employees' workplace attitudes and behaviors. Moreover, much of what is known stems from research that has traditionally been narrow in scope (Ferris et al., 2009), largely dominated by social exchange as a singular theoretical paradigm (see Cropanzano & Mitchell, 2005). I broaden these theoretical boundaries in the current study by shifting focus onto processes of need fulfillment and the role of employees' psychological attachment to others, each of which serve as core elements within relational systems theory (Kahn, 1998; 2001; 2007).

Finally, this study extends current research on PE fit theory. As described in Chapter 2, PE fit theory offers the idea that individuals' appraisal of congruence between needs and environmental supplies promotes desired outcomes. However, although PE fit theory represents a long-standing theoretical tradition within organizational literature, researchers have predominately focused on a limited number of topics in considering fit

between a person and his/her environment, most notably job and organizational characteristics (e.g., prestige, pay, work/home boundary segmentation; Edwards & Rothbard, 1999). This study extends current theorizing on needs/supplies PE fit by focusing on dimensions more interpersonal in nature – in other words, relational needs which are fulfilled through individuals’ actual interpersonal experiences with others at work.

Practical implications. Beyond its contributions to research and theory, this study also has implications for management practice. According to Duffy, Ganster, and Pagon (2002, p. 331), “interpersonal relationships are critical determinants of what occurs in any organization – how it functions, how effectively it performs its central tasks, and how it reacts to its external environment.” As discussed later, interpersonal relationships may also ‘anchor’ individuals to their organization (Kahn, 2001). This suggests that employees’ interpersonal relationships can play a key role in employee retention, a construct strongly associated with employee commitment and engagement, the two primary outcomes of interest in this study. Employee retention often serves as a salient goal for managers and human resource professionals, particularly given the high costs associated with employee turnover and inevitable recruitment activities that follow (Carlson, Connerley, & Mecham, 2002; Mueller & Price, 1989). To the degree workplace relationships are shown in this study to influence employees’ organizational commitment and work engagement, managers may gain valuable insight into how the promotion of stronger interpersonal relationships among employees can serve as a useful retention tool.

Indeed, should workplace relationships be found to play a role in promoting organizational commitment and work engagement, managers have at their disposal numerous strategies which can support the development of more effective work relationships among employees. These, for example, could include the implementation of mentoring programs or other developmental relationship structures; the introduction of training focused on interpersonal skills such as trust, active listening, and empathy; as well as several other more informal activities or events which can promote greater social interaction among employees (Berman, West, & Richter, 2002; Reich & Hershcovis, 2011; c.f., Baker & Dutton, 2007). Each of these activities, however, requires some degree of outlay on the part of the organization. As such, to understand how workplace relationships may contribute to employee attachment can offer managers important information as to the full range of benefits such programs may carry when considering their costs of implementation.

Finally, current practitioner literature has increasingly described the implementation of many of the more traditional methods for promoting employee commitment and engagement as a growing hardship for organizations (Dewhurst, Guthridge, & Mohr, 2009). These methods predominantly focus on tangible employee rewards such as increased pay, promotions, and benefits. Such challenges facing organizations today reinforce the need for managers to develop a better understanding of other factors which may promote desired employee attitudes and behaviors in organizations. The current study offers such insight by focusing on the role workplace relationships may play in promoting employee commitment and engagement – a topic of inquiry which has not received sufficient attention from scholars and practitioners to date.

Dissertation Outline

This dissertation is organized into six chapters, the first of which is this introduction. In Chapter 2, I provide a review of the organizational commitment, work engagement, and workplace relationship literatures, focusing in particular on points of overlap between the three research streams that relate to this study. I also review relational systems theory and person-environment fit theory, each of which contributes to the theoretical foundation for this study. In Chapter 3, I offer the theoretical model and identify the hypotheses considered. I then turn in Chapters 4 and 5 to the study methodology, analyses, and results. Specifically, Chapter 4 reports on a validation study using a sample of $N = 327$ currently and recently employed students at two Midwestern universities. This validation study was necessary given that several new measures were used in the dissertation study, which is presented in Chapter 5. In Chapter 5, I test the study hypotheses using a sample of $N = 538$ full-time organizationally employed individuals from across the United States. Finally, in Chapter 6, I discuss study findings; limitations; implications for theory, research, and practice; and overall conclusions.

Chapter 2: Literature Review

In this chapter, I first review literature involving the two primary outcome variables in this study: organizational commitment and work engagement. After providing an overview of these constructs, I address the most frequently identified antecedents of organizational commitment and work engagement in existing research, and identify the common theoretical approaches used in these studies. Given my focus on workplace relationships, I then provide a separate review of research examining the link between interpersonal factors and organizational commitment and work engagement. Finally, I review relational systems theory and person-environment fit theory, which together provide the theoretical foundation for this study.

Organizational Commitment

For roughly four decades, organizational commitment has served as a topic of interest for both scholars and practitioners (Ehrhardt, Miller, Freeman, & Hom, 2011; Morrow, 2011). This stems from empirical evidence linking organizational commitment to numerous desirable employee outcomes, including greater task and extra-role performance, increased citizenship behaviors, and decreased physical and psychological withdrawal (Cooper-Hakm & Viswesvaran, 2005; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Ng & Sorensen, 2008; van Knippenberg & Sleebos, 2006).

Nature and definition of organizational commitment. Organizational commitment has been defined in numerous ways. While many definitions share at least some parallels, the nature and scope of existing definitions varies considerably. For example, prominent scholars have defined organizational commitment both as a multifaceted (e.g., Cohen, 2007; Jaros, Jermier, Koehler, & Sincich, 1993; Meyer &

Allen, 1991; Penley & Gould, 1988) and unidimensional construct (e.g., Klein et al., 2012; Mowday, Steers, & Porter, 1979; Solinger, van Olffen, & Roe, 2008). Likewise, scholars have centered their definitions on a wide variety of foci when describing the essence of commitment (e.g., side bets – Becker, 1960; Hrebiniak & Alutto, 1972; internalization, identification, and compliance – O'Reilly & Chatman, 1986; internal force – Meyer & Herscovitch, 2001; normative pressures – Wiener, 1982). In Table 1, I provide a list of several prominent definitions of organizational commitment used by management scholars. Given the extensive history of commitment research, this list is not intended to be exhaustive. Rather, it is intended to illustrate the range of definitions previously offered, and serves as a point of reference for the definition of organizational commitment used in this study.

Table 1: Common Definitions of Organizational Commitment in Extant Literature

Citation	Organizational commitment definition
Sheldon, 1971, p. 143	“an attitude or an orientation toward the organization which links or attaches the identity of the person to the organization”
Hrebiniak & Alutto, 1972, p. 556	“a structural phenomenon which occurs as a result of individual-organizational transactions and alterations in side bets or investments over time”
Mowday et al., 1979, p. 226	“the strength of an individual’s identification with and involvement in a particular organization”
Wiener, 1982, p. 421	“the totality of normative pressures to act in a way which meets organizational goals and interests”
Reichers, 1985, p. 465	a process of identification with the goals and values of an organization ^a
O’Reilly & Chatman, 1986, p. 493	“the psychological attachment felt by the person for the organization...reflect(ing) the degree to which an individual internalizes or adopts characteristics or perspectives of the organization”
Mathieu & Zajac, 1990, p. 171	“a bond or linking of the individual to the organization”
Solinger et al., 2008, p. 80	“an attitude of an employee vis-à-vis the organization, reflected in a combination of affect (emotional attachment, identification), cognition (identification and internalization of its goals, norms, and values), and action readiness (a generalized behavioral pledge to serve and enhance the organization’s interests)”
Meyer, 2009, p. 39 ^{a,b}	an internal force that binds an individual to the organization and/or a course of action of relevance to the organization where the force is experienced as a conscious mindset. The mindset can be one of desire (affective commitment), obligation (normative commitment), perceived cost (continuance commitment), or some combination of these components.
Klein et al., 2012, p. 137 ^a	a volitional psychological bond reflecting dedication to and responsibility for one’s organization

^aOrganization as a specific target of commitment has been inserted. In their original, these definitions articulate a general target of commitment in which the organization may serve as one.

^bThis definition subsumes earlier definitions offered by Meyer and his colleagues (Meyer & Allen, 1991; 1997; Meyer & Herscovitch, 2001) which pertain to the oft-cited three component model of organizational commitment.

As noted in Chapter 1, I follow Klein and colleagues (2012) in defining organizational commitment as *a volitional psychological bond reflecting dedication to and responsibility for one's organization*. This definition reflects emerging theorizing on the nature of commitment, and embodies growing appeals from scholars that organizational commitment is best conceptualized as a *unidimensional* construct (e.g., Klein et al., 2012; Klein, Molloy, Cooper, & Swanson, 2011; Ko, Price, & Mueller, 1997; Solinger et al., 2008). This perspective departs from the multidimensional view of organizational commitment commonly adopted by scholars throughout the 1990s and 2000s, including Meyer and Allen's (1991) 'three-component model' (TCM) of affective, normative, and continuance commitment, which is typically regarded as the most popular multidimensional commitment framework (Meyer, Becker, & Vandenberghe, 2004). Within the TCM, commitment is described as an internally-situated force that binds an individual to an organization by means of an affective, normative, and/or continuance 'commitment mindset(s)' (Meyer & Herscovitch, 2001)¹. Commitment from an affective mindset refers to employees' emotional attachment and desire to remain with an organization; a normative mindset concerns individuals' feelings to remain in an organization based on a feeling of obligation; and a continuance mindset pertains to perceived costs that may be associated with leaving an organization.

Alternatively, Klein and colleagues (2012) describe organizational commitment as unidimensional in nature. In contrast to the TCM which positions commitment as an 'internal force' (Meyer & Herscovitch, 2001), Klein and colleagues define commitment

¹ Although most often defined by researchers solely in terms of its affective, normative, and continuance 'mindsets,' Meyer and Herscovitch (2001) clarify that commitment through the lens of the TCM does have a singular core essence (i.e. internal force) across all dimensions (c.f., Meyer, 2009).

as a ‘bond’ – that is, a psychological state reflecting how strongly one is bound/attached to the organization (Klein, Molloy, & Cooper, 2009). Commitment is moreover identified as a particular type of bond – one that is both volitional and psychological, as well as reflects dedication and responsibility toward a target (here, the ‘target’ is the organization). This description situates commitment as one of several distinct bond types that may link a person to his/her organization. Other bond types not fitting the description of a ‘commitment bond’ *do not typify commitment* (Klein et al., 2012). For example, an ‘instrumental bond,’ which pertains to perceived costs or losses that would be incurred if the person-organization bond was severed, does not represent organizational commitment. This can be contrasted with the TCM, which includes a similar definition for commitment from the perspective of a continuance mindset. As evident in this example, Klein et al.’s (2012) definition can be viewed as providing a more specialized (and arguably unambiguous) conceptualization of organizational commitment compared to the TCM. Ancillary concepts such as ‘commitment mindsets’ are therefore unnecessary.

My decision to adopt Klein et al.’s (2012) definition of organizational commitment also reflects growing construct validity concerns for the TCM. For example, the underlying factor structure of the three commitment mindsets within the TCM has often not been supported (e.g., Bergman, 2006; Chen & Francesco, 2003; Cheng & Stockdale, 2003; Ko et al., 1997; c.f., Solinger et al., 2008). Additionally, in a meta-analytic review of over 90 studies, Meyer et al. (2002) found a corrected correlation of only .05 between the TCM’s affective and continuance components. The authors further found that these two TCM dimensions related in opposite directions to several oft-cited

commitment outcomes, including job satisfaction, job performance, and organizational citizenship behaviors (positive for affective commitment and negative for continuance commitment for all variables). Together, these findings suggest a considerably high level of distinction between the affective and continuance commitment mindsets prescribed by the TCM, thereby providing support for Klein and colleagues' (2012) theorizing that each, in fact, do not represent a singular underlying bond type.

Antecedents of organizational commitment. A sizable body of literature exists on antecedents of organizational commitment, including both conceptual and quantitative reviews (e.g., Cohen, 1992; Klein et al., 2009; Mathieu & Zajac, 1990; Meyer & Allen, 1997; Meyer et al., 2002; Morrow, 2011; Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). A review of this literature, however, suggests that although quite a bit of research has been conducted, theoretical and empirical consideration for the influence of workplace relationships has been limited. I return to a specific discussion of those studies that have explored interpersonal factors later in Chapter 2. First, however, I review two general classes of the most studied organizational commitment antecedents: individual-related factors, and work-related factors.

Individual-related antecedents. Organizational scholars have examined three groups of individual-related antecedents to organizational commitment: dispositional and related personality factors, cultural values, and demographic variables. Although there has been a good deal of research on these relationships, a strong theoretical rationale does not exist for *why* these factors should predict organizational commitment (Bergman, Benzer, & Henning, 2009).

Dispositional factors. Of the three classifications of individual-related factors, dispositional/personality constructs have generally proven to be the most robust predictors of employees' organizational commitment. In a recent meta-analysis of proactivity constructs, Thomas, Whitman, and Viswesvaran (2010) reported an estimated true score correlation (ρ) of .25 between proactive personality and organizational commitment. Likewise, individuals' conscientiousness and extraversion have shown similar positive relationships with organizational commitment, while neuroticism has proven negatively related (Erdheim, Wang, & Zickar, 2006; Schleicher, Hansen, & Fox, 2011; c.f., Hochwarter, Perrewé, Ferris, & Guercio, 1999). Both positive ($\rho = .35$) and negative ($\rho = -.27$) affectivity are additionally related to organizational commitment (Cropanzano, James, & Konovsky, 1993; Thoresen et al., 2003). Finally, a general ($r = .19$) and work ($r = .32$) locus of control have been shown in meta-analytic studies to be related to organizational commitment (Wang, Bowling, & Eschleman, 2010). A general locus of control reflects a personality-like construct representing the extent to which people believe their own actions determine the outcomes they receive in their life (Rotter, 1966). A work locus of control pertains to a similar belief structure specific to the workplace context (Spector, 1982; 1988). These relationships suggest that individuals believing that their own actions are closely associated with rewards and/or consequences received will be more likely to develop a psychological bond to their workplace.

Cultural values. Some research has additionally drawn links between individuals' internalization of specific cultural values and organizational commitment. The majority of this research has centered on value dimensions identified by Hofstede (1984). Specifically, both uncertainty avoidance and femininity have been positively linked to

organizational commitment, although the number of studies that have considered these relationships is limited and effect sizes have proven modest (Taras, Kirkman, & Steel, 2010). Collectivism, though, has generated more robust support as being related to organizational commitment (e.g., Clugston, Howell, & Dorfman, 2000; Felfe, Yan, & Six, 2008; Wang, Bishop, Chen, & Scott, 2002).² Scholars asserting a direct link between organizational commitment and these values argue that some level of conceptual overlap exists between the constructs, and as such, individuals' may be predisposed toward feelings of commitment (c.f., Lee, Ashford, Walsh, & Mowday, 1992 for similar arguments concerning 'commitment propensity'). For example, employees with a collectivist orientation may appreciate being part of an organization because of their intrinsic desire to belong to a social entity. Attaching themselves to an organization serves as one mechanism by which this emotional need for belonging can be fulfilled (c.f., Cohen & Keren, 2008; Wasti, 2003). Recent evidence, however, suggests that at least some of cultural values' total effect on organizational commitment may be indirect through other organization-based antecedents such as justice perceptions (Ehrhardt, Shaffer, Chiu, & Luk, 2012).

Demographic variables. Finally, a variety of demographic constructs have been suggested as antecedents of organizational commitment. Of these, age, tenure, and gender have been the most commonly examined (Schleicher et al., 2011), and are often featured, at minimum, as control variables in commitment research. Findings for such

² Bergman and her colleagues (2009) note that collectivism may serve as an exception to the point above that theoretical links between individual/person-related constructs and commitment are underdeveloped. This follows from the previous theorizing devoted to allocentrism, the individual-level equivalent of collectivism. However, given the inductive nature of the value framework in which collectivism itself is rooted, some criticism may still be levied from a purely deductive viewpoint.

demographic influences on organizational commitment, however, have generally proven mixed. For example, while organizational tenure ($\rho = .16$ to $.17$) was reported as having a modest positive relationship with organizational commitment in meta-analyses conducted by Mathieu and Zajac (1990) and Meyer et al. (2002), two meta-analyses conducted by Cohen (1992; 1993) and a meta-analysis conducted by Brierly (2000) suggest a weaker relationship between the variables. Gender's relationship with organizational commitment has additionally proven disparate across meta-analyses, with Meyer and colleagues (2002) reporting an estimated true score correlation of $-.03$ between the constructs and Mathieu and Zajac (1990) reporting an estimated true score correlation of $-.15$ (in both cases women were coded 0). Finally, in contrast to tenure and gender, age has been a relatively consistent, albeit modest, predictor of organizational commitment across quantitative reviews ($\rho = .15$ to $.23$). Given these generally modest effect sizes across demographic variables, Meyer and his colleagues (2002, p. 38) concluded that demographics "play a relatively minor role in the development of organizational commitment."

Work-related antecedents. A wide variety of work-related antecedents of organizational commitment have been proposed by researchers. Four in particular, however, have been identified as theoretically most proximal to the development of employee commitment: perceived organizational support, organizational justice, psychological contract fulfillment/breach, and person-organization fit (Meyer, 2009). I therefore organize my review of work-related antecedents around these four constructs. In doing so, I recognize that additional factors may contribute toward the development of commitment. For example, human resource practices (e.g., Ehrhardt et al., 2011;

Giauque, Resenterra, & Siggen, 2010); organizational culture (see Wright & Kehoe, 2009); and job conditions such as role ambiguity, role clarity, and job security (e.g., Podsakoff, LePine, & LePine, 2007) have each been linked to organizational commitment. However, for each of these work-related factors, evidence exists that at least some of their total effect on organizational commitment occurs through one or more of the proximal influences reviewed here (e.g., Meyer & Smith, 2000; Rhoades & Eisenberger, 2002; c.f., Schleicher et al., 2011).

Perceived organizational support. Perceived organizational support (POS) is an employee's general belief concerning how much an organization values his/her contribution, and cares about his/her well being (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Eisenberger, Huntington, Hutchinson, & Sowa, 1986). The relationship between POS and organizational commitment is characterized within organizational support theory, which itself is anchored in a more general social exchange rationale (Cropanzono & Mitchell, 2005). Organizational support theory holds that an exchange process based on reciprocity norms governs the employee-organization relationship. POS serves as the employer offering in the employee-organization exchange relationship, while commitment serves as the employee offering (Wayne et al., 2009). In essence, POS is theorized to create a feeling of indebtedness toward the organization that may be repaid with increased levels of organizational commitment (Rhoades, Eisenberger, & Armeli, 2001).

A positive link between POS and organizational commitment has proven quite robust in previous literature. For example, in two meta-analyses of the relationship between POS and work-related outcomes, the estimated true score correlation for POS

and organizational commitment was .71 (Riggle, Edmondson, & Hansen, 2009) and .67 (Rhoades & Eisenberger, 2002). Morrow (2011) also notes that the link between POS and organizational commitment is substantiated in her qualitative review of only longitudinal commitment studies.

Organizational justice. The second antecedent to organizational commitment is organizational justice. This concerns the degree to which an individual perceives fairness in organizational outcomes (distributive justice; Folger & Konovsky 1989), organizational processes (procedural justice; Thibaut & Walker 1975), and treatment by the organization when processes are carried out (interactional justice; Bies & Moag, 1986). Each form of justice has been shown to relate positively to organizational commitment (distributive: $\rho = .37/.51/.40$, procedural: $\rho = .43/.57/.38$, interactional: $\rho = .42/.19-.29/.50$; Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Meyer et al., 2002).³ Li and Cropanzano (2009) also provided cross-cultural evidence for a moderate to strong relationship between organizational commitment and both distributive and procedural justice (East Asian – distributive: $\rho = .31$, procedural: $\rho = .38$; North American – distributive: $\rho = .42$, procedural: $\rho = .48$). Finally, beyond its direct effects, some evidence suggests that organizational justice may indirectly influence organizational commitment through POS (e.g., Masterson, Lewis, Goldman, & Taylor, 2000; Wayne, Shore, Bommer, & Tetrick, 2002).

³ For each justice type, the first value listed pertains to those reported by Cohen-Charash and Spector (2001). The second value listed pertains to those reported by Colquitt and colleagues (2001). The third value listed pertains to those reported by Meyer et al. (2002). Two values for interactional justice are reported by Colquitt et al. given their further division of interactional justice into ‘interpersonal’ and ‘informational’ dimensions.

Psychological contract fulfillment/breach. The third antecedent to organizational commitment is psychological contract fulfillment/breach. A psychological contract characterizes the employment relationship an individual perceives between him/herself and an organization (Bal, De Lange, Jansen, & Van Der Velde, 2008; Rousseau, 1989). Explicitly, psychological contract is defined as “individual beliefs, shaped by the organization, regarding terms of an exchange agreement between individuals and their organization” (Rousseau, 1995, p. 9). Contract fulfillment occurs when an employee feels that an organization has honored its end of the employee-organization exchange agreement he/she perceives to exist. On the other hand, a contract breach occurs when an individual perceives the organization to have failed to honor the exchange agreement (Robinson & Rousseau, 1994).

The theoretical link between psychological contract fulfillment/breach and organizational commitment has most commonly been made on the basis of social exchange theory and affective events theory (Weiss & Cropanzano, 1996). From a social exchange viewpoint, the mutual obligations between an individual and employer comprise the contract (Taylor & Tekleab, 2004). Thus, whether the employer fulfills its perceived obligation in the contract has implications for the commitment level of an employee. This argument largely parallels that outlined above with respect to the relationship between POS and organizational commitment. In contrast, an affective events perspective is more focused on contract breach. Breached contracts may be viewed as a negative event by the employee and elicit an affective response, for example mistrust in the organization (Morrison & Robinson, 1997). Following affective events theory, this affective response in turn should negatively influence organizational

commitment. Regardless of the specific theoretical approach taken, however, meta-analytic evidence supports the contract fulfillment/breach – organizational commitment relationship. Bal et al. (2008), for example, found a moderately strong ($\rho = -.39$) relationship between contract breach and organizational commitment. Zhao, Wayne, Glibkowski, and Bravo (2007) also reported a similar value ($\rho = -.38$) for this relationship.

Person-organization fit. The last antecedent of organizational commitment is person-organization (PO) fit. PO fit is associated with the congruence between an employee and organization rather than the explicit employee-organization relationship. Specifically, PO fit addresses the compatibility, match, similarity, or correspondence of a person and organization on one or more commensurate dimensions (Kristof-Brown, Zimmerman, & Johnson, 2005).

Several theoretical perspectives describe why PO fit may promote organizational commitment. For example, both social identity theory (Tajfel, 1978) and need fulfillment theories (e.g., Dawis & Lofquist, 1984) have received attention in fit literature (Kristof, 1996; Kristof-Brown et al., 2005). Usually, the application of a specific theoretical framework is a function of the particular fit perspective of interest. For example, O'Reilly, Chatman, and Caldwell (1991) took an identity-based focus in their study of fit conceptualized in terms of *individual-organizational value congruence*, also known as 'supplementary' fit (Muchinsky & Monahan, 1987). O'Reilly and colleagues (1991) proposed that individuals' desire to be connected to similar others may be achieved in part by maintaining an organizational affiliation where values are consistent with one's own. Thus, should value congruence be perceived, organizational commitment would be expected to be strengthened.

Need fulfillment theories, in contrast, may be more appropriate when fit is described from a *needs/supplies* viewpoint – that is, when fit is achieved by an organization providing what an individual needs or wants. Fit from this perspective has been described as ‘complementary’ fit (Cable & Edwards, 2004; c.f., Muchinsky & Monahan, 1987).⁴ Edwards and Shipp (2007) pointed out that organizational commitment will likely be greater when one’s work conditions fulfill his/her salient needs, thus signifying greater levels of complementary PO fit. It should additionally be acknowledged that applications of a needs/supplies viewpoint may be extended beyond PO fit exclusively. For example, while most often applied to work/job characteristics (e.g., desired/actual levels of job autonomy, pay, work/home segmentation, etc.), a needs/supplies perspective may also offer a useful lens for understanding the influence of workplace relationships on employee outcomes (Higgins, 2007). I return to this idea later in this chapter as this perspective provides a key contribution to the theoretical foundation for the present study.

Regardless of the theoretical approach taken (e.g., supplementary or complementary fit), findings for a positive relationship between PO fit and organizational commitment are consistent across studies. This is supported by two meta-analyses demonstrating a moderate ($\rho = .31$; Verquer, Beehr, & Wagner, 2003) and strong ($\rho = .51$; Kristof-Brown et al., 2005) relationship between PO fit and organizational commitment.

⁴ Complementary fit also encapsulates a *demands-ability* perspective on fit, which concerns whether an employee’s abilities match the demands of his/her work environment.

Work Engagement

The second dependent variable examined in this study is work engagement. In contrast to organizational commitment, which has captured scholars' interest for more than four decades, work engagement is a relatively contemporary construct. Theorizing on work engagement began in the early 1990s with the ethnographic work of Kahn (1990; 1992). Quantitative analysis, however, did not begin to any extensive degree for roughly a decade following. Still, over the past ten to fifteen years, a considerable amount of research has been undertaken on work engagement, and scholars have demonstrated empirical links with such outcomes as decreased turnover (Bakker, Demerouti, & Schaufeli, 2005), increased proactive behaviors (Salanova & Schaufeli, 2008), and greater job performance (Ho, Wong, & Lee, 2011; Rich, LePine, & Crawford, 2010). Work engagement has further pervaded popular literature, where the construct has been extolled as a key driver of firm profitability (Rath & Harter, 2010).

Nature and definition of work engagement. Most considerations of work engagement in existing literature follow one of two primary definitions. These definitions underscore scholars' general consensus that work engagement is best understood as an inherently motivational construct (Leiter & Bakker, 2010; Rich et al., 2010). First, Schaufeli, Salanova, González-Romá, and Bakker (2002) characterize work engagement as a positive, fulfilling, work-related state of mind conceptualized by vigor, dedication, and absorption. 'Vigor,' is characterized by mental resilience and high levels of energy while working; 'dedication' refers to being highly involved in one's work and experiencing a sense of enthusiasm and significance from it; and 'absorption' is depicted as being fully and happily engrossed in one's work (Bakker & Demerouti, 2008). Second,

Kahn (1990, p. 694) describes work engagement as “the harnessing of organization members’ selves to their work roles,” by which “people employ and express themselves physically, cognitively, and emotionally during their role performance.” For Kahn, to be engaged is to be fully present in one’s work. Engaged individuals are psychologically present, connected, and focused in their role performance (Kahn, 1990; 1992; Saks, 2006)⁵.

As noted in Chapter 1, I follow Kahn (1990) in defining work engagement as *a state in which one harnesses him/herself fully in one’s work role; that is, a state in which an employee expresses him/herself physically, cognitively, and emotionally during one’s role performance*. Although outpaced in terms of usage by Schaufeli and colleagues’ (2002) definition (Bakker, 2011), adopting Kahn’s (1990) definition for this study offers several advantages. First, Kahn’s conceptualization of engagement is rooted in strong grounded theory. In his qualitative theory-building research Kahn (1990) describes three psychological conditions which promote work engagement: meaningfulness (how meaningful is it to invest my full efforts in this role performance?), psychological safety (How safe is it to fully invest myself?), and availability (How available am I to fully invest myself?) (c.f., Rich et al., 2010). To become engaged is additionally a product of one’s energy at work. Energy is defined as an emotional state in which one is both eager to act and capable of acting within a given context (Quinn & Dutton, 2005). Feelings of energy allow individuals to invest themselves more completely in their work role (Dutton

⁵ Each of these definitions may further be viewed as reflecting ‘state engagement’ from the perspective of Macey and Schneider (2008).

& Heaphy, 2003), a premise which follows theory that individuals tend to invest as much of themselves into activities as their energy levels allow (Marks, 1977).

In contrast to Kahn's (1990) grounded theory approach, the development of engagement for Schaufeli and colleagues (2002) is nearly exclusively understood through the lens of the job demands-resources (JD-R) model (Bakker & Demerouti, 2007; 2008). The JD-R model is a heuristic framework that classifies job attributes and other workplace factors into two broad categories: job demands and job resources. Job demands are those aspects of one's job that require sustained physical and/or mental effort, and thereby may be associated with certain physiological costs (e.g., job complexity). In contrast, job resources are aspects of one's job that are functional to achieving work goals and/or stimulate personal growth (e.g., autonomy) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Drawing on these categories, the JD-R model posits that job resources positively influence work engagement, while job demands lead to 'burnout,' described as the negative antipode of engagement. While the parsimonious nature of the JD-R model has appeal, this heuristic has been criticized as overly simplistic. Illuminating this point, Crawford, LePine, and Rich (2010) demonstrated that specific job demands may have differing influences on work engagement when classified as "challenge" or "hindrance" demands respectively. Also, notably absent in the JD-R model is any attention given to the cognitive processes individuals undergo in assessing demands and resources in their environment. Cognitive processes, in contrast, serve as a lynchpin in Kahn's (1990) engagement conceptualization with respect to the self-determined conditions of meaningfulness, psychological safety, and availability.

In addition to conceptual issues, construct validity issues have also been raised for Schaufeli et al.'s (2002) conceptualization of engagement. These issues pertain to conceptual redundancies between Schaufeli and colleagues' (2002) vigor, dedication, and absorption dimensions and existing burnout dimensions of exhaustion-energy, cynicism-involvement, and inefficacy-efficacy (Leiter & Maslach, 2005; Maslach & Leiter, 1997; 2008). In a recent test, for example, Cole, Walter, Bedeian, and O'Boyle (2012) found correlations as high as $-.97$ between corresponding engagement and burnout dimensions, thereby suggesting considerable levels of overlap (Licht, 1995). Based on these findings, Cole and colleagues concluded that "perhaps it is time for Schaufeli and colleagues'...perspective to be reformulated" (p.1576), and go on to recommend "Kahn's more encompassing definition of engagement" as a useful theoretical alternative. Following this recommendation, Kahn's (1990) conceptualization of work engagement is used in this study.

Antecedents of work engagement. In this section, I review antecedents of work engagement. Consistent with my focus, I first review those studies that specifically use Kahn's (1990) approach to work engagement. Then, given the relative popularity of Schaufeli and colleagues' (2002) approach, I note points of overlap in antecedents across the two bodies of work. Like organizational commitment, limited attention has been given to the role interpersonal relationships may play in shaping work engagement. I return to a specific discussion of the relatively few instances this perspective appears in current literature later in this chapter.

Only three studies have examined antecedents of work engagement specifically from Kahn's (1990) perspective, and these studies have paid limited attention to the role

of relationships in engagement. First, using a sample drawn from a large insurance firm, May, Gilson, and Harter (2004) examined individuals' psychological states of meaningfulness, safety, and availability, and found that each of these states related positively to engagement. These states were influenced by several factors, including individuals' perceived job characteristics (e.g., autonomy, task significance), perceived work-role fit, and the amount of time spent in non-work activities. Saks (2006), in contrast, drew on social exchange theory to hypothesize direct connections between person- and work-related factors and engagement, and his results indicated that perceived organizational support and desired job characteristics (using a composite, shortened measure of the job diagnostic survey; Hackman & Oldham, 1975) predicted work engagement. Finally, Rich and colleagues (2010) tested direct links between person- and work-related factors and work engagement. In their study, the authors incorporated Kahn's (1990) proposed conditions of meaningfulness, psychological safety, and availability in building theory for proposed antecedents. Three factors were suggested as promoting the development and maintenance of these three psychological conditions, and thus were hypothesized as being positively related to work engagement: PO fit from the viewpoint of value congruence, perceived organizational support, and core self-evaluation, which is defined as an individual's self-evaluated worthiness, capability, and effectiveness as a person (Judge & Bono, 2001). Using a sample of firefighters, the relationship between each of these constructs and engagement was substantiated.

Although May et al. (2004), Saks (2006), and Rich et al. (2010) are the only studies which have examined work engagement exclusively from Kahn's (1990) perspective, an expanded review encompassing Schaufeli et al.'s (2002)

conceptualization points to further evidence for a few specific engagement antecedents. For example, through a JD-R lens, Halbesleben (2010) showed that autonomy, which is viewed as a job resource, is positively related to work engagement. Likewise, the relationship between job characteristics and work engagement was confirmed by Christian, Garza, and Slaughter (2011), who provided meta-analytic evidence for the relationship between both autonomy ($\rho = .39$) and feedback ($\rho = .33$) and work engagement. Regardless of the viewpoint taken, therefore, desired job characteristics and related working conditions appear to serve as predictors of engagement (Cole et al., 2012).

Recent updates to the JD-R model (Bakker & Demerouti, 2007; 2008) have also been made to incorporate personal resources. Citing the JD-R model, scholars have noted that such person-related factors as self-esteem, optimism, and self-efficacy may promote work engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007; 2009). These findings may be viewed concomitantly with Rich et al. (2010), who drew on Kahn's (1990) perspective to show that core self-evaluation relates positively to work engagement. Finally, similarities across engagement perspectives can also be made for non-work constructs. For example, while May et al. (2004) took Kahn's (1990) perspective in arguing that non-work responsibilities may limit one's psychological availability at work, Bakker et al. (2005) suggested that non-work resources and demands may cross over to influence individuals' work engagement. Rothbard (2001) has additionally shown that engagement in one life role may influence individuals' capacity to engage in other life roles.

Interpersonal Influences on Commitment and Engagement: Extant Research on Workplace Relationships

In this section, I examine the impact of interpersonal factors on organizational commitment and work engagement. Although less frequently examined than those person- and work-related antecedents reviewed above, scholars have long acknowledged that interpersonal influences can contribute to employees' organizational commitment and work engagement. Indeed, references to the role social interactions may play in shaping organizational commitment appear even in seminal works dating back to the 1970s (e.g., Hackman & Lawler, 1971; Sheldon, 1971). Likewise, Kahn (1990) noted that relationships at work may contribute to feelings of meaningfulness and psychological safety for employees, thereby promoting conditions for work engagement. Unfortunately, much of the subsequent focus on interpersonal influences appears at the periphery of research on organizational commitment and work engagement. As Kahn (2007, p. 189) summarized: although scholars "have found that the quality of work relationships does make some difference" in the development of important individual-level outcomes such as commitment and engagement, "work relationships by and large appear in organizational theory as part of the background." Despite this, a few constructs have emerged as topics of interest for organizational researchers. These constructs may be organized into two broad classifications: dyadic influences and network influences.

Dyadic influences. Much of the current research on the link between interpersonal factors and either organizational commitment or work engagement focuses on the interactions between an employee and a *specific* constituent or group of

constituents in the organization. In particular, three groups have received the bulk of interest: supervisors, co-workers, and mentors.

Supervisors. The influence of employees' interactions with their supervisor is one dyadic focus that has received interest from scholars. This focus on the employee-supervisor relationship encompasses such notable constructs as leader-member exchange (LMX) and supervisor support. Specifically, LMX theory concerns the quality of exchange relationship that develops over time between an employee and his/her supervisor (Graen & Cashman, 1975; Graen & Uhl-Bien, 1995). LMX theory additionally allows for the likelihood that a leader/supervisor will maintain different levels of relationship quality with distinct subordinates (Liden, Wayne, & Sparrowe, 2000).

On the whole, ratings of LMX quality by subordinates have generally been described as having a meaningful relationship with a variety of work-related outcomes, including their commitment to the organization (Liden, Sparrowe, & Wayne, 1997). Meta-analytic evidence supports this link, as Gerstner and Day (1997) report a corrected correlation of .42 for the relationship between LMX quality and organizational commitment. More recent evidence further substantiates this relationship across a variety of different settings, including in non-Western contexts (e.g., Hui, Lee, & Rousseau, 2004), and in organizations where much of the work is accomplished away from the office, thereby limiting the face-to-face interactions between individuals and supervisors (e.g., Golden & Veiga, 2008). Finally, although scholars have discussed the importance leadership may play in shaping employees' work engagement (see Spreitzer, Lam, & Fritz, 2010), only a small amount of research has empirically addressed the relationship

between LMX and work engagement. In one four-sample study conducted in the Netherlands, though, Schaufeli and Bakker (2004) found a positive relationship between ‘supervisory coaching,’ which was measured using an LMX scale, and each of the three components of work engagement based on Schaufeli and colleagues’ (2002) definition. More specifically, subordinates who perceived their supervisors as providing greater levels of coaching also reported higher vigor, dedication and absorption.

Supervisor support has also received attention in the literature. Supervisor support falls under the rubric of workplace social support, and is defined as the degree to which individuals believe that their well being is valued by their supervisor (Kossek, Pichler, Bodner, & Hammer, 2011; c.f., Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002). Like other forms of support, supervisor support is commonly differentiated along ‘emotional’ and ‘instrumental’ lines. Whereas emotional support concerns psychosocial and other person-focused support from one’s supervisor (e.g., being available to talk to about a personal problem), instrumental support pertains to support more task-focused in nature (e.g., being available to talk to about a problem on a current work project) (see Cutrona & Russell, 1990). On balance, most studies have reported a positive relationship between perceptions of supervisor support and organizational commitment (e.g., Casper, Harris, Taylor-Bianco, & Wayne, 2011; Rousseau & Aubé, 2010). Christian and colleagues (2011) also reported meta-analytic evidence for a positive relationship between *social support* (i.e. the composite of supervisor provided support and support from other sources) and work engagement ($\rho = .32$).

Still, it is important to note that the specific influence of supervisor support on work outcomes has not been universally supported. Saks (2006), for example, found no relationship between supervisor support and employees' work engagement. Likewise, Deelstra and colleagues (2003) observed that social support (regardless of the source) may not always be welcomed, particularly when employees believe such support is unnecessary. In this vein, several studies by Buunk, Peeters, and their colleagues have shown that when instrumental support is felt to be imposed on an individual, it may evoke feelings of inferiority and incompetence (Buunk & Peeters, 1994; Peeters, Buunk, & Schaufeli, 1995a; 1995b). The receipt of emotional support may similarly have detrimental implications when unwelcomed and/or unprovoked. Employees, for example, may view unwelcomed emotional support as an intrusion on their personal privacy (Edwards & Rothbard, 1999; Harrison, 1978). Individuals may also interpret this often sensitive personal contact as inappropriate within a workplace setting, thereby resulting in feelings of anxiety (Kahn, 2005). This premise is supported by research which has shown connections between social support and higher reported levels of emotional exhaustion, burnout, and negative emotions (e.g., Buunk, Doosje, Jans, & Hopstaken, 1993; Ray & Miller, 1994; c.f., Yang & Carayon, 1995). *Collectively, these findings suggest that support, be it instrumental or emotional in nature, may be most effective when it is perceived as needed and valued by the recipient.*

Co-workers. Individuals' interactions and relationships with co-workers may also play a role in shaping attitudes toward their organization and work (Avery, McKay, & Wison, 2007). Much of this focus on the role of co-workers closely parallels research

concerning supervisors. This is evident in two topics in particular, team-member exchange (TMX) and co-worker support.

Originally posited by Seers (1989), TMX concerns the content, process, and overall 'quality' of exchanges an employee perceives with other members of his/her work group or team. TMX quality is commonly presented in terms of the nature of the exchange occurring between co-workers. That is, 'low quality' TMXs are described as limited to interactions pertaining primarily to work task completion, while 'high quality' TMXs are characterized by exchanges of support and other resources that extend beyond the necessary interactions required for task accomplishment (Liden et al., 2000; Love & Forret, 2008). Some evidence suggests that employees' perceived TMX quality is positively and directly related to organizational commitment (Liden et al., 2000). Similarly, while not examining TMX explicitly, several other scholars have reported a positive relationship between organizational commitment and/or work engagement and such related constructs as 'rewarding interactions with co-workers' and the 'quality of social interaction within one's work group' (Heffner & Rentsch, 2001; May et al., 2004). Sherony and Green (2002), however, found that TMX quality (labeled co-worker exchange, but measured as TMX) was not related to employees' organizational commitment. Some questions have also been raised concerning how TMX quality is defined. Specifically, current perspectives hold that low quality TMXs are characterized by only task-oriented exchanges and high quality TMXs are those that extend beyond only task-focused exchanges (Liden et al., 2000; Love & Forret, 2008). However, some authors have pointed out that this may present a somewhat inaccurate picture of how

some employees define ‘exchange quality’ (e.g., Tse & Dasborough, 2008), a point I return to later in this chapter.

Like supervisor support, co-worker support is another form of social support which has been shown to be related to individuals’ organizational commitment. Notably, recent research has further demonstrated that the effects of co-worker support and supervisor support are additive, with each explaining unique variance in reported levels of organizational commitment (e.g., Rousseau & Aubé, 2010). In their meta-analysis, Chiaburu and Harrison (2008) found that co-worker support influenced individual level outcomes even after leader support was partialled out. Also, in many instances, interpersonal influences with respect to co-workers are just as strong as or stronger than interpersonal influences with respect to supervisors/leaders.

As with supervisors, however, it is again important to note that the influence of co-worker support on desired employee outcomes has not been universally supported across research. For example, Duffy and colleagues (2002) found that co-worker support was not related to organizational commitment. Also, Mossholder, Settoon, and Henagan (2005) found that co-worker support did not predict employee turnover, a construct commonly linked with organizational commitment. Himle, Jayaratne, and Thyness (1989) have further suggested that because competition often exists between individuals at work, employees may question the motivation of others when receiving unsolicited support from co-workers, particularly when the support pertains to work-related tasks.

Less attention has been given to the unique influence of co-worker support on work engagement. Rather, researchers have generally focused on the broader topic of workplace social support (Christian et al., 2011). However, drawing on the related

literature of burnout at work, Halbesleben (2006) found that workers reported less burnout when they perceived higher levels of co-worker support. Since many scholars view engagement as the positive antipode of burnout (see Salanova, Schaufeli, Llorens, Pieró, & Grau, 2001; Schaufeli et al., 2001), it is reasonable to expect that co-worker support may also predict work engagement.

Mentors. A mentor is defined as a more senior, experienced individual who can provide a range of benefits to a less experienced employee (i.e. protégé). These include both career development functions such as guidance, assistance, and coaching, and psychosocial functions such as personal support (Kram, 1985). There is some evidence to suggest that even the mere presence of a mentor may positively predict individuals' reported levels of organizational commitment (Payne & Huffman, 2005), along with other positive organizational and career-related outcomes (Allen, Eby, Poteet, Lentz, & Lima, 2004; Eby, Allen, Evans, Ng, & DuBois, 2008; c.f., Dougherty & Dreher, 2007 for a review). As Ragins, Cotton, and Miller (2000) observed, however, a focus on only the presence or absence of a mentor may provide an overly simplistic view of the influence a mentoring relationship may have on employees' attitudes and behaviors. Rather, certain characteristics of mentoring relationships may be important to consider. Two such factors are the nature of a mentoring relationship (formal vs. informal) and the quality of the mentoring relationship. Based on a review of existing literature, Underhill (2006) concluded that protégés in informally developed relationships experienced more desirable outcomes than those with formally assigned mentors. However, Ragins et al. (2000) demonstrated that the quality of the relationship (i.e. how satisfied one is with his/her mentor) mattered more than presence or form (i.e., formal/informal) in predicting

employees' organizational commitment. Numerous other scholars have also found a relationship between protégés' organizational commitment and their reports of the quality or satisfaction with the relationship (e.g., Madlock & Kennedy-Lightsey, 2010; Ragins et al., 2012)

Collectively, these studies suggest that, while perhaps stronger under some conditions than others, mentoring relationships can play a role in influencing employees' organizational commitment. Despite these empirical findings, however, mentoring scholars point out that there is a lack of theory that explains how and why mentoring relationships shape work-related attitudes (Ragins et al., 2012; c.f., Dougherty & Dreher, 2007; Ferris et al., 2009). Recognition of this weakness has led to some suggestions for grounding mentoring study in related theoretical traditions (e.g., social network theory – Higgins, Chandler, & Kram, 2007; Higgins & Kram, 2001), as well as attempts to more strongly articulate the nature of relationships and relational 'quality' in the mentoring process (e.g., relational mentoring theory – Ragins, 2012).

Some mentoring scholars have also posited a need-based theoretical approach to mentoring (e.g., Young & Perrewé, 2000; 2004). This perspective focuses on the particular needs of the protégé and holds that the degree to which a protégé's relationship with a mentor (or mentors) satisfies his/her salient individual needs dictates the effectiveness of the mentoring relationship in predicting a protégé's work- and/or career-related attitudes and behaviors. Often, protégé needs include such constructs as psychosocial support and personal career development, thereby providing an intuitive link between this emerging need-based theoretical approach and earlier research on mentoring functions (Kram, 1985; Ragins & McFarlin, 1990). Beyond psychosocial

support and career development, Allen and Eby (2007) suggested that mentors may also play an important role in fulfilling protégés' affiliation needs (c.f., Baumeister & Leary, 1995). A need-based theoretical approach has also been applied in an international context. Specifically, Mezas and Scandura (2005) theorized that the value an expatriate may gain from a mentoring relationship depends on the particular developmental needs of the individual. Mezas and Scandura went on to point out that the needs of protégés are wide-ranging, as well as likely to change over time. To this end, as protégés' needs become more varied, it becomes more likely that multiple and different types (e.g., peer, hierarchical) of developmental relationships are necessary to satisfy these needs (c.f., Higgins & Kram, 2001).

Network influences. Interpersonal influences on organizational commitment and work engagement have additionally been addressed from a broader perspective. While those dyadic influences noted above focus on the interactions between an employee and specific constituent or group of constituents in an organization, network influences focus instead on the collective effect of employees' interpersonal 'ties.' A tie refers simply to some type of connection between two individuals (Borgatti & Halgin, 2011). Two subsets of network influences may moreover be identified: social network structures and friendship networks.

Social network structures. Organizational research on social network structures concerns the pattern and structure of relationships between individuals nested within an organization (McPherson, Popielarz, & Drobnic, 1992; Totterdell, Wall, Holman, Diamond, & Epitropaki, 2004). This line of research suggests that all employees are embedded in social networks, and certain characteristics of these networks may have

implications for individuals' attitudes, behaviors, and performance (Borgatti & Halgin, 2011).

Across studies, numerous social network characteristics have been conceptually explored and/or empirically examined by researchers. Results of these studies, however, have often varied. In a study of organizational newcomers, for example, Morrison (2002) found that both employees' network 'range' (number of different groups represented in one's social network) and network 'status' (average hierarchical level of network members) related positively to employees' organizational commitment. Labianca and Brass (2006), in contrast, suggested that negative outcomes may result if one's network range expands to an excessive level, as this may lead to increased opportunities for the presence of negative relationships in one's social network. Recent research has additionally posited and found support for curvilinear relationships between employees' network centrality and network structural holes and organizational commitment (Lee & Kim, 2011). Specifically, network centrality concerns the extent to which actors in one's network are directly or indirectly linked to others, while structural holes concerns one position in a social network such that they provide the only relational link between disconnected individuals. These findings for a curvilinear relationship stand at odds with earlier research suggesting that characteristics such as network centrality will linearly relate to employee outcomes (e.g., Mossholder et al., 2005; Totterdell et al., 2004). Different still, some research has shown a negative relationship between holding a central position in an organizational network and work-related attitudes (e.g., Brass, 1981).

Employee network tie quantity and tie strength have also been examined by management scholars. Tie quantity concerns the overall number of ties an employee

possesses in his/her intra-organizational network. This construct has perhaps most notably been explored through the lens of job embeddedness theory, which suggests that within-organization interpersonal 'links' are an important precursor for an individual choosing to stay at a particular organization (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001). Indeed, in their seminal writing on job embeddedness, Mitchell and colleagues showed that both the overarching construct itself ($r = .64$), as well as its within-organization links component ($r = .15$), were positively related to organizational commitment. However, more recent research by sociologists has suggested that the relationship between tie quantity and organizational commitment may be contingent on what type of information is in fact sought from network contacts. To this end, Kim and Rhee (2010) demonstrated that when using one's network contacts for task advice, strategic information, or other forms of 'instrumental' support, tie quantity was a meaningful predictor of organizational commitment. However, when accessing one's network for psychosocial support or other 'expressive' needs, tie quantity did not significantly relate to organizational commitment (c.f., Ibarra & Andrews, 1993 for a discussion of instrumental vs. expressive networks).

Divergent from tie quantity, tie strength refers to the degree of actual interaction which occurs between two parties in a network. Again, outcomes associated with tie strength among employees' network contacts have varied. Lee and Kim (2011), for example, found that tie strength did not influence employees' organizational commitment when tested in the presence of other structural network constructs, for example network centrality and structural holes. In contrast, Heffner and Rentsch (2001) reported a strong relationship between the degree of interaction among employees and their levels of

organizational commitment. Some theorizing also suggests tie strength among employees may contribute toward the development of work engagement (Hakanen, Schaufeli, & Ahola, 2008). However, precise empirical evidence for this relationship is often masked inasmuch as network constructs are commonly operationalized as only one component of a higher-order job resources factor in existing engagement research. As a result, specific relationships between network constructs such as tie strength and work engagement are often not reported. This shortcoming is widespread in studies following the JD-R research framework.

Friendship networks. Friendship networks are a particular form of network structure – one that represents an employee’s collective array of friendship ties within an organization. According to Wright (1984), friendship is defined as a particular type of interpersonal relationship in which parties involved respond to each other on a personal level through voluntary and unconstrained interaction. A friendship relationship may furthermore be viewed as a form of communal relationship – that is, a relationship characterized by one party’s concern for another’s welfare (Winstead, Derlega, Montgomery, & Pilkington, 1995; c.f., Clark & Mills, 1979; 1993). Communal relationships are governed by communal norms, which allow for resources to be given across two parties in a relationship without any expectation of reciprocation (Bartz & Lydon, 2006). This may be contrasted with exchange-based norms, which carry expectations for reciprocity based on another party’s actions.

While not as prevalent as research on network structures, a few studies have drawn links between friendship network constructs and organizational commitment specifically. One such topic is friendship opportunities, a construct that has roots in early

job characteristics research (see Hackman & Lawler, 1971). Defined as the degree to which employees perceive an opportunity to develop informal friendships with others at work, limited examinations of this construct have shown mixed evidence for its capacity as an antecedent to organizational commitment (Morrison, 2004; Riordan & Griffeth, 1995). However, reports of a direct positive relationship between the actual presence of strong friendships and/or friendship networks and employees' organizational commitment have generally proven more consistent (Morrison, 2004; Winstead et al., 1995). Additionally, meta-analytic evidence supports a link between organizational commitment and the presence of an affective workplace climate, a construct conceptually related and conducive to the development of friendship networks within the workplace (Carr, Schmidt, Ford, & DeShon, 2003; c.f., Ostroff, 1993 for a detailed description of affective workplace climates).

Across studies of workplace friendships, friendship networks, and related research, two additional key findings may further be extracted. First, research has shown that rationales for cultivating friendships and other social ties with co-workers, at least at the outset of a relationship, may be multifaceted. Randel and Ranft (2007), for example suggest that two primary motivations underlie the development and maintenance of many workplace friendships – a relational motivation and a job/career facilitation motivation. These motivations correspond closely to other research described in this review, in particular research on mentoring that suggests similar constructs (i.e. psychosocial support and career development) as two primary mentoring functions (Kram, 1985). Indeed, mentoring researchers have also noted that relationships among co-workers

outside of conventional mentoring structures can conceivably provide similar functions to employees (Kram & Isabella, 1985).

Second, research on friendship networks has demonstrated that workplace friendships (as well as other workplace relationships) can develop among a wide variety of constituents. To this end, Winstead and her colleagues (1995) found considerable variance in whether individuals report that their 'best' friend at work is a supervisor, peer, or subordinate. Other reports confirm that employees can, and often do, maintain interpersonal relationships with a variety of individuals across multiple hierarchical levels of the organization simultaneously (Berman et al., 2002; c.f., Ferris et al., 2009).

Issues and limitations of extant research and current approaches to workplace relationships. To this point in Chapter 2, I have reviewed an array of interpersonal constructs that have received attention as antecedents of employees' organizational commitment, work engagement, and/or related individual-level work outcomes. From this review, several primary issues and limitations of this research may be identified. Given my objective in this study of offering a model which more comprehensively explains how relationships at work shape employees' organizational commitment and work engagement, it is important to address each of these primary issues in this chapter. In particular, from the review above, three key issues are most apparent: 1) the pervasiveness of mixed findings for how some interpersonal constructs may relate to employees' work-related attitudes and behaviors, 2) the meaning of relationship 'quality,' and 3) the inclusiveness of current theoretical perspectives for examining the influence of workplace relationships on employees' organizational

commitment and work engagement. These issues are discussed in greater detail in the sections below.

Mixed findings within extant literature. First, it is interesting to note the numerous occurrences of mixed findings for several of the most commonly studied interpersonal factors. For example, while on balance social support has been shown to positively relate to employees' commitment and engagement (e.g., Casper et al., 2011; Christian et al., 2011), Deelstra and colleagues (2003) and Saks (2006), among other scholars, illustrated that supervisor support is not universally perceived as desirable by employees. Likewise, co-worker support has been shown not to serve as a meaningful predictor of individual-level work outcomes on all occasions (e.g., Duffy et al., 2002; Mossholder et al., 2005). Discrepant findings further appear for the influence of TMX (e.g., Liden et al., 2000; Sherony & Green, 2002), as well as several network-related constructs (e.g., Labianca & Brass, 2006; Lee & Kim, 2011). A key question is what may explain these inconsistent findings.

Value of relationships with different workplace constituents. One possible explanation for these inconsistent findings is that employees allot different levels of value to their interactions with specific intra-organization constituents. A 'constituent' refers simply to a specific individual (e.g., supervisor, particular work peer) or group of individuals (e.g., co-workers in one's department) an employee may interact with at work. It is conceivable, for instance, that for some employees, relationships with supervisors, co-workers, mentors, or other constituents may be more salient in influencing their work-related attitudes and behaviors compared to other employees. Still, meta-analytic evidence reviewed above indicates that even if perhaps differentially weighted,

interpersonal influences from different sources may be additive (Chiaburu & Harrison, 2008). Interactions with both a co-worker and a supervisor, for example, may each impart a separate positive (or negative) influence on an employee that can independently affect his/her work-related attitudes and behaviors. Put more generally, this suggests *that interactions with multiple workplace constituents may simultaneously contribute toward shaping the organizational commitment and work engagement of employees* (Leiter & Maslach, 1988).

An important implication of this finding, therefore, is that models that explain the influence of work relationships on work-related attitudes and behaviors need to allow for an individual's *full array* of workplace relationships to be captured. Alternatively, a focus limited to only a specific relationship (e.g., supervisor, mentor, co-worker, etc.) may inappropriately downplay the complete role individuals' array of interpersonal relationships play in shaping their organizational commitment and work engagement. Individuals' relational experiences within an organization are not limited to interactions with a single constituent. As such, to consider only the influence of a single relationship on employee outcomes also offers a similarly insufficient view (c.f., Dougherty & Dreher, 2007; Higgins & Kram, 2001 for corresponding perspectives within the field of mentoring).

Individual differences in value assigned to relationships: Relational-interdependent self-construals. A second possible explanation for the inconsistent findings in extant literature is that trait-like individual differences exist in the value individuals assign to interpersonal relationships. As such, some employees may draw more heavily on interpersonal experiences in shaping their work-related attitudes and

behaviors. This perspective has only recently been broached in research on commitment (Johnson, Chang, & Yang, 2010) and has not received attention in the engagement literature. However, a good deal of theorizing from social psychology suggests that individuals do differ in the degree to which they assign meaning to relationships in constructing their own self-views (e.g., Andersen & Chen, 2002; Brewer & Gardner, 1996). Much of this research centers on the concept of an individual's 'relational-interdependent self-construal,' defined as the degree to which one defines him/herself in terms of relationships, group memberships, or other interpersonal roles (Cross, Bacon, & Morris, 2000).

As a trait-like individual difference variable, relational-interdependent self-construal has been shown in recent organizational research to influence individuals' work values (Brockner, De Cremer, van den Bos, & Chen, 2005; Gahan & Abeysekera, 2009). Also, in one of the few studies to capture both relational-interdependent self-construal and work attitudes, Guan, Deng, Risavy, Bond, and Li (2011) found that value congruence with members of one's workgroup was a more salient predictor of organizational commitment for those with a higher relational-interdependent self-construal. Similarly, in another study, Yang, Sanders, and Bumatay (2012) found that interpersonally-focused human resource practices (e.g., support for training) served as a stronger predictor of organizational commitment for those with a higher relational-interdependent self-construal. These findings suggest that interpersonal factors may be more important predictors of work-related attitudes for those who define themselves in terms of their relationships. Johnson and his colleagues (2010) supported this perspective, as they theorized that employees with a high relational-interdependent self-construal may

be more likely to recall previous interpersonal experiences, and thus assign these experiences greater salience, when constructing their organizational attitudes such as commitment.

Finally, it is important to point out that although those with a high relational-interdependent self-construal may assign greater weight to interpersonal experiences in constructing their work-related attitudes, this does not imply that individuals with a low relational-interdependent self-construal place *no value* on, or do not wish to develop, interpersonal relationships (Cross & Madson, 1997). To this end, Baumeister and Leary (1995) observed that a drive to establish strong and stable relationships is a fundamental human drive. Likewise, Chen, Boucher, and Tapias (2006) noted that all individuals derive at least some of their self-view from ‘relational selves,’ which describe who a person is in relation to one or more significant others (c.f., Andersen & Chen, 2002).

Relationship content. The actual content channeled through individuals’ interactions with others may also be a critical consideration for determining the potential influence of workplace relationships (Kim & Rhee, 2010). This suggests a third possible explanation for inconsistent findings across previous research: *that individuals assign different value to their interactions with workplace constituents based on the kind of information which is in fact exchanged these interactions.* From this viewpoint, the needs of the employee become the salient consideration in determining the value assigned to his/her interpersonal interactions. As an example, recall the mixed findings reported for the influence of instrumental (i.e. task-related) social support in extant research (Buunk & Peeters, 1994; Deelstra et al., 2003; Peeters et al., 1995a; 1995b). This finding could be explained by examining the specific needs of the individuals under study. That

is, an individual's need/desire for task-related support will likely vary from situation to situation; therefore, the appraised value for receiving task-related support from others at work would also be expected to vary accordingly.

As reviewed above, such a needs-based perspective has gained traction within different streams of relationship literature, in particular research on mentoring (e.g., Mezas & Scandura, 2005; Young & Perrewé, 2000; 2004). Through a mentoring lens, a needs-based approach contends that the degree to which a protégé's relationship with a mentor(s) may satisfy his/her salient individual needs dictates the influence mentoring relationships may have on protégé outcomes (Higgins, 2007). In essence, a protégé's perceived value for a mentoring relationship(s) is determined based on the intersection of two key factors: what a mentor may be able to provide to the protégé, and the value the protégé places on these provisions (c.f., Ragins, 2012).

Both Higgins (2007) and Ragins and Verbos (2007) also observe that a needs-based perspective may be extended beyond the field of mentoring – that is, a needs-based focus may serve as a useful lens for understanding how *one's collective array of workplace relationships* with supervisors, co-workers, mentors, as well as any other workplace constituent, may influence his/her work-related attitudes and behaviors more generally. Applied here, this suggests a critical role for understanding employee needs when considering how workplace relationships may come to shape individuals' organizational commitment and work engagement. Aligned with theorizing from the mentoring literature, this view further does not assume that a larger network of interpersonal resources is necessarily superior; rather, the degree of value one may take from his/her personal interactions with others at work is ultimately based on one's own

specific needs (Higgins, 2007; Higgins & Kram, 2001). Indeed, while some mentoring research suggests that the presence of larger network of mentoring relationships may be beneficial (e.g., Kay & Wallace, 2010), Higgins (2000) has shown that the ultimate value of an increasing mentoring network size on employee attitudes is contingent on salient protégé needs. Applied more generally, this research suggests that what is of the utmost importance is the subjective needs and experiences of the employee – what the employee actually perceives him/herself as experiencing relative to what he/she actually wants/needs from their workplace relationships.

The role and meaning of relationship ‘quality.’ Another key insight from the literature is the importance of relationship quality. Mentoring scholars, for example, have noted that perceived mentor quality may serve as the core construct in determining a mentor’s ability to influence desired protégé outcomes (Ragins et al., 2000). Research on LMX and TMX likewise recognizes the importance of quality of exchanges between individuals and their leaders and team members respectively (Graen & Uhl-Bien, 1995; Seers, 1989). Network scholars are concerned with several relationship quality-related constructs such as tie strength (Lee & Kim, 2011). Several studies specific to work engagement have also taken an interest in co-worker quality (Avery et al., 2007; May et al., 2004). Drawing on this literature, relationship quality should be incorporated into models that explain how work relationships shape employees’ organizational commitment and work engagement.

To integrate relationship quality, however, begs a difficult question: what in fact constitutes a ‘high quality’ relationship? Indeed, for the attention ‘quality’ has received, the precise meaning of relationship quality has proven far more elusive for organizational

scholars. This is perhaps no more evident than in the burgeoning literature on positive relationships at work, where similar questions are commonly presented for what defines a ‘positive’ relationship⁶. In their introduction to a recent edited book, for example, Ragins and Dutton (2007) observe that across the more than twenty-five chapter contributors, a wide variety of descriptions for what constitutes a ‘positive’ relationship are offered. This elusiveness is echoed in other recent works addressing the more general literature on positive organizational scholarship (e.g., Cameron & Spreitzer, 2012). Relationship scholars, however, offer the insightful perspective that relationship quality may be best understood from the individual’s perspective. In essence, to understand quality, individuals’ appraisals of the relationship must be considered. This point is succinctly captured by Duck (2007, p. 182): “there are no such things as inherently positive or inherently negative relationships, but only qualities” assessed by a person who sets his/her “own standards for judgments.” From this viewpoint, no universal definition of quality can conceivably exist for all persons – rather, a high quality relationship can only be understood by taking into account the subjective assessments of individuals (c.f., Spector, 2012 for a similar perspective on the importance of individual appraisals in deciphering relationship quality).

This perspective offered by relationship scholars again points to the utility of a needs-based approach for understanding the influence of workplace relationships on employee outcomes. Relationship theorists Rusbult and Van Lange (2003, p. 354), in fact, made this connection explicitly, when they observed that interpersonal “interactions

⁶ Several conceptualizations for ‘positive’ relationships include references to ‘quality’ or ‘high quality,’ thereby demonstrating the overlap between the meaning of ‘high quality’ and ‘positive.’ (e.g., Dutton & Heaphy, 2003; Quinn, 2007).

are experienced as pleasurable to the extent that they gratify one or more important needs.” To adopt a needs-based perspective toward relationship quality further informs current literature. Recall, for example, the inconsistent findings reported above for the relationship between TMX and employees’ organizational commitment (e.g., Liden, et al., 2000; Sherony & Green, 2002). One explanation for this finding may be based on assumptions inherent in the traditional definition of exchange quality in TMX literature which stipulates that higher quality relationships are those characterized by exchanges extending beyond those solely related to task accomplishment (Steers, 1989). A needs-based perspective, however, would suggest that this definition of ‘quality’ may be overly restrictive, as it does not necessarily represent employees’ actual appraisals of what constitutes exchange quality among team members. For some team members, evaluations of exchange quality may be based solely on their evaluation of task-oriented exchanges. Others, for example newcomers to a team, may be mostly interested in whether exchanges allow for desired learning to transpire. Each of these possibilities is altogether conceivable, suggesting that individuals’ potentially unique appraisal of quality must be taken into account if a true picture of ‘exchange quality’ may emerge. Tse and Dasborough (2008) provide initial support to this viewpoint, as they show that high quality exchanges can be perceived by individuals, even if the nature of interactions among team members is primarily task-focused.

Inclusiveness of current theoretical perspectives. In the review above, I have described several empirical links between interpersonal constructs, organizational commitment, and work engagement. However, theoretical models that may comprehensively explain these relationships are infrequent. This shortcoming ties

directly to Kahn's (2007) observation that work relationships too often become relegated to part of the background in organizational research – ultimately not given the theoretical attention afforded to other constructs such as work and job characteristics (e.g., Cropanzano & Mitchell, 2005; Rousseau, 1995; c.f., Duffy et al., 2002). With few exceptions, the study of work relationships is limited in that it “does not articulate the multiple, and integrative, underlying dimensions that frame behavior and outcomes in organizations” (Ferris et al., 2009, p. 1380).

Such criticisms may be levied for many of the specific theoretical approaches mentioned in this review. This is not to say that any of any of these theoretical models is inherently faulty. Rather, each offers a somewhat incomplete portrayal of the richness of relationships in the workplace, and the complexity by which these relationships may contribute in shaping employees' attitudes and behaviors. These limitations further vary across different theoretical perspectives. For example, while a job embeddedness lens acknowledges that individuals may become attached to organizations partly through their interpersonal links (Mitchell et al., 2001), the role of relationship quality is not broached in any level of detail (Holtom, Mitchell, Lee, & Eberly, 2008). LMX and TMX theories, in contrast, while recognizing the critical influence of relationship quality in specific workplace relationships (e.g., Maslyn & Uhl-Bien, 2001), are limited in their focus on only a single group of constituents. The JD-R heuristic is likewise limited inasmuch as work relationships are commonly collapsed into the more general category of job resources (e.g., Hakanen et al., 2008). Most theoretical models, with the notable exception of recent needs-based perspectives offered in the mentoring field (e.g., Higgins, 2007; Mezas & Scandura, 2005; Ragins, 2012), moreover do not account for the

cognitive processes employees may undergo when developing feelings of attachment and/or engagement.

Acknowledging these shortcomings, in the following section I introduce two theoretical perspectives – relational systems theory (Kahn, 1998; 2007) and person-environment fit theory (Edwards, 1992) – which when viewed in tandem, offer a more comprehensive account of how attitudinal and behavioral outcomes such as organizational commitment and work engagement are influenced by employees' workplace relationships.

A Relational Systems Perspective on Interpersonal Influences

A relational systems perspective holds that workplace relationships are a central factor in engendering desired work-related attitudes and behaviors in employees (Kahn, 1998; 2001). According to Kahn (2007, p. 190), “relationships...attach people to their organizations. When people feel meaningfully connected to others, they are more likely to feel connected as well to what they are doing and the group and organizational contexts in which they are doing it.” This premise serves as the overarching argument of *relational systems theory* – a theoretical platform outlining how individuals' relationships with others at work may stimulate their feelings of organizational commitment and work engagement (Kahn, 1998; 2007; 2010).

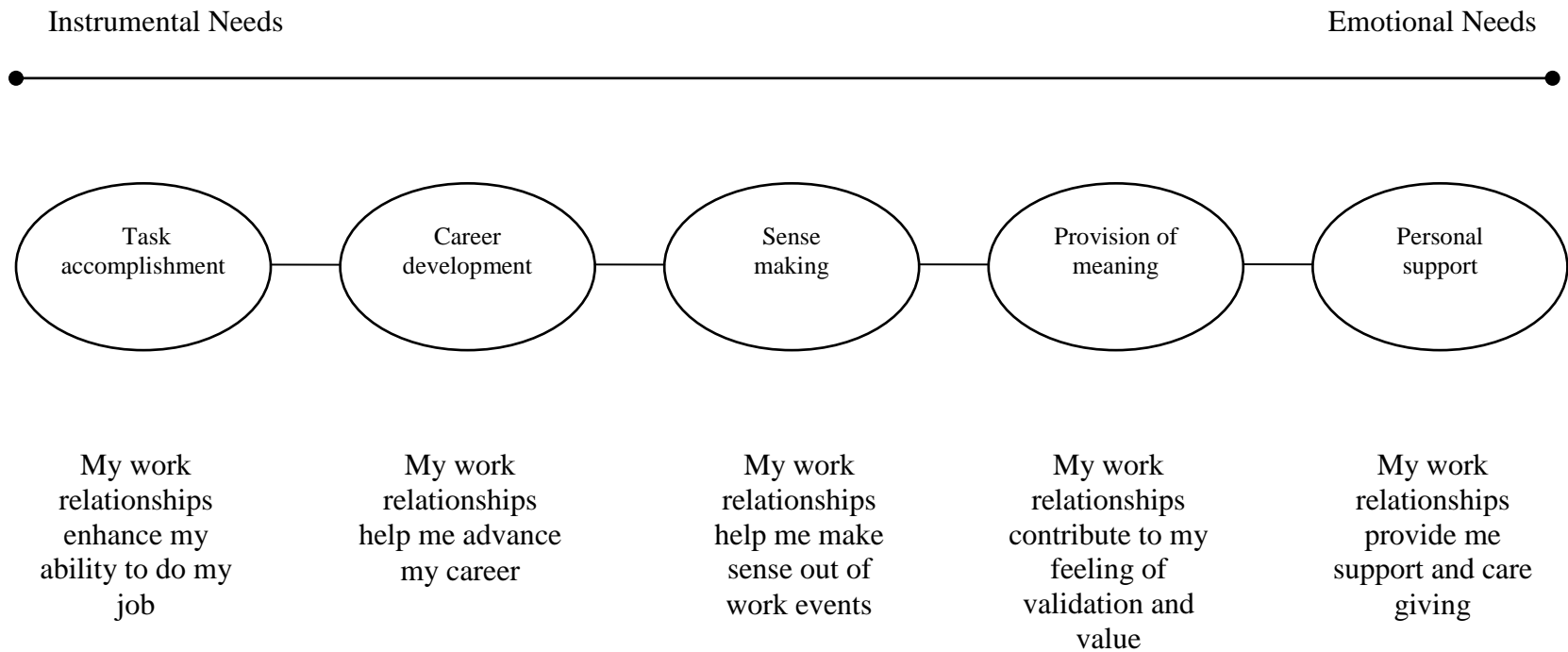
Relational systems theory: Core components. At a general level, relational systems theory holds that individuals' commitment to their organization and engagement in their work occurs when they are embedded in a system of workplace relationships experienced as *positive* (Kahn, 1998; 2007). Two core theoretical components further spell out this process: first, that relationships are an important factor in fulfilling different

relational needs, and second, that individuals develop interpersonal attachments to others at work on account of their experiences of need fulfillment. I expound on these two points below.

Nature of positive relational constellations. The first premise of relational systems theory is that individuals draw on interactions with their collective array (i.e. system) of workplace relationships in order to fulfill different relational needs. This aggregate of workplace relationships represents an employee's *relational constellation*, which is defined as "the entire set of relations that organization members draw on to meet their various needs" (Kahn, 2007, p. 195). As noted in Chapter 1, relational needs are defined as what employees wish to obtain through their interactions with others at work. Kahn (2007) identifies five core dimensions of relational needs: task accomplishment, career development, sense making, provision of meaning, and personal support. Specifically, the task accomplishment dimension concerns individuals' desire for interpersonal input relating to the successful completion of their job or work; the career development dimension concerns individuals' desire for interpersonal input relating to the advancement of their career; the sense making dimension involves individuals' desire for interpersonal input geared toward helping them make sense out of events, experiences, and other activities transpiring within the organization; the provision of meaning dimension concerns individuals' desire for interpersonal input contributing toward feelings of validation and value at work; and the personal support dimension involves individuals' desire for interpersonal input pertaining to social support and care giving (Kahn, 2007). These five dimensions, each of which has roots in social network research

(see Ibarra, 1993), may further be described as falling along a continuum with personal support and task accomplishment at its endpoints. This is illustrated in Figure 1.

Figure 1: Dimensions of Relational Needs



Note. Adapted from Kahn (2007).

According to relational systems theory, need fulfillment is defined as the degree to which employees' relational needs are satisfied by their work relationships. In other words, what employees wish to obtain through their workplace relationships is indeed provided for by the interpersonal input actually received from their relational constellation. *Positive relational constellations* thus constitute those which are able to fulfill individuals' requisite relational needs across each of the five dimensions (Kahn, 2007).

In taking a need fulfillment lens, relational systems theory also acknowledges that the salience for each of these five dimensions can vary across individuals. This follows inasmuch as individuals can have varying desires for what they want to obtain from their workplace relationships (Kahn, 2007). This premise is important, as it aligns relational systems theory with 1) relationship scholars' assertions that relationship quality cannot be defined without specific reference to individuals' appraisals of their own salient needs (Duck, 2007; Rusbult & Van Lange, 2003), and 2) current literature suggesting that a needs-based perspective may have the greatest utility for understanding the influence of workplace relationships on employee outcomes. Additionally, it should be pointed out that each specific work environment may also carry some bounds on the degree to which employees have access to others willing and/or capable of meeting their relational needs on one or more of the five prescribed dimensions (Kahn, 2007). This suggests that a great deal of variance may exist in the quality of relational constellations experienced by individuals, both within and across workplaces. Finally, it is useful to note that individuals' relational needs are not prescribed as being entirely orthogonal – rather,

relational systems theory acknowledges that some overlap will likely exist in individuals' need levels across the five dimensions (Kahn, 2007).

Psychological attachment to others as a mediating influence. Relational systems theory additionally suggests that the link between experiences of a positive relational constellation and organizational commitment and work engagement may be indirect. Specifically, when a relational constellation is experienced as positive (i.e. fulfilling one's relational needs on the five dimensions identified), individuals will first develop feelings of psychological attachment for others within their workplace; in particular those who may be most instrumental in contributing to the fulfillment of their salient needs. In this context, an individual's *psychological attachment to others at work* is defined as the extent to which he/she feels personally connected to others within the workplace (Kahn, 2007). This feeling of psychological attachment for others is then expected to generalize such that it influences employees' attachment to their organization, as well as individuals' investment and engagement in their work (Kahn, 2007). In effect, this suggests that strong attachments with others at work, described by Kahn (2001) as 'anchoring relationships,' serve as a critical precursor to individuals' organizational commitment and work engagement. Anchoring relationships may furthermore exist between any number of different workplace constituents (Kahn, 2001). This perspective again is aligned with current literature holding that interactions with multiple workplace constituents may simultaneously contribute toward shaping employees' organizational commitment and work engagement (Chiaburu & Harrison, 2008; Leiter & Maslach, 1988), as well as recognizes the bounds that may exist within different workplaces. Across contexts, however, the process described in relational systems theory is expected

to remain consistent: perceptions of relational need fulfillment on salient dimensions first influences attachment to others at work, which in turn may be generalized to influence commitment to the organization, as well as investment and engagement in one's work.

Ties to existing research. Some of the basic premises behind relational systems theory can be found in related theoretical and empirical work. Most notably, the idea that individuals may extrapolate feelings of attachment for others at work into an attachment to their organization is aligned with other theories and models of organizational attachment. Pfeffer (1991), for instance, notes from a structural perspective that desired psychological states such as organizational commitment may be a consequence of social contagion processes among organizational constituents. Lawler's (2001) affect theory of exchange further suggests that positive feelings arising from multi-actor exchanges strengthen individuals' attachments. Also, moving beyond the organizational context specifically, sociologists hold that individuals' attachment to their community is driven by their interpersonal relationships with others in the community – a perspective known as the systemic model of community attachment (Kasarda & Janowitz, 1974).

Within identity literature, Sluss and Ashforth (2007; 2008) also offer a related model suggesting that relational identification with specific workplace constituents may generalize to affect individuals' organizational identification. They define relational identification as “the partial definition of oneself in terms of...(a) role relationship” (Sluss & Ashforth, 2008, p. 810). Put succinctly, this generalization process suggests that individuals may cognitively transpose qualities of a work relationship onto the organization itself. According to Sluss and Ashforth (2007; 2008), such a process is possible given that workplace relationships are situated within the bounds of the

organization, a scenario they describe as ‘structurally nested.’ As such, the collective unit (i.e. the organization) may be viewed as an extension of a more proximal interpersonal attachment (c.f., Ashforth & Johnson, 2001). An interpersonal workplace relationship and the organization may thus “serve mutually conditional stimuli in that attitudes toward one generalize to the other” (Sluss & Ashforth, 2008, p.811). Initial support for this generalization effect has been reported using samples from the telemarketing industry and US military respectively (Sluss, Ployhart, Cobb, & Ashforth, 2012). Also, Pratt (2000) has reported qualitative evidence supporting the generalization hypothesis using a sample of Amway distributors.

From a theoretical standpoint, Sluss and Ashforth’s (2008) model of identity generalization closely parallels relational systems theory’s proposition that attachment to others at work may extrapolate to influence individuals’ attachment to their organization. This is useful inasmuch as Sluss and Ashforth’s model offers support for arguments posed by relational systems theory. However, it is important to point out that several key differences exist between these two theoretical platforms. An important distinction, for example, may be made in that Sluss and Ashforth’s relational identification model focuses on relationships with specific workplace constituents, and in particular, supervisors. Relational systems theory, in contrast, focuses on one’s collective array of workplace relationships, that is, their relational constellation. This broader perspective offered by relational systems theory more closely aligns with existing research that interpersonal relationships with multiple workplace constituents can simultaneously contribute to feelings of organizational commitment (Leiter & Maslach, 1988; Wang, 2008; Yoon, Baker, & Ko, 1994; c.f., Higgins & Kram, 2001). A second distinction may be drawn in

that the two theoretical models have different foci, with Sluss and Ashforth's (2008) model taking an interest in individuals' identity (both relational and organizational), and relational systems theory focused on feelings of attachment (Kahn, 2007). While related, scholars have pointed to several conceptual distinctions between these constructs (see Meyer, Becker, & Van Dick, 2006; van Knippenberg & Sleebos, 2006 for detailed reviews). Of particular note, for Sluss and Ashforth (2008) the experience of relational identification requires the altering of one's self-concept to include a particular role relationship. Attachment from the perspective of relational systems theory, however, while likewise suggesting a psychological connection, does not assert a fundamental shift in an individual's self-definition.

Support for the idea that individuals may extrapolate feelings of attachment for others at work into attachments to their organization is additionally bolstered by existing empirical research. For example, Chen, Tsui, and Farh (2002) have demonstrated that feelings of loyalty toward others at work may promote commitment to the organization more generally. Adler and Adler (1988) have also reported that high levels of cohesion among individuals will result in increased feelings of commitment to the organization itself. A relationship between interpersonal attachments and organizational commitment further exists when examined using employees representing different and similar levels of the organizational hierarchy simultaneously (Wang, 2008; Yoon et al., 1994). Finally, Heffner and Rentsch (2001) have shown that the degree of social interaction among employees, which may be a function of feelings of attachment, is positively related to organizational commitment.

As shown here, related theory and research support the premise that feelings of interpersonal attachments serve as an important precursor to the development of organization-focused attitudes such as commitment and engagement. In the next section, I turn to a discussion of PE fit theory, which informs understanding of the need fulfillment process specified in relational systems theory.

Assessing relational systems: Integrating a complementary fit lens.

Consistent with the goals of this study, relational systems theory provides a framework which clearly puts workplace “relationships at the center rather than at the periphery of people’s experiences at work” (Kahn, 2007, p. 190). Core tenets of relational systems theory are furthermore aligned with critical perspectives on workplace relationships identified in the review above; including 1) the importance of focusing on one’s full array of interpersonal relationships as opposed to only specific constituents, 2) the need to flesh out how workplace relationships may influence employee outcomes, and perhaps most important, 3) the utility of a needs-based lens for assessing the content and quality of interpersonal interactions. Still, while a strength of relational systems theory is its focus on need fulfillment (Duck, 2007; Rusbult & Van Lange, 2003), the theory is limited in that it does not give clear guidance on how to determine if an individual’s relational needs are indeed satisfied by his/her relational constellation.

A complementary fit perspective offers a practical approach for addressing this shortcoming. As reviewed earlier, complementary fit uses a needs/supplies perspective – for example, when characteristics of the organizational environment (i.e. supplies) provide what an employee needs (Muchinsky & Monahan, 1987; c.f., Edwards & Shipp, 2007 for a review). It should be clarified that ‘needs’ do not imply physical or biological

needs (see Maslow, 1943) in this context. Rather, ‘needs’ from a PE fit perspective refer to individuals’ specific *desires, preferences and/or wants* pertaining to a given topic of interest (e.g., desire/need for autonomy, desire/need for work/family segmentation, etc., Edwards, 1996). It is further important to note that this approach toward ‘needs’ offered by PE fit theory is aligned with relational system theory’s presentation of relational needs in terms of what employees *wish* to obtain through their interactions with others at work.

A complementary fit approach is theoretically grounded in PE fit theory (Edwards, 1992). At a general level, PE fit theory makes the argument that both the person and environment serve as joint determinants of employee well-being (French et al., 1982; Yang, Che, & Spector, 2008); a perspective rooted in the classic interactional psychology tradition (Lewin, 1935; Murray, 1938). More specifically, however, PE fit theory makes four key assertions that inform relational systems theory and this study.

First, as an overarching principle, PE fit theory contends that congruence between some internal reference criterion and a commensurate characteristic of the environment is generally beneficial to individuals’ well-being (French et al., 1982; Harrison, 1978). Using a complementary fit lens, ‘internal reference criterion’ refers to a particular need. Whether the environment provides for the fulfillment of this need, then, represents the ‘commensurate environmental characteristic’ (see Cable & Edwards, 2004). As noted earlier, most often this application of complementary fit concerns an employee’s need for a specific work dimension – for example, one’s need/desire for autonomy and the degree of autonomy provided in one’s job (e.g., Edwards & Rothbard, 1999; Yang et al., 2008). A similar application, however, may be used to capture experiences of relational need fulfillment within the context of relational systems theory. Specifically, individuals may

be first described as having varying levels of relational needs on each of the five dimensions – task accomplishment, career development, sense making, provision of meaning, and personal support (Kahn, 2007). Taking a fit lens, then, the degree to which one's relational constellation may satisfy individuals' specific relational needs on each of these dimensions could be described as reflecting the commensurate environmental component on which congruence may be assessed.

The second tenet of PE fit theory is that needs are independently appraised. In other words, individuals make their own determination in how they prescribe value to any particular need. As a result, the allocation of value assigned to a given need will commonly differ across individuals (Edwards, 1992; Yang et al., 2008). Consider for example two employees asked to evaluate their need for job autonomy. It is possible that one of these individuals may desire a great deal of autonomy in his/her job, and as such, appraise autonomy as a valued need. The second individual, on the other hand, could feel indifferent toward having autonomy in his/her job, and as a result, appraise autonomy as not very meaningful. This example illustrates that *between-person* variance can exist in the appraisal of a specific need. Where multiple needs are of interest, *within-person* variance in the appraisal of specific needs can also exist. Consider these same two individuals, now asked to evaluate both their need for job autonomy and prestige. It is possible that the first individual who greatly values job autonomy may simultaneously place little value on prestige. Likewise, the second individual who places little value on job autonomy may place high value on having a prestigious job. Allocation of value is moreover not a zero-sum equation – it is conceivable that some individuals will highly value multiple needs, while others place less value on some compared to others.

Integrating this tenet of PE fit theory within relational systems theory suggests that relational needs should be assessed independently, as individuals may differ in the degree of value given to relational needs on each dimension. Some employees may moreover hold several needs salient, thus seeking interpersonal connections that fulfill each of these relational needs. Other employees, however, may center on one primary relational need, which if satisfied, could largely dictate their attachment to others at work, and in turn, their commitment to the organization and work engagement.

The third tenet of PE fit theory concerns consequences of not achieving person-environmental congruence. In terms of complementary fit, while congruence on needs/supplies is desired, ‘misfit,’ defined as a lack of congruence, may also occur. PE fit theory differentiates between two types of misfit (Edwards, Caplan, & Harrison, 1998). A first type of misfit occurs when an individual’s need is not met – in other words, a situation in which actual levels of an environmental characteristic is lower than desired levels. In this case, PE fit theory holds that as realized needs increase toward desired need levels (e.g., the environment is able to provide more of the individual’s needs), levels of an expected outcome should increase (Edwards, 1996). Applied to a relational systems context, consider a situation in which an individual’s need for personal support is not being met by his/her relational constellation. For this type of misfit, PE fit theory would contend that as actual levels of personal support increase toward desired levels of personal support (i.e. the point of congruence), one’s level of psychological attachment to others at work (i.e. the outcome) should increase. This theorizing follows research that individuals will feel unfulfilled when their salient needs are not met by the environment (Dawis & Lofquist, 1984; Edwards & Cooper, 1990), a premise which has been

empirically supported in a variety of domains (e.g., Edwards & Rothbard, 1999; Shockley, 2010).

A second type of misfit occurs when a given need is ‘over-met’ by one’s environment. In this situation, actual levels of an environmental characteristic exceed desired levels – in other words, a need is met but also exceeded. Under these circumstances, any one of three results may occur. First, outcome levels may continue to increase as actual levels of a given need increase beyond desired levels. Reapplying the relational systems theory example from above, consider a situation in which an individual’s need for personal support is exceeded by his/her relational constellation. With such an occurrence, one possible result is that an individual’s level of psychological attachment to others at work (i.e. the outcome) continues to increase after the point of congruence is reached. A second possible result, on the other hand, is that as actual levels of a given need exceed desired levels, outcome levels may decrease. Returning to the example in which an individual’s need for personal support is exceeded by his/her relational constellation, this scenario would suggest that one’s psychological attachment to others at work (i.e. the outcome) would decrease as one’s need for personal support is exceeded. Such an outcome could result, for instance, in cases where having a need for personal support ‘over-met’ invokes feelings of intrusion on matters one considers private or personal, thereby leading to a reduction in attachment (Harrison, 1978; Kahn, 2005). Finally, a third possible result is that as actual levels of a given need exceed desired levels, outcome levels remain unchanged, thereby remaining stable with levels occurring at the point of perfect congruence (Edwards, 1996).

Altogether, it is important to note that PE fit theory does not provide specific direction on which of these three scenarios for experiences of one's needs being over-met by the environment is most likely to occur. Rather, the theory provides that any of the three outcomes described above are plausible. PE fit theory further acknowledges that the influence of having one's needs over-met may differ across specific need dimensions of interest (Edwards, 1996; French et al., 1982).

Finally, the fourth tenet of PE fit theory is that the influence of congruence between actual and desired levels of an environmental characteristic may differ depending on the value at which fit occurs (Edwards et al., 1998; Edwards & Shipp, 2007). Applied here, this tenet reiterates the core precept of needs-based approaches that individuals will value specific needs more so than others. In essence, the value of achieving congruence on a particular need will be greater if the need itself is salient for the individual. Applying this to our recurring example, this suggests that higher levels of psychological attachment to others at work (i.e. the outcome) would be expected if individuals both receive, and *highly value* the personal support provided by their relational constellation. In essence, to have a more valued need met by one's relational constellation should convey greater meaning in shaping psychological attachment to others at work than having a less valued need met.

To summarize, PE fit theory makes four key assertions: 1) congruence between the person (P) and commensurate characteristic of the environment (E) is beneficial to well-being (French et al., 1982); 2) individual differences will exist in how specific needs and environmental characteristics are appraised (Edwards, 1992); 3) the influence of 'misfit' on well-being can be asymmetric – in other words, implications for not having

one's needs met can differ from one having his/her needs over-met (Edwards, 1996; Edwards et al., 1998); and 4) the influence of congruence between actual and desired levels of an environmental characteristic may differ depending on the value at which fit occurs (Edwards et al., 1998). Together, these four tenets of PE fit theory complement relational systems theory by providing guidance for how best to capture whether individuals' relational needs on the five core dimensions identified are indeed satisfied by their relational constellation. In this study, I identify the person and environmental congruence on each of the prescribed relational needs, in turn examining how these congruence effects may contribute to individuals' psychological attachment to others at work. I then posit employees' attachment to others at work as a key mediating construct, expected to directly influence both organizational commitment and work engagement for employees. Together, these links provide the framework for this study's proposed theoretical model, which is presented in Chapter 3.

Summary of Chapter 2

Organizational commitment and work engagement have each received considerable attention in previous literature. As described in this review, however, the role interpersonal relationships may play in the development of each construct has not been fully articulated (c.f., Ferris et al., 2009).

Relational systems theory is a relatively new theory which offers a useful lens for understanding how interpersonal relationships at work may contribute to the development of organizational commitment and work engagement. According to this theory, individuals have specific relational needs which may (or may not) be met by their system of workplace relationships, or relational constellation. The degree to which these

relational needs are met is envisioned to influence individuals' psychological attachment to those around them, which in turn is expected to influence their feelings of commitment and engagement (Kahn, 2007). Relational systems theory, however, is limited in that it does not describe the process by which individuals' appraise whether their specific relational needs are indeed met. In this study, I integrate PE fit theory with relational systems theory to better define this process.

This study additionally informs PE fit theory. PE fit theory offers the idea that congruence between individual needs and environmental supplies promotes desired outcomes, as well as outlines implications for not achieving congruence (Edwards, 1992). To date, however, applications of PE fit theory have generally centered on defining needs/supplies with respect to job characteristics and related elements (e.g., autonomy, workload, boundary segmentation, Edwards & Rothbard, 1999; Yang et al., 2008). Consideration of relational needs (Kahn, 2007) through a fit lens, as is done here, has generally not been broached by PE fit scholars.

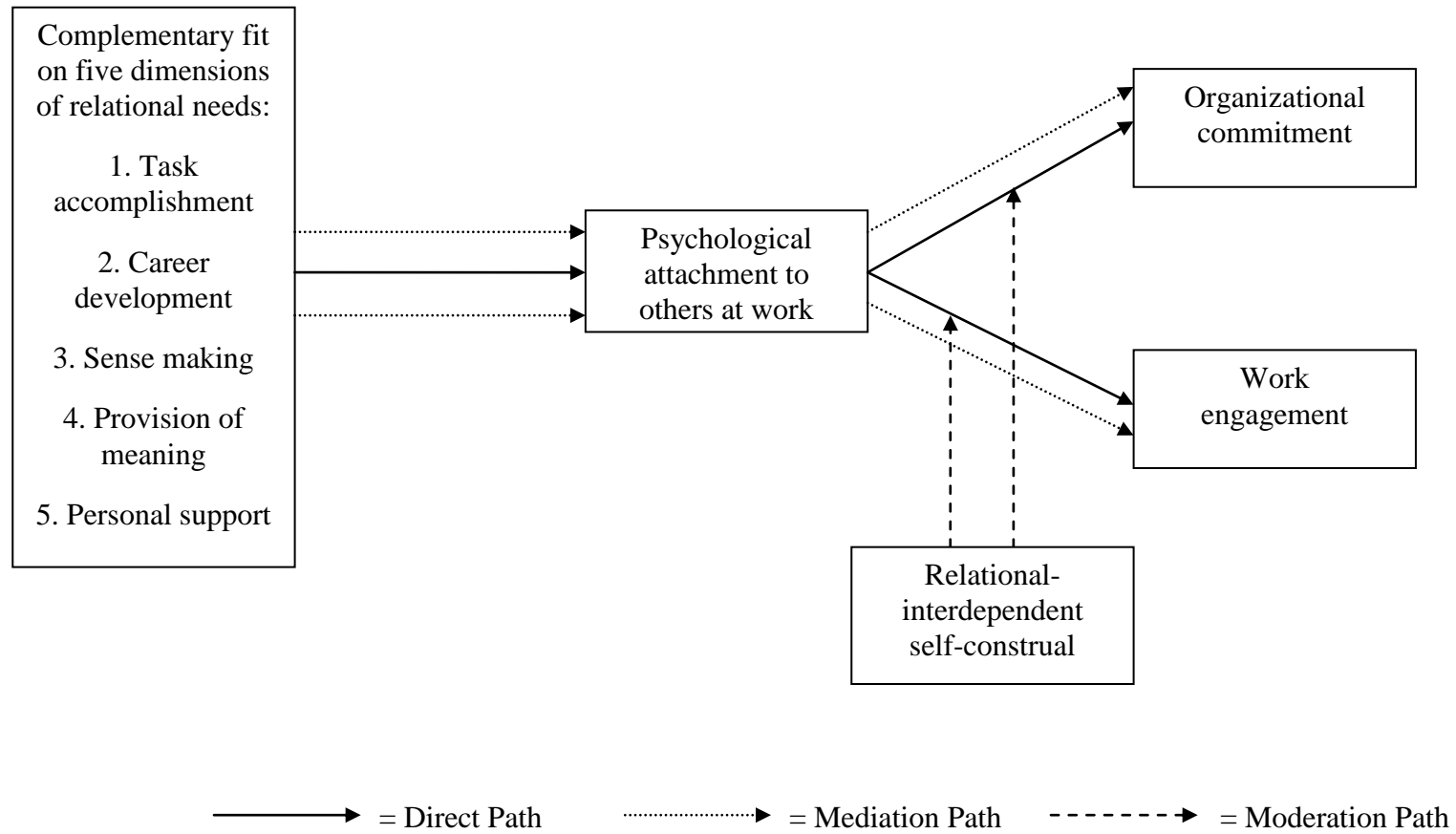
In sum, by integrating relational systems theory and PE fit theory, this study offers a more comprehensive and complete perspective in explaining how interpersonal relationships shape organizational commitment and work engagement than is currently offered in extant literature.

Chapter 3: Theoretical Model and Hypotheses

In this chapter, I outline the proposed model, hypotheses, and related research questions that I examine in this study. Figure 2 depicts the specific theoretical model that is tested. As reviewed earlier, relational systems theory (Kahn, 1998; 2007) and PE fit theory (Edwards, 1992) provide the theoretical foundations for this model.

In the sections below, I present study propositions corresponding to each of the model paths depicted in Figure 2. Working from left to right across the model, I first examine how the experience of relational need fulfillment may influence individuals' psychological attachment to others at work. Second, I examine how these feelings of interpersonal attachment may in turn contribute to the development of individuals' organizational commitment and work engagement. Finally, I consider whether these relationships between feelings of interpersonal attachment and organizational commitment and work engagement may be contingent on individuals' relational-interdependent self-construal, a trait-like individual difference variable reviewed in Chapter 2 (Cross et al., 2000). Each of these proposed relationships is identified in Figure 2.

Figure 2: Dissertation Model



Effects of Relational Need Fulfillment

In this section, I develop hypotheses concerning the effect of relational need fulfillment on individuals' psychological attachment to others at work. For clarity, I will use terminology taken from PE fit literature in the construction of these hypotheses – specifically, the nomenclature ‘needs’ and ‘supplies.’ In taking this PE fit lens, ‘needs’ refer to individuals' *desired levels of interpersonal input* from their relational constellation on a given dimension. ‘Supplies,’ in contrast, refer to the perceived level of *interpersonal input actually received* from their relational constellation on a given dimension.⁷ Consider, for example, the task accomplishment dimension. Here, ‘needs’ would constitute employees' desired level of interpersonal input relating to the accomplishment of their work responsibilities (e.g., the extent to which individuals *desire* that others at work help them with completing their work tasks). ‘Supplies,’ in contrast, would constitute the perceived interpersonal input actually received relating to the accomplishment of work responsibilities (e.g., the extent to which others at work *actually provide* help in completing their work tasks). It should be noted that this operationalization of supplies reflects individuals' perceptions of the *actual* interpersonal input received from members of their relational constellation as opposed to the perceived *availability* of input. This is aligned with relational systems theory, which focuses explicitly on the degree to which individuals' relational needs are actually met by their relational constellation (Kahn, 2007).

⁷ It should be reiterated that this construction of ‘needs’ using PE fit nomenclature (i.e. desired levels of interpersonal input), while framed in slightly different terms, is conceptually aligned with the definition of ‘relational needs’ offered in relational systems theory (i.e. what employees *wish* to obtain through their interactions with others).

Guided by PE fit theory, I present study propositions for the influence of need fulfillment in three subsections. Because the influence of ‘misfit’ can be asymmetric (Edwards, 1996), two scenarios pertaining to the influence of misfit must be considered: 1) when actual levels of interpersonal input from one’s relational constellation (i.e. supplies) are *less than* desired levels of interpersonal input (i.e. needs), and 2) when actual levels are *greater than* desired levels. These two scenarios are addressed in two separate subsections below. In the other subsection, I consider whether needs/supplies congruence occurring at high values leads to greater levels of attachment to others at work compared to needs/supplies congruence occurring at low values. As described in Chapter 2, this follows PE fit theory, which suggests that congruence between actual and desired levels of an environmental characteristic may have different implications depending on the absolute value at which fit occurs (Edwards et al., 1998). Altogether, this framing for understanding the effects of relational need fulfillment is in line with extant complementary fit research (e.g., Edwards & Rothbard, 1999; Hecht & Allen, 2005; Kreiner, 2006; Shaw & Gupta, 2004; Yang et al., 2008).

Effects where needs are not met by supplies. As reviewed in Chapter 2, PE fit theory asserts that when individuals’ needs are not met by their environment, undesired outcomes will result (Edwards, 1996; Kristof, 1996; Kristof-Brown et al., 2005; Verquer et al., 2003). By construction, this assertion likewise assumes that as supplies increase toward requisite needs, levels of desired outcomes should also increase (Edwards & Rothbard, 1999; Harrison, 1978). This pattern of relationships is further expected to exist across any and all identifiable need dimensions (Edwards et al., 1998). Importantly, these PE fit perspectives are also aligned with relational systems theory. Recall from

Chapter 2 that relational systems theory predicts that perceptions of relational need fulfillment on five core dimensions (task accomplishment, career development, sense making, provision of meaning, and personal support) by individuals' relational constellations is beneficial. Specifically, the fulfillment of one's relational needs is asserted to influence employees' workplace attachment through first promoting strong feelings of interpersonal attachment to others at work (Kahn, 2007).

Applied to the current study, this synergistic theorizing from both PE fit and relational systems perspectives suggests that psychological attachment to others at work will increase as actual levels of interpersonal input from one's relational constellation (i.e. supplies) increases toward desired levels of interpersonal input (i.e. needs). This should moreover remain true for each of the five core dimensions identified (Edwards et al., 1998; Edwards & Shipp, 2007). When relational needs are underserved by one's relational constellation, an affective distancing from others at work is likely to take place. Specifically, individuals may develop feelings of isolation and abandonment when those around them in the workplace are unable to satisfy their expressed needs, thereby reducing levels of psychological attachment to others at work (Kahn, 2005; 2007). The inability of one's relational constellation to meet his/her relational needs may also promote feelings of insecurity, dislike, and distrust toward members of one's relational constellation (see Holmes, 2000), all affective responses which should decrease the likelihood that an individual will develop psychological attachments to others at work.

Collectively, these theoretical arguments suggest the following hypothesis, which aligned with PE fit and relational systems theory, is examined individually for each of the five dimensions of relational needs:

Hypothesis 1: Psychological attachment to others at work will increase as supplies from one's relational constellation increases towards requisite need levels.

Effects for congruence at high versus low absolute values. As reviewed in Chapter 2, employees are expected to develop greater levels of well-being, more desired psychological states, and stronger feelings of attachment when their needs are fulfilled (Edwards, 1996; Edwards et al., 1998; Meyer & Allen, 1991; 1997). This overarching principle of PE fit theory, however, does not address the absolute level at which experiences of need fulfillment may occur. Individuals could assign very little meaning to a particular need that is sufficiently provided for in one's environment, just as they may conceivably experience fulfillment of a need that is highly valued. Consider, for example, two individuals – one with high need levels for personal support and one with low need levels for personal support. Despite possessing these different requisite need levels, both individuals remain capable of having their needs for personal support sufficiently satisfied by their relational constellations. What may differ between these two individuals, however, is the meaning an individual attaches to having this relational need fulfilled. For the individual with high need levels, for example, to have his/her personal support needs fulfilled will likely hold significant value for the individual. In contrast, for the individual with low personal support need levels, experiences of need fulfillment will likely be less meaningful as he/she would be expected to attach less value to this lower rated need. Put more generally, to have a higher rated need met by one's relational constellation should have greater ramifications than having a lower valued need met (Edwards & Shipp, 2007). This premise is supported by extant fit research, which typically shows that the influence of having a higher rated need met by environmental

supplies will result in greater well-being and/or related outcomes than having a lower rated need met (e.g., Edwards & Van Harrison, 1993; Edwards & Rothbard, 1999; Livingstone, Nelson, Barr, 1997; Ostroff, Shinn, & Kinicki, 2005; Taris & Feij, 2001; Yang et al., 2008). According to PE fit theory, this pattern of relationships is moreover expected to be consistent regardless of the specific need dimension under study (Edwards & Shipp, 2007). Simply put, the fit between needs and supplies when both are high (i.e., high level of need that is sufficiently fulfilled) should have a greater influence on expected outcomes than the fit between needs and supplies when both are low (i.e., low level of need that is sufficiently fulfilled) (Yang et al., 2008).

Applied to the current study, this suggests that higher levels of psychological attachment to others at work will result when individuals experience fulfillment at high, as opposed to low, values of a given relational need. As noted, individuals likely assign greater levels of meaning to those relational needs that are perceived as greater (Edwards & Shipp, 2007). As a result, should one's relational constellation be able to fulfill those more highly rated needs, stronger feelings of psychological attachment to others at work is likely to occur as a result. On the other hand, while having a lower rated need met by one's relational constellation should not be detrimental, the ultimate influence on feelings of interpersonal attachment should be less than when fulfillment is perceived on more highly rated relational needs.

Collectively, this theory and research leads to the following hypothesis, which again is assessed independently for each of the five dimensions of relational needs:

Hypothesis 2: Psychological attachment to others at work will be greater when supplies from one's relational constellation and requisite need levels are both high than when both are low.

Effects where supplies exceed needs. To this point, I have presented hypotheses concerning two scenarios: where needs are unmet by supplies from one's relational constellation, and where congruence between needs/supplies occurs at high versus low levels. As noted in the preceding sections, PE fit theory stipulates that a consistent pattern of relationships will exist across any and all need dimensions for both of these scenarios (Edwards & Shipp, 2007). PE fit theory is more equivocal, however, for occurrences in which needs are 'over-met' by supplies (Edwards et al., 1998), in other words, occurrences in which individuals receive more interpersonal input from their relational constellation than is desired or needed. In contrast to the above two scenarios, PE fit theory acknowledges that the influence of excess supplies on outcomes will likely differ across needs (Edwards, 1996; French et al., 1982). Moreover, as reviewed in Chapter 2, PE fit theory suggests that three possible results may occur when individuals perceive excess supplies on a particular need: 1) levels of the expected outcome may continue to increase as the point of needs/supplies congruence is exceeded, 2) levels of the expected outcome may decrease after the point of needs/supplies congruence is reached, or 3) levels of the expected outcome may remain stable with levels occurring at the point of congruence (Edwards et al., 1998; Harrison, 1978).

How then for the current study would the presence of excess supplies for each relational need be expected to influence individuals' psychological attachment to others at work? As noted in the preceding paragraph and reviewed in Chapter 2, PE fit theory does not provide definitive guidance for answering this question, instead suggesting three possible scenarios. Likewise, while advocating a need fulfillment lens, relational systems theory offers little direction for situations in which relational needs are over-met by

supplies. Extant literature further offers virtually no concrete empirical guidance. Indeed, as noted in Chapter 2, those relational needs of interest here have generally not received previous scrutiny from a needs/supplies PE fit viewpoint.

Given this lack of clear theoretical direction and empirical research, therefore, the following research question is examined for each of the five dimensions of relational needs:

Research Question 1: As supplies from one's relational constellation exceed requisite need levels, will psychological attachment to others at work increase, decrease, or remain constant?

Effects of Psychological Attachment to Others at Work

In this section, I turn to hypotheses concerning the effects of psychological attachment to others at work. As noted in Chapter 2, psychological attachment to others at work is defined as the extent to which individuals feel personally connected to others within their workplace (Kahn, 2007). Following Figure 2, psychological attachment to others at work is expected to influence both individuals' organizational commitment and work engagement in this study. Both direct and indirect effects are expected, and are discussed below.

Organizational commitment. According to Kahn (2007), individuals may extrapolate strong feelings of attachment for others at work into attachments to their organization. This premise serves as a core component of relational systems theory, and as reviewed in Chapter 2, is further aligned with several related theoretical viewpoints (e.g., Kasarda & Janowitz, 1974; Lawler, 2001; Sluss & Ashforth, 2008). As further described in Chapter 2, empirical support for a relationship between feelings of interpersonal attachment and organizational commitment exists as well (e.g., Adler &

Adler, 1988; Chen et al., 2002; Heffner & Rentsch, 2001). This relationship has moreover been shown to be robust across several conditions, including different levels of organizational hierarchy (Wang, 2008; Yoon et al., 1994). Collectively, this suggests a positive relationship between psychological attachment to others at work and organizational commitment for the current study. Aligned with relational systems theory and existing research, therefore, I offer the following hypothesis:

Hypothesis 3: Psychological attachment to others at work will be positively related to organizational commitment.

Individuals' psychological attachment to others at work is additionally expected to serve as an intermediary link between experiences of relational need fulfillment and organizational commitment. This mediated path is shown in Figure 2. Specifically, the experience of a positive relational constellation (defined in terms of need fulfillment) is expected to first influence feelings of interpersonal attachment, which in turn is expected to generalize to influence attachment attitudes toward the organization (Kahn, 2007). This process is reviewed in greater detail in Chapter 2.

Several related streams of research offer additional support for this proposed mediation effect. For example, Blatt and Camden (2007) have offered the idea that positive interpersonal relationships promote the development of a 'sense of community' within the workplace, which in turn is expected to lead employees to become more committed to the organization. Additionally, from an identity perspective, Sluss and Ashforth (2008) have described positive interpersonal experiences as a precursor to the development of relational identification, which as reviewed in Chapter 2, is expected to influence employees' organizational identification according to the generalization hypothesis (Sluss & Ashforth, 2007; 2008; c.f., Sluss et al., 2012). This viewpoint again

suggests a similar mediation effect as is offered here. As such, guided by both relational systems theory and these related theoretical perspectives, I offer the following hypothesis:

Hypothesis 4: Psychological attachment to others at work mediates the relationship between needs/supplies fit on the five relational need dimensions and organizational commitment.

Work engagement. Beyond its expected influence on organizational commitment, individuals' psychological attachment to others at work may also promote their levels of work engagement. This relationship is identified within relational systems theory (Kahn, 2007) and is supported by existing research. Specifically, individuals' psychological attachment to others at work may both facilitate core psychological conditions for engagement identified by Kahn (1990) and promote feelings of energy necessary to allow individuals to fully invest in their work role (Dutton & Heaphy, 2003).

Recall from Chapter 2 that Kahn (1990) identified three psychological conditions which allow for individuals to become engaged in their work: meaningfulness, psychological safety, and availability. Research suggests that interpersonal attachments within the workplace play an important role in the development of these critical conditions, and particularly conditions of meaningfulness and psychological safety. Kahn (1992; 2005; 2010), for example, points out that those who hold strong interpersonal attachments within the workplace should also experience greater meaning in their work. According to both Avery et al. (2007) and Rich et al. (2010), harmonious attachments should also promote an increased sense of psychological safety, allowing employees to feel more secure to expose their true selves when performing their work. Poor relationships, in contrast, are expected to heighten defensiveness, thereby resulting in lower levels of work engagement. Feelings of interpersonal attachment may also

promote individuals' levels of energy (Dutton & Heaphy, 2003; Heaphy & Dutton, 2008). Specifically, organizational scholars have suggested that strong psychological attachments between employees facilitate their levels of vitality, aliveness, arousal, and positive energy, each states which increase their capacity to fully engage in their work role (Quinn & Dutton, 2005; Stephens, Heaphy, & Dutton, 2012; c.f., Marks, 1977; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005). Altogether, this theory and research suggests the following hypothesis:

Hypothesis 5: Psychological attachment to others at work will be positively related to work engagement.

I additionally expect individuals' psychological attachment to others at work to serve as an intermediary link between experiences of relational need fulfillment and individuals' levels of work engagement. According to Kahn (2007), people become more fully engaged in their work when they feel psychologically attached to others at work – a state which itself is brought on when individuals have their critical relational needs fulfilled by their relational constellation. This theorizing points to a mediating role for individuals' psychological attachment to others at work, and is illustrated in Figure 2.

Associated relationship research concurs with this theoretical perspective. For example, Quinn (2007) has asserted that when a social interaction (be it momentary or recurring) between two or more employees is experienced as positive, increased levels of energy may occur for participating parties. As described above, such increased energy gives individuals a greater capacity to fully invest and engage in their work role (Dutton & Heaphy, 2003; Quinn & Dutton, 2005; Stephens et al., 2012). Consistent with the proposed mediation argument offered here, however, Quinn (2007) further clarifies that the relationship between positive workplace social interactions and increased energy

levels among participants may be indirect, with individuals first developing an increased sense of psychological attachment and belongingness with others at work on account of these positive interactions. Guided by relational systems theory and this related perspective, therefore, I offer the following hypothesis:

Hypothesis 6: Psychological attachment to others at work mediates the relationship between needs/supplies fit on the five relational need dimensions and work engagement.

Moderating Role of Relational-interdependent Self-construal

In the previous section, I hypothesized that individuals' psychological attachment to others at work will positively relate to both organizational commitment and work engagement. As noted, these propositions are theoretically supported by relational systems theory (Kahn, 2007), as well as by a variety of related theoretical and empirical research (e.g., Dutton & Heaphy, 2003; Kahn, 1990; Sluss & Ashforth, 2008; Wang, 2008; Yoon et al., 1994). It is possible, however, that these relationships may vary in magnitude depending on the value individuals assign to interpersonal relationships. This suggests that individuals' relational-interdependent self-construal may moderate these hypothesized relationships. Recall from Chapter 2 that relational-interdependent self-construal is a trait-like individual difference variable that captures the degree to which individuals define themselves in terms of their relationships and/or interpersonal roles (Cross et al., 2000).

Recent theorizing by Johnson et al. (2010) offers insight into how individuals' relational-interdependent self-construal may inform relational systems theory. Specifically, in their model of commitment and motivation, Johnson and his colleagues (2010) pointed out that because individuals are limited information processors by nature,

they will have a tendency to recall only limited information and organizational experiences when forming their attitudes toward an organization. To this end, Johnson et al. (2010) theorized that individuals' dominant self-construal type will play a role in dictating what specific information and/or experiences may be most likely to be recalled, and thus may hold the greatest valence, when constructing organizational attitudes. For example, employees with a dominant *individual* self-construal would be expected to more prominently recall, and thus place greater emphasis on, factors which visibly represent benchmarks of *personal* success (e.g., pay/salary) (Johnson & Chang, 2008). On the other hand, employees with a dominant *relational-interdependent* self-construal, because they place greater value on relationships, would be expected to attribute greater salience to their *interpersonal connections* with others at work when constructing attitudes toward their organization, for example their organizational commitment.

This theorizing suggests that employees' self-construal may moderate the relationship between traditional commitment antecedents and organizational commitment (Yang et al., 2012). As described in the examples above, a particular antecedent would be expected to serve as a stronger predictor of commitment should it be more closely aligned with one's dominant self-construal type. This perspective follows from the notion that one's dominant self-construal type plays a role in determining what contextual information may be most likely to be recalled, and thus most salient, when individuals form their organizational attitudes (Johnson et al., 2010). Several scholars have moreover demonstrated support for this moderating effect of self-construal (e.g., Guan et al., 2011; Johnson, Selenta, & Lord, 2006; Yang et al., 2012).

For the current study, individuals' psychological attachment to others at work reflects an inherently interpersonal construct. As such, it follows from the above theorizing that those with a higher relational-interdependent self-construal may place greater salience on their interpersonal attachments when constructing work-related attitudes such as organizational commitment (Johnson et al., 2010). I therefore expect the previously hypothesized positive relationship between individuals' psychological attachment to others at work and organizational commitment may be amplified for those with a high relational-interdependent self-construal. Formally:

Hypothesis 7: Individuals' relational-interdependent self-construal moderates the relationship between psychological attachment to others at work and organizational commitment such that the relationship will be more positive for those with higher levels of relational-interdependent self-construal than for those with lower levels.

As noted, Johnson and colleagues' (2010) theoretical model specifically relates to the interaction between individuals' self-construals and antecedents of organizational commitment. Within a relational systems context, though, a question may be raised as to whether a similar contingency effect for relational-interdependent self-construal may be expected for the relationship between individuals' psychological attachment to others at work and work engagement. As described above, positive workplace relationships and the strong feelings of interpersonal attachment they facilitate can provide a significant source of energy for employees (Dutton & Heaphy, 2003; Stephens et al., 2012). Could the ability to derive energy from these interpersonal connections, however, be tempered to some degree by the value employees place on relationships? This possibility has not been addressed in existing research, nor does clear theoretical guidance exist for answering this question. I thus offer the following as a research question:

Research Question 2: Does individuals' relational-interdependent self-construal moderate the relationship between psychological attachment to others at work and work engagement such that the relationship will be more positive for those with higher levels of relational-interdependent self-construal than for those with lower levels?

Chapter 4: Validation Study

In this chapter, I describe the methodology and results of the validation study. Below, I first describe the data collection procedures and study measures. Then, I discuss the analytic strategies used and present study results.

The purpose of the validation study was to assess the psychometric properties of newly developed measures. Specifically, two core study constructs required the development of new measures: relational need fulfillment on each of the five dimensions identified in relational systems theory (task accomplishment, career development, sense making, provision of meaning, and personal support) and psychological attachment to others at work.

The validation study received approval from the University of Wisconsin-Milwaukee Internal Review Board (IRB) office on September 21, 2012 (Approval #13.085). Additionally, secondary approval was received from the University of Wisconsin-Eau Claire IRB office on October 9, 2012 (Approval #8492012). Secondary approval was obtained from the University of Wisconsin-Eau Claire given that validation study respondents included students at this university in addition to current students and recent graduates from the University of Wisconsin-Milwaukee.

Data Collection and Measures

Data collection procedures. Data were collected from a convenience sample of currently employed and recently employed business school students (both undergraduate and graduate) at two Midwestern universities (University of Wisconsin-Milwaukee and University of Wisconsin-Eau Claire). Data collection occurred between September 20, 2012 and October 27, 2012. Potential respondents were contacted through email and all

data were collected via a web-based survey instrument constructed using the Qualtrics platform.

Recruitment of the convenience sample occurred in two ways. First, I contacted my own former students via email with a notification about the survey and an embedded survey link. This invitation email contained the basic outline of the survey, time expected to complete the survey (15-20 minutes), and information pertaining to participation incentives (described below). Second, I contacted course instructors and asked them to forward a survey invitation to their students. Those instructors indicating their agreement were then sent a survey invitation email that they could forward to their students. Copies of the notification email sent to instructors and the survey invitation email sent or forwarded to students are provided in Appendices A and B respectively.

Incentives. I allowed for two incentives as a means to increase response rate. First, I used a prize drawing incentive. All Wisconsin State Statutes and UW System Policy were adhered to in conducting this drawing. First, each potential respondent contacted was given an opportunity to enter a drawing to win one of 25 Amazon.com gift certificates (10 valued at \$25 and 15 valued at \$10), and they received this opportunity irrespective of whether they completed the survey. Individuals were given instructions for entering the drawing (by means of an email contact) at the end of the survey instrument. Instructions for an alternative means of entering the drawing (via postal mail) were also provided in the email invitation. Second, a complete 'prize notice' was provided in any place the gift certificates were mentioned, including the verifiable retail value of the gift certificates and approximate odds of winning. Third, recipients incurred no costs associated with receiving the gift certificates (e.g., shipping and handling fees),

no general purpose revenue (GPR) was used in purchasing the gift certificates, and the value of each gift certificate was well under the allowable threshold of \$200. Finally, approval of the prize drawing was received *a priori* by Mark T. Harris, UWM Chancellor Designee.

I additionally allowed for an extra credit incentive; however, this incentive was only offered if specifically requested by the course instructor. In those cases where a course instructor did request an extra credit incentive, the invitation email to potential participants included an additional paragraph informing them of this incentive (see Appendix A). The value of the extra credit incentive was determined by the course instructor. However, prior to allowing an extra credit incentive to be offered, I requested and received written assurance from the instructor that an equal, alternative opportunity to receive extra credit would be made available to their students. This prevented coerced responses from participants, as well as ensured compliance with university policies where extra credit incentives are allowed.

Sample. In total, 679 individuals received an invitation to participate in the validation study. Altogether, 353 questionnaires were returned, an overall response rate of 52%. However, fourteen individuals indicated that they were not currently or recently employed, and thus were removed from the sample. One individual not indicating his/her employment status was also removed. Screening of the data further revealed eight clearly problematic cases (e.g., primarily unfinished questionnaire, response time of less than three minutes, etc.). These eight cases were also removed, leaving 330 responses in the dataset – a *usable* response rate of 49%. Based on recommendations provided in previous research (see Gorsuch, 1983; MacCallum, Widaman, Zhang, & Hong, 1999;

Sapnas & Zeller, 2002), this sample size was deemed sufficient for analyzing the psychometric properties of the newly created measures.

With respect to sample characteristics, 63% of respondents were currently employed part-time, 18% of respondents were currently employed full-time, and 19% of respondents were not currently employed, but were recently employed. Eighty-six percent of respondents had an organizational tenure of 4 years or less, and for 90% of respondents, tenure in one's current job was also 4 years or less. With respect to the industry of one's employer, the highest values reported were for service-oriented positions (e.g., restaurant/bar/hospitality: 24%, business services: 16%). In terms of respondents' positions, approximately 70% of individuals were non-managers, while only 20% reported that they had any level of supervisory responsibilities. Mean age of respondents was 23 years ($SD = 6.4$ years); 86% were white while 14% were persons of color. Fifty-four percent were men and 46% were women. Finally, 85% of respondents were single/never married, 13% were currently married/living with a partner, 1% were divorced, and 1% were widowed.

Measures to be validated. A summary list of measures included in the validation study is provided in Table 2. As noted above, the specific model constructs which required the development of new measures were psychological attachment to others at work and relational need fulfillment on each of the five dimensions identified in relational systems theory (task accomplishment, career development, sense making, provision of meaning, and personal support). For each of these constructs, my primary objective was the development of a reliable, valid, and succinct measurement scale. To this end, all of the newly developed questionnaire items went through an extensive

development process to ensure high levels of face validity and maximum reliability prior to their inclusion in the validation study. This process included a detailed review of related literature, multiple item-development sessions, and pilot testing prior to the validation study.

Table 2: Summary of Measures for the Validation Study

Variable	Variable Type	Source	Items
Task accomplishment: Needs/Supplies	Primary	Developed for this study	5 items per needs/supplies
Career development: Needs/Supplies	Primary	Developed for this study	5 items per needs/supplies
Sense making: Needs/Supplies	Primary	Developed for this study	5 items per needs/supplies
Provision of meaning: Needs/Supplies	Primary	Developed for this study	5 items per needs/supplies
Personal support: Needs/Supplies	Primary	Developed for this study	5 items per needs/supplies
Psychological attachment to others at work	Primary	Developed for this study & Richer & Vallerand (1998) ^a	10 items
Subjective experiences of relationships - positive regard	Convergent validity	Carmeli et al. (2009)	3 items
Quality of relationships index	Convergent validity	Senécal et al. (1992)	3 items
Interpersonal self-efficacy	Convergent validity	Sherer et al. (1982)	6 items
General self-efficacy	Discriminant validity	Chen et al. (2001)	8 items
Core self-evaluation	Discriminant validity	Judge et al. (2003)	12 items
Social desirability	Discriminant validity	Strahan & Gerbasi (1972) ^b	10 items

^aThree items were adapted from Richer and Vallerand (1998). Seven items were developed for this study. Specifics on which items were developed, which items were adapted, and the nature of the adaptations are provided in Appendix C.

^bStrahan and Gerbasi (1972) used 10 items originally developed by Crowne & Marlowe (1960)

Psychological attachment to others at work. The first new measure to be validated captures individuals' psychological attachment to others at work. For this measure, I began with a list of ten items, each of which is included in Appendix C. Three of these items were adapted from Richer and Vallerand's (1998) need for relatedness scale while the remaining seven items were newly developed.

Need fulfillment on relational dimensions. New scales corresponding to both the needs and supplies components on each of the five relational need dimensions were included in the validation study. For each dimension, I began with a list of five commensurate items for both the needs and supplies components respectively. Each of these scales and their respective items is included in Appendix C.

Two points with respect to the development and construction of these scales must be made. First, needs and supplies on each dimension were gauged independently. As evident in Appendix C, commensurate statements were used which ask respondents to separately report on their desired levels (i.e. needs) and actual levels (i.e., supplies) of a particular item. This reflects an *atomistic* approach to assessing fit (Edwards, Cable, Williamson, Lambert, & Shipp, 2006). An atomistic approach is considered the most appropriate and rigorous strategy for examining congruence effects between commensurate dimensions of the person and environment as it is the only approach that does not confound the person and environment, and allows for the greatest level of theoretical precision in hypothesis testing (Edwards, 2008; Edwards et al., 2006; Edwards & Berry, 2010). Second, it should be noted that these scales were intended to capture individuals' *subjective* experiences of needs/supplies fit. Examining fit through a

subjective lens was appropriate given that perceptions of fit/misfit are cognitively constructed (Cable & Edwards, 2004).

Additional measures. As outlined in Table 2, several additional measures were included in the validation study for the purpose of assessing the convergent or discriminant validity of the newly developed measures.

Convergent validity measures. Three measures were included in the validation study for the purpose of assessing convergent validity: Sherer et al.'s (1982) six-item interpersonal self-efficacy scale; Carmeli, Brueller, and Dutton's (2009) three-item subjective experience of positive regard in relationships scale; and a three-item version of Senécal, Vallerand, and Vallières's (1992) quality of interpersonal relationships scale (adapted to reflect others at work).⁸ Each of these scales and their specific items are provided in Appendix C.

Discriminant validity measures. Three measures were included in the validation study for the purpose of assessing discriminant validity: Strahan and Gerbasi's (1972) ten-item version of the Marlowe-Crowne social desirability scale (c.f., Crowne & Marlowe, 1960; Fischer & Fick, 1993; Leite & Beretvas, 2005); Chen, Gully, and Eden's (2001) eight-item general self-efficacy scale; and Judge, Erez, Bono, and Thoreson's (2003) twelve-item core self-evaluation scale. Again, each of these scales and their specific items are provided in Appendix C.

Clarification questions. Four open-ended questions were also included in the validation study. These questions allowed for respondents to provide any feedback

⁸ As the quality of interpersonal relationships scale (Senécal et al., 1992) was originally developed in French, the adapted scale used in this study also reflects a translation to English conducted by a native French speaker.

concerning problematic or confusing items. Following Winkel (2010), the four items were: 1) What difficulties did you have in completing the survey? 2) Were the survey questions and instructions clear and concise? 3) Did you have any difficulty with any particular section, question, or set of instructions on the survey? and 4) Do you have any recommendations for improving the survey?

Statistical Analysis and Results

Several tests were used to determine the psychometric properties of the constructs created for this study. I outline these tests below, as well as present results of these analyses.

Preliminary screening. Prior to assessing psychometric properties, I conducted three preliminary data screening analyses. I first screened for missing data, I second screened for outliers, and I third assessed the normality of all items.

With respect to missing data, results indicated only a small number of missing data points for items comprising the constructs of interest. Specifically, no more than four cases of missing data occurred for any of the items comprising either the relational need fulfillment constructs or the psychological attachment to others at work construct. As the number of cases with missing data was thus well under the recommended threshold of 5% (Kline, 2005), cases with missing values were deleted listwise in subsequent analysis in which the respective constructs were assessed.

I next began my outlier screening by examining univariate outliers for all items. Following Tabachnick and Fidell (2007), outliers were defined as any reported values in excess of 3.29 standard deviations from the mean of a given item. Initial inspection led to the identification of five cases containing outliers. I further conducted tests for

Mahlanobis Distance to confirm the status of these cases as outliers. Each of these five cases was then independently screened to assess potential problems (e.g., patterns in responses, illogical responses, etc.). In total, three of the five cases were identified as problematic, and thus removed from the dataset. As such, $N = 327$ observations were retained for all subsequent psychometric analyses described later in this chapter.⁹

Finally, I screened for normality across all items using two methods: 1) assessing univariate skewness and kurtosis based on accepted standards ($< |2|$ for skewness & $< |7|$ for kurtosis) (Curran, West, & Finch, 1996) and 2) examining histograms. Screening results first demonstrated that all items fell within the allowable range of skewness and kurtosis values. A visual assessment of histograms also showed strong evidence of normality for most items. However, some items reflecting need levels on a few relational need dimensions (e.g., provision of meaning, career development) did show some deviation from normality in the form of a left skew. As noted, however, these findings were not so pronounced as to result in skewness levels above accepted standards.

Factor analyses. Having conducted preliminary data screening, I next conducted a series of exploratory factor analyses. These analyses were designed to provide a preliminary look at the underlying factor structure of the developed items, as well as identify problematic items or other items which should be removed prior to moving forward with the dissertation study. All exploratory factor analyses were, more specifically, principal components analyses (PCAs).

⁹ I additionally retested all analyses described in this chapter with all five outliers removed (thus $N = 325$ observations) and results were substantiated.

Analyses were conducted in several steps. First, I conducted a separate PCA for each of the eleven new measurement scales (i.e. psychological attachment to others at work scale, five ‘needs’ scales, and five commensurate ‘supplies’ scales). The purpose of these analyses was to ensure a single factor underlies each construct, as well as provide an initial look at which of the items best comprise each construct. Second, I conducted a PCA of those items expected to represent the need scales on each of the five relational need dimensions. The purpose of this analysis was to evaluate the factor structure across the need scales and identify any cross-loading or otherwise problematic items. After analyzing the need scales, I then conducted a similar analysis for the five supplies scales. Third, I conducted a series of five PCAs examining each need scale and its corresponding supplies scale. The purpose of these analyses was to ensure that items comprising the separate need and supplies scales were indeed not capturing a single construct reflecting the scales’ underlying dimension. As an example, for the career development dimension, that the career development need and supplies scales were in fact representative of separate need and supplies components, not a common career development factor. Finally, I conducted an overall PCA of all items. In addition to providing a holistic look at the factor structure, the primary focus of this analysis was to identify and remove any cross-loading or poorly loading items expected to reflect individuals’ psychological attachment to others at work.

Individual PCAs. Evidence of a single underlying factor was found for each of the anticipated measurement scales when examined individually. For the ten items originally developed to reflect individuals’ psychological attachment to others at work, one factor emerged, explaining 67% of the variance in the data. One item (‘responsible

for their welfare'), however, clearly had a loading inferior to the remaining nine items, and was thus dropped at this juncture. I then reran the PCA using the remaining nine items, and as expected, one factor again emerged, explaining 69% of the variance in the data. As all loadings were similarly strong in magnitude, these nine items were retained for subsequent analyses. A single factor additionally emerged for each of the five needs and commensurate supplies scales when examined independently. PCA results for items developed for each of these respective scales further revealed a generally strong pattern of loadings, and were thus retained for subsequent analyses. A summary of PCA results for these independent analyses of items for each measurement scale is presented in Table 3.

Table 3: Summary of Individual Principal Components Analyses for the Validation Study

Measurement Scale	Explained Variance ^a	Mean Loading	Min Loading	Max Loading
Task accomplishment: Needs	73%	.85	.82	.89
Task accomplishment: Supplies	66%	.81	.74	.86
Career development: Needs	85%	.92	.91	.93
Career development: Supplies	79%	.89	.83	.91
Sense making: Needs	77%	.88	.84	.90
Sense making: Supplies	70%	.84	.79	.88
Provision of meaning: Needs	79%	.89	.81	.93
Provision of meaning: Supplies	71%	.85	.84	.89
Personal support: Needs	74%	.86	.73	.91
Personal support: Supplies	71%	.84	.79	.90
Psychological attachment to others at work ^b	69%	.83	.80	.89

^aAs a single factor clearly emerged for each analysis, percentages reported reflect variance explained by the first factor.

^bBased on a nine-item measure of psychological attachment to others at work.

Needs and supplies PCAs. As described above, I next examined the factor structure of those items expected to represent the need scales on each of the five relational need dimensions. As five factors were anticipated (corresponding to the five dimensions in relational systems theory), I allowed for a five factor structure to be captured in the PCA. Given the expectation for multiple factors, therefore, I conducted the PCA using promax rotation.¹⁰

For the needs items, a five factor structure explained a cumulative 79% of variance in the data, as well as revealed a pattern of loadings closely aligned with the expected factor structure. These findings are displayed in Table 4. As evident in Table 4, however, three items in particular showed some evidence of cross-loading: ‘Give you information that helps you make sense of things at work,’ ‘Help build your sense of competence,’ and ‘Provide you with support or personal encouragement.’

¹⁰ Promax is an oblique method of rotation. In promax rotation, an orthogonal varimax rotation is first conducted. Then, this original rotated solution is re-rotated with the constraint of orthogonal factors relaxed (see Tabachnick & Fidell, 2007).

Table 4: Principal Components Analysis of the Initial Set of Twenty-five Needs Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems		.25			.68
	Help you get the resources you need to do your job					.80
	Give you information that you need to do your job		.35			.65
	Offer you advice that helps you do your job					.80
	Provide you with job-related feedback				.28	.63
Career development	Offer you opportunities for advancing your career	.86				
	Give you information that may help your career	.83				
	Help you get resources that may build your career	.88				
	Give you access to opportunities that may help your career	.90				
	Help you develop your career	.96				
Sense making	Give you information that helps you make sense of things at work		.44			.47
	Help you understand why things happen the way they do at work		.85			
	Give you insight on how to interpret or make sense of things happening at work		.88			
	Help you make sense out of workplace events		.72			
	Help you understand the rules of the road at work		.82			
Provision of meaning	Make you feel that you are appreciated				.92	
	Give you a sense that you are capable				.78	
	Make you feel that you are valued				.95	
	Help build your sense of competence			.20	.28	.41
	Make you feel that you belong				.80	
Personal support	Provide you with support on personal matters			.96		
	Offer you help on personal issues or challenges			.95		
	Offer to listen to a problem you may be having			.72		
	Provide you with support or personal encouragement			.31	.59	
	Go out of their way to help you with personal issues			.96		

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

I next conducted a similar PCA for those items expected to represent the supplies scales on each of the five relational need dimensions identified in relational systems theory. For the supplies items, a five factor structure again revealed a pattern of loadings mostly aligned with the expected structure, and explained a cumulative 73% of variance in the data. These findings are summarized in Table 5. What is further of note, those three items showing evidence of cross-loading for the needs items ('Give you information that helps you make sense of things at work,' 'Help build your sense of competence,' and 'Provide you with support or personal encouragement') again showed evidence of cross-loading for the supplies items. These three items were thus removed from both the needs and supplies pools of items. As is further evident in Table 5, 'Provide you with job-related feedback' also showed evidence of cross-loading in the analysis of supplies items. This item was therefore also removed as a supplies item, and to allow for commensurate measures across the needs and supplies scales, removed as a needs item as well.¹¹ Finally, in order to maintain a consistent number of items for scales across the five dimensions, one item corresponding to the career development dimension ('Give you information that may help your career') was also removed.

¹¹ As illustrated in Table 4, 'Provide you with job-related feedback' was also the poorest loading item of those anticipated to capture the needs component of the task accomplishment dimension.

Table 5: Principal Components Analysis of the Initial Set of Twenty-five Supplies Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems					.84
	Help you get the resources you need to do your job					.63
	Give you information that you need to do your job					.83
	Offer you advice that helps you do your job					.61
	Provide you with job-related feedback	.26	.29	.32	.56	
Career development	Offer you opportunities for advancing your career	.86				
	Give you information that may help your career	.81				.26
	Help you get resources that may build your career	.90				
	Give you access to opportunities that may help your career	.90				
	Help you develop your career	.86				
Sense making	Give you information that helps you make sense of things at work			.54		.27
	Help you understand why things happen the way they do at work			.82		
	Give you insight on how to interpret or make sense of things happening at work			.61		.21
	Help you make sense out of workplace events			.85		
	Help you understand the rules of the road at work			.91		
Provision of meaning	Make you feel that you are appreciated				.93	
	Give you a sense that you are capable				.82	
	Make you feel that you are valued				.90	
	Help build your sense of competence	.22		.23	.27	
	Make you feel that you belong				.62	.26
Personal support	Provide you with support on personal matters		.87			
	Offer you help on personal issues or challenges		.90			
	Offer to listen to a problem you may be having		.66			.25
	Provide you with support or personal encouragement		.42		.47	
	Go out of their way to help you with personal issues		.85			

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

After removing the five specified items, I next retested the factor structures for both the needs and supplies components using the remaining twenty items. For the needs items, a five factor structure now explained a cumulative 82% of variance in the data, while for the supplies items, a five factor structure now explained a cumulative 75% of variance in the data. Tables 6 and 7 summarize the updated factor structures for needs items and supplies items respectively.

As shown in Tables 6 and 7, the pattern of loadings again generally aligned with the expected factor structure. However, particularly for the supplies items, several cases were identified in which an item loaded notably worse in comparison to related items: ‘Offer you advice that helps you do your job,’ ‘Give you insight on how to interpret or make sense of things happening at work,’ and ‘Make you feel that you belong.’ These three empirically problematic items were therefore removed as supplies items, and to allow for commensurate dimensions across the needs and supplies scales, removed as needs items as well. Finally, to again maintain an equivalent number of items for scales across the five dimensions, two items identified as conceptually ambiguous or overlapping with other items (‘Help you get resources that may build your career’ and ‘Go out of their way to help you with personal issues’) were additionally removed.

Table 6: Principal Components Analysis of the Reduced Set of Twenty Needs Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems		.26			.65
	Help you get the resources you need to do your job					.73
	Give you information that you need to do your job		.30			.71
	Offer you advice that helps you do your job					.76
Career development	Offer you opportunities for advancing your career	.85				
	Help you get resources that may build your career	.87				
	Give you access to opportunities that may help your career	.91				
	Help you develop your career	.97				
Sense making	Help you understand why things happen the way they do at work		.88			
	Give you insight on how to interpret or make sense of things happening at work		.88			
	Help you make sense out of workplace events		.74		.21	
	Help you understand the rules of the road at work		.81			
Provision of meaning	Make you feel that you are appreciated				.89	
	Give you a sense that you are capable				.82	
	Make you feel that you are valued				.95	
	Make you feel that you belong				.81	
Personal support	Provide you with support on personal matters			.95		
	Offer you help on personal issues or challenges			.94		
	Offer to listen to a problem you may be having			.71		
	Go out of their way to help you with personal issues			.95		

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 7: Principal Components Analysis of the Reduced Set of Twenty Supplies Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems			.84		
	Help you get the resources you need to do your job			.83		
	Give you information that you need to do your job			.89		
	Offer you advice that helps you do your job			.71		
Career development	Offer you opportunities for advancing your career	.85				
	Help you get resources that may build your career	.87				
	Give you access to opportunities that may help your career	.90				
	Help you develop your career	.83				
Sense making	Help you understand why things happen the way they do at work					.72
	Give you insight on how to interpret or make sense of things happening at work			.25		.55
	Help you make sense out of workplace events					.93
	Help you understand the rules of the road at work			.25		.70
Provision of meaning	Make you feel that you are appreciated				.87	
	Give you a sense that you are capable				.81	
	Make you feel that you are valued				.85	
	Make you feel that you belong				.64	
Personal support	Provide you with support on personal matters		.88			
	Offer you help on personal issues or challenges		.92			
	Offer to listen to a problem you may be having		.66			
	Go out of their way to help you with personal issues		.88			

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

After removing these five items, I again retested the factor structures for both the needs and supplies components using the remaining fifteen items. For the needs items, a five factor structure now explained a cumulative 84% of variance in the data, while for the supplies items, a five factor structure now explained a cumulative 78% of variance in the data. Tables 8 and 9 summarize the updated factor structures for needs items and supplies items respectively. As shown, a clear pattern of loadings aligned with the expected factor structure emerged. All item loadings corresponding to their anticipated factor were greater than or equal to .65, with all except three loadings across both the needs and supplies PCAs greater than .70. Moreover, only six cases occurred with cross-loadings of greater than .20, and in no instances did cross-loadings exceed .34. These fifteen commensurate items used to capture needs and supplies for the five relational need dimensions identified in relational systems theory were thus retained.

Table 8: Principal Components Analysis of the Final Reduced Set of Fifteen Needs Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems	.86				
	Help you get the resources you need to do your job	.82				
	Give you information that you need to do your job	.87				
Career development	Offer you opportunities for advancing your career		.85			
	Give you access to opportunities that may help your career		.93			
	Help you develop your career		.97			
Sense making	Help you understand why things happen the way they do at work	.31				.65
	Help you make sense out of workplace events					.85
	Help you understand the rules of the road at work	.34				.65
Provision of meaning	Make you feel that you are appreciated				.90	
	Give you a sense that you are capable				.82	
	Make you feel that you are valued				.93	
Personal support	Provide you with support on personal matters			.96		
	Offer you help on personal issues or challenges			.96		
	Offer to listen to a problem you may be having	.20		.78		

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 9: Principal Components Analysis of the Final Reduced Set of Fifteen Supplies Items

Relational Need Dimension	Item	Factor				
		1	2	3	4	5
Task accomplishment	Help you solve job-related problems		.82			
	Help you get the resources you need to do your job		.73			
	Give you information that you need to do your job		.89			
Career development	Offer you opportunities for advancing your career	.89				
	Give you access to opportunities that may help your career	.89				
	Help you develop your career	.83				
Sense making	Help you understand why things happen the way they do at work					.69
	Help you make sense out of workplace events					.90
	Help you understand the rules of the road at work		.26		.22	.71
Provision of meaning	Make you feel that you are appreciated				.88	
	Give you a sense that you are capable				.69	
	Make you feel that you are valued				.90	
Personal support	Provide you with support on personal matters			.89		
	Offer you help on personal issues or challenges		.23	.89		
	Offer to listen to a problem you may be having		.29	.77		

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

PCAs of commensurate dimensions. The next set of PCAs examined each expected needs scale with its commensurate supplies scale. In total, five separate PCAs were conducted, corresponding to the five dimensions identified in relational systems theory. Because two factors were anticipated in each of these analyses, each corresponding to the needs and supplies components respectively, I allowed for a two factor structure to be captured in the PCAs. All PCAs were again conducted using promax rotation.

The factor patterns for these five PCAs are summarized in Tables 10-14 respectively. Table 10 presents the structure of items on the task accomplishment dimension, Table 11 presents the structure of items on the career development dimension, Table 12 presents the structure of items on the sense making dimension, Table 13 presents the structure of items on the provision of meaning dimension, and Table 14 presents the structure of items on the personal support dimension. As shown in each of these tables, a clear pattern emerged suggesting appropriate demarcation of the needs and supplies components. Strong loadings appeared across the dimensions for both the needs and supplies items, and no cross-loadings were found. For each dimension, the two factors reflecting needs and supplies items cumulatively explained considerable variance in the data: task accomplishment – 78%, career development – 84%, sense making – 76%, provision of meaning – 83%, and personal support – 80%.

Table 10: Factor Structure of Needs and Supplies Items for the Task Accomplishment Dimension

Item	Factor	
	1	2
<i>Supplies</i> – Help you solve job-related problems		.85
<i>Supplies</i> – Help you get the resources you need to do your job		.91
<i>Supplies</i> – Give you information that you need to do your job		.82
<i>Needs</i> – Help you solve job-related problems	.81	
<i>Needs</i> – Help you get the resources you need to do your job	.94	
<i>Needs</i> – Give you information that you need to do your job	.90	

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 11: Factor Structure of Needs and Supplies Items for the Career Development Dimension

Item	Factor	
	1	2
<i>Supplies</i> – Offer you opportunities for advancing your career		.88
<i>Supplies</i> – Give you access to opportunities that may help your career		.92
<i>Supplies</i> – Help you develop your career		.89
<i>Needs</i> – Offer you opportunities for advancing your career	.93	
<i>Needs</i> – Give you access to opportunities that may help your career	.95	
<i>Needs</i> – Help you develop your career	.92	

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 12: Factor Structure of Needs and Supplies Items for the Sense Making Dimension

Item	Factor	
	1	2
<i>Supplies</i> – Help you understand why things happen the way they do at work		.90
<i>Supplies</i> – Help you make sense out of workplace events		.83
<i>Supplies</i> – Help you understand the rules of the road at work		.78
<i>Needs</i> – Help you understand why things happen the way they do at work	.90	
<i>Needs</i> – Help you make sense out of workplace events	.91	
<i>Needs</i> – Help you understand the rules of the road at work	.87	

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 13: Factor Structure of Needs and Supplies Items for the Provision of Meaning Dimension

Item	Factor	
	1	2
<i>Supplies</i> – Make you feel that you are appreciated		.94
<i>Supplies</i> – Give you a sense that you are capable		.81
<i>Supplies</i> – Make you feel that you are valued		.92
<i>Needs</i> – Make you feel that you are appreciated	.93	
<i>Needs</i> – Give you a sense that you are capable	.92	
<i>Needs</i> – Make you feel that you are valued	.95	

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Table 14: Factor Structure of Needs and Supplies Items for the Personal Support Dimension

Item	Factor	
	1	2
<i>Supplies</i> – Provide you with support on personal matters		.92
<i>Supplies</i> – Offer you help on personal issues or challenges		.94
<i>Supplies</i> – Offer to listen to a problem you may be having		.76
<i>Needs</i> – Provide you with support on personal matters	.87	
<i>Needs</i> – Offer you help on personal issues or challenges	.90	
<i>Needs</i> – Offer to listen to a problem you may be having	.94	

Note. Loadings reflect a promax rotation. All loadings under .20 are suppressed.

Overall PCA. Finally, I conducted an overall PCA that included all items. While the above series of PCAs were generally geared at examining the pattern of loadings and removing problematic items for the expected needs and supplies scales, this overall PCA was focused more so on ensuring an adequate factor pattern for the items expected to reflect individuals' psychological attachment to others at work when examined concomitantly with the needs and supplies items.

Results of an initial PCA using promax rotation demonstrated that all nine items expected to reflect individuals' psychological attachment to others at work loaded cleanly on a single factor, and no cross-loadings greater than .20 were found. The mean loading was .84, with a minimum loading of .73 and maximum loading of .90. Given the large number of scale items, however, three of the poorest loading items were removed (when thinking about my relationships with others at work, I feel... '...connected to them,' '...a

deep sense of caring for them,' and '...devoted to them'), reducing the total number of items to six. The overall factor structure was then re-examined, again revealing a clean pattern of loadings for the six retained items expected to reflect individuals' psychological attachment to others at work. The mean loading for the six items was .86, with a minimum loading of .78 and maximum loading of .90.

Internal consistency. Having conducted this series of PCAs, I next examined the internal consistency of the retained items expected to comprise the measurement scales being developed (three commensurate items for the needs and supplies components of each of the five relational need dimensions and six items reflecting individuals' psychological attachment to others at work). I assessed internal consistency using Cronbach's alpha, allowing for a minimum acceptable value of .70 *a priori* (Nunnally & Bernstein, 1994).

A summary of internal consistency statistics is provided in Table 15. As shown, strong evidence of internal consistency was found for each newly developed scale, with alpha values ranging from .80 to .93. Table 15 additionally provides the internal consistency statistics for existing measures used to assess discriminant and convergent validity of the measures developed in this study. Acceptable internal consistency values were again found for each of these existing constructs.

Table 15: Summary of Internal Consistency Findings for the Validation Study

Scale Type	Measurement Scale	Number of Items	Reliability Statistic ^a
Developed for this study	Task accomplishment: Needs	3	.88
	Task accomplishment: Supplies	3	.84
	Career development: Needs	3	.93
	Career development: Supplies	3	.88
	Sense making: Needs	3	.87
	Sense making: Supplies	3	.80
	Provision of meaning: Needs	3	.93
	Provision of meaning: Supplies	3	.87
	Personal support: Needs	3	.90
	Personal support: Supplies	3	.85
	Psychological attachment to others at work	6	.92
Existing scale used to assess discriminant or convergent validity	Subjective experiences of relationships: Positive regard	3	.86
	Quality of relationships index	3	.88
	Interpersonal self-efficacy	6	.71
	General self-efficacy	8	.94
	Core self-evaluation	12	.85

^aCronbach's alpha.

Construct validity. Construct validity, which is defined as the extent to which a measured variable indeed assesses the construct it is supposed to measure, was evaluated with tests of both discriminant and convergent validity. Discriminant and convergent validity serve as two core components of construct validity (Scandura & Williams, 2000). Specifically, discriminant validity concerns the empirical differentiation of a construct from theoretically distinct constructs, while convergent validity describes the degree to which a construct is in fact related to theoretically similar constructs (Cook & Campbell, 1976). Discriminant validity was evaluated using three methods: confirmatory factor analysis (CFA) model comparisons, correlation assessment, and tests for average variance explained (AVE). Convergent validity was assessed using two methods: evaluations of CFA factor loadings and correlation assessments.

Construct validity assessments based on CFA results. I first performed a CFA which included the eleven newly developed latent constructs (i.e. five needs scales, five supplies scales, and psychological attachment to others at work) to ensure that all measured items produced the expected factor structure. Several fit indices were used to evaluate the CFA: the comparative fit index (CFI), root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), and incremental fit index (IFI), along with traditional chi-square measures. Model fit was assessed based on well-established standards outlined by Kline (2005) and Hu and Bentler (1999). All factor covariance combinations were freely estimated in the CFA.

CFA results demonstrated good fit for the specified eleven-factor model, despite the presence of a significant chi-square statistic: $\chi^2(539) = 906.65, p < .001$; CFI = .96, RMSEA = .05, TLI = .95, IFI = .96. While a non-significant chi-square statistic is

desirable is positing model fit, inferences based solely on this statistic are ill-founded based on a chi-square value's susceptibility to become inflated when sample size is large (see Kline, 2005). Supporting convergent validity, factor loadings for all items were significant ($p < .001$ for all) and all standardized factor loadings were greater than .70. A summary of standardized factor loadings is presented in Table 16. Altogether, values reported demonstrate strong evidence of convergent validity.

Discriminant validity was assessed by comparing the fit of the anticipated eleven-factor model with nested models in which one or more of the factor covariances were fixed to one (Hom et al., 2009). Specifically, fit of the anticipated model was assessed relative to two alternative models. First, I compared the fit of the proposed model to a nested model in which factor covariances across commensurate dimensions were constrained to one. Results of a chi-square difference test confirmed the superiority of the expected eleven-factor model structure: $\chi^2_{diff}(5) = 43.72, p < .001$. Second, I compared the fit of the proposed model to a nested model in which factor covariances across needs and supplies dimensions were constrained to one. Again, results of a chi-square difference tests confirmed the superiority of the expected eleven-factor model structure: $\chi^2_{diff}(8) = 20.17, p < .01$. Together, these findings provide evidence of discriminant validity between the latent study measures (Hom et al., 2009).

Table 16: Confirmatory Factor Analysis: Standardized Loadings for the Validation Study

Item	Factor Loading on Specified Latent Construct
<i>Supplies</i> – Help you solve job-related problems	.79
<i>Supplies</i> – Help you get the resources you need to do your job	.81
<i>Supplies</i> – Give you information that you need to do your job	.78
<i>Needs</i> – Help you solve job-related problems	.85
<i>Needs</i> – Help you get the resources you need to do your job	.85
<i>Needs</i> – Give you information that you need to do your job	.82
<i>Supplies</i> – Offer you opportunities for advancing your career	.77
<i>Supplies</i> – Give you access to opportunities that may help your career	.90
<i>Supplies</i> – Help you develop your career	.86
<i>Needs</i> – Offer you opportunities for advancing your career	.90
<i>Needs</i> – Give you access to opportunities that may help your career	.92
<i>Needs</i> – Help you develop your career	.89
<i>Supplies</i> – Help you understand why things happen the way they do at work	.80
<i>Supplies</i> – Help you make sense out of workplace events	.71
<i>Supplies</i> – Help you understand the rules of the road at work	.75
<i>Needs</i> – Help you understand why things happen the way they do at work	.85
<i>Needs</i> – Help you make sense out of workplace events	.79
<i>Needs</i> – Help you understand the rules of the road at work	.87
<i>Supplies</i> – Make you feel that you are appreciated	.86
<i>Supplies</i> – Give you a sense that you are capable	.76
<i>Supplies</i> – Make you feel that you are valued	.89
<i>Needs</i> – Make you feel that you are appreciated	.91
<i>Needs</i> – Give you a sense that you are capable	.87
<i>Needs</i> – Make you feel that you are valued	.92
<i>Supplies</i> – Provide you with support on personal matters	.89
<i>Supplies</i> – Offer you help on personal issues or challenges	.84
<i>Supplies</i> – Offer to listen to a problem you may be having	.72
<i>Needs</i> – Provide you with support on personal matters	.92
<i>Needs</i> – Offer you help on personal issues or challenges	.89
<i>Needs</i> – Offer to listen to a problem you may be having	.78
<i>Psychological Attachment</i> ^a – Close to them	.79
<i>Psychological Attachment</i> – Attached to them	.78
<i>Psychological Attachment</i> – A close bond with them	.87
<i>Psychological Attachment</i> – Committed to them	.79
<i>Psychological Attachment</i> – A sense of oneness with them	.87
<i>Psychological Attachment</i> – Like I belong with them	.78

Note. N = 327. All factor loadings are significant at $p < .001$. Model fit statistics: $\chi^2(539) = 906.65$, $p < .001$; CFI = .96, RMSEA = .05, TLI = .95, IFI = .96.

^a Psychological attachment to others at work.

Correlation assessments. I further evaluated convergent and discriminant validity based on correlation assessments. Specifically, I first examined convergent validity for the newly developed psychological attachment to others at work construct by assessing its correlation with three existing measures: Sherer et al.'s (1982) interpersonal self-efficacy scale; Carmeli et al.'s (2009) subjective experience of positive regard in relationships scale, and an adapted version of Senécal et al.'s (1992) quality of interpersonal relationships scale. Results for these bivariate correlation analyses are displayed in Table 17. As shown, the newly developed psychological attachment to others at work construct correlated positively with each of the three existing constructs: interpersonal self-efficacy – $r = .20, p < .01$, subjective experience of positive regard in relationships – $r = .60, p < .001$, and quality of interpersonal relationships – $r = .63, p < .001$, thereby supporting convergent validity. Also, as expected, the relationship between psychological attachment to others at work and both subjective experiences of positive regard in relationships (*Steiger's* $Z = 7.17, p < .001$) and quality of interpersonal relationships (*Steiger's* $Z = 7.58, p < .001$) was significantly stronger than the relationship between psychological attachment to others at work and interpersonal self-efficacy.

Table 17: Summary of Bivariate Correlations between Individuals' Psychological Attachment to Others at Work and Measures of Convergent and Discriminant Validity for the Validation Study

Variable	M	SD	1	2	3	4	5	6
1. Psychological attachment ^a	4.71	1.21	-					
2. Core self evaluation	5.04	0.83	.11	-				
3. General self-efficacy	5.73	0.75	.13	.61	-			
4. Interpersonal self-efficacy	4.61	0.92	.20	.46	.39	-		
5. Subjective experiences of relationships ^b	5.59	1.01	.60	.29	.34	.34	-	
6. Quality of relationships index	5.33	1.06	.63	.26	.25	.29	.72	-

Note: N = 327. Correlations greater than .11 are significant at $p < .05$.

^aPsychological attachment to others at work.

^bSubjective experiences of relationships: Positive regard

I next examined discriminant validity for the newly developed psychological attachment to others at work construct by assessing its correlation with two existing measures: Chen et al.'s (2001) general self-efficacy scale and Judge et al.'s (2003) core self-evaluation scale. Results for these bivariate correlation analyses are displayed in Table 17. As shown, the newly developed psychological attachment to others at work construct was uncorrelated with core self-evaluation: $r = .11, p > .05$, and only slightly correlated with general self-efficacy: $r = .13, p < .05$. The difference in the strength of these correlations was moreover insignificant (*Steiger's* $Z = 0.41, p > .05$), suggesting that each construct was 'equally unrelated' to the newly developed psychological attachment to others at work construct.

Third, I examined the discriminant validity for each of the eleven newly developed scales (i.e. five needs scales, five supplies scales, and psychological attachment to others at work) by assessing their bivariate relationship with Strahan and Gerbasi's (1972) ten-item shortened version of the Marlowe-Crowne social desirability scale. Results of these tests are displayed along the bottom row of Table 18. As shown, no relationship was found between any of the newly developed scales and social desirability.

Table 18: Summary of Bivariate Correlations among Developed Scales and Social Desirability Assessments for the Validation Study

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. <i>Supplies</i> – Task accomplishment	5.44	0.96	.79											
2. <i>Supplies</i> – Career development	4.38	1.45	.56	.84										
3. <i>Supplies</i> – Sense making	5.14	1.04	.73	.57	.75									
4. <i>Supplies</i> – Provision of meaning	5.35	1.07	.66	.60	.66	.84								
5. <i>Supplies</i> – Personal support	4.48	1.37	.45	.48	.52	.62	.82							
6. <i>Needs</i> – Task accomplishment	5.86	0.94	<u>.61</u>	.31	.46	.38	.25	.84						
7. <i>Needs</i> – Career development	5.71	1.19	.39	<u>.35</u>	.32	.30	.20	.66	.90					
8. <i>Needs</i> – Sense making	5.69	0.98	.55	.30	<u>.51</u>	.39	.27	.82	.63	.84				
9. <i>Needs</i> – Provision of meaning	5.83	1.06	.46	.30	.40	<u>.44</u>	.35	.73	.66	.75	.90			
10. <i>Needs</i> – Personal support	4.79	1.34	.36	.30	.36	.31	<u>.56</u>	.45	.48	.52	.55	.86		
11. Psychological attachment ^a	4.71	1.21	.37	.40	.43	.49	.56	.26	.16	.26	.27	.37	.81	
12. Social desirability	5.29	1.94	.05	-.03	.01	.00	.01	.00	-.02	.03	.05	.07	-.02	-

Note: N = 327. Correlations greater than .11 are significant at $p < .05$. Boldface entries on the diagonal are the square root of the average variance explained. Italicized, underlined entries are those corresponding to the bivariate correlation between the needs and supplies components on a specific dimension.

^aPsychological attachment to others at work.

Finally, I assessed discriminant validity by examining the bivariate correlations between newly developed measures. These correlation values are provided in Table 18. Given the non-orthogonal nature of the five dimensions identified in relational systems theory (Kahn, 2007), some degree of correlation between the needs and supplies scales is to be expected. However, as shown in Table 18, most bivariate correlations reported do not raise concerns as being exceedingly high to suggest a lack of discriminant validity across the dimensions (Licht, 1995). This is especially important with respect to the bivariate correlations of commensurate needs and supplies scales (e.g., the bivariate correlation between needs and supplies for career development, or, the bivariate correlation between needs and supplies for personal support, etc.), as uncovering congruence effects requires at least some degree of variance between these respective values. In this study, correlations between the needs and supplies components, which are underlined and italicized in Table 18, are comparable with those reported in previous research examining needs/supplies congruence effects (e.g., Cable & Edwards, 2004; Edwards & Rothbard, 1999). Additionally, values in Table 18 show a similar pattern with previous needs/supplies research insomuch as higher correlations exist between the respective five needs scales and five supplies scales (e.g., the bivariate correlation between task accomplishment needs and provision of meaning needs, or, the bivariate correlation between task accomplishment supplies and provision of meaning supplies, etc.), while lower correlations exist across the needs and supplies scales (e.g., the bivariate correlation between task accomplishment needs and provision of meaning supplies, etc.).

However, among the values displayed in Table 18, one potentially concerning correlation in excess of .80 should be pointed out. This value reflects the correlation between the sense making needs scale and task accomplishment needs scale ($r = .82$). Analogous responses on these scales likely stems from the fact that task accomplishment and sense making are among the most similar dimensions of the five identified in relational systems theory. Recall that the task accomplishment dimension pertains to interpersonal input which may help individuals complete job- or work-related tasks, while the sense making dimension pertains to interpersonal input which may help individuals make sense out of workplace events, workplace experiences, or related organizational behaviors/actions. It is certainly conceivable that some interactions an employee has with others at work can have implications for both of these dimensions. Consider, for example, interpersonal input a service-sector employee may receive that pertains to expected decorum in one's workplace. For these individuals, items such as 'help you understand the rules of the road at work,' a component of the sense making dimension, may be interpreted similarly as items such as 'gives you information that you need to do your job,' a component of the task accomplishment dimension. This follows inasmuch as learning and understanding 'procedures' or 'rules' in the workplace is indeed a core component of how one completes his/her core tasks; for instance, a restaurant greeter or waiter/waitress is instructed on the way they should greet guests – a 'rule' which also serves as information that is necessary to do his/her job.

AVE assessments. As a final assessment of discriminant validity, I followed procedures outlined by Fornell and Larcker (1981) to calculate the square root of the AVE for items comprising each construct. To demonstrate discriminant validity, the

square root of the AVE should be greater than corresponding latent variable correlations in the same row and column when placed on the diagonal of a correlation matrix (Andrews, Kacmar, & Harris, 2009). As shown in Table 18, this was satisfied in all cases, including for the high correlation between the needs components of the task accomplishment and sense making dimensions pointed out and discussed in the previous section.

Validation Study Summary

Drawing on a sample of $N = 327$ currently and recently employed students from two Midwestern universities, findings from the validation study, on the whole, provided substantial evidence for the validity of the newly developed measurement scales. Given the results described above, I took forward to the dissertation study a six-item psychological attachment to others at work scale, as well as commensurate three-item scales for the needs and supplies components of each of the five relational need dimensions described in relational systems theory. The final items for each of the newly developed scales are detailed in Appendix D.

Chapter 5: Dissertation Study

In this chapter, I describe the methodology and results of the dissertation study. I first provide details on the study sample, data collection procedures, and measures. I then describe the analytic procedures and present study findings. Approval of the dissertation study was granted by the University of Wisconsin-Milwaukee Internal Review Board office on October 24, 2012 (Approval #13.141).

The purpose of the dissertation study was to test the theoretical model outlined in Chapter 3. To this end, after first conducting preliminary analyses to verify adequate psychometric properties of the data collected, I conducted explicit tests of the hypotheses and research questions presented in Chapter 3.

Sample and Data Collection

Information on StudyResponse. Respondents for the dissertation study were recruited using the StudyResponse project (Stanton & Weiss, 2002). The StudyResponse project is a non-profit service hosted by Syracuse University that provides academic researchers access to an online panel of individuals who are interested in participating in academic survey research.¹² In exchange for their participation, respondents receive post-payments in the form of electronic gift certificates to Amazon.com. The StudyResponse project has a roster of about 40,000 organizationally employed individuals representing a wide range of job types and industries (see www.studyresponse.net/sample.htm for an overview), thereby providing a useful means for sampling individuals across a wide range of occupations and organizations (Montes &

¹² More information about the StudyResponse project can be found at www.studyresponse.net. The Studyresponse project assists only for academic research and requires IRB approval of a study before it may be used as a facilitation method for data collection.

Zweig, 2009). To date, the StudyResponse project has facilitated in the data collection for numerous academic research studies, including several recently published in premier outlets such as the *Journal of Applied Psychology* (e.g., Inness, LeBlanc, & Barling, 2008; Johnson, Rosen, & Djurdjevic, 2011; Montes & Zweig, 2009; Richards & Schat, 2011; Thau & Mitchell, 2010), *Academy of Management Journal* (e.g., Piccolo & Colquitt, 2006), and *Journal of Management* (Ng & Feldman, in press).

Because online panels such as the StudyResponse typically involve direct payments as an incentive for participation, it should be noted that their use in academic research has raised concerns among some scholars. These concerns center on panel members' motivation for participation, and in particular whether the use of a direct post-payment incentive may influence response quality. Recent research addressing these concerns, however, has generally demonstrated that online volunteer participant pools such as StudyResponse produce similar, and at times better, data response quality compared to traditional survey data collection methods; as well as may be more generalizable than other forms of convenience sampling given the inclusion of individuals from a wide range of occupations and industries (Buhrmester, Kwang, & Gosling, 2011; Goritz, 2004). Also, contrary to concerns raised, evidence suggests that a greater proportion of online panel participants are motivated to participate in academic research for primarily intrinsic, as opposed to extrinsic, reasons (Brüggen, Wetzels, de Ruyter, & Schillewaert, 2011). Accordingly, I determined StudyResponse to be an appropriate source for data collection for this study.

Data collection procedures. As all model constructs reflected measures of individuals' attitudes and/or subjective experiences, a two-wave data collection strategy

was chosen in an effort to reduce threats associated with common method bias (see Conway & Lance, 2010; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). As outlined below in the description of study measures, exogenous, mediating, and moderating constructs were measured at Time 1, while the primary dependent constructs were measured at Time 2. A two-wave data collection procedure was facilitated by StudyResponse's use of participant identification (ID) numbers. Specifically, when registering with the StudyResponse project, all panelists are assigned a unique StudyResponse ID number. This number served as the matching criterion for panelists' responses across the two waves of data collection in this study. Additionally, when completing the survey at each time point, respondents provided no identifying information outside of their StudyResponse ID number, thereby maintaining anonymity with respect to the researcher(s).

The initial sample was developed using a pre-screening questionnaire that was distributed to a random sample of StudyResponse panel members. The purpose of the pre-screening questionnaire was to identify a sample of panel members that were qualified to participate in the present research study based on basic demographic stipulations. Specifically, I provided four such criteria for this study: 1) employed full-time, 2) organizationally employed (i.e. not self-employed), 3) US resident, and 3) a minimum of a high school education. The pre-screening questionnaire additionally included an item asking whether an individual would be willing to participate in a research study that involved completing multiple surveys over a specified time period. Distribution of the pre-screening questionnaire was conducted by StudyResponse administrators, and both the online questionnaire and responses were housed on

StudyResponse servers. Data collection for the pre-screening questionnaire occurred between November 8, 2012 and November 20, 2012.

Because the pre-screening questionnaire is considered an internal function of StudyResponse, specific details on the exact number of invitations sent and the number of undeliverable contacts among panel members were not obtainable. However, the list of respondents was provided – in total, there were 1,087 complete responses to the pre-screening questionnaire, with 919 eligible (i.e. meeting the four criteria noted above) and willing respondents identified. These 919 panel members constituted the sample receiving the Time 1 Survey.

Data collection for Time 1 began on November 27, 2012 and closed on December 10, 2012. Time 1 survey invitations were sent to pre-screened eligible and willing participants via email from StudyResponse administrators. This invitation email included a direct link to the web-based survey, which was hosted on the University of Wisconsin-Milwaukee's Qualtrics platform.¹³ Additionally, to reduce reporting errors, individuals were reminded of their unique StudyResponse ID number in the text of the invitation email. A copy of the full invitation email text for the Time 1 Survey is provided in Appendix F. A reminder email was additionally sent by StudyResponse administrators to invitees who had not completed the survey after one week.

Altogether, of the 919 panel members receiving an invitation to participate, 718 returned a questionnaire at Time 1. This constitutes an overall response rate of 78%.

¹³ In contrast to the pre-screening questionnaire, which as noted above is hosted by StudyResponse, both the Time 1 and Time 2 Surveys are hosted by the researcher (Mr. Kyle Ehrhardt). This allows the researcher to have direct and immediate access to the data submitted by respondents. For the Time 1 and Time 2 Surveys, StudyResponse simply provides the function of a 'remailer' – sending email invitations to panelists which contain the link to the respective survey constructed and hosted by the researcher.

However, an initial screening for completeness revealed ten clearly problematic cases – specifically, nine cases in which the questionnaire was largely unfinished, and one case in which the respondent failed to report his/her StudyResponse ID number. These ten cases were thus removed, leaving a total of 708 responses at Time 1 – a *usable* response rate of 77% from the pre-screened sample. As an incentive for completing the Time 1 survey, respondents received a \$5 gift certificate to Amazon.com as a direct post-payment. Post-payments were made by StudyResponse administrators to participants between December 12, 2012 and December 14, 2012.

As described earlier, this study called for respondents to complete surveys at two time points. The 708 individuals providing a usable response at Time 1 were thus invited to participate in the Time 2 Survey. Data collection for Time 2 began on January 7, 2013 (four weeks following the completion of the Time 1 Survey) and closed on January 22, 2013. Invitation emails containing a direct link to the researcher-hosted web-based survey were again sent by StudyResponse administrators, as was a reminder email to invitees not yet completing the survey after one week. A copy of the full invitation email text for the Time 2 Survey is provided in Appendix G. Similar to Time 1, the direct post-payment incentive for completing the Time 2 survey was a \$5 gift certificate to Amazon.com. Post-payments were made by StudyResponse to participants on January 24, 2013.

A total of 647 individuals completed useable surveys at Time 2, reflecting a retention rate of 91%. Useable surveys were those which contained one's StudyResponse ID number and were predominately complete. Only the responses of

those 647 individuals completing both a usable Time 1 and Time 2 Survey were retained for further analyses.

Response screening. In addition to initial screenings for largely incomplete questionnaires or missing ID numbers noted above, I conducted a more thorough data screening using data collected from both the Time 1 and Time 2 Surveys. A detailed screening for careless or otherwise problematic responses at each measurement time point is a critical step for ensuring response quality, especially where data is collected using web-based surveys (Meade & Craig, 2012).

Following Meade and Craig (2012), I conducted three tests for identifying careless/problematic responses using data collected during the Time 1 Survey. First, two ‘instructed response items’ were included on the survey – one approximately halfway through the questionnaire and the second approximately three-fourths of the way through the questionnaire. For these items, respondents were provided specific instructions for completion – for example, “Please select ‘strongly agree’ for this item.” Thirty-nine respondents failed to follow instructions for at least one of these instructed response items (22 responded inaccurately to both items while 17 responded inaccurately to one item). These 39 individuals were deemed likely “careless respondents” and thus removed. As a result, 608 respondents remained in the combined dataset.

Second, using data for the Time 1 Survey start time and the time of submission, I calculated respondents’ duration for completing the Time 1 Survey in minutes. I identified 18 cases in which respondents took less than five minutes to complete the Time 1 Survey as likely containing careless responses, and removed those cases. On account of these deletions, 590 respondents remained in the combined dataset.

Finally, I drew on procedures outlined by Johnson (2005) and implemented a variation of the *LongString* response pattern index. This index is designed to capture consecutive cases in which the same response choice is indicated by a respondent (e.g., the number of cases in a row a '5' is indicated or a '4' is indicated, etc.). Because this index is most useful where items reflecting separate scales are inter-dispersed (Meade & Craig, 2012), I employed this index specifically for items designed to capture the needs and supplies components of the five relational need dimensions, as the presentation of these items were randomized in the Time 1 Survey. I further took a conservative approach to identifying problematic response patterns using this index, and removed only those cases in which respondents' answers consisted of a *LongString* that spanned the entire set of needs items and entire set of supplies items respectively. Twenty-four such cases were identified and removed, thereby leaving 566 respondents in the combined dataset.

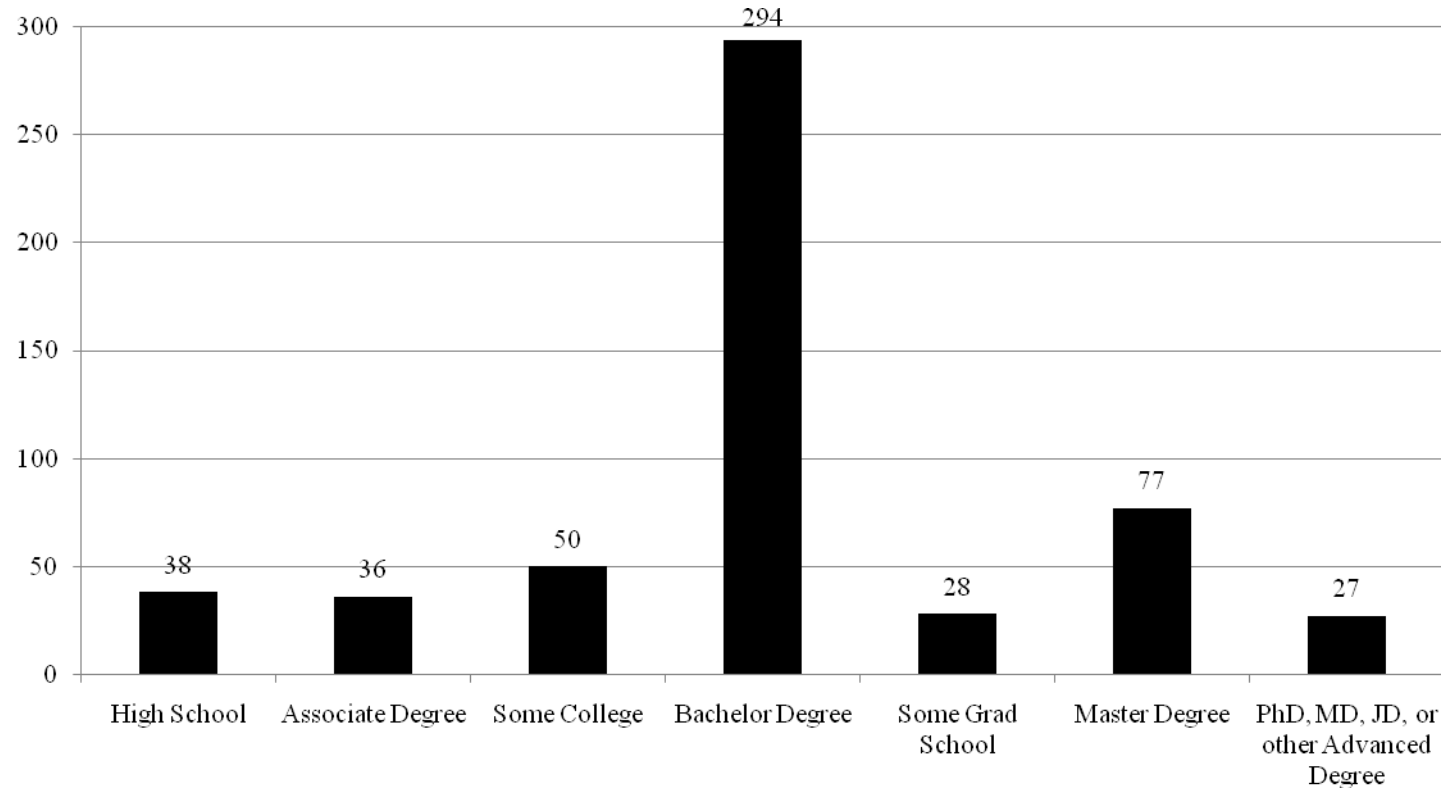
Similar screening procedures were utilized for data collected during the Time 2 Survey, with the exception of the *LongString* procedure. This procedure was not appropriate given that the needs and supplies items did not appear on the Time 2 Survey. First, results of the instructed response item screening revealed that an additional 16 respondents failed to follow instructions for at least one of the two such items collected during the Time 2 Survey (5 responded inaccurately to both items while 11 responded inaccurately to one item). These 16 individuals were thus removed from the combined dataset, leaving 550 respondents. Finally, a test of survey duration for the Time 2 Survey revealed that all of the remaining 550 respondents spent an adequate time in completing the survey, and thus no additional cases were removed. Altogether, therefore,

approximately 15% of cases were removed due to the likelihood of containing careless responses, a value aligned with previous research focused on the identification of careless survey respondents (e.g., Kurtz & Parish, 2001; Meade & Craig, 2012)

The 550 remaining cases thus comprised the sample carried forward for subsequent psychometric analyses. As discussed below, this sample of 550 individuals was further reduced to 538 as a consequence of these psychometric tests. It is useful to note that this final sample of $N = 538$ well exceeded the *a priori* sampling goal of 400, which was based on a statistical power analysis using a conservative effect size ($f^2 = .02$), standard probability level ($\alpha = .05$), and desired power of .80 (Cohen, 1988).

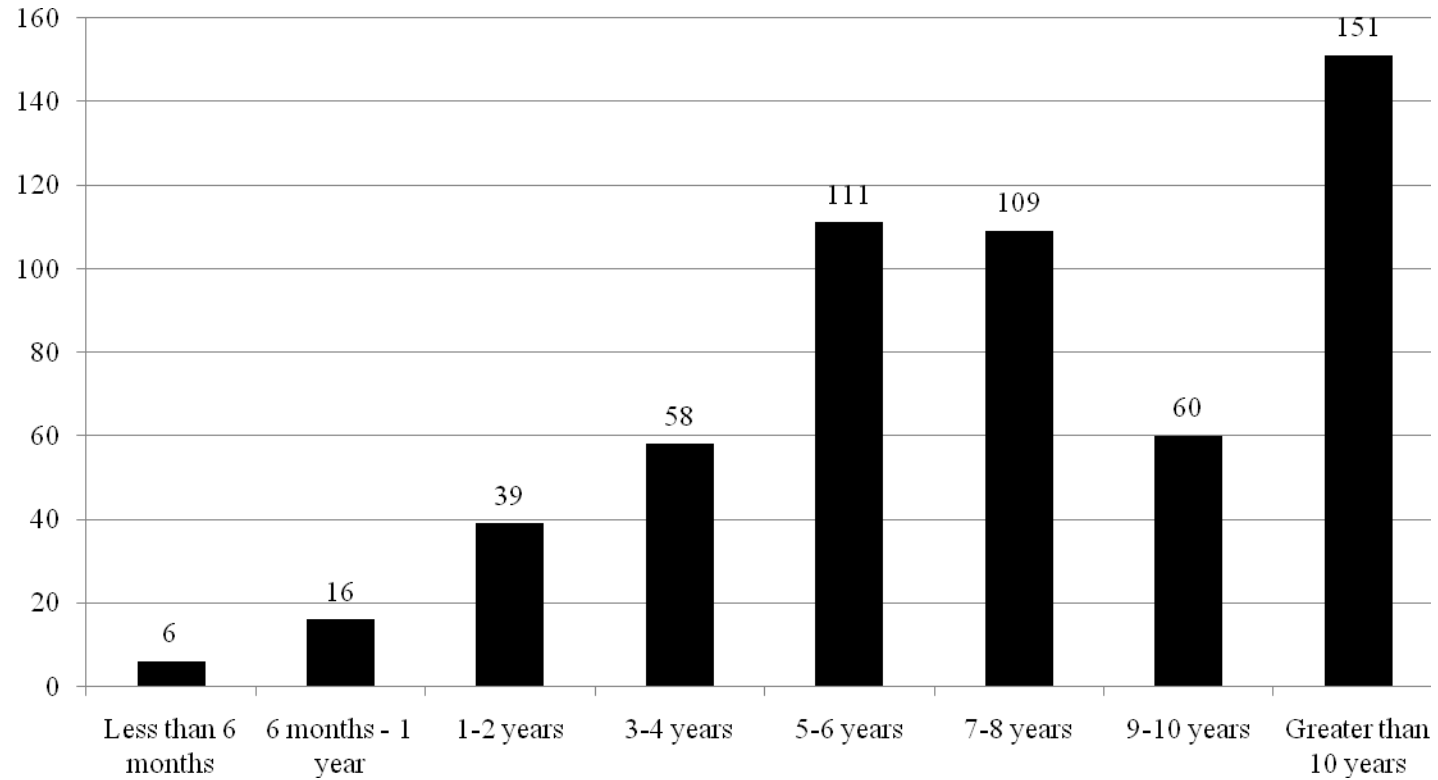
Sample description. In terms of sample characteristics, the mean age of respondents was 38.69 years ($SD = 9.49$) and ranged from 23 to 69 years. Seventy-five percent of respondents were married and 58% of respondents were male. Seventy-six percent of respondents were White, while 24% were people of color; more precisely, 4% were Black, 8% were Hispanic/Latino, 6% were Native American/Alaskan Native, 5% were Asian/Pacific Islander, and 1% self-identified their race/ethnicity as not falling within one of these categories. Descriptive information concerning respondents' education level, organizational tenure, job tenure, organization size (in terms of # of employees at one's primary work location), position, and annual compensation is provided in Figures 3-8 respectively.

Figure 3: Descriptive Statistics for Respondents' Education Level



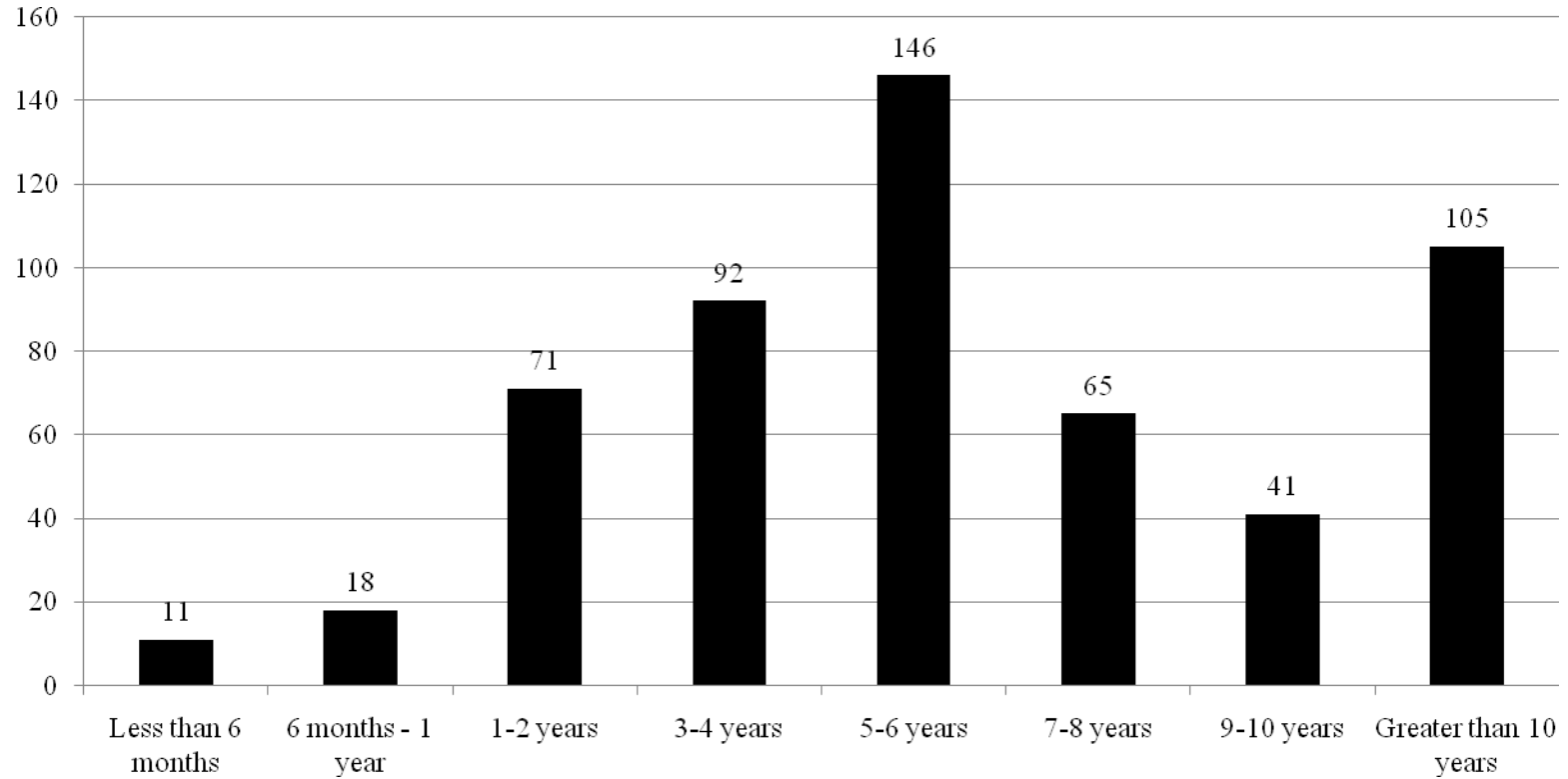
Note. $N = 550$. Frequencies are reported.

Figure 4: Descriptive Statistics for Respondents' Organizational Tenure



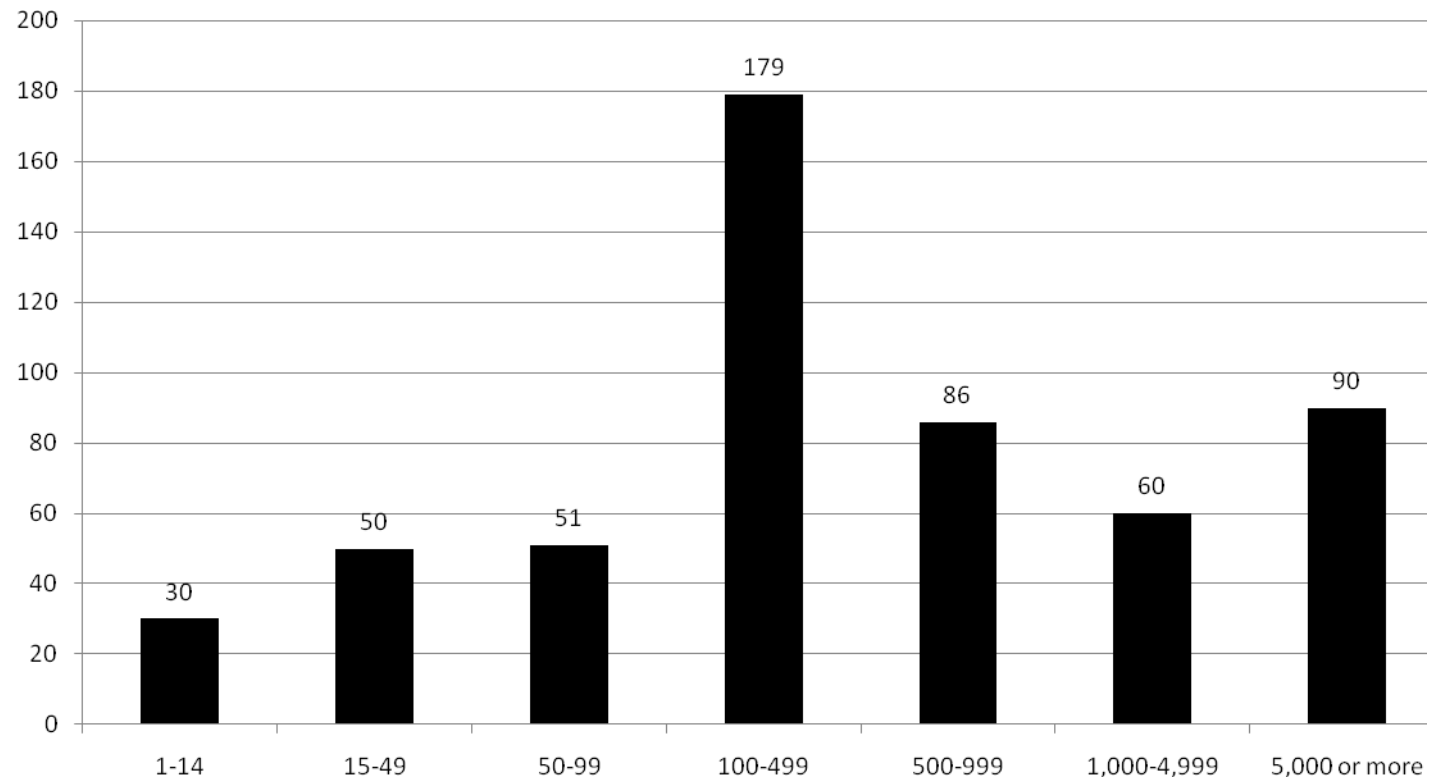
Note. $N = 550$. Frequencies are reported.

Figure 5: Descriptive Statistics for Respondents' Job Tenure



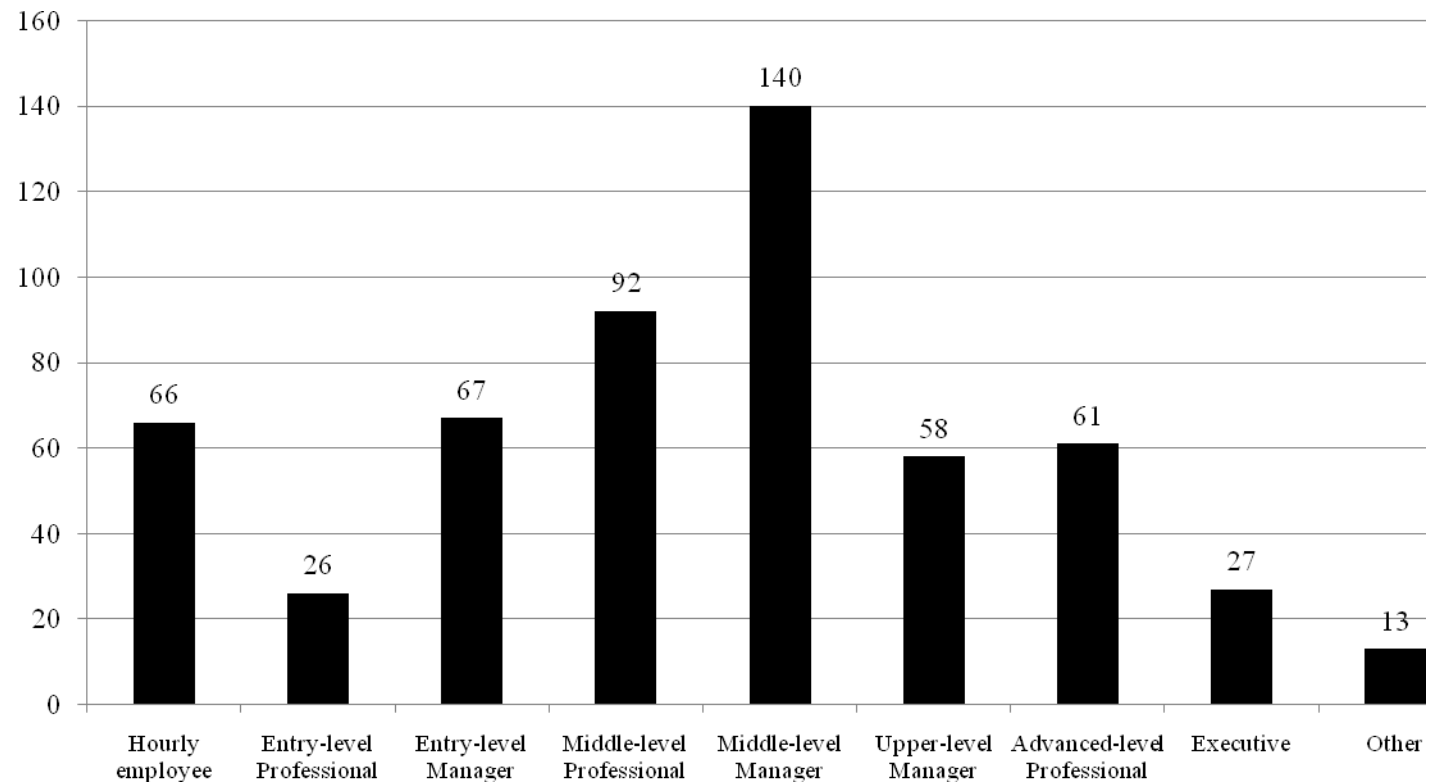
Note. $N = 549$ (1 missing value). Frequencies are reported.

Figure 6: Descriptive Statistics for Respondents' Organization Size



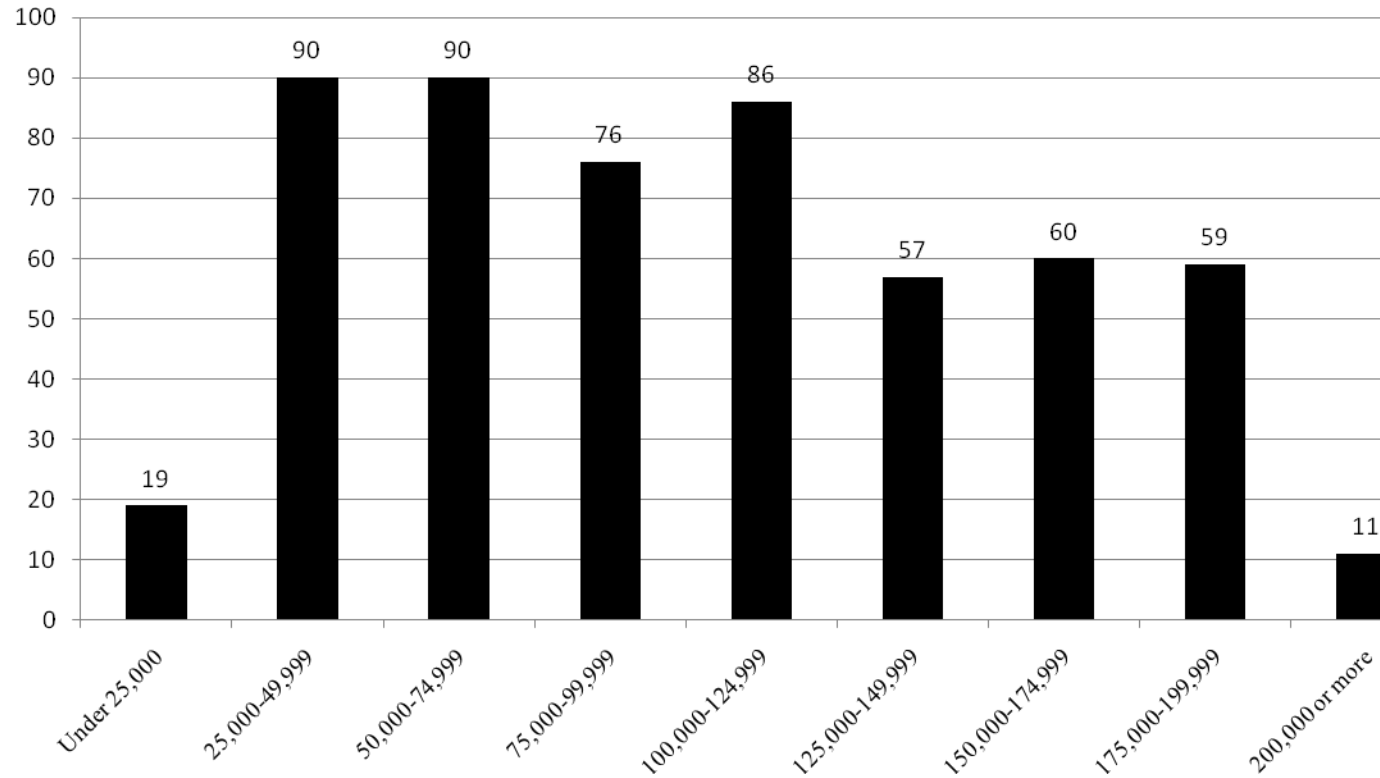
Note. $N = 546$ (4 missing values). Frequencies are reported.

Figure 7: Descriptive Statistics for Respondents' Position within an Organization



Note. $N = 550$. Frequencies are reported.

Figure 8: Descriptive Statistics for Respondents' Annual Compensation



Note. $N = 548$ (2 missing values). Frequencies are reported.

Measures

A complete list of all items comprising the study measures and details on scale anchors are included in Appendix D (Time 1 measures) and Appendix E (Time 2 measures) respectively. Additionally, a summary list of measures in the dissertation study is provided in Table 19. Table 19 also describes the internal consistency (i.e. Cronbach's alpha) of study measures, all of which exceeded the recommended threshold of .70 (Nunnally & Bernstein, 1994). For all measures, scale items were averaged to create a single construct score and higher values denote greater levels of that construct.

Table 19: Summary of Measures used in the Dissertation Study

Variable	Variable	Collection	Source	Items	Reliability Statistic ^{ab}
Task accomplishment: Needs/Supplies	Exogenous	Time 1	Validation study	3 items per needs/supplies	N: .87, S: .83
Career development: Needs/Supplies	Exogenous	Time 1	Validation study	3 items per needs/supplies	N: .93, S: .93
Sense making: Needs/Supplies	Exogenous	Time 1	Validation study	3 items per needs/supplies	N: .88, S: .87
Provision of meaning: Needs/Supplies	Exogenous	Time 1	Validation study	3 items per needs/supplies	N: .89, S: .87
Personal support: Needs/Supplies	Exogenous	Time 1	Validation study	3 items per needs/supplies	N: .90, S: .90
Psychological attachment to others at work	Endogenous	Time 1	Validation study	6 items	.93
Relational-interdependent self-construal	Endogenous	Time 1	Cross et al., 2000	11 items	.83
Supplementary fit (value congruence)	Control	Time 1	Cable & DeRue, 2002	3 items	.93
Perceived organizational support	Control	Time 1	Eisenberger et al., 1986	8 items	.89
Demographics	Control	Time 1	N/A	Organizational Tenure	-
Organizational commitment	Endogenous	Time 2	Klein et al., 2011	4 items	.96
Work engagement	Endogenous	Time 2	Rich et al., 2010	18 items	.96

^a Chronbach's alpha.

^b N = Needs. S = Supplies.

Organizational commitment. I used Klein et al.'s (2011) four-item scale to measure organizational commitment. In a measurement validation study, Klein and colleagues (2011) reported strong internal consistency for their measure ($\alpha = .95$). Organizational commitment was measured at Time 2.

Work engagement. I used Rich et al.'s (2010) eighteen-item scale to measure work engagement. This scale contains three dimensions: physical engagement, cognitive engagement, and emotional engagement, each of which aligns to Kahn's (1990) theorizing that work engagement occurs when an individual is physically, cognitively, and emotionally present in his/her work role (Rich et al., 2010; c.f., Christian et al., 2011). Rich and colleagues (2010) reported strong internal consistency for each of these dimensions ($\alpha = .89$ to $.94$), and additionally showed that the three dimensions may be combined to form a composite work engagement construct. Work engagement was measured at Time 2.

Psychological attachment to others at work. To gauge psychological attachment to others at work, I used the six-item measure developed in the validation study described in Chapter 4. Psychological attachment to others at work was measured at Time 1.

Need fulfillment on relational dimensions. To assess relational need fulfillment, I used the commensurate three-item scales capturing needs and supplies on each of the five dimensions identified in relational systems theory (i.e. task accomplishment, career development, sense making, provision of meaning, and personal support) and developed in the validation study. Each of these five commensurate three-item scales (thus ten three-item scales in total) was measured at Time 1.

Relational-interdependent self-construal. I measured individuals' relational-interdependent self-construal using Cross and colleagues' (2000) eleven-item scale. In their study, Cross et al. (2000) reported strong internal consistency for their measure across several samples ($\alpha = .85$ to $.90$). Relational-interdependent self-construal was measured at Time 1.

Control variables. Based on the literature reviewed in Chapter 2, I controlled for three variables in this study. Specifically, I controlled for perceived organizational support (POS) and supplementary person-organization fit (supplementary PO fit) given their theoretical and empirical links to both organizational commitment and work engagement (e.g., Kristof-Brown et al., 2005; Rhoades & Eisenberger, 2002; Rich et al., 2010; Saks, 2006). POS was assessed using the eight-item short form of the measure developed by Eisenberger et al. (1986). Supplementary PO fit was assessed using the three-item measure developed by Cable and DeRue (2002). I additionally controlled for organizational tenure in all analyses. Previous research suggests that organizational tenure may relate to individuals' organizational commitment and work engagement (e.g., Avery et al., 2007; Mathieu & Zajac, 1990; Meyer et al., 2002). Organizational tenure may also affect employees' opportunities to develop interpersonal attachments with others at work.

Preliminary Analyses

I conducted several preliminary psychometric analyses before testing the study hypotheses and research questions. As in the validation study, these tests began with screenings for missing data, outliers, and normality. I then followed with several tests to ensure the appropriateness of the measurement model using CFA and an assessment of

AVE. As discussed in Chapter 4, an AVE value supports discriminant validity should its square root exceed those bivariate correlations reported in the corresponding row and column of a correlation matrix (Andrews et al., 2009). I also report on the bivariate correlations between study constructs.

Missing data. Results indicated only a small number of missing data points for items comprising the primary model constructs and control variables. Specifically, no more than four cases of missing data occurred for any of the items comprising relational needs and supplies on the five dimensions, psychological attachment to others at work, organizational commitment, work engagement, relational-interdependent self-construal, perceived organizational support, supplementary PO fit, or organizational tenure. As the number of cases with missing data thus fell under recommended thresholds (see Kline, 2005), cases with missing values were deleted listwise in subsequent analyses which included the respective constructs.

Outliers. I screened for outliers by examining the distribution of z-score values for the primary model constructs at the univariate level, as well conducted tests for Mahlanobis Distance to test for the presence of multivariate outliers. As in the validation study, outliers at the univariate level were defined as values in excess of 3.29 standard deviations from the mean of a given construct. Following Tabachnick and Fidell (2007), multivariate outliers were determined by comparing Mahlanobis Distance values to critical levels of a chi-square distribution based on a conservative probability estimate ($p < .001$). Initial inspection based on both univariate and multivariate assessments led to the identification of ten cases containing outliers. Each of these ten cases was then independently screened to assess potential problems (e.g., patterns in responses, illogical

responses, etc.). In total, seven of the ten cases were identified as problematic, and thus removed from the dataset. As such, 543 cases were retained for subsequent analyses.

Because response surface analysis (discussed in detail below), which is used in examining Hypotheses 1-2 and Research Question 1, is sensitive to influential observations (Edwards, 2002), I further conducted two additional tests for outliers using the relational needs and supplies constructs for the five dimensions, which are the primary constructs used in the response surface analyses. These tests assessed multivariate outliers based on leverage and influence. Leverage (h_{ii}) is a measure of how far away a single observation is from others without taking into account the direction of the discrepancy. Outliers were defined conservatively as cases in which $h_{ii} \geq 5(k/N)$, where k is the number of expected independent variables and N is the sample size. Influence, in contrast, is a measure assessing expected change when a given observation is deleted. Cook's D was calculated to measure influence, with outliers defined as cases in which Cook's D is ≥ 1 (see Belsley, Kuh, & Welsch, 1980; Cohen, Cohen, West, & Aiken, 2003 for more detailed discussions of these tests). Findings revealed five clearly discrepant cases – each based on high values for leverage. Aligned with previous research (e.g., Edwards & Cable, 2009), these cases were removed, thereby leaving 538 observations in the dataset.

Normality. As in the validation study, I screened for normality across all items comprising primary model constructs, as well as the constructs themselves, by assessing univariate skewness and kurtosis based on accepted standards ($< |2|$ for skewness & $< |7|$ for kurtosis) (Curran et al., 1996). Results demonstrated that all items and constructs fell

within the allowable range of skewness and kurtosis values; thus, all observations were retained.

Measurement model analyses. Following these assessments of missing data, outliers, and normality, I next conducted two CFAs to evaluate the appropriateness of the measurement model. Specifically, I first replicated the CFA conducted in the validation study so as to confirm these findings in the dissertation sample. I then conducted a full CFA of all measures used in the dissertation study. Appropriate model comparison analyses for these CFAs were conducted as well. As in the validation study, CFAs were evaluated using the CFI, RMSEA, TLI, IFI, and traditional chi-square measures, with model fit determined based on standards outlined by Kline (2005) and Hu and Bentler (1999). In each of the CFAs, all factor covariance combinations were freely estimated.

In replicating the CFA of newly developed measures from the validation study, good fit for the specified eleven-factor model was found for the dissertation study sample: $\chi^2(539) = 1156.82, p < .001$; CFI = .96, RMSEA = .05, TLI = .96, IFI = .97. Again, factor loadings for all items were significant ($p < .001$ for all), and all standardized factor loadings were greater than or equal to .69. Table 20 presents the standardized factor loadings for all items in this CFA so comparisons may be drawn between specific loadings from the dissertation study sample and validation study sample (presented in Table 16). As shown, individual item loadings were generally consistent and high across the validation and dissertation study samples respectively.

Table 20: Confirmatory Factor Analysis: Verification of Validation Study Findings in the Dissertation Study

Item	Factor Loading on Specified Latent Construct
<i>Supplies</i> – Help you solve job-related problems	.83
<i>Supplies</i> – Help you get the resources you need to do your job	.82
<i>Supplies</i> – Give you information that you need to do your job	.76
<i>Needs</i> – Help you solve job-related problems	.80
<i>Needs</i> – Help you get the resources you need to do your job	.84
<i>Needs</i> – Give you information that you need to do your job	.83
<i>Supplies</i> – Offer you opportunities for advancing your career	.90
<i>Supplies</i> – Give you access to opportunities that may help your career	.88
<i>Supplies</i> – Help you develop your career	.90
<i>Needs</i> – Offer you opportunities for advancing your career	.89
<i>Needs</i> – Give you access to opportunities that may help your career	.90
<i>Needs</i> – Help you develop your career	.89
<i>Supplies</i> – Help you understand why things happen the way they do at work	.82
<i>Supplies</i> – Help you make sense out of workplace events	.84
<i>Supplies</i> – Help you understand the rules of the road at work	.80
<i>Needs</i> – Help you understand why things happen the way they do at work	.82
<i>Needs</i> – Help you make sense out of workplace events	.84
<i>Needs</i> – Help you understand the rules of the road at work	.83
<i>Supplies</i> – Make you feel that you are appreciated	.86
<i>Supplies</i> – Give you a sense that you are capable	.78
<i>Supplies</i> – Make you feel that you are valued	.84
<i>Needs</i> – Make you feel that you are appreciated	.84
<i>Needs</i> – Give you a sense that you are capable	.83
<i>Needs</i> – Make you feel that you are valued	.84
<i>Supplies</i> – Provide you with support on personal matters	.90
<i>Supplies</i> – Offer you help on personal issues or challenges	.89
<i>Supplies</i> – Offer to listen to a problem you may be having	.81
<i>Needs</i> – Provide you with support on personal matters	.84
<i>Needs</i> – Offer you help on personal issues or challenges	.91
<i>Needs</i> – Offer to listen to a problem you may be having	.82
<i>Psychological Attachment</i> ^a – Close to them	.69
<i>Psychological Attachment</i> – Attached to them	.87
<i>Psychological Attachment</i> – A close bond with them	.90
<i>Psychological Attachment</i> – Committed to them	.84
<i>Psychological Attachment</i> – A sense of oneness with them	.86
<i>Psychological Attachment</i> – Like I belong with them	.85

Note. N = 538. All factor loadings are significant at $p < .001$. Model fit statistics: $\chi^2(539) = 1156.82$, $p < .001$; CFI = .96, RMSEA = .05, TLI = .96, IFI = .97.

^a Psychological attachment to others at work.

As in the validation study, I compared the fit of the specified eleven-factor model with two nested alternative models. First, I compared the fit of the proposed model to a nested model in which factor covariances across commensurate dimensions were constrained to one. Results of a chi-square difference test confirmed the superiority of the expected eleven-factor model structure: $\chi^2_{diff}(5) = 76.43, p < .001$. Second, I compared the fit of the proposed model to a nested model in which factor covariances across needs and supplies dimensions were constrained to one. Again, results of a chi-square difference test confirmed the superiority of the expected eleven-factor model structure: $\chi^2_{diff}(8) = 85.27, p < .001$. Altogether, these results confirmed validation study findings, thereby suggesting discriminant and convergent validity for the newly developed measures.

I next conducted a CFA which included all multi-item measures used in the dissertation study in order to ensure the appropriateness of the measurement model. To conduct this CFA, I implemented an item parceling strategy given the size of the model. Item parceling is a procedure in which composite indicators are created to capture a set of measured items for one or more latent variable in a CFA. Item parceling is moreover a practice commonly employed when some latent constructs present in a model have a large number of measured items (Bandalos & Finney, 2001; Little, Cunningham, Shahar, & Widaman, 2002), as was the case here – work engagement: 18 items, relational-interdependent self-construal: 11 items, perceived organizational support: 8 items. Using item parcels for large models reduces the number of unique parameters to be estimated, thereby allowing for more stable fit estimates and less biased individual parameter estimates (Alhija & Wisenbaker, 2006; Bagozzi & Edwards, 1998; Bandalos, 2002;

MacCallum et al., 1999; Yuan, Bentler, & Kano, 1997). Aligned with scholars' recommendations (e.g., Holt, 2004; Nasser & Takahashi, 2003), I created three- and/or four-item parcels for latent constructs with greater than four measured indicators. Specifically, work engagement was specified to load on six three-item parcels, relational-interdependent self-construal was specified to load on two four-item parcels and one three-item parcel, perceived organizational support was specified to load on two four-item parcels, and psychological attachment to others at work was specified to load on two three-item parcels.

CFA results demonstrated reasonably good fit for the measurement model of all multi-item measures present in the dissertation study: $\chi^2(1055) = 2584.18, p < .001$; CFI = .94, RMSEA = .05, TLI = .93, IFI = .94.¹⁴ Moreover, the anticipated measurement model demonstrated superior fit in comparison to a variety of alternative nested models based on a series of chi-square difference tests in which one or more factor covariances were constrained to unity: $\chi^2_{diff}(1 \text{ to } 8) = 16.35 \text{ to } 158.80$, all tests $p < .001$. These model comparison analyses are summarized in Table 21. Altogether, these results suggest both a reasonably good fit of the overall measurement model and offer evidence of discriminant validity between the primary constructs present in the dissertation study.

¹⁴ An alternative model in which organizational commitment was specified to load on two two-item parcels was also tested and demonstrated essentially equivalent fit: CFI = .94, RMSEA = .05, TLI = .92, IFI = .94.

Table 21: Confirmatory Factor Analysis Model Comparisons for the Dissertation Study

Model	χ^2	df	$\Delta\chi^2$	Model comparison
Model 1: Expected measurement model	2584.18	1055	-	-
Model 2: Covariances between commensurate needs and supplies fixed to one	2660.66	1060	76.48*	Model 2 to Model 1
Model 3: Covariances among needs and supplies fixed to one	2667.34	1063	83.16*	Model 3 to Model 1
Model 4: Covariance between psychological attachment to others at work and perceived organizational support fixed to one	2613.64	1056	29.46*	Model 4 to Model 1
Model 5: Covariance between psychological attachment to others at work and person-organization fit fixed to one	2600.53	1056	16.35*	Model 5 to Model 1
Model 6: Covariance between psychological attachment to others at work and relational-interdependent self-construal fixed to one	2742.98	1056	158.80*	Model 6 to Model 1

Note. N = 538.

* $p < .001$.

Bivariate correlations and assessment of AVE. Table 22 presents the bivariate correlations between study constructs, along with their descriptive statistics. Additionally, Table 22 includes the square root of the AVE for items comprising each construct on the diagonal of the correlation matrix. As mentioned above, an AVE value supports discriminant validity should its square root exceed those bivariate correlations reported in the corresponding row and column of the correlation matrix (Andrews et al., 2009). As shown, this condition was satisfied in all cases, thereby suggesting discriminant validity between the study constructs.

Several values reported in Table 22 merit specific attention and discussion. First, it is important to note the significant correlations between psychological attachment to others at work and each of the primary outcome variables (organizational commitment: $r = .32, p < .001$; work engagement: $r = .37, p < .001$). These bivariate relationships are aligned with Hypotheses 3 and 5, which suggest that individuals' psychological attachment to those around them in the workplace will meaningfully predict both their organizational commitment and work engagement.

Table 22: Descriptive Statistics, Correlations, and Average Variance Explained Values for Dissertation Study Constructs

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Organizational tenure	5.85	1.77	-																
2. Person-organization fit	5.08	1.19	.04	.90															
3. Perceived organizational support	4.80	1.21	.00	.55	.70														
4. Relational self-construal ^a	4.95	0.75	-.02	.27	.31	.68													
5. <i>Supplies</i> – Task accomplishment	5.23	1.00	.00	.49	.54	.34	.80												
6. <i>Supplies</i> – Career development	4.61	1.39	-.03	.51	.49	.25	.67	.89											
7. <i>Supplies</i> – Sense making	4.98	1.11	-.03	.47	.47	.35	.77	.78	.82										
8. <i>Supplies</i> – Provision of meaning	5.19	1.07	.04	.51	.57	.34	.79	.65	.77	.83									
9. <i>Supplies</i> – Personal support	4.74	1.31	.08	.51	.42	.31	.60	.71	.74	.67	.87								
10. <i>Needs</i> – Task accomplishment	5.44	0.98	-.09	.26	.34	.34	<u>.61</u>	.29	.45	.54	.29	.83							
11. <i>Needs</i> – Career development	5.16	1.24	-.16	.27	.32	.36	.50	<u>.51</u>	.52	.51	.42	.69	.89						
12. <i>Needs</i> – Sense making	5.28	1.03	-.12	.33	.35	.37	.59	.44	<u>.62</u>	.58	.47	.77	.77	.83					
13. <i>Needs</i> – Provision of meaning	5.42	1.00	-.04	.33	.33	.36	.57	.34	.50	<u>.60</u>	.43	.76	.68	.76	.84				
14. <i>Needs</i> – Personal support	4.80	1.26	.02	.39	.26	.33	.44	.56	.59	.51	<u>.76</u>	.38	.56	.57	.52	.86			
15. Psychological attachment ^b	4.91	1.20	.12	.48	.39	.35	.58	.66	.67	.65	.74	.29	.38	.41	.38	.61	.84		
16. Organizational commitment (T2)	3.91	0.93	.17	.58	.54	.17	.44	.52	.48	.52	.49	.20	.27	.32	.29	.36	.51	.92	
17. Work engagement (T2)	5.69	0.92	.12	.47	.45	.45	.46	.38	.42	.49	.37	.36	.32	.37	.32	.28	.44	.59	.77

Note: N = 538. Correlations greater than .08 in absolute value are significant at $p < .05$, correlations greater than .11 in absolute value are significant at $p < .01$, and correlations greater than .16 in absolute value are significant at $p < .001$. Boldface entries on the diagonal are the square root of the average variance explained. Italicized, underlined entries are those corresponding to the bivariate correlation between the needs and supplies components on a specific dimension.

^aRelational-interdependent self-construal.

^bPsychological attachment to others at work.

Second, consistent with findings from the validation study, fairly high correlations were found between the respective five needs scales and five supplies scales (e.g., the bivariate correlation between task accomplishment needs and provision of meaning needs, or, the bivariate correlation between task accomplishment supplies and provision of meaning supplies, etc.). Despite this pattern of results, however, two points are warranted. First, from a statistical standpoint, although bivariate correlations between the needs scales and supplies scales are consistently high, no specific values reach a level to suggest a lack of discriminant validity between any two dimensions (e.g., $r \geq .80$ – Licht, 1995). To this end, recall also that evidence of discriminant validity between the needs scales and supplies scales was confirmed based on model comparison analyses for each of the CFAs reported above, as well as based on examinations of AVE values for each construct. Second, from a theoretical standpoint, it should be reiterated that a pattern of fairly high correlations between the respective needs scales and supplies scales is ultimately not unexpected given the non-orthogonal nature of the five dimensions (Kahn, 2007).

Finally, because at least some variance between commensurate needs and supplies scales is required to assess congruence effects, the bivariate correlation between each pair of commensurate scales is accentuated (underlined and italicized) in Table 22.

Altogether, these bivariate correlations between commensurate needs and supplies scales are generally comparable to values reported in the validation study and previous research examining needs/supplies congruence effects (e.g., Cable & Edwards, 2004; Edwards & Rothbard, 1999). Still, it should be noted that one value – the correlation between needs and supplies on the personal support dimension – was found to be notably higher

compared to the validation study ($r = .76$ in the dissertation sample; $r = .56$ in the validation sample). This value nevertheless suggests adequate variance to assess needs/supplies congruence effects. Additionally, to more precisely illustrate the nature of the parallels/discrepancies between needs and supplies for each commensurate dimension, I constructed scatter diagrams of individuals' reported values. These diagrams are displayed in Figures 9-13 respectively (one figure per dimension). As shown, reported needs and supplies deviated both in terms of absolute value (i.e., high needs-high supplies, low needs-low supplies) and level of discrepancy (i.e., high needs-low supplies, low needs-high supplies) across the dimensions.

Figure 9: Scatter Diagram for Reported Needs and Supplies: Task Accomplishment

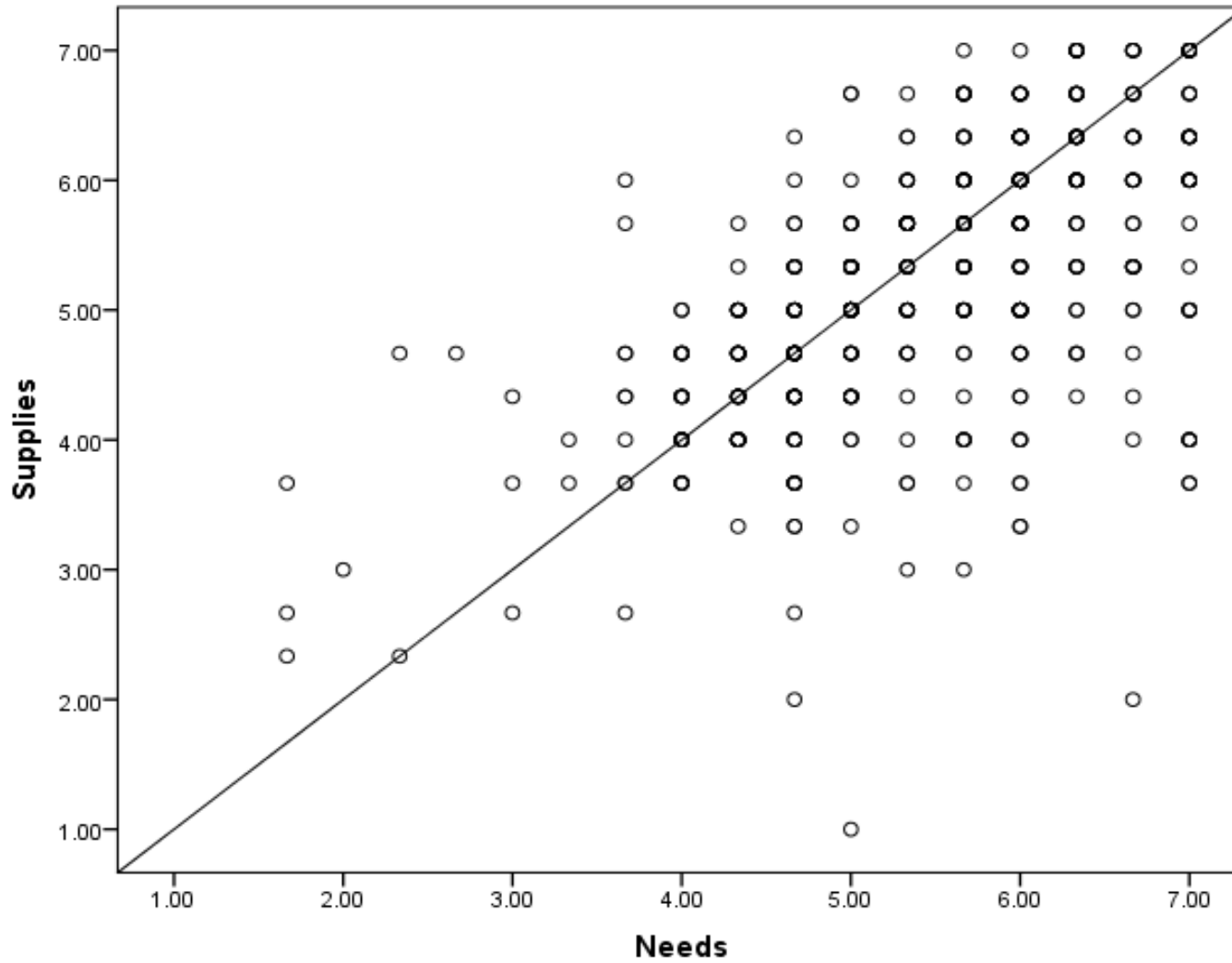


Figure 10: Scatter Diagram for Reported Needs and Supplies: Career Development

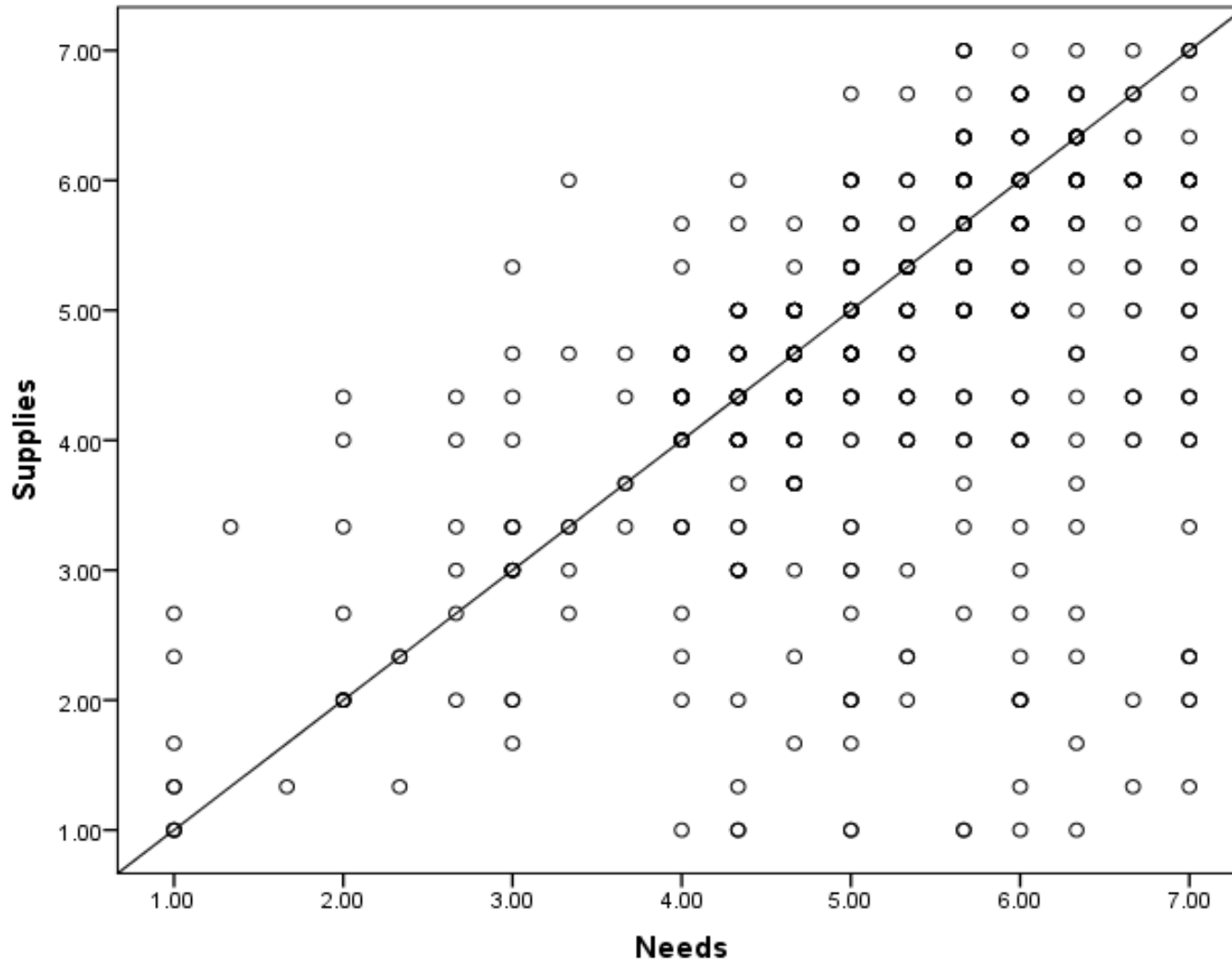


Figure 11: Scatter Diagram for Reported Needs and Supplies: Sense Making

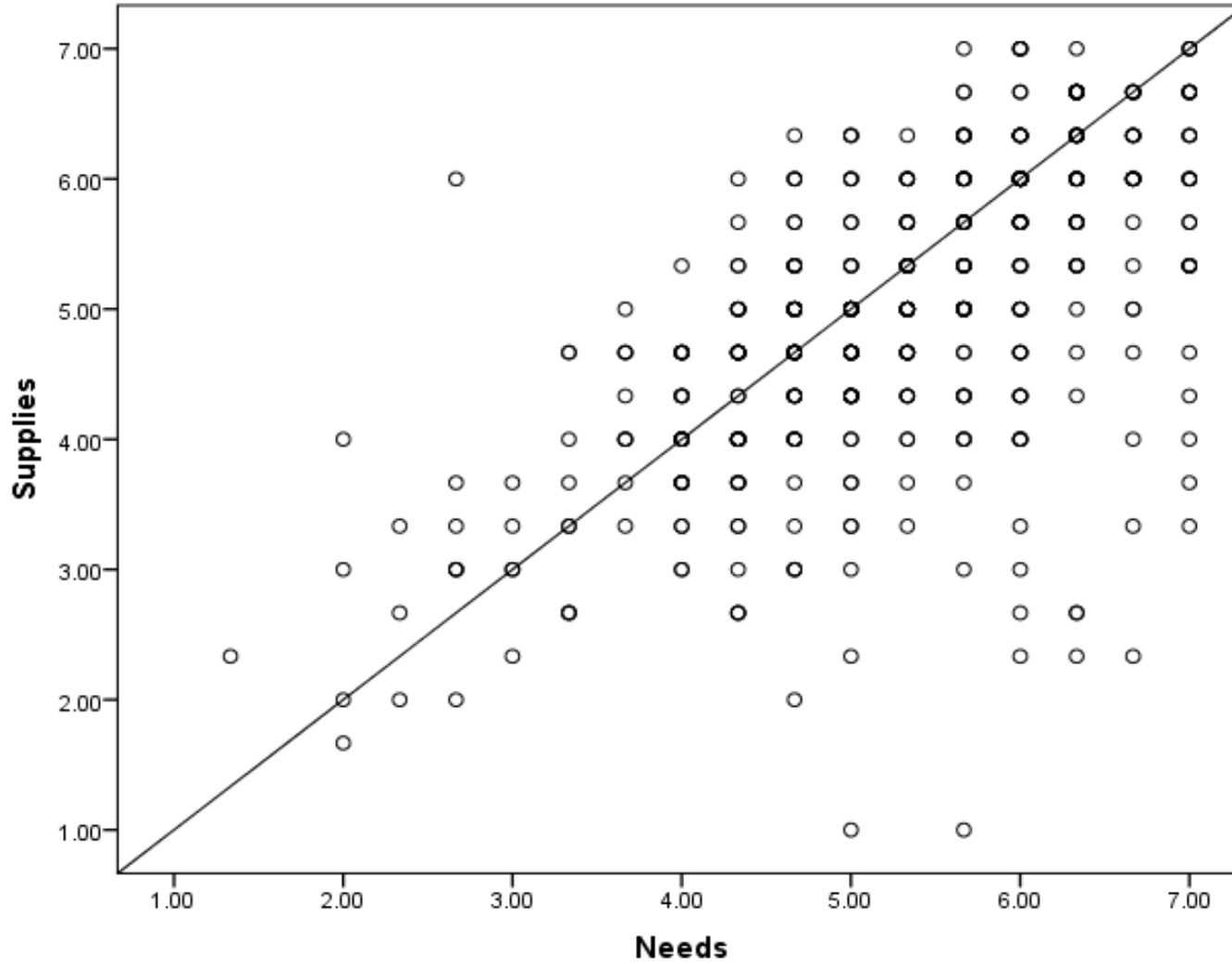


Figure 12: Scatter Diagram for Reported Needs and Supplies: Provision of Meaning

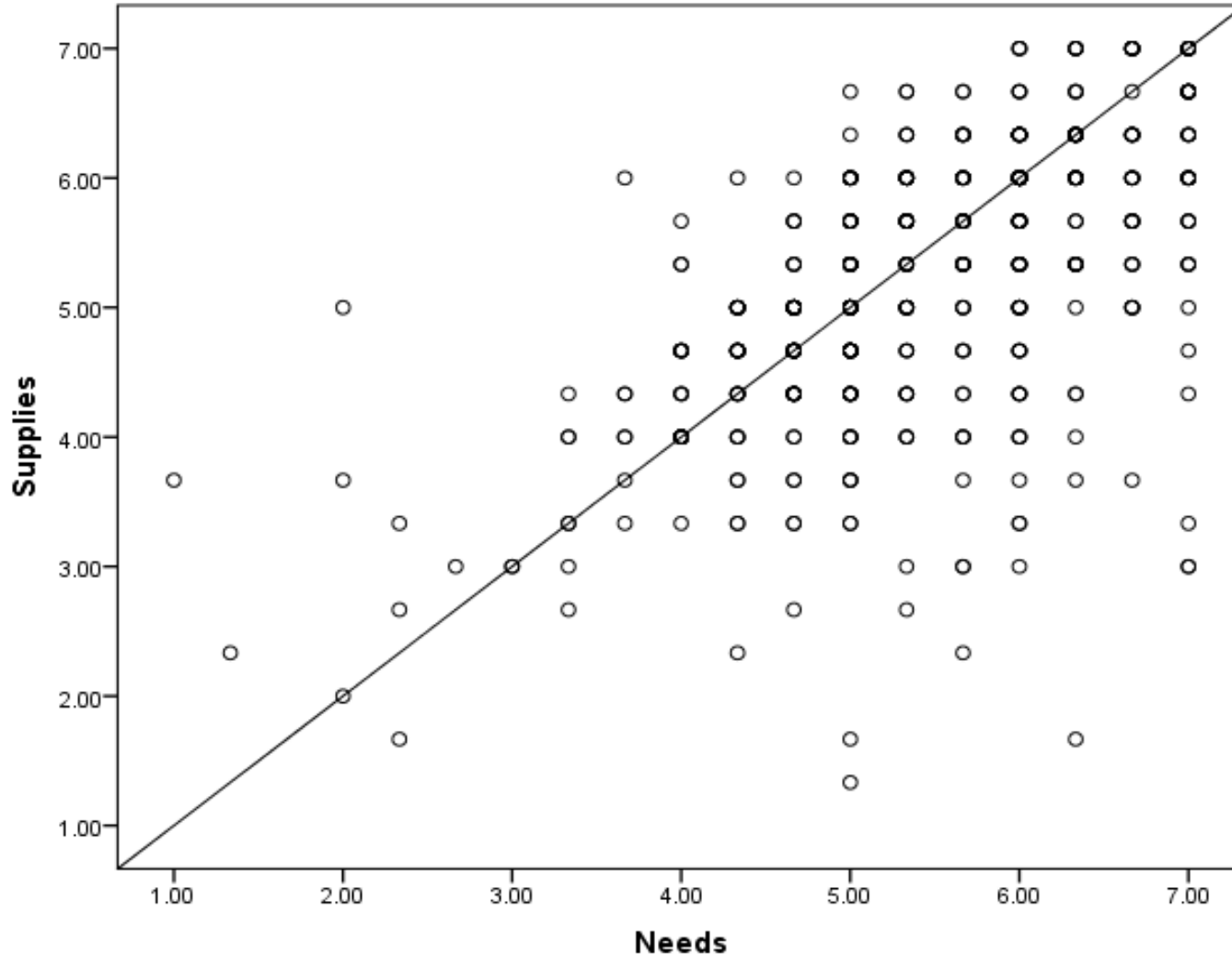
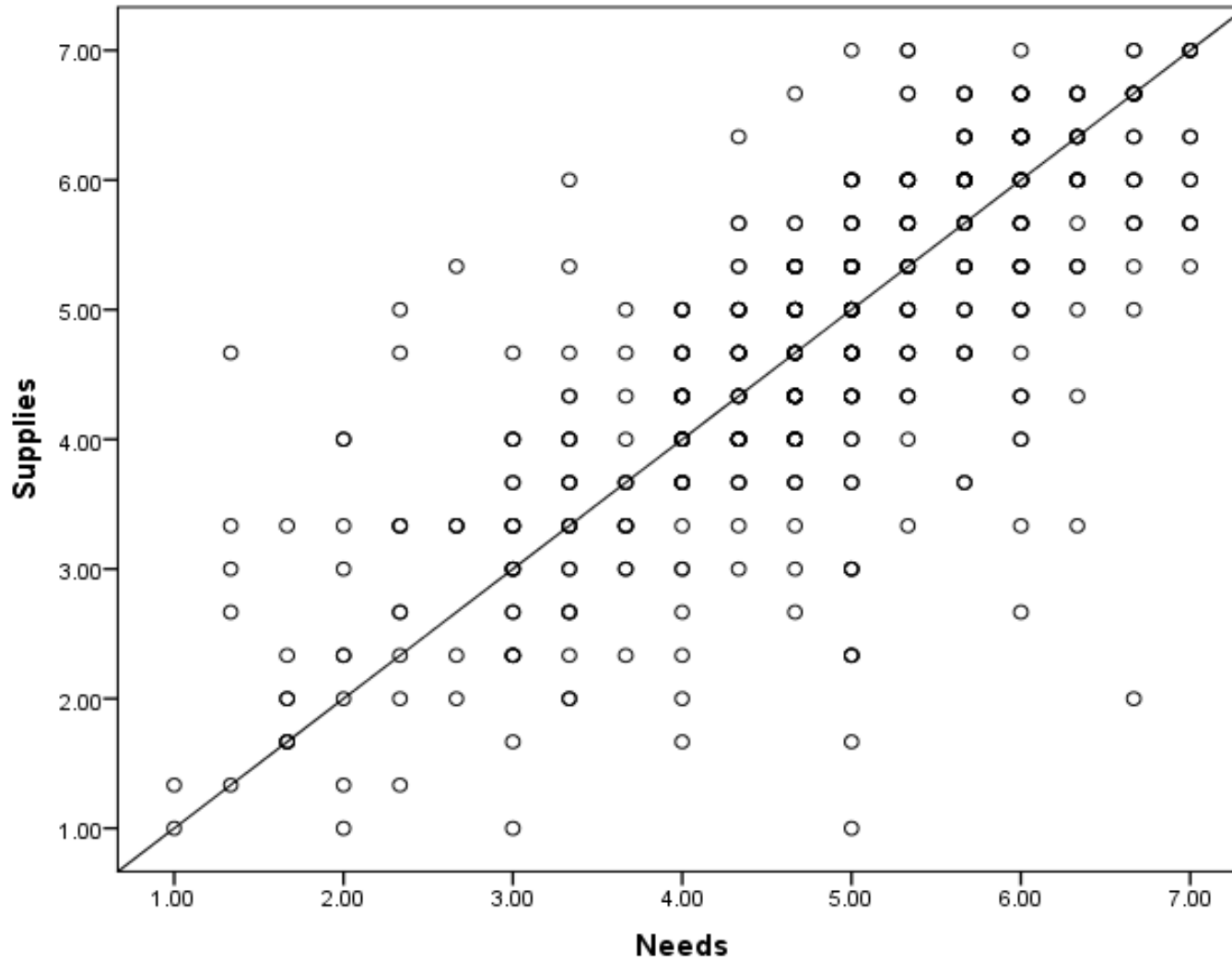


Figure 13: Scatter Diagram for Reported Needs and Supplies: Personal Support



Study Analyses

Having assessed the psychometric adequacy of the measures, I now turn to the study hypotheses and research questions presented in Chapter 3. Based on the removal of a small number of observations from the original sample given the results of the preliminary analyses described above, the final study sample used for conducting the analyses was $N = 538$.

Several statistical methods were used to conduct the analyses. First, polynomial regression and response surface methodology (RSM; Box & Draper, 1987) was used to test Hypotheses 1-2 and Research Question 1. Hypotheses 3-7 and Research Question 2 were tested using variations of hierarchical multiple regression. On account of its relatively infrequent use in organizational literature, I briefly describe polynomial regression and RSM below. I then explain how I apply these methods in evaluating the hypotheses and research question. Additional information concerning polynomial regression and RSM, as well as empirical examples, can be found in Edwards (1994; 2002). I also describe the hierarchical multiple regression analyses and mediation test procedures used in testing Hypotheses 3-7 and Research Question 2. After outlining the statistical methodology, I then present study results.

Methodology: Polynomial regression and response surface methodology (RSM). Polynomial regression considers the influence of a set of linear and quadratic predictors on a specified outcome – in this case, psychological attachment to others at work. Specifically, five terms representing the independent and joint effects of needs and supplies on individuals' psychological attachment to others at work are considered in the general polynomial regression model:

$$PAOW = b_0 + b_{c1}C_1 \dots b_{cn}C_n + b_1S + b_2N + b_3S^2 + b_4NS + b_5N^2 + e \quad (1)$$

where *PAOW* represents psychological attachment to others at work, *C* represents any covariates, *N* refers to one's requisite need level for a specific dimension (i.e. *N* = needs), and *S* refers to the actual level of that commensurate dimension provided for in one's relational constellation (i.e. *S* = supplies). This model suggests that needs and supplies have both unique and interactive effects on individuals' psychological attachment to others at work. This is important as it represents the only means for evaluating fit which does not inappropriately confound the often unique effects of needs and supplies on outcomes (Edwards et al., 2006). This method is additionally superior to difference score calculations which impose generally inappropriate constraints on the regression equation (see Edwards, 1994; Edwards & Parry, 1993 for detailed discussions on the advantages of polynomial regression for testing fit/misfit). As noted, this model also allows for non-linear considerations of the joint effects of the needs and supplies components. These non-linear inclusions are necessary in order to evaluate the study hypotheses that the influence of needs and supplies for each specified relational need dimension on psychological attachment to others at work will differ depending on the degree of congruence between needs and supplies, as well as how these effects may differ based on the direction of misfit (see Edwards, 2002).

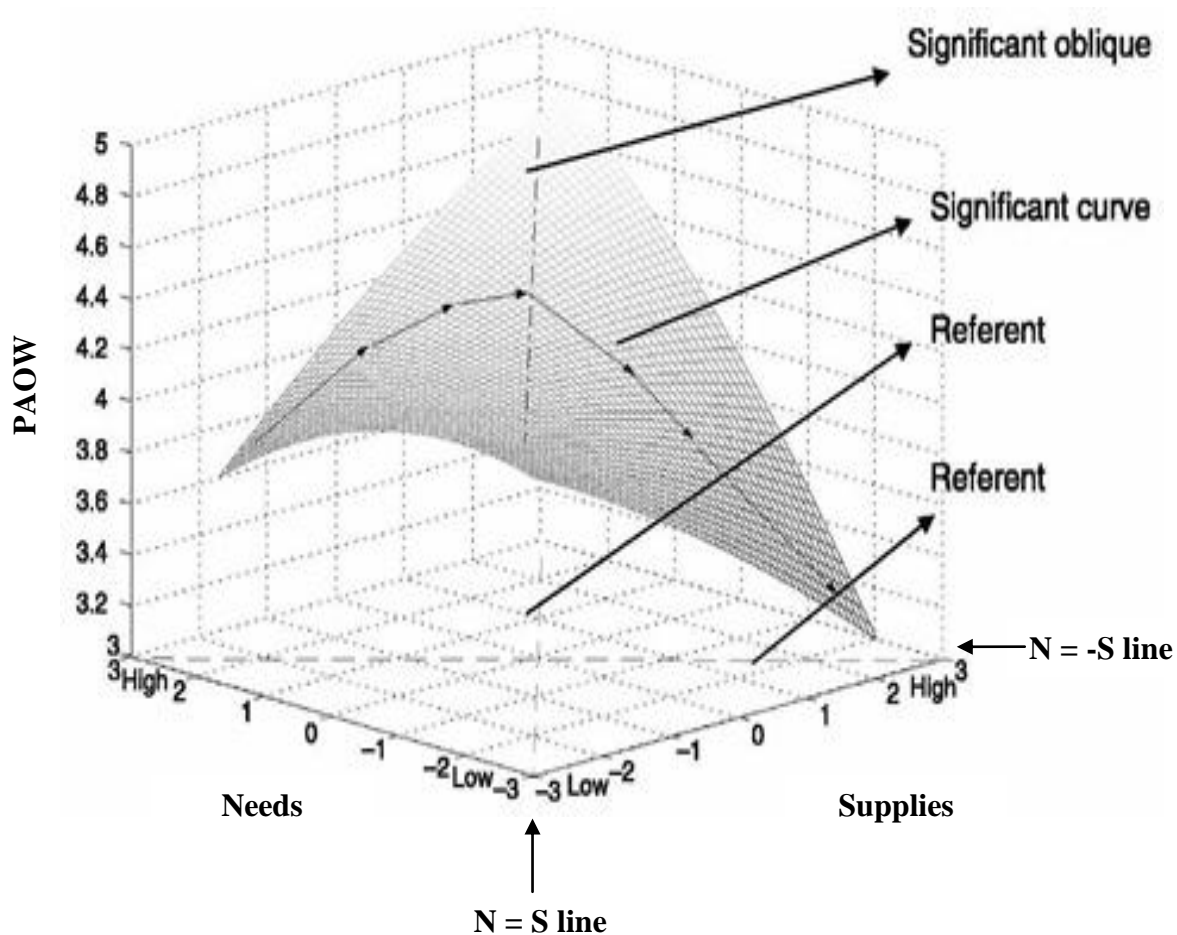
In light of the presence of higher order terms in the polynomial regression model, as well as to enhance interpretability of the results, all scale items reflecting needs and supplies were scale centered prior to analysis in this study. Aligned with PE fit theory and study hypotheses (as well as because of the complexity of the model), separate regressions were furthermore conducted for the effects of needs/supplies fit on each

relational need dimension.¹⁵ Given that this strategy may increase the likelihood of committing a Type I Error (Yang, Levine, Smith, Ispas, & Rossi, 2008), I set a more conservative *a priori* alpha level of $p = .01$ for all significance tests involving polynomial regression equations – that is, Hypotheses 1, 2, and Research Question 1 (congruence analyses), and Hypotheses 4 and 6 (mediation analyses).

RSM provides a means by which surfaces corresponding to polynomial regression results can further be analyzed and interpreted. To evaluate Hypotheses 1-2 and Research Question 1, I took specific interest in each surface's shape along the line of misfit: $N = -S$, and the line of fit: $N = S$. These lines are shown on the sample three-dimensional surface diagram in Figure 14 – in the figure, they are identified as 'referents.' Specifically, the $N = -S$ line runs from the far left corner to the far right corner of the horizontal plane, while the $N = S$ line runs from the near corner to the far corner of the horizontal plane. Note also that point (0,0) resides at the center of the plane along the base of the figure. This is given the scale centering for the needs and supplies scales noted in the preceding paragraph.

¹⁵ Testing needs/supplies congruence independently on each dimension of interest further follows convention in fit research (e.g., Edwards, 1996; Edwards & Cable, 2008; Edwards & Rothbard, 1999; Yang et al., 2008).

Figure 14: Response Surface Example



Slopes along preferred = actual line

$$b_1 + b_2 \quad .16^{**}$$

$$b_3 + b_4 + b_5 \quad .05$$

Slopes along preferred = - actual line

$$b_1 - b_2 \quad -.12$$

$$b_3 - b_4 + b_5 \quad -.14^*$$

Note: Figure and table excerpt replicated from Yang et al. (2008)

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

The surface along each of these lines serves specific functions in determining the nature of the fit between the needs and supplies components of each dimension. In particular, Hypothesis 1 and Research Question 1, which concern how one's level of psychological attachment to others at work changes relative to congruence, are evaluated by considering the surface along the $N = -S$ line. Moving from left to right across the horizontal plane in Figure 14, the region along the $N = -S$ line left of the intersection with the $N = S$ line pertains to situations in which S is approaching N , (i.e. supplies increases toward requisite need levels), the point of intersection indicates congruence, and to the right of the intersection pertains to situations in which S exceeds N (i.e. supplies exceed requisite need levels). As described by Edwards and Rothbard (1999), the shape of the surface along this line is determined by setting N equal to $-S$ in Equation 1, yielding the following equation after like terms are collected:

$$PAOW = b_0 + b_{c1}C_1 \dots b_{cn}C_n + (b_1 - b_2)S + (b_3 - b_4 + b_5)S^2 + e \quad (2)$$

Drawing on this equation, two important points for hypothesis testing can be inferred. First, along the line of misfit, the surface slope at $S = 0$ is represented by the compound coefficient on the first-order term (' S ' in Equation 2), that is: $(b_1 - b_2)$. Second, the surface curvature along the misfit line is represented by the compound coefficient on the second-order term (' S^2 ' in Equation 2), that is: $(b_3 - b_4 + b_5)$ (see Edwards, 1994; 2002; Edwards & Parry, 1993 for more detailed discussions). Following previous fit research (e.g., Edwards & Cable, 2009; Yang et al., 2008), these values, in addition to the respective surface diagrams themselves, were used to evaluate Hypothesis 1 and Research Question 1. Recall that Hypothesis 1 suggests that for each relational need dimension, psychological attachment to others at work increases as supplies

increase toward needs – in other words, as S increases toward N. Recall also that Research Question 1 considers what effects on psychological attachment to others at work may occur when supplies exceed needs on each of the five dimensions. These effects (where supplies increase toward and exceed requisite need levels) were evaluated in corresponding pairs for each dimension (e.g., both Hypothesis 1 and Research Question 1 relative to the task accomplishment dimension were evaluated using the task accomplishment response surface, etc.).

Support for Hypothesis 1 was inferred based on the presence of specific patterns of results for statistical significance testing on the compound coefficients $(b_1 - b_2)$ and $(b_3 - b_4 + b_5)$. Specifically, any of three conditions denotes support for Hypothesis 1: where $(b_1 - b_2)$ is significantly positive and $(b_3 - b_4 + b_5)$ is significantly negative (thus signifying a positive slope at the point of congruence and downward curvature in the surface), where $(b_1 - b_2)$ is significantly positive and $(b_3 - b_4 + b_5)$ is not different from zero (thus signifying a positive slope at the point of congruence and no curvature in the surface), and where $(b_1 - b_2)$ is not different from zero and $(b_3 - b_4 + b_5)$ is significantly negative (thus signifying a zero slope at the point of congruence and downward curvature in the surface). I additionally examined the response surfaces for each dimension to ensure the appropriateness of these conclusions. Research Question 1 was then evaluated based on the value for $(b_3 - b_4 + b_5)$ and by inspection and further analysis of additional characteristics of the response surfaces (e.g., principal axes – discussed in the presentation of results).

In respect to Hypothesis 2, the $N = S$ line is of primary interest. As Edwards (1996; 2002) described, the shape of the surface along this line is determined by setting N equal to S in Equation 1, yielding the following equation after like terms are collected:

$$PAOW = b_0 + b_{c1}C_1 \dots b_{cn}C_n + (b_1 + b_2)S + (b_3 + b_4 + b_5)S^2 + e \quad (3)$$

Thus, the surface slope at $S = 0$ is represented by the compound coefficient on the first-order term (' S ' in Equation 3), that is: $(b_1 + b_2)$; and the surface curvature along the fit line is represented by the compound coefficient on the second-order term (' S^2 ' in Equation 3), that is: $(b_3 + b_4 + b_5)$. Recall that Hypothesis 2 suggests that psychological attachment to others at work will be greater when congruence occurs at high values as opposed to low values. For each relational need dimension, support is thus inferred if $(b_1 + b_2)$ is significantly positive and $(b_3 + b_4 + b_5)$ is not different than zero (Yang et al., 2008). In essence, this result would suggest that the influence of needs/supplies congruence at different values is a linear function, with fit at higher values being more influential than the experience of fit at lower values (see Edwards, 2002; Edwards & Rothbard, 1999). Support is also inferred if $(b_1 + b_2)$ is significantly positive and $(b_3 + b_4 + b_5)$ is significantly positive; thereby suggesting a positive slope at zero and upward curvature along the $N = S$ line. I also examined the response surfaces to ensure the appropriateness of these conclusions.

Sample analysis. Before continuing, it may be helpful to provide an illustration of these tests using the surface and statistical analyses shown in Figure 14 as an example. Recall from the discussion above that Figure 14 provides a hypothetical response surface. This surface was replicated from a study published in the *Journal of Occupational & Organizational Psychology* (Yang et al., 2008) that used polynomial regression and RSM

for hypothesis testing. For purposes here, the vertical axis in Figure 14 has been labeled ‘PAOW,’ reflecting individuals’ psychological attachment to others at work, while the axes along the bottom plane of the figure have been labeled ‘needs’ and ‘supplies’ respectively. Note also that the needs and supplies constructs are scale-centered, evident in the -3 to 3 ranges for each construct.

Recall from the discussion above that the shape of the surface along the $N = -S$ line is of specific interest for evaluating Hypothesis 1 and Research Question 1. For the hypothetical surface in Figure 14, its shape along the $N = -S$ line is depicted as a solid line connected by several dots and labeled ‘Significant curve.’ In essence, this solid line represents a two-dimensional ‘slice’ of the response surface which follows along the $N = -S$ line. Moving from left to right across the figure, a visual inspection suggests this line is characterized by an inverted parabolic function (i.e. an inverted U shape). More specifically, the line appears to be increasing as supplies increases toward needs, reach an inflection point close to the line of congruence (i.e. the $N = S$ line), and finally continue downward as supplies exceed needs. This visual pattern is moreover consistent with the statistical evidence reported below the surface – specifically, tests of $(b_1 - b_2)$ and $(b_3 - b_4 + b_5)$. Here, the contrast estimate for the compound coefficient $(b_1 - b_2)$ is not significantly different than zero, suggesting a zero slope at the intersection of the $N = -S$ and $N = S$ lines (i.e. the point 0,0 in the figure); and the contrast estimate for the compound coefficient $(b_3 - b_4 + b_5)$ is significantly negative, suggesting downward curvature along the $N = -S$ line. As noted above, this combination of findings suggests support for Hypothesis 1 – that is, psychological attachment to others at work increases as supplies increase toward requisite need levels. With respect to Research Question 1, it

appears the presence of excess supplies may have detrimental effects on individuals' psychological attachment to others at work – in other words, as supplies exceed needs, individuals' psychological attachment to others at work is decreasing.

Recall also that the shape of the surface along the $N = S$ line is of specific interest for evaluating Hypothesis 2. For the hypothetical surface in Figure 14, its shape along the $N = S$ line is depicted as a dashed line and labeled 'Significant oblique.' In essence, this dashed line represents a two-dimensional 'slice' of the response surface which follows along the $N = S$ line. A visual inspection moving from front to back in the figure – in other words, from point -3,-3 to point 3,3 – suggests that the dashed line is characterized essentially by an increasing linear function. This suggests higher levels of psychological attachment to others at work at high values of needs/supplies congruence (e.g., at the point 3,3) compared to low values of needs/supplies congruence (e.g., at the point -3,-3). This is further supported by the statistical evidence reported below the surface – specifically, tests of $(b_1 + b_2)$ and $(b_3 + b_4 + b_5)$. Here, the contrast estimate for the compound coefficient $(b_1 + b_2)$ is significantly positive, suggesting an increasing slope at the intersection of the $N = -S$ and $N = S$ lines (i.e. the point 0,0 in the figure); and the contrast estimate for the compound coefficient $(b_3 + b_4 + b_5)$ is not significantly different than zero, suggesting no curvature along the $N = S$ line. Together, these findings support Hypothesis 2 as fit at high values results in greater levels of psychological attachment to others at work than fit at low values.

Methodology: Direct effects. Recall that Hypotheses 3 and 5 reflect direct effect tests for the influence of individuals' psychological attachment to others at work on organizational commitment and work engagement. These tests were conducted using

hierarchical regression with ordinary least squares as the estimation method. To determine its unique influence on organizational commitment and work engagement above that of the covariates (organizational tenure, POS, and supplementary PO fit), psychological attachment to others at work was added in step 2 of the hierarchical regression analysis, while the covariates were entered collectively in step 1.

Methodology: Mediated effects. Hypothesis 4 and Hypothesis 6 constitute tests of mediated effects for psychological attachment to others at work – specifically, that psychological attachment to others at work would mediate the influence of relational need fulfillment on organizational commitment and work engagement. As discussed above, these effects were furthermore expected across each of the five relational need dimensions.

As a precursor to testing for mediation, because individuals' experience of relational need fulfillment is represented by a composite of five terms capturing the joint effects of needs and supplies (see Equation 1), I first created a block variable as a surrogate for these five terms (Heise, 1972; Marsden, 1982). Block variables are used to summarize the composite effects of a set of conceptually related variables, particularly when a set of variables contains non-linear and/or interactive terms, as was the case here. In essence, a block variable represents a “weighted linear composite of the variables that constitute the block, in which the weights are the estimated regression coefficients for the variables in the block” (Edwards & Cable, 2009, p. 660). Coefficients on any other model terms are not affected when a block variable is used in place of a set of terms, and

the total variance explained for a dependent variable by the set of terms is the same as the total variance explained by the block variable.¹⁶

Using a block variable as representative of relational need fulfillment, therefore, I examined Hypotheses 4 and 6 by testing for the significance of the indirect effect of relational need fulfillment on organizational commitment and work engagement for each of the five dimensions. However, because the relational need fulfillment block variable encompasses both linear and non-linear terms, I was unable to apply traditional procedures for assessing mediation (see MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002 for a review). I thus examined the significance of the indirect effect using bias-corrected confidence intervals constructed from 1,000 bootstrapped samples (c.f., Cable & Edwards, 2004 for a similar research design). Additionally, I allowed the direct influence of relational need fulfillment on the outcome variables (organizational commitment and work engagement) to be freely estimated in the second stage of the mediation analyses to allow for a more conservative estimate of indirect effects.

Methodology: Moderated effects. Finally, Hypothesis 7 and Research Question 2 each constitute moderated effect tests. As such, I used hierarchical moderated regression to examine these tests, with a multiplicative interaction term entered as the last step in the model. Following Aiken and West (1991), I centered both the independent variable (psychological attachment to others at work) and moderating variable (relational-interdependent self-construal) prior to constructing the interaction term. This process allowed for a clearer interpretation of any significant interaction effects (Cohen et al., 2003).

¹⁶ A block variable is also known as a sheaf coefficient.

Results: Polynomial regression and response surface methodology. Parameter estimates derived from the polynomial regression analyses for each of the five relational need dimensions are presented in Table 23. For each analysis, organizational tenure was entered as a covariate along with the five terms shown in Equation 1 and discussed above. Drawing on these parameter estimates, Figures 15(a)-19(a) display the corresponding three-dimensional response surfaces. Additionally, Figures 15(b)-19(b) show a two-dimensional 'slice' illustrative of the $N = -S$ line for each response surface, while Figures 15(c)-19(c) display a two-dimensional 'slice' illustrative of the $N = S$ line. As discussed above, statistical tests for Hypotheses 1-2 and Research Question 1 are conducted along each of these specific lines. I thus provide the corresponding two-dimensional portrayals of the $N = -S$ and $N = S$ lines for each respective response surface as a convenience for the reader.

Table 23: Polynomial Regression Estimates for the Five Relational Need Dimensions

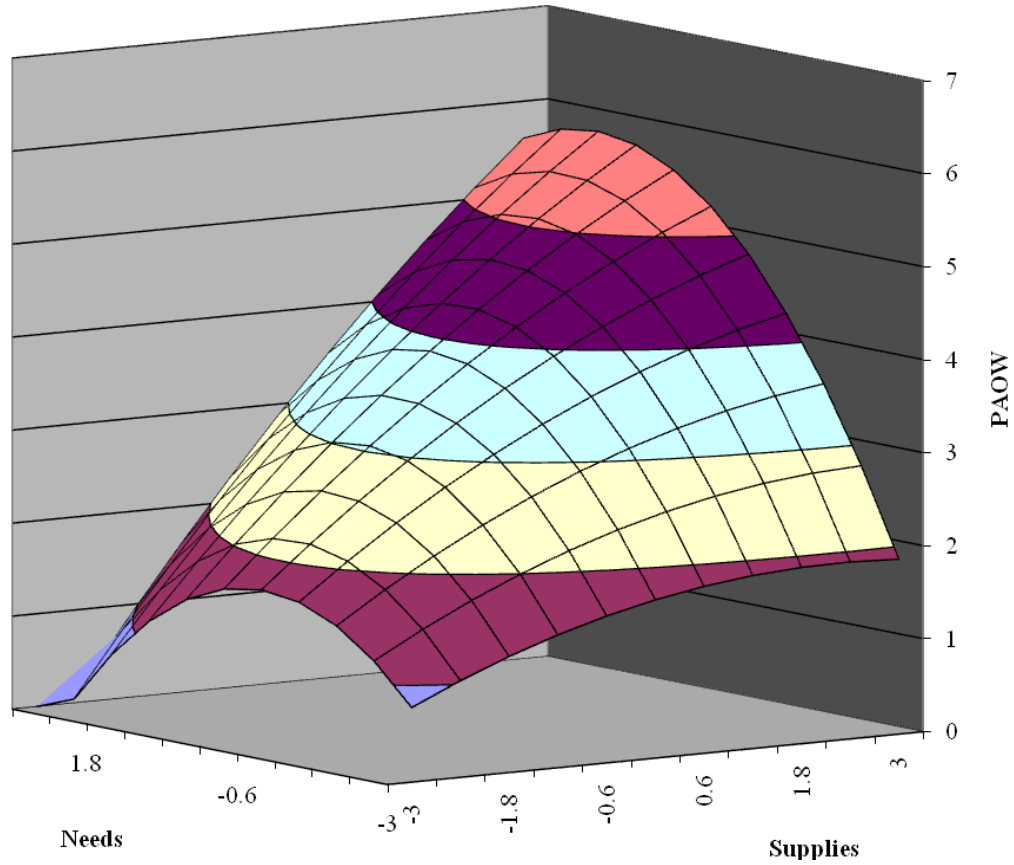
Variable	Task Accomplishment		Career Development		Sense Making		Provision of Meaning		Personal Support		
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>	
Control variable											
Organizational tenure	.06	2.43*	.10	4.56***	.08	3.78***	.05	2.39*	.05	2.26*	
Needs/Supplies constructs											
Supplies	.60	5.63***	.44	7.61***	.52	6.72***	.62	7.23***	.53	11.49***	
Needs	.20	2.19*	.10	1.79	.12	1.52	.11	1.42	.15	3.22**	
Supplies ²	-.04	-1.12	.01	0.53	-.02	-0.80	-.00	-0.05	-.07	-2.52*	
Supplies x Needs	.14	2.23*	.06	2.04*	.15	3.07**	.07	1.24	.16	3.97***	
Needs ²	-.17	-3.97***	.00	0.08	-.07	-1.95	-.07	-1.96*	-.08	-3.03**	
Regression statistics											
<i>R</i> ²	.38		.47		.48		.43		.57		
Adjusted <i>R</i> ²	.37		.46		.47		.42		.57		

Note: All estimates are unstandardized.

Dependent variable = Psychological attachment to others at work.

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

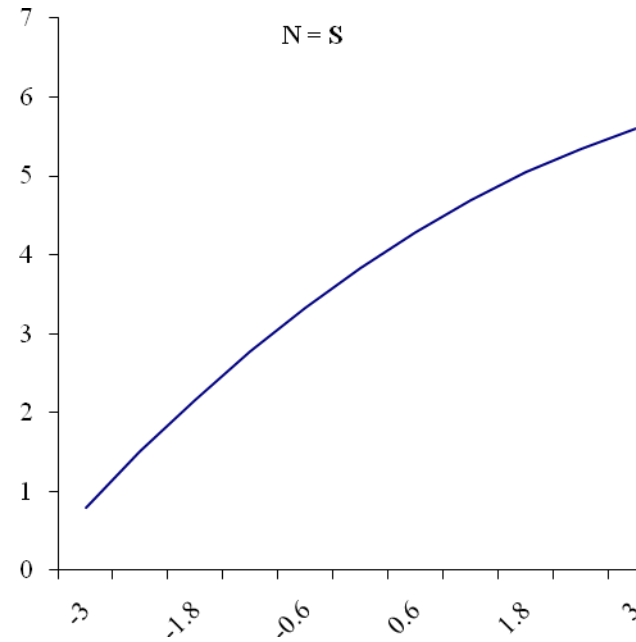
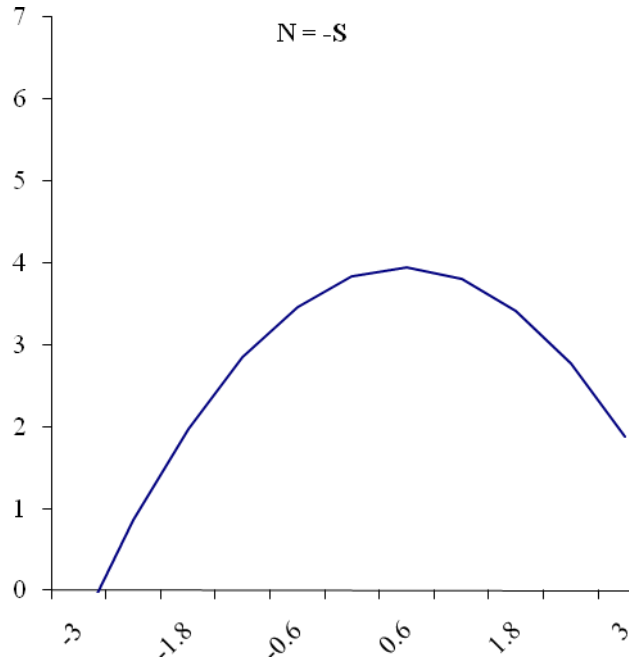
Figure 15(a): Response Surface for the Task Accomplishment Dimension



Along $N = -S$ line: Slope at zero = 0. Downward curvature, $p < .01$.

Along $N = S$ line: Slope at zero, $p < .001$. No significant curvature.

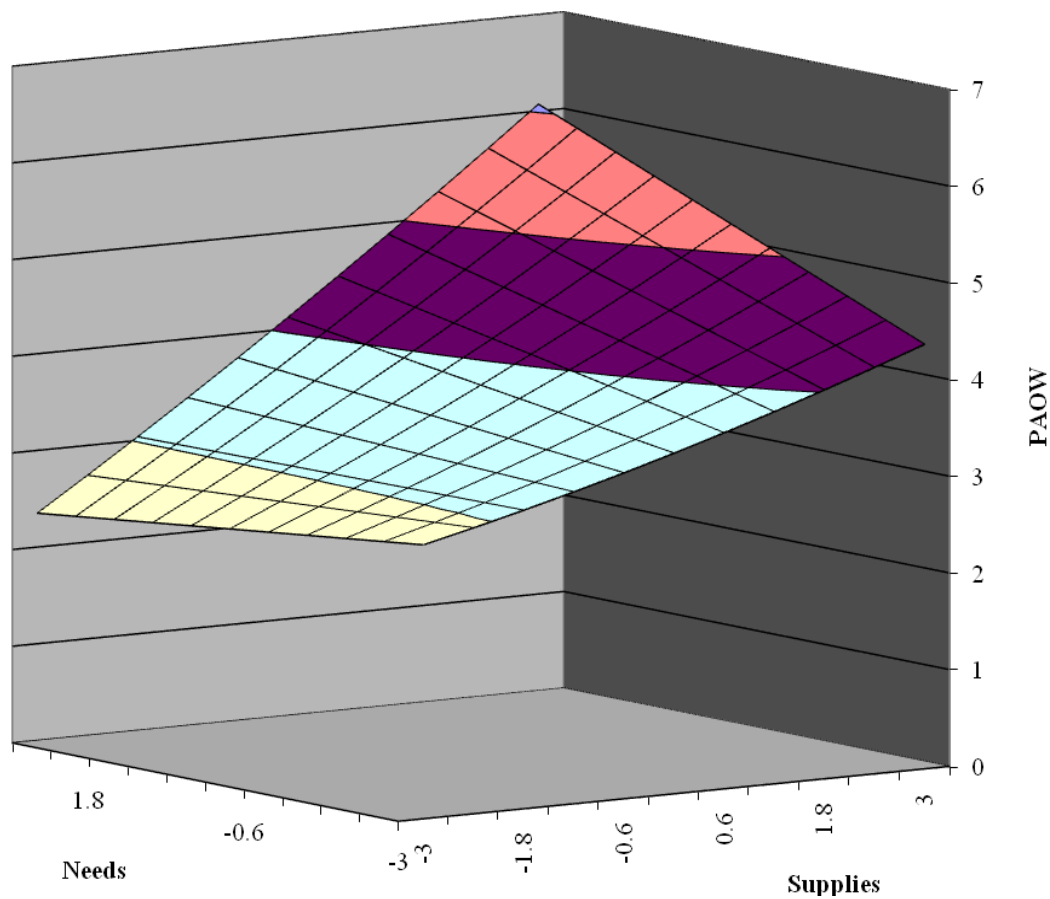
Figures 15(b)(c): Two-dimensional Slices of the $N = -S$ Line and $N = S$ Line for the Task Accomplishment Response Surface



Along $N = -S$ line: Slope at zero = 0. Downward curvature, $p < .01$.

Along $N = S$ line: Slope at zero, $p < .001$. No significant curvature.

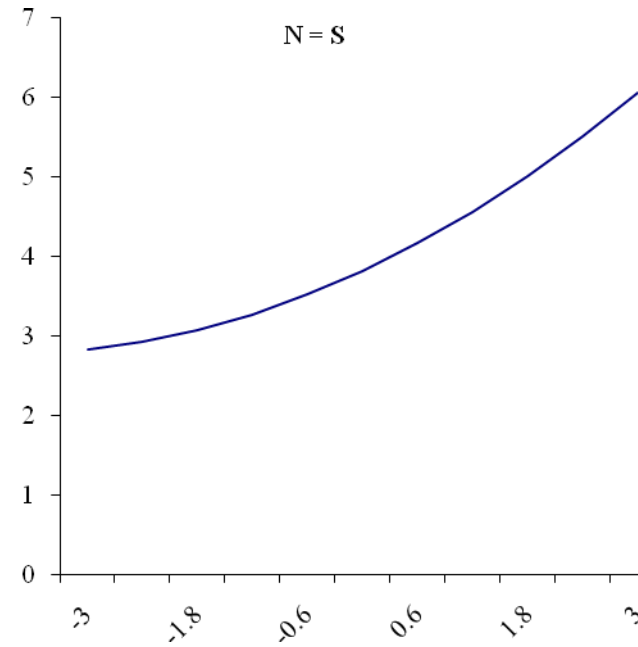
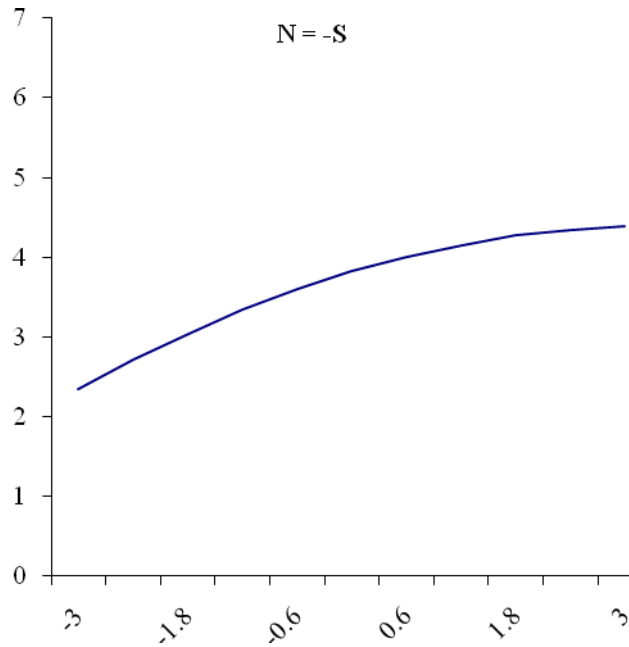
Figure 16(a): Response Surface for the Career Development Dimension



Along $N = -S$ line: Slope at zero, $p < .001$. No significant curvature.

Along $N = S$ line: Slope at zero, $p < .001$. Upward curvature, $p < .001$.

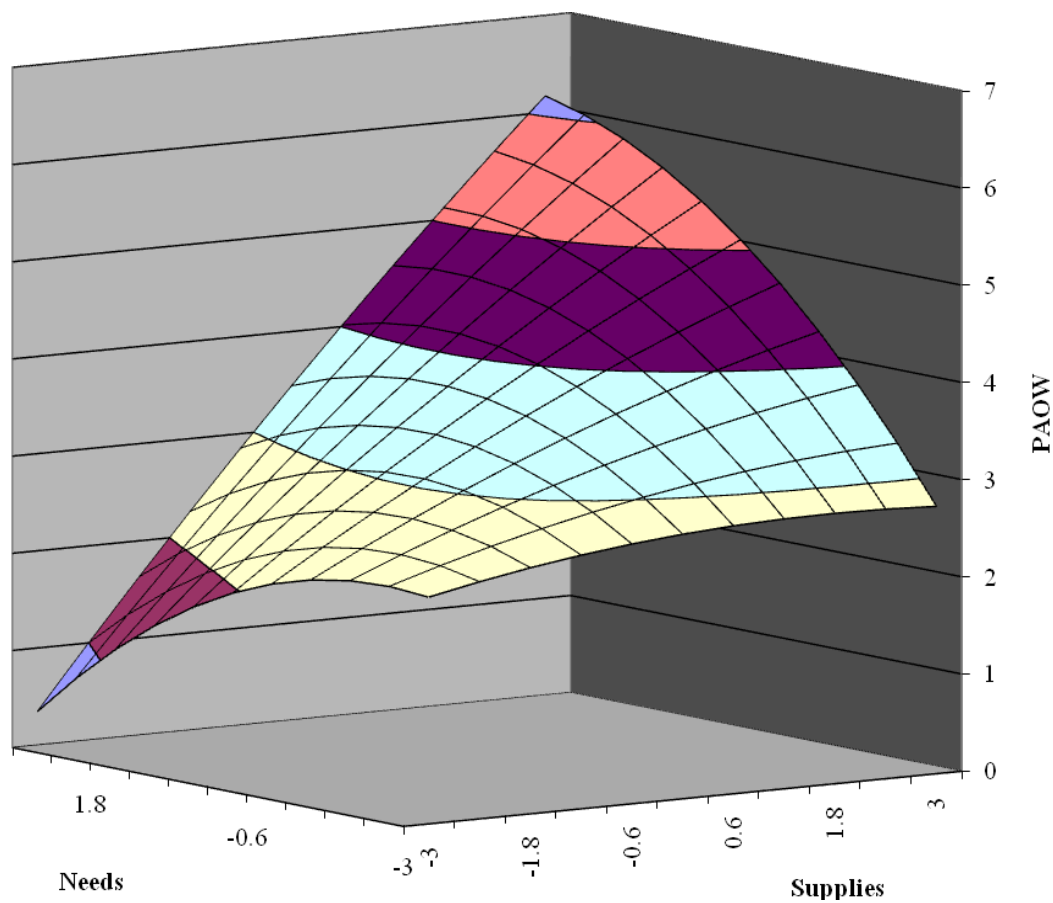
Figures 16(b)(c): Two-dimensional Slices of the N = -S Line and N = S Line for the Career Development Response Surface



Along N = -S line: Slope at zero, $p < .001$. No significant curvature.

Along N = S line: Slope at zero, $p < .001$. Upward curvature, $p < .001$.

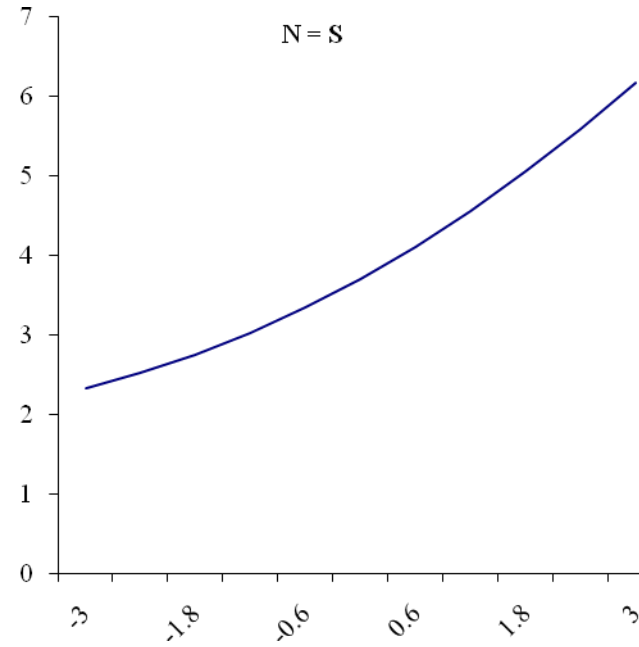
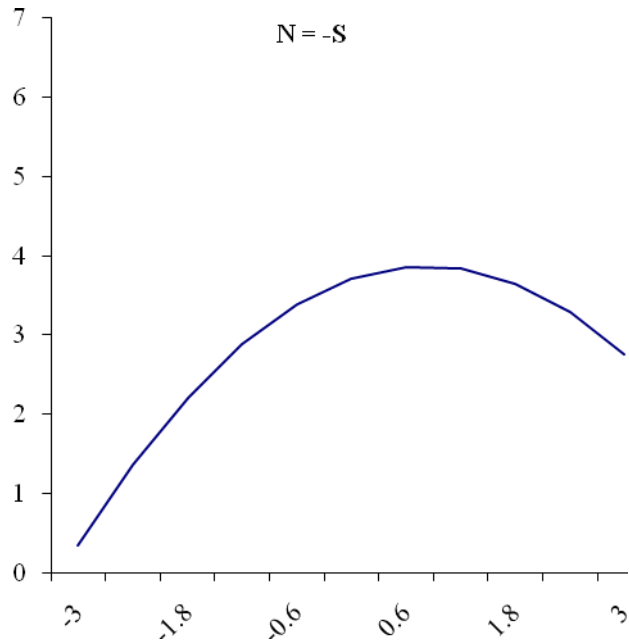
Figure 17(a): Response Surface for the Sense Making Dimension



Along $N = -S$ line: Slope at zero, $p < .01$. Downward curvature, $p < .01$.

Along $N = S$ line: Slope at zero, $p < .001$. No significant curvature.

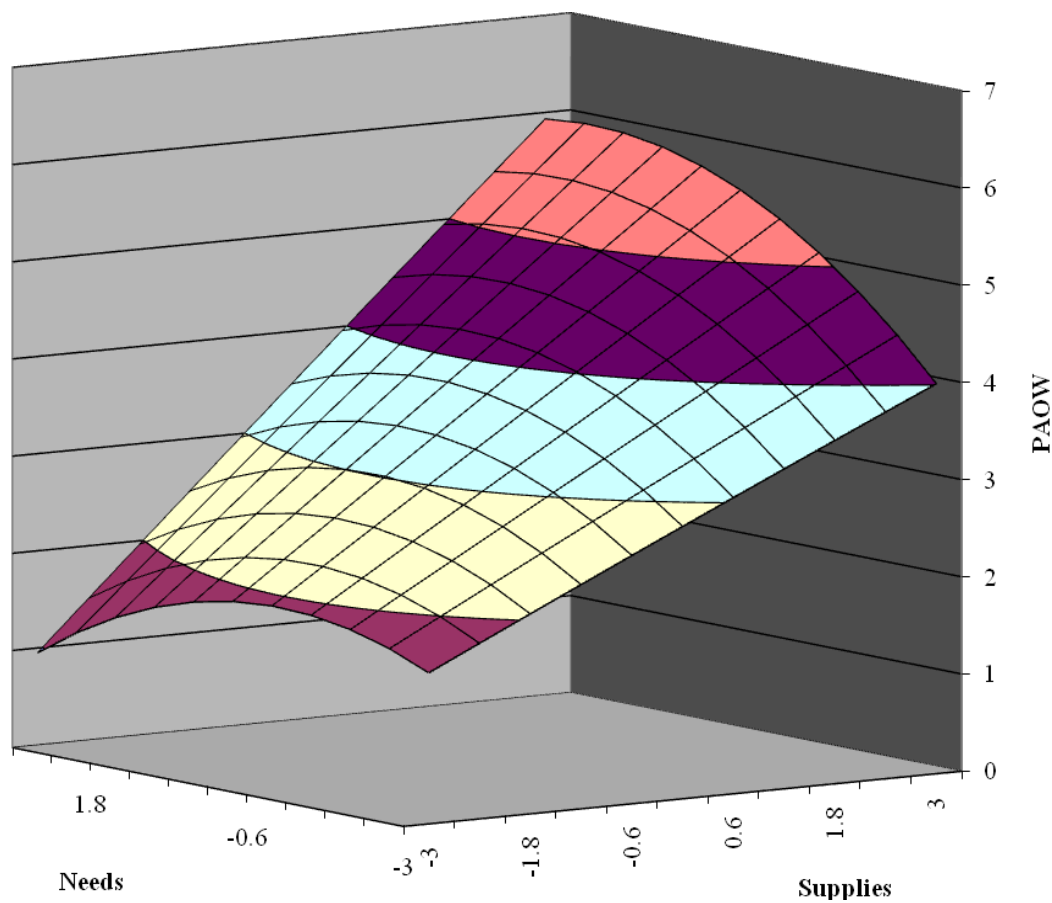
Figures 17(b)(c): Two-dimensional Slices of the N = -S Line and N = S Line for the Sense Making Response Surface



Along N = -S line: Slope at zero, $p < .01$. Downward curvature, $p < .01$.

Along N = S line: Slope at zero, $p < .001$. No significant curvature.

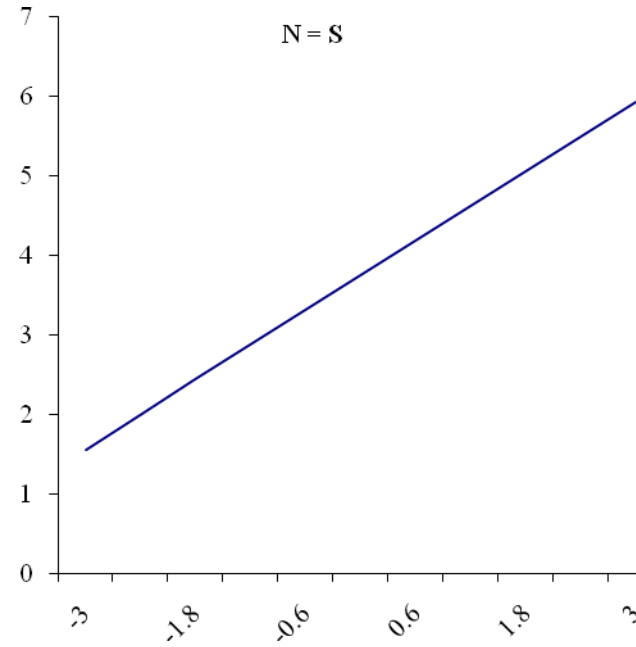
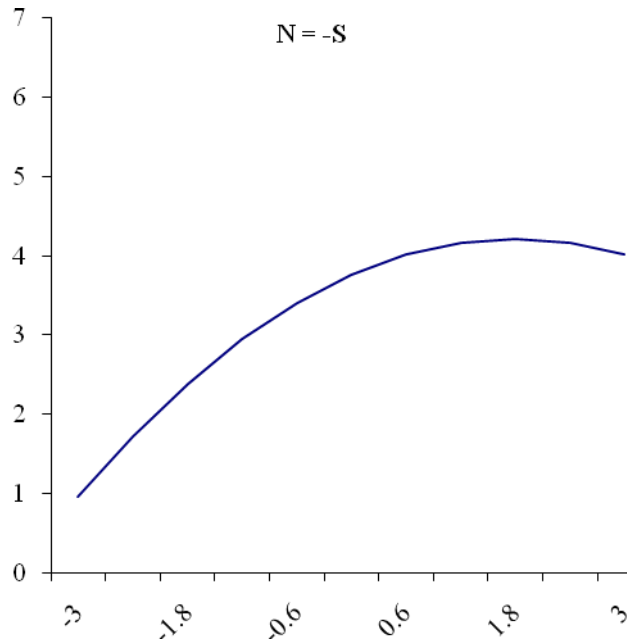
Figure 18(a): Response Surface for the Provision of Meaning Dimension



Along $N = -S$ line: Slope at zero, $p < .001$. No significant curvature.

Along $N = S$ line: Slope at zero, $p < .001$. No significant curvature.

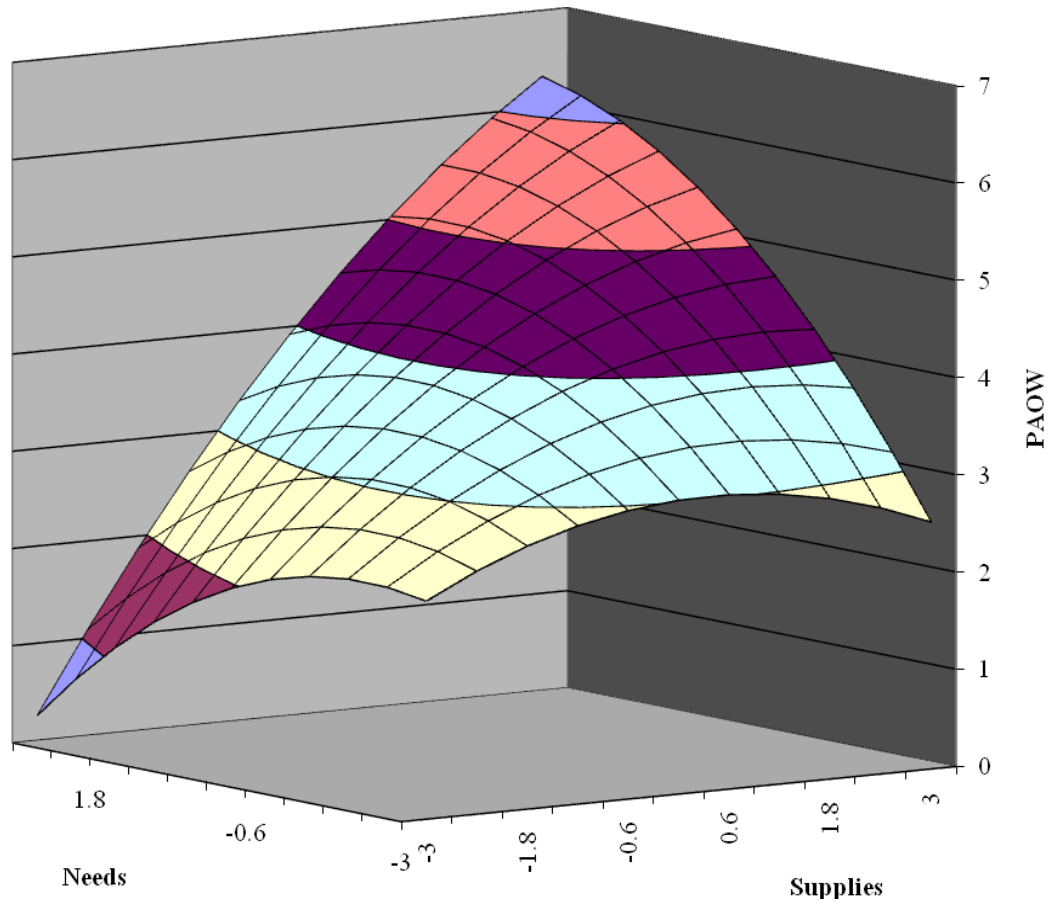
Figures 18(b)(c): Two-dimensional Slices of the N = -S Line and N = S Line for the Provision of Meaning Response Surface



Along N = -S line: Slope at zero, $p < .001$. No significant curvature.

Along N = S line: Slope at zero, $p < .001$. No significant curvature.

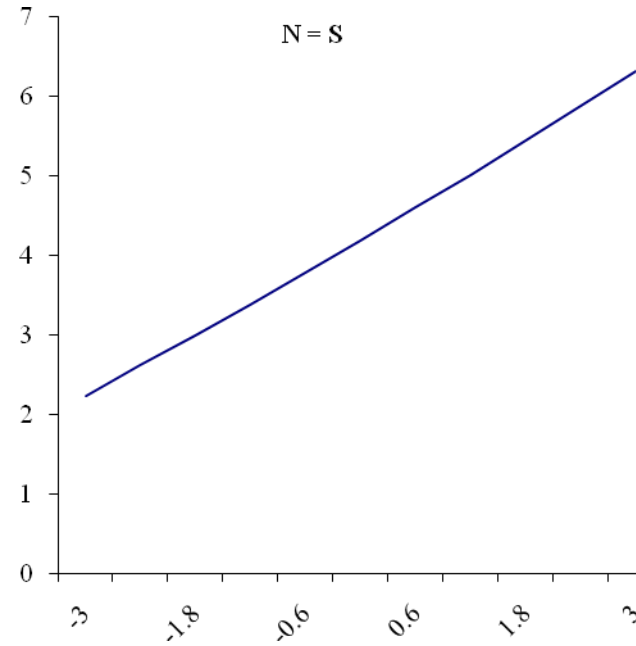
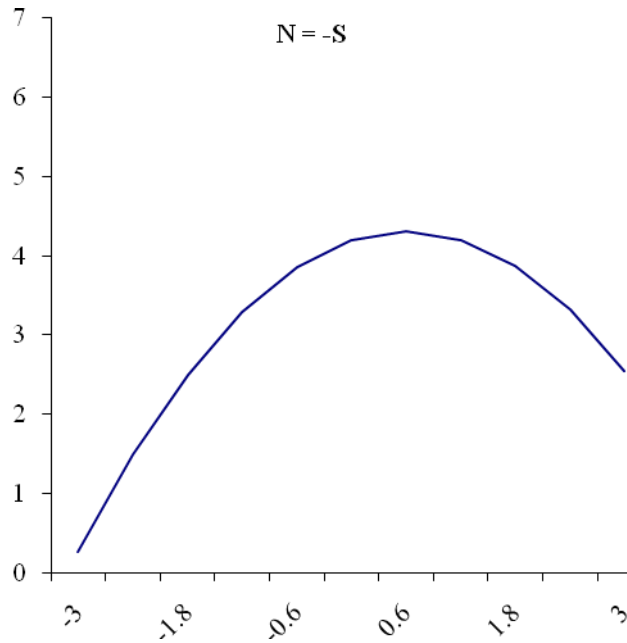
Figure 19(a): Response Surface for the Personal Support Dimension



Along $N = -S$ line: Slope at zero, $p < .001$. Downward curvature, $p < .001$.

Along $N = S$ line: Slope at zero, $p < .001$. No significant curvature.

Figures 19(b)(c): Two-dimensional Slices of the N = -S Line and N = S Line for the Personal Support Response Surface



Along N = -S line: Slope at zero, $p < .001$. Downward curvature, $p < .001$.

Along N = S line: Slope at zero, $p < .001$. No significant curvature.

With respect to the specific tests of interest, recall first that Hypothesis 1 posited that for each relational need dimension, individuals' psychological attachment to others at work would increase as supplies increase toward requisite need levels. As discussed above, this was assessed by examining each response surface along the $N = -S$ line, and more specifically by conducting tests of statistical significance for the compound coefficients ($b_1 - b_2$) and ($b_3 - b_4 + b_5$). Altogether, results indicated that individuals' psychological attachment to others at work increased as supplies approached requisite needs on each of the five dimensions, thereby inferring support for Hypothesis 1. Specifically, for the task accomplishment dimension, the slope at the point of congruence along the $N = -S$ line was not significantly different than zero ($p > .01$ for the contrast $b_1 - b_2 = 0$)¹⁷ and the $N = -S$ line showed significant downward curvature ($p < .01$ for the contrast $b_3 - b_4 + b_5 = 0$ with a resulting negative contrast estimate); for both the career development and provision of meaning dimensions, the slope at the point of congruence along the $N = -S$ line was significantly positive ($p < .001$ for the contrast $b_1 - b_2 = 0$ with resulting positive contrast estimates) and the $N = -S$ line showed no significant curvature ($p > .01$ for the contrast $b_3 - b_4 + b_5 = 0$); for the sense making dimension, the slope at the point of congruence along the $N = -S$ line was significantly positive ($p < .01$ for the contrast $b_1 - b_2 = 0$ with a resulting positive contrast estimate) and the $N = -S$ line showed significant downward curvature ($p < .01$ for the contrast $b_3 - b_4 + b_5 = 0$ with a resulting negative contrast estimate); and finally for the personal support dimension, the

¹⁷ As shown in Table 24, this contrast estimate for the slope at the point of congruence along the $N = -S$ line for the task accomplishment dimension was significant at $p < .05$. This was the only instance in which adopting a more conservative $p < .01$ alpha level impacted findings for statistical significance. However, it should be noted that even had an alpha level of $p < .05$ been maintained, *substantive* conclusions regarding support for Hypotheses 1 and 2 would not have changed.

slope at the point of congruence along the $N = -S$ line was significantly positive ($p < .001$ for the contrast $b_1 - b_2 = 0$ with a resulting positive contrast estimate) and the $N = -S$ line showed significant downward curvature ($p < .001$ for the contrast $b_3 - b_4 + b_5 = 0$ with a resulting negative contrast estimate). Table 24 summarizes these tests.

Additionally, a visual inspection of Figures 15(b)-19(b) confirms these statistical tests pertaining to Hypothesis 1. As can be seen in each two-dimensional figure portraying the shape of the surfaces along the $N = -S$ line, an increasing function exists as the line approaches zero. This pattern can likewise be seen in each three-dimensional surface displayed in Figures 15(a)-19(a) respectively.

Table 24: Contrast Estimates for the Shape of Responses Surfaces along the N = -S and N = S Lines

Variable	N = -S		N = S	
	$b_1 - b_2$	$b_3 - b_4 + b_5$	$b_1 + b_2$	$b_3 + b_4 + b_5$
Relational need dimension				
Task accomplishment	.40 (.17) [†]	-.35 (.12) [*]	.80 (.10) ^{**}	-.07 (.04)
Career development	.34 (.11) [*]	-.05 (.39)	.54 (.04) ^{**}	.08 (.02) ^{**}
Sense making	.40 (.14) [*]	-.24 (.09) [*]	.64 (.07) ^{**}	.05 (.03)
Provision of meaning	.51 (.14) ^{**}	-.14 (.10)	.73 (.08) ^{**}	-.01 (.03)
Personal support	.38 (.09) ^{**}	-.31 (.08) ^{**}	.67 (.03) ^{**}	.01 (.02)

Note: All estimates are unstandardized with standard errors in parentheses. These estimates are used to examine Hypothesis 1, Hypothesis 2, and Research Question 1.

Dependent variable = Psychological attachment to others at work.

[†] $p < .05$. * $p < .01$. ** $p < .001$.

Recall next that Hypothesis 2 posited that for each relational need dimension, psychological attachment to others at work would be greater when supplies and needs are both high as opposed to both low. Hypothesis 2 was assessed by examining each response surface along the $N = S$ line, and more specifically by conducting tests of statistical significance for the compound coefficients $(b_1 + b_2)$ and $(b_3 + b_4 + b_5)$. For the task accomplishment, sense making, provision of meaning, and personal support dimensions, the slope at zero along the $N = S$ line was significantly positive ($p < .001$ for the contrast $b_1 + b_2 = 0$ with resulting positive contrast estimates) and the $N = S$ line showed no significant curvature ($p > .01$ for the contrast $b_3 + b_4 + b_5 = 0$). Additionally, for the career development dimension, the slope at zero along the $N = S$ line was significantly positive ($p < .001$ for the contrast $b_1 + b_2 = 0$ with a resulting positive contrast estimate) and the $N = S$ line showed significant upward curvature ($p < .001$ for the contrast $b_3 + b_4 + b_5 = 0$ with a resulting positive contrast estimate). Altogether, these results indicate support for Hypothesis 2, as across dimensions, the experience of needs/supplies congruence at high values was more meaningful in shaping individuals' psychological attachment to others at work than the experience of congruence at low levels. These results are also summarized in Table 24.

Again, a visual inspection of Figures 15(c)-19(c) further confirms these statistical tests for Hypothesis 2. For Figures 15(c), 17(c), 18(c), and 19(c) respectively (corresponding to the task accomplishment, sense making, provision of meaning, and personal support dimensions), a clear linear trend is evident, thus confirming the increasing function along the $N = S$ line. For Figure 16(c) (corresponding to the career development dimension), an increasing trend is again evident; however, the upward

curvature uncovered in the statistical test above can also be seen. Each of these findings can also be viewed in the three-dimensional surfaces displayed in Figures 15(a)-19(a).

In contrast to Hypotheses 1 and 2 which suggested a consistent pattern of effects across the task accomplishment, career development, sense making, provision of meaning, and personal support dimensions; Research Question 1 explored whether for each dimension independently, individuals' psychological attachment to others at work would increase, decrease, or remain constant as supplies exceeded requisite need levels. As noted above, Research Question 1 was assessed by examining the curvature of the response surfaces along the $N = -S$ line for each dimension (i.e. contrast of $b_3 - b_4 + b_5 = 0$) along with the surfaces themselves. In visual terms, therefore, of particular interest for Research Question 1 is the shape of the surfaces along the $N = -S$ line to the right of the intersection with the congruence line (i.e. $N = S$ line) in Figures 15(a)-19(a).

Aligned with PE fit theory suppositions that the influence of excess supplies may differ across dimensions (Edwards, 1996; Edwards et al., 1998; French et al., 1982), several distinctive findings appeared concerning the influence of excess supplies on individuals' psychological attachment to others at work. First, for three dimensions – task accomplishment, sense making, and personal support, an inverted parabolic function (i.e. inverted U shape) clearly emerged. This suggests that the presence of excess supplies on these dimensions may in fact promote a *detaching* of sorts for individuals. In other words, individuals' may actually experience less psychological attachment to others at work in these situations. However, it is important to note an additional characteristic of the sense making and personal support dimensions as well – that is, the positive slope at the point of congruence along the $N = -S$ line. This is evident in the findings presented

in Table 24 and discussed above – specifically, the compound coefficient ($b_1 - b_2$), which denotes the slope along the $N = -S$ line at zero, was significantly positive for both of these dimensions. This can also be seen in Figures 17(b) and 19(b) inasmuch as the inflection point of each inverted parabolic function is to the right of zero. In essence, these findings suggest that for the sense making and personal support dimensions in particular, some level of supplies beyond requisite need levels may actually be *beneficial* in promoting individuals' psychological attachment to others at work before the reverse effect takes shape. In contrast, for the task accomplishment dimension, the slope at the point of congruence along the $N = -S$ line was not significantly different than zero, which suggests that the value of supplies in positively influencing individuals' psychological attachment to others at work may in fact be maximized at the point of needs/supplies congruence.¹⁸ Again, this can be seen in Figure 15(c), which shows the inflection point of the inverted parabolic function very close to the zero point.

Further analysis incorporating the 'first principal axes' of these response surfaces allows for greater insight into the specific values at which psychological attachment to others at work may be maximized. Specifically, for any concave response surface, the first principal axis is defined as the line in which downward curvature in the surface is minimized (Edwards, 2002; Edwards & Parry, 1993). For each of the task accomplishment, sense making, and personal support response surfaces, therefore, the equation of the line for the first principal axis may be used to identify the inflection point of the inverted parabolic function along the $N = -S$ line by determining the intersection of

¹⁸ It should be reiterated, however, that this slope was positive in direction, as well as was significantly different than zero at $p < .05$.

the two lines (see Edwards, 2002 for a detailed discussion). Analyses revealed that for the sense making dimension, psychological attachment to others at work was maximized when supplies exceeded needs by .59 units (inflection point at .59,-.59 on the N = -S line), while for the personal support dimension, psychological attachment to others at work was maximized when supplies exceeded needs by .55 units (inflection point at .55,-.55 on the N = -S line).

In contrast to the task accomplishment, sense making, and personal support dimensions, a clear linear function emerged for the career development dimension, suggesting that supplies, even if in excess of requisite need levels, continues to positively influence individuals' psychological attachment to others at work. Finally, while the provision of meaning dimension also showed an overall linear trend based on statistical evidence, there does appear to be some indication of an asymptotic effect occurring at levels where supplies greatly exceeds needs. This can be seen in both Figure 18(a) and 18(b).

Results: Direct effects. Hypothesis 3 and Hypothesis 5 examined the direct effect of individuals' psychological attachment to others at work on organizational commitment and work engagement respectively. Table 25 presents the results for these analyses. Specifically, as shown in Models 2 and 6 in Table 25, psychological attachment to others at work was a significant predictor of both organizational commitment ($\beta = .25, p < .001$) and work engagement ($\beta = .24, p < .001$), even beyond the influence of individuals' organizational tenure, POS, and perceptions of supplementary PO fit. Hypotheses 3 and 5 were thus supported.

Table 25: Regression Analysis Results for the Direct Effect of Psychological Attachment to Others at Work and the Moderating Effect of Relational-interdependent Self-construal

Variable	DV: Organizational Commitment				DV: Work Engagement			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Control variables								
Organization tenure	.16***	.13***	.13***	.13***	.11**	.09*	.09*	.09*
Perceived organizational support	.32***	.27***	.28***	.28***	.28***	.23***	.19***	.19***
Person-organization fit	.39***	.30***	.31***	.30***	.31***	.22***	.20***	.20***
Main effects								
Psychological attachment ^a		.25***	.28***	.29***		.24***	.16***	.15*
Relational self-construal ^b			-.09**	-.09*			.27***	.26***
Interaction								
Psychological attachment ^a x Relational self-construal ^b				-.02				.02
Regression statistics								
R^2	.41	.46	.47	.47	.28	.32	.38	.38
Adjusted R^2	.41	.46	.46	.46	.28	.32	.37	.37
ΔR^2	-	.05***	.01**	.00	-	.04***	.06***	.00

Note: Standardized coefficients are reported. These are OLS models. These values are used to examine Hypothesis 3, Hypothesis 5, Hypothesis 7, and Research Question 2.

^aPsychological attachment to others at work.

^bRelational-interdependent self-construal.

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

Results: Moderated effects. I next examined Hypothesis 7 and Research Question 2, each of which considered whether individuals' relational-interdependent self-construal influenced the hypothesized (and supported) direct relationship between psychological attachment to others and the primary study outcomes. Specifically, Hypothesis 7 posited that the relationship between individuals' psychological attachment to others at work and organizational commitment would be moderated by their relational-interdependent self-construal such that the relationship would be stronger for those with higher relational-interdependent self-construals. Recall also that Research Question 2 explored whether the relationship between individuals' psychological attachment to others at work and work engagement would be contingent on individuals' relational-interdependent self-construals. These moderated analyses were conducted prior to tests of Hypotheses 4 and 6, each of which examined mediated effects, given that the presence of significant moderated effects may suggest that conditional indirect effects be examined as well.

Results for these analyses are presented in Table 25 (Models 4 and 8). Specifically, Hypothesis 7, which again posited that the relationship between individuals' psychological attachment to others at work and organizational commitment would be moderated by their relational-interdependent self-construal, was not supported ($\beta = -.02$, $p > .05$). Likewise, Research Question 2, which again explored whether the relationship between individuals' psychological attachment to others at work and work engagement would be moderated by their relational-interdependent self-construal also demonstrated non-significant results ($\beta = .02$, $p > .05$). These results suggest that psychological attachment to others at work may play a meaningful role in shaping both individuals'

organizational commitment and work engagement regardless of the degree to which they define themselves in terms of their interpersonal relationships/roles.

Results: Mediated effects. Aligned with relational systems theory, Hypotheses 4 and 6 posited that individuals' psychological attachment to others at work mediates the relationship between experiences of relational need fulfillment (defined here in terms of needs/supplies congruence) and organizational commitment and work engagement respectively. Table 26 summarizes these results for each relational need dimension. Specifically, included in Table 26 are the standardized estimates for each stage of the mediation analysis, standardized indirect effects, and significance test results.

As shown in Table 26, the indirect effect of relational need fulfillment on organizational commitment and work engagement through psychological attachment to others at work was significant in all cases ($p < .01$ for each test), thereby supporting both Hypotheses 4 and 6. The average standardized indirect effect (i.e. $\alpha*\beta$) across the five dimensions on organizational commitment (Hypothesis 4) was .21, while the average standardized indirect effect across the five dimensions on work engagement (Hypothesis 6) was .16. Additionally, the average reduction in the standardized direct effect from relational need fulfillment to organizational commitment across the five dimensions was .23 (range: .19 to .28), while the average reduction in the standardized direct effect from relational need fulfillment to work engagement was .15 (range: .13 to .19).

Table 26: Mediation Test Results for the Effect of Relational Need Fulfillment on Organizational Commitment and Work Engagement through Psychological Attachment to Others at Work

Mediated effect test ^d	Task Accomplishment			Career Development			Sense Making			Provision of Meaning			Personal Support		
	α^a	β^b	$\alpha^*\beta^c$	α^a	β^b	$\alpha^*\beta^c$	α^a	β^b	$\alpha^*\beta^c$	α^a	β^b	$\alpha^*\beta^c$	α^a	β^b	$\alpha^*\beta^c$
Relational need fulfillment to organizational commitment	.61	.37	.23*	.68	.27	.18*	.68	.33	.22*	.65	.29	.19*	.75	.32	.24*
Relational need fulfillment to work engagement	.61	.26	.16*	.68	.24	.16*	.68	.22	.15*	.65	.20	.13*	.75	.28	.21*

Note: Standardized estimates are reported. Significance tests for the indirect effect ($\alpha^*\beta$) are based on bias-corrected confidence intervals constructed using 1,000 bootstrap samples. These values are used to examine Hypothesis 4 and Hypothesis 6.

^a α = Standardized path coefficient from the ‘independent variable’ to psychological attachment to others at work.

^b β = Standardized path coefficient from psychological attachment to others at work to the ‘dependent variable.’

^c $\alpha^*\beta$ = Indirect effect.

^d The ‘independent variable’ is listed first and the ‘dependent variable’ is listed second.

† $p < .05$. * $p < .01$.

Summary of Dissertation Study Results

Using a sample of $N = 538$ full-time, organizationally employed individuals, results for the dissertation study generally offered support for the theoretical model presented in Chapter 3. In total, six of seven hypotheses received support, and findings provided insight into each of the two research questions identified.

Specifically, results of the polynomial regression and response surface analyses first offered support for the congruence hypotheses. In particular, Hypothesis 1, which posited that individuals' psychological attachment to others at work would increase as supplies from their relational constellation increase towards requisite need levels, was supported across each of the five relational need dimensions. Likewise, Hypothesis 2, which suggested that individuals' psychological attachment to others at work would be greater when supplies from their relational constellation and requisite need levels were both high than when both were low, was also supported across each of the five dimensions.

Following the model, Hypotheses 3-6 were additionally supported. In terms of direct effects, psychological attachment to others at work predicted both organizational commitment (Hypothesis 3) and work engagement (Hypothesis 5). Psychological attachment to others at work also mediated the relationship between experiences of relational need fulfillment and organizational commitment (Hypothesis 4), as well as the relationship between experiences of relational need fulfillment and work engagement (Hypothesis 6). These mediating effects held for experiences of fulfillment across each of the five relational need dimensions.

In contrast to predictions offered in Hypothesis 7, however, individuals' relational-interdependent self-construal did not amplify the relationship between their reports of psychological attachment to others at work and organizational commitment. Similarly, individuals' relational-interdependent self-construal did not moderate the relationship between psychological attachment to others at work and work engagement (Research Question 2). These findings indicate that the relationship between individuals' psychological attachment to others at work and their work attitudes do not vary based on the degree to which they define themselves in terms of their relationships with others.

These findings, as well as their implications for theory, research, and practice are discussed in greater detail in Chapter 6.

Chapter 6: Discussion and Conclusions

Work is an inherently social experience for virtually every individual. We do not work in a vacuum; rather, most of us depend heavily on our interactions with others in accomplishing our work tasks every day. Emerging theory suggests that the quality of these interactions and the relationships we develop may also have implications for our attitudes toward where we work and the work we do (Eby & Allen, 2012). Despite this, the study of workplace relationships has largely been relegated to the background in most organizational theory and research. We thus unfortunately know little about what the full implications of individuals' interpersonal experiences in the workplace may be (Ragins & Dutton, 2007). Indeed, Kahn (2007, p. 189-190) points out that if scholars are to truly comprehend the utility of workplace relationships, theoretical models that place "relationships at the center rather than at the periphery of people's experiences at work" are compulsory.

In this dissertation, I integrated two theoretical perspectives – relational systems theory (Kahn, 1998; 2001; 2007) and person-environment (PE) fit theory (Edwards, 1992; 1996) – to construct a model which explains how employees' full array of interpersonal relationships at the workplace may contribute in the development of their organizational commitment and work engagement. Relational systems theory, which provided the primary foundation for this study's model, offers a needs-based perspective for understanding workplace relationships and their implications for employees. According to the theory, employees' commitment to their organization and engagement in their work occurs when they are embedded in a set of workplace relationships that meet their 'relational needs' (Kahn, 2007). As reviewed earlier, these relational needs exist across

five distinct, although conceptually related, dimensions: task accomplishment, career development, sense making, provision of meaning, and personal support. Kahn (2007) also presented the idea of psychological attachment to others at work, which involves the degree to which individuals feel personally connected to others within their workplace. He theorized that these feelings of interpersonal attachment are an underlying mechanism that link employees' experience of relational need fulfillment with their resulting organizational commitment and work engagement. In this study, I not only tested the basic tenets of relational systems theory, I also empirically developed and validated the psychological attachment to others at work construct, and demonstrated its utility as a mediator within relational systems theory.

Using a sample of 538 individuals working full-time in a wide range of industries and organizations throughout the United States, study findings offered overarching support for the key tenets of relational systems theory. Specifically, individuals' experiences of need fulfillment across the five relational need dimensions predicted both their organizational commitment and work engagement. In support of theoretical predictions, these effects were mediated by individuals' psychological attachment to others at work. Psychological attachment to others at work also explained significant variance in both organizational commitment and work engagement beyond the influence of long-standing 'person-organization' constructs, such as perceived organizational support and supplementary person-organization fit. Finally, these relationships were robust to individual differences in employees' relational-interdependent self-construal.

In the sections below, I discuss study findings in greater detail, as well as outline their implications for theory and research.

Relational Systems Theory: Foundational Hypotheses and Implications

Relational need fulfillment and psychological attachment to others at work.

The first key finding of this study is that, as predicted, individuals' psychological attachment to others at work increased as supplies from their relational constellation increased towards their requisite need levels. This was furthermore the case across each of the five relational need dimensions. In other words, findings illustrated that as the actual level of interpersonal input received from one's relational constellation (i.e. supplies) on a given dimension approached his/her desired level of interpersonal input (i.e. needs) on that same dimension, he/she developed greater levels of psychological attachment to others in the workplace. These findings support PE fit theory (Edwards, 1996), as well as corroborate research that negative affectivity and lower levels of well-being will result when individuals' appraise their needs as unfilled (Chatman, 1989; 1991; Diener, 1984; Edwards & Cooper, 1990). Here, findings suggest that when individuals' experience their relational needs as unfulfilled, they psychologically distance themselves from others at work.

Beyond the prescribed value for having one's relational needs met by their relational constellation, the results of this study also showed that the level at which needs/supplies congruence occurs can have implications for individuals' psychological attachment to others at work. Specifically, individuals reported greater psychological attachment to others at work when a particularly valued need was met than when a less valued need was met. These findings again support PE fit theory (Edwards et al., 1998; Edwards & Shipp, 2007) and are aligned with previous research demonstrating that when the degree of fit between needs and supplies is held constant, outcomes will generally be

higher when needs and supplies are both high as opposed to both low (e.g., Edwards & Van Harrison, 1993; Livingstone et al., 1997). These findings also support the notion that individuals place greater emphasis on some relational needs relative to others – a point acknowledged in relational systems theory (Kahn, 2007).

The mediating role of psychological attachment to others at work. Results from this study further illustrated a critical role for individuals' psychological attachment to others at work within the relational systems model. As noted above, psychological attachment to others at work mediated the relationship between individuals' experience of relational need fulfillment and both organizational commitment and work engagement. This further held across each of the five relational need dimensions, with medium to large effect sizes characterizing these indirect effects based on Cohen's (1988) classification. The influence of individuals' psychological attachment to others at work on both organizational commitment and work engagement additionally remained significant after controlling for employees' perceived organizational support and supplementary person-organization fit – constructs which have been shown to be among the strongest predictors of organizational commitment and work engagement in extant research (e.g., Kristof-Brown et al., 2005; Rhoades & Eisenberger, 2002; Rich et al., 2010; Saks, 2006). In short, empirical support for the mediating role of psychological attachment to others at work found in this study offers an important contribution to relational systems theory as it explicates the process by which employees' experiences of relational need fulfillment may promote these crucial employee outcomes.

Beyond supporting relational systems theory, study findings for individuals' psychological attachment to others at work also corroborate theory and research from

several other related areas. For example, links between individuals' psychological attachment to others at work and organizational commitment offers support to the notion that feelings of interpersonal attachment can generalize to influence feelings of attachment to the organization itself. Beyond relational systems theory, this 'generalization hypothesis' serves as a core theoretical premise in recent organizational identification research (Sluss & Ashforth, 2007; 2008; c.f., Sluss et al., 2012), as well as research in other domains (e.g., sociology – see Kasarda & Janowitz, 1974). Baumeister and Leary (1995), in their theory of belongingness, also offer the idea that individuals have both a drive to establish *and sustain* strong interpersonal attachments. Within a workplace context, their theorizing suggests that once strong attachments have been cultivated among employees, individuals may subsequently form attachments to their workplace as a mechanism which allows these relationships to be sustained (c.f., Holmes, 2000; Van Lange & Rusbult, 1995 for a related perspective in the study of close relationships). Links between psychological attachment to others at work and organizational commitment found in this study ultimately support this theoretical prediction.

Several scholars have also theorized that interpersonal relationships can promote 'conditions for engagement.' Kahn (1990; 1992; 2010), for example, suggests that when employees hold strong interpersonal attachments with others in their workplace, they will likely experience greater *meaning* in their work as a result (c.f., May et al., 2004). Rich et al. (2010, p. 621) explicitly state that "interpersonal relationships foster feelings of *psychological safety* that increases willingness to engage fully in work roles." Likewise, Avery and colleagues (2007) speculate that when individuals experience their workplace

relationships as harmonious, they feel greater levels of *psychological safety* as a result. Existing theory also suggests that high quality connections between individuals at work can promote *positive energy* (Quinn, 2007; Quinn & Dutton, 2005; Stephens et al., 2012), as well as can lead to physiological and neurological outcomes which provide for higher levels of *vitality* and *arousal*. These include a greater release of oxytocin in the body, increased levels of endogenous opiate peptides in the brain, and reduced systolic blood pressure (Dutton & Heaphy, 2003; Heaphy & Dutton, 2008). Altogether, these conditions – meaningfulness, psychological safety, positive energy, and physiological vitality and arousal – afford individuals a greater opportunity to more fully engage in their work (Marks, 1977).

Unfortunately, despite this previous theorizing on ‘conditions for engagements,’ direct empirical assessments of the relationship between interpersonal-related constructs and work engagement have been less frequent. Moreover, where any attention is given to interpersonal-related constructs, focus nearly exclusively falls on the role of social support as one of a collection of ‘job resources’ that may promote work engagement. As reviewed in Chapter 2, the theoretical basis for this relationship is primarily rooted in the Job Demands-Resource model (see Bakker & Demerouti, 2007; 2008; Demerouti et al., 2001), a heuristic framework suggesting that ‘job resources’ such as social support will directly influence employees’ work engagement (e.g., Schaufeli & Bakker, 2004; c.f., Christian et al., 2011 for a meta-analytic review). Results from this study, however, suggest a different theoretical process which further fleshes out this relationship – specifically, that the influence of social support may first promote individuals’ psychological attachment to those providing such support, which in turn may result in

increased levels of work engagement. This follows insomuch as personal support, which Kahn (2007) identifies as one of individuals' five core relational needs, relates closely to conceptualizations of emotion-focused social support predominately examined in extant work engagement research. In this sense, a relational systems perspective may better explain the process by which interpersonal-related constructs can influence employees' work engagement than is currently offered by existing lenses such as the Job Demands-Resource model, which is the most frequently applied theoretical framework in extant engagement research (Cole et al., 2012).

Theoretical and research implications for relational systems theory.

Collectively, these findings offer new insight into how workplace relationships may influence employees' work-related attitudes and behaviors. As described earlier, research on individuals' work relationships has traditionally been narrow in scope (Ferris et al., 2009), and at times has been criticized for undervaluing the role of relationships in employees' organizational life (see Bradbury et al., 2000). This stems, at least in part, from the fact that social exchange theory has served as the dominant theoretical paradigm in existing research (Cropanzano & Mitchell, 2005). Accordingly, reciprocity norms, a foundation of social exchange perspectives, have typically been described as a defining characteristic of most workplace relationships (Eisenberger et al., 2001). Exchange-based frameworks, however, constitute only one possible set of norms that may govern relationships in the workplace (Coyle-Shapiro & Conway, 2004; Coyle-Shapiro & Shore, 2007), and have been described as inadequate for assessing how high quality relationships may shape employees' attitudes and behaviors (see Ragins & Dutton, 2007; Sluss & Ashforth, 2008).

The theoretical model examined in this study, in contrast, was guided by relational systems theory (Kahn, 1998; 2007), which suggests an alternative theoretical framework for understanding workplace relationships and their implications for employees. As described above, relational systems theory offers a needs-based perspective for capturing relationship quality, and suggests that individuals' perceiving their relational needs as being met will develop a psychological attachment to those around them in the workplace, which may in turn generalize to influence their organizational commitment and work engagement (Kahn, 2007). These key theoretical tenets received broad empirical support in this study, suggesting that relational systems theory may indeed provide a useful lens for understanding how workplace relationships contribute toward shaping crucial employee attitudes and behaviors. Still, it is important to point out that this study is among the first empirical tests of relational systems theory in practice. As such, future research on its generalizability beyond the current sample is warranted.

Nonetheless, the overarching support for relational systems theory found in this study does highlight the utility of needs-based perspectives for understanding relationship quality. To date, organizational research centered on employee relationship needs has primarily surfaced within the field of mentoring (e.g., Mezias & Scandura, 2005; Young & Perrewé, 2004). However, several mentoring scholars have also observed that a focus on employee needs likely has utility for understanding relationship quality beyond the context of the protégé-mentor dyad specifically (e.g., Higgins, 2007; Higgins & Kram, 2001; Ragins & Verbos, 2007). By taking an interest in individuals' experience of relational need fulfillment across several core dimensions, relational systems theory

recognizes that the mere presence of relationships in the workplace is insufficient for driving attachment (Kahn, 2007). Rather, the degree to which the interpersonal input received from others at work satisfies their relational needs is paramount.

Future applications of needs-based perspectives for assessing relationship quality would additionally benefit from research at the dyadic level. As described earlier, relational systems theory takes an interest in an employee's constellation of workplace relationships – in other words, their full array of interpersonal relationships in the workplace, and the degree to which these individuals are collectively able to meet an employee's relational needs (Kahn, 2007). While this approach is beneficial inasmuch as it recognizes that interactions with numerous workplace constituents may simultaneously contribute to work-related outcomes for employees (Leiter & Maslach, 1988), such a broad focus does not allow for precise tests of the role of specific relationships in employees' experiences of need fulfillment. By taking a dyadic focus, on the other hand, future research can determine which specific relationships may contribute the most to employees' experiences of need fulfillment. This research could also assess which types of relationships best fulfill specific needs. A dyadic focus would additionally allow for tests of mutual need fulfillment, which is a characteristic of high quality work relationships (Halbesleben, 2012; Ragins & Dutton, 2007; Roberts, 2007). For example, as applied to mentoring, a dyadic approach could examine how a protégé contributes to fulfilling the relational needs of a mentor and vice versa (c.f., Fletcher & Ragins, 2007). A dyadic approach would be particularly appropriate for assessing the mutuality of meeting affective relational needs (e.g., provision of meaning and personal support). Mutual need fulfillment, though, may be less likely in the case of meeting instrumental

needs (e.g., task accomplishment and career development), particularly in hierarchical relationships. However, this would be an interesting topic for future research.

Applications of needs-based perspectives at the dyadic level also offer rich opportunities for future integration with social network analysis. While a strength of social network analysis is its ability to capture the often complex web of ties between an employee and others in the workplace (Borgatti & Halgin, 2011), the ability to accurately gauge the quality of specific ties through a network lens can be more challenging. Indeed, even long-standing theoretical traditions in social network research rely predominately on structural proxies as a means to characterize the nature and quality of ties between individuals (e.g., structural holes theory, Burt, 1992; strength of weak ties theory, Granovetter, 1973). Assessing how specific relationships within employees' networks contribute to their relational need fulfillment, however, may offer a useful perspective for capturing individuals' impressions of the value associated with specific network ties. In this sense, relational systems theory can provide an important complement to social network perspectives.

Finally, relational systems theory has implications for the study of 'positive relationships at work' (see Ragins & Dutton, 2007). Emerging theory from this field posits that, among employees, "social interactions will lead to closer relationships...to the extent that the quality of (an) interaction experience is *positive*" (Dumas et al., 2013, p.12). Or, put differently, employees will "feel more close to those with whom they have *rewarding...interactions*" (Dumas et al., 2013, p.11). In essence, these statements suggest that what *actually transpires* in one's interactions with others at work, as well as the *value* individuals assign to what actually transpires in these interactions, are critical to

understanding why individuals become attached to those around them (c.f., Berscheid, 1985 for a related perspective from the more general field of relationship science). These statements offered by Dumas and her colleagues provide a straightforward summation of the central tenet of much research concerning positive relationships at work – specifically, that *relationship quality matters*. However, these statements also beg an important question: ‘what, in fact, makes interactions between employees *positive, rewarding, or high quality*?’ Relational systems theory offers a needs-based perspective for examining this question.

Extensions to Relational Systems Theory: Findings and Implications

As described above, findings from this study offered overarching support for key model paths described in relational systems theory. However, I also explored several additional tests: whether the influence of individuals’ psychological attachment to others at work on study outcomes may be moderated by individual differences in employees’ relational-interdependent self-construal, and drawing on PE fit theory, whether there may be different implications for individuals having their relational needs ‘overmet’ versus ‘undermet’ by their relational constellation. Here I review the findings of these tests and their implications for theory and research.

The moderating role of relational-interdependent self-construals. In contrast to predictions (Hypothesis 7), individuals’ relational-interdependent self-construal did not strengthen the positive relationship found between psychological attachment to others at work and organizational commitment. Additionally, an exploration of Research Question 2 found that individuals’ relational-interdependent self-construal failed to moderate the relationship between psychological attachment to others at work and work engagement.

However, individuals' relational-interdependent self-construal was significantly associated with their psychological attachment to others at work ($r = .35, p < .001$, as displayed in Table 22); those who viewed themselves in terms of their interpersonal relationships (i.e. high relational-interdependent self-construal) were also more likely to report higher levels of psychological attachment to others at work. Despite this, the relationship between psychological attachment and the outcomes in this study was not affected by the individual's self-construal.

It is important to note that one difference between this study and prior research is that previous tests of the moderating role of relational-interdependent self-construal have most often focused on employees' connection with a single individual (e.g., supervisor – Johnson & Chang, 2008; Yang et al., 2012) or small number of individuals (e.g., immediate workgroup – Guan et al., 2011). In this study, however, the construct of interest was employees' psychological attachment to others at work – a new construct designed to capture individuals' overall assessment of interpersonal attachment in the workplace, which likely includes a wider range of individuals. Indeed, most respondents for this study reported that they regularly interacted with more than twelve individuals in their workplace, and nearly one-fourth indicated that they regularly interacted with more than 25 individuals. This more encompassing focus is aligned with relational systems theory's emphasis on an individual's relational constellation (Kahn, 1998; 2007). However, it may have played a role in the non-significant interaction effects found in this study. Future research could examine these relationships more closely.

Although I considered only individuals' relational-interdependent self-construal as a potential moderator in this study, future research should examine whether other

workplace and/or personal characteristics may moderate the relationships found here. With respect to workplace characteristics, for example, one construct which may be of particular interest is task interdependence. Task interdependence concerns the degree to which employees' work assignments require them to work interdependently with other individuals (Pearce & Gregersen, 1991). It is conceivable, for instance, that the degree to which individuals are required to work interdependently with others in completing their jobs may influence how they respond to experiences of incongruence on certain relational needs, particularly related to the task accomplishment dimension. Sluss and Ashforth (2008) also suggest that the potential for interpersonal attachments to generalize to influence perceptions of organizational attachment may be greater if individuals are required to work more interdependently with their colleagues. Applied in a relational systems model, therefore, task interdependence may have implications for the strength of the relationship between individuals' psychological attachment to others at work and organizational commitment.

In addition to task interdependence, future research could also consider the medium through which people communicate with others in the workplace. Some work relationships are 'virtual' or are conducted primarily on-line, whereas others are face-to-face. Future research could examine the role of relationship medium in need fulfillment. For example, it is likely that emotional needs are more likely to be filled in face-to-face relationships than in virtual relationships. Future research could also examine if the relationship between psychological attachment to others at work and organizational commitment is as strong in virtual relationships as compared to face-to-face relationships. Field theory (Lewin, 1943) suggests that an individual's attitudinal and/or behavioral

reactions to elements in one's environment are dependent on proximity. Since virtual relationships may be less proximal, it could be that these types of relationships may be less influential in shaping one's work-related attitudes than face-to-face relationships. This offers an interesting avenue for future research.

The presence of 'excess supplies' across relational need dimensions: A key point of divergence between relational systems theory and PE fit theory is their level of treatment for the construct 'need fulfillment.' Whereas relational systems theory suggests that the experience of having one's needs fulfilled by his/her relational constellation will result in desired outcomes (Kahn, 2007), PE fit theory offers an increased level of theoretical precision by focusing on an individual's appraisal of needs/supplies fit – that is, the congruence of one's internal standards (i.e. needs) and perceived environmental inputs (i.e. supplies) on a given dimension or need. By focusing on congruence, PE fit theory recognizes that addressing only the question 'are one's needs fulfilled?' may be insufficient for adequately capturing individuals' experiences. PE fit theory instead suggests that incongruence can be experienced in two directions – where needs are unmet by environmental supplies (see Hypothesis 1), and where needs are 'overmet' by environmental supplies (see Research Question 1; Edwards, 1996). This latter scenario concerns the presence of 'excess supplies' – in other words, the presence of supplies beyond requisite need levels.

As reviewed in Chapters 2 and 3, PE fit theory recognizes that when multiple need dimensions are of interest, as was the case here given the focus on five separate relational needs, differing implications for the presence of excess supplies is plausible (Edwards et al., 1998; Edwards & Shipp, 2007). As such, I examined the influence of

excess supplies on individuals' psychological attachment to others at work as a research question in this study.

The exploration of this research question revealed several distinct patterns of findings, and the findings differed by type of need. Specifically, for task accomplishment, sense making, and personal support needs, the presence of excess supplies had an overall *negative* influence on individuals' psychological attachment to others at work. In contrast, for career development needs, the presence of excess supplies had a *positive* influence on individuals' psychological attachment to others at work. Finally, for the provision of meaning dimension, the presence of excess supplies also had a generally *positive* influence on individuals' psychological attachment to others at work, although this positive influence diminished as the degree of excess supplies increased. I discuss these findings and their implications for future research in greater detail below.

Negative influences of excess supplies: Implications. As noted, results revealed that experiencing certain relational needs as 'overmet' may in fact lead to lower levels of interpersonal attachment with others in the workplace. Three such instances occurred: for interactions pertaining to the accomplishment of one's work tasks (i.e. task accomplishment), understanding or making sense out of workplace events (i.e. sense making), and receiving emotional support or caregiving (i.e. personal support).

Collectively, these findings suggest an important caveat when viewing relationship quality through a needs-based lens – that is, to only be concerned with 'need fulfillment' in a general sense does not offer a sufficient level of precision. Rather, for these three relational needs in particular, a more fine-grained theoretical approach is necessary which recognizes that receiving too much interpersonal input can be

detrimental for promoting desired employee outcomes. A focus on *congruence* offers a superior lens – what is most beneficial for an individual is to receive the specific levels of interpersonal input he/she *wants* or *desires*. This premise is aligned with overarching principles of PE fit theory (Edwards et al., 1998; Edwards et al., 2006). Indeed, without utilizing a PE fit lens in this study, these negative influences for the presence of excess supplies on psychological attachment to others at work would not have been recognized.

Although the present study examined differential outcomes as a function of excess supplies, it did not explore the particular reasons or dynamics underlying these relationships. Related research, however, offers some insights into the relationships explored in this research question. For example, Deelstra and colleagues (2003) suggested that interpersonal input related to work-related activities may promote feelings of inferiority and incompetence when such input is believed to be unwarranted. Likewise, several studies by Buunk, Peeters, and their colleagues (e.g., Buunk & Schaufeli, 1993; Peeters et al., 1995a; 1995b) have shown that feelings of inferiority can lead employees to both psychologically and physically distance themselves from others at the workplace. Subsequently, these feelings of inferiority and overall lower levels of well-being stemming from diminished self-esteem may lead individuals to distance themselves from other at work. This suggests that the presence of excess supplies on instrumental need dimensions, such as task accomplishment and sense making, may foster feelings of inferiority and contribute to lower levels of self-esteem (Deelstra et al., 2003). Turning to the personal support dimension, other researchers have acknowledged that relationships that provide more support than needed may be viewed as intrusive, a violation of personal privacy, and/or inappropriate within a workplace setting (Edwards

& Rothbard, 1999; Harrison, 1978). This may lead to feelings of anxiety and/or distancing oneself from others at work (Kahn, 2005). Future research could examine these relationships using qualitative methods. They could also quantitatively test these emotional responses (e.g., lower self-esteem, feelings of inferiority, anxiety, and intrusion) as mediators linking the presence of excess supplies to individuals' psychological attachment to others at work.

Future research should also longitudinally assess whether the influence of excess supplies on specific relational need dimensions may change in lieu of changing events and corresponding changes in needs. Consider for example an individual who recently received a promotion to a new area of an organization, and a result, must become more reliant on others for task-related advice pertaining to his/her new position. Or, consider an employee who recently experienced a tragic event in his/her personal life such as the death of a parent. It could be that excess levels of personal support may have positive repercussions in these situations. Indeed, individuals may not only have fluctuating need levels for interpersonal input across the five relational need dimensions as their work and personal circumstances change (Kahn, 2001), they may also perceive the value of excess supplies differently. These are important lines of inquiry which should be explored in future research.

Positive influences of excess supplies: Implications. While oversupply led to negative outcomes for some needs (task accomplishment, sense making, and personal support), in other cases it was associated with more positive outcomes (e.g., provision of meaning and career development). It is important to note that these findings do not contradict PE fit theory assertions that congruence between desired and actual levels of

interpersonal input pertaining to helping one to feel validated or valued (i.e. provision of meaning) or the advancement of one's career (i.e. career development) is desirable (see Edwards et al., 1998; Edwards & Shipp, 2007). Rather, findings for these two relational need dimensions suggest that the presence of excess supplies may in fact continue to positively influence desired outcomes over and above the beneficial effects experienced at the point of congruence.

With respect to the provision of meaning dimension, findings for a positive influence of excess supplies on individuals' psychological attachment to others at work are aligned with existing research. Sluss and Ashforth (2008), for example, have observed that interpersonal input supporting perceptions of validation and value may unequivocally promote feelings of belongingness, and hence interpersonal attachment, within one's workplace. Baumeister and Leary (1995) further recognized that social contact which facilitates feelings of validation and belongingness is a fundamental human motivation. To this end, however, it is interesting to note that Baumeister and Leary go on to point out that once a desired level of social contact is surpassed, the further receipt of such contact is "subject to diminishing returns" (p.500). This view is aligned with results from the current study which showed that excess provision of meaning supplies had a diminishing positive influence on individuals' psychological attachment to others at work as the degree of excess supplies increased. Still, it is important to note that at no point was the influence of excess provision of meaning supplies on individuals' psychological attachment to others at work detrimental.

Future research is necessary, however, in order to better understand why excess career development supplies may continue to have positive implications even beyond the

point of needs/supplies congruence. One possibility is that even if not specifically sought out, interpersonal input related to career advancement or promotional opportunities may be construed by individuals as an expression that others perceive them as a competent and capable member of an organization (Kaye & Jordan-Evans, 2011). In this sense, excess career development supplies may first promote feelings of confidence and self-esteem, which in turn may allow individuals to feel a greater level of comfort around their work colleagues, ultimately leading to higher levels of interpersonal attachment. Qualitative research would again provide a useful means to better capture this process.

Implications for PE fit theory. Finally, it is important to note that in addition to offering a theoretical contribution to relational systems theory, applying a PE fit lens to explain individuals' appraisal of relational needs breaks new ground within the rubric of PE fit theory. Although PE fit theory represents a long-standing theoretical tradition in organizational literature, researchers have predominately focused on a limited number of topics when considering the implications for fit between a person and his/her environment. Most notably, these topics center on job and organizational characteristics, for example autonomy, workload, prestige, and pay (e.g., Cable & Edwards, 2004; Edwards & Rothbard, 1999; Edwards & Van Harrison, 1993; c.f., reviews by Kristof, 1996; Kristof-Brown et al., 2005). This study extends current theorizing on needs/supplies fit perspectives by focusing on dimensions more interpersonal in nature.

Implications for Practice

Beyond its theoretical and research implications, this study also contributes to management practice. These findings have implications for understanding how employees' workplace relationships can influence their attachment to their organization.

This study found that relationships played a key role in organizational commitment and work engagement. As these constructs are strongly related to employees' turnover intentions (Halbesleben, 2010; Mathieu & Zajac, 1990; c.f., Meyer, 2009), the findings may also have implications for employee retention. In essence, findings support the notion that individuals' relationships with their work colleagues can help 'anchor' employees to their organization (Kahn, 2001).

Employee retention is often a salient goal for organizational leaders, particularly in light of the high costs associated with employee turnover (Ballinger, Craig, Cross, & Gray, 2011). Given study findings for the influence of individuals' psychological attachment to others at work, therefore, managers may consider strategies designed to promote more effective work relationships among employees as a potentially useful means to promote organizational attachment. These strategies could include formal workplace offerings such as mentoring programs and/or training activities geared at developing interpersonal skills such as active listening, trust, and empathy (Berman et al., 2002; Reich & Hershcovis, 2011). Team building activities may also be beneficial for promoting interpersonal relationships (Dyer, 1977), particularly for organizations relying heavily on team- or project-based organizational structures. Indeed, recent meta-analytic evidence suggests that team-building may be particularly beneficial when interpersonal-focused outcomes are of interest, for example facilitating trust, communication, and/or coordination (Klein et al., 2009). Finally, informal activities could be utilized. To this end, Ingram and Morris (2007) have suggested that parties or related social functions can be conducive for promoting social interaction among co-workers, as can employer-sponsored leisure activities (c.f., Hays, 1984; Segal, 1979).

However, another key finding of this study is that individuals have different needs related to their workplace relationships. So while formal and/or informal activities have the capacity to enhance the quality of employee relationships, individual differences will likely exist in employees' interaction preferences. Managers must therefore take under consideration these individual differences in order to maximize the desired results of any programs or activities undertaken. Indeed, should employees' personal preferences be ignored, or individuals participate in activities only because they feel they must, unintended negative consequences will likely result (Dumas et al., 2013).

It is therefore important for managers to be able to understand the dominant relational needs of their employees. However, these needs are not always apparent, so employees need to be able to share this information with their managers. This requires that employees have a clear understanding of their own relational needs. Accordingly, developmental activities or workshops that help individuals recognize their own preferences for what they wish to gain from their interactions with others at work may be worthwhile. Managers, then, may gain insight into the relational needs of their employees in a variety of ways. Conversations could be included as part of an employee's performance appraisal, for instance, or data could be collected using survey metrics. Regardless of how it is obtained, this information could be utilized in the development of future relationship-building initiatives in organizations. For example, information concerning individuals' relational need preferences can serve as an important criterion when matching mentors and protégés in formal mentoring programs.

Where possible, managers may also be well-served to provide opportunities that allow individuals to expand their relational constellations in the workplace. Although

network researchers point out that simply increasing the size of one's constellation of relationships is not a panacea for deriving network benefits (Kim & Rhee, 2010), building a broader array of contacts may be useful if done strategically. Understanding employees' relational needs again provides a useful starting point. Organizational newcomers, for example, who may be less savvy in interpreting workplace events, and thus have higher sense making needs, could perhaps benefit most from opportunities to establish relationships with more senior individuals (Morrison, 2002). In a similar vein, employees recently experiencing traumatic life events such as a death of a parent or a divorce may, at least temporarily, experience higher personal support needs and benefit from expanding their constellation to include others who can provide support and compassion (c.f., Kahn, 2001 for a related perspective concerning 'holding environments'). Put simply, a broader constellation of workplace relationships may give employees more opportunity to achieve fulfillment across each of their relational needs.

Finally, it is important to note that both organizational commitment and work engagement have been linked to desired performance-related outcomes such as increased task- and contextual- performance (Bakker, Demerouti, & Verbeke, 2004; Christian et al., 2011; Meyer et al., 2002; Salanova, Agut, & Peiró, 2005). Given these links, several scholars have suggested that efforts geared at developing commitment and/or engagement may serve as a useful, albeit indirect, strategy for fostering greater organizational performance (Alatrasta & Arrowsmith, 2004; Fu, Bolander, & Jones, 2009). Managerial initiatives directed toward promoting interpersonal attachments and/or fostering the development of individuals' relational constellation with workplace colleagues may thus have some bearing in this capacity as well.

Limitations

When considering study findings and their contributions to theory, research, and practice, appropriate limitations must be kept in mind. One such limitation was that all measures were collected using self-report survey instruments. This has several implications. First, the potential for same-source bias influencing results (e.g., inflated correlations due to a monomethod effect – see Spector, 2006) must be acknowledged, although this threat is diminished given that data were collected at multiple time points. Additionally, shortcomings associated with same-source bias are reduced inasmuch as all relationships tested in this study which used variables measured at the same time point involved non-linear and interaction terms, which research has shown are not susceptible to common method variance (Siemsen, Roth, & Oliveira, 2010). Second, because I assessed both the needs and supplies constructs using self-report data, study findings can only be viewed as capturing individuals' subjective perceptions of relational need fulfillment (Edwards & Rothbard, 1999; c.f., Kristof, 1996). However, individuals are in the best position to report their relational needs, and the degree to which workplace relationships fill those needs. Moreover, evaluating needs/supplies congruence in a subjective sense is conceptually aligned with PE fit theory's focus on individual appraisal (Edwards, 1996; Edwards et al., 1998; Edwards & Shipp, 2007).

Some limitations regarding the study analyses should also be pointed out. First, as variations of multiple regression comprised most of the analyses, this study inherits assumptions associated with this analytic strategy – most notably, the assumption that constructs were measured without error (Cohen et al., 2003). Second, as described in Chapter 5, needs/supplies congruence analyses were conducted independently for each

relational need dimension. This measurement strategy offers several positives – for example, it is aligned with tenets of PE fit theory (Edwards, 1992), provides a useful means for averting polynomial regression models that contain an unwieldy number of terms (Edwards, 2002), and follows convention in current research (e.g., Edwards & Cable, 2009; Yang et al., 2008). A weakness of this approach, however, is that covariance between the fit terms across the five relational need dimensions is ignored, which may introduce omitted variable biases (James, 1980). Given this limitation, a more conservative Type I Error rate was set for each of the polynomial regression analyses in this study (Edwards, 2002). In the future, however, researchers may wish to employ simultaneous measurement strategies, thereby allowing for a more parsimonious model that captures the covariances among model constructs. These methods, though, are only beginning to be developed (Jeff Edwards, personal communication, May, 19, 2012).

Some limitations concerning the generalizability of the study sample should also be observed. Online panels such as StudyResponse have at times been lauded as perhaps having greater generalizability than traditional sampling strategies in organizational research given that respondents are situated within a wide range of occupations and organizations (Buhrmester et al., 2011; Montes & Zweig, 2009). However, online panels may still suffer from some limitations. For example, there are questions about respondents' motivation for participation in online panels and whether the use of a direct post-payment incentive may influence response quality. Given these concerns, I conducted extensive data screening analyses to ensure data quality in this study. It is also important to note that a growing body of research suggests that response quality concerns

associated with the use of online panels may be overstated (Buhrmester et al., 2011; Goritz, 2004), and that a greater proportion of panel members are motivated to participate in academic research for primarily intrinsic reasons (Brüggen et al., 2011). It should also be noted that some characteristics of this specific study sample deviated from the population of working adults in the United States, thus limiting this study's generalizability. For example, the sample for this study tended to be somewhat more educated and have a higher annual income. Additionally, the sample was composed of a slightly greater percentage of non-Hispanic Whites (United States Bureau of Labor Statistics, 2012; United States Census Bureau, 2012). Future research should thus assess the generalizability of these findings using different samples, as well as consider whether the relationships examined here would be supported in other cultural contexts.

Conclusion

In this study, I tested a model designed to explain how employees' collective array of workplace relationships may contribute in the development of their work-related attitudes and behaviors – in particular, their organizational commitment and work engagement. The model examined key tenets of relational systems theory, which posits that employees' commitment to their organization and engagement in their work occurs when they are embedded in a 'positive' constellation of relationships (Kahn, 2007). I further integrated a needs/supplies fit lens into this model in order to better understand individuals' experience of a positive relational constellation, which is defined with respect to the fulfillment of five core relational needs. Finally, I empirically developed and validated a measure of psychological attachment to others at work, as well as demonstrated its utility as a mediator within Kahn's (2007) theory of relational systems.

This study's theoretical model was largely supported, thereby corroborating key tenets of relational systems theory. Individuals' experience of relational need fulfillment predicted their psychological attachment to others at work, which in turn predicted both their organizational commitment and work engagement. Also, by integrating a needs/supplies fit lens, interesting findings emerged for instances in which individuals received greater levels of interpersonal input from their constellation of workplace relationships than they felt they needed or desired. Altogether, these findings illustrate the complexity of how workplace relationships may shape employees' experiences in organizations, and offer important and interesting avenues for future research.

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Appendix A: Notification Email to Course Instructors

[Date]

Dear [name of instructor]:

I am writing to ask for your assistance in my dissertation research, which examines the role interpersonal relationships play in employees' workplace attitudes and behaviors. This study is being conducted at the University of Wisconsin-Milwaukee under the supervision of Dr. Belle Rose Ragins, and has received Internal Review Board (IRB) (Approval #13.085).

I need a sample of undergraduate and/or graduate students for my study, and would greatly appreciate your help. All I need is for you to forward an email invitation to your students. The invitation contains a link to an online survey that takes 15-20 minutes to complete. I will provide the email invitation for you, so it should not take much of your time. The invitation needs to be forwarded between [Date] and [Date]. Survey responses will be held in the strictest of confidence.

As a token of my appreciation, your students will be able to enter a drawing to win one of 25 Amazon.com gift cards. They might win either a \$25.00 gift card (10 prizes with a verifiable retail value of \$25.00 each) or a \$10.00 gift card (15 prizes with a verifiable retail value of \$10.00 each). As such, they will have an approximately 1 in 24 chance of receiving a prize.

I'd also be happy to send you and your students a summary of the study findings if you like.

I hope you can help with this dissertation project by forwarding the survey invitation to your students. I can also come to your class and talk to your students about the project if you like.

Please let me know if you are willing to help. If you have any questions, please also feel free to contact me at kpe@uwm.edu.

Thank you in advance for your interest and assistance. It is a challenge to collect data, and I appreciate your support!

Sincerely,

Kyle Ehrhardt, PhD Candidate – Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee (kpe@uwm.edu)

Dr. Belle Rose Ragins, Professor of Management – Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee

Appendix B: Invitation Email to Students

Dear [university business school] student:

What makes people enjoy work? We believe people's workplace relationships play a key role...but we need research in order to understand these complex effects.

We are writing to invite you to participate in a study that can help us better understand the role of relationships in organizational life. Our online survey will take approximately 15-20 minutes to complete and your specific responses are *completely confidential*. The questions are interesting and thought provoking, and the study can be accessed directly from the link below.

The results of this study will be nationally disseminated and used in management education and business courses throughout the country. This study will also help managers better understand the needs of their employees and the role relationships play in shaping employees' experiences, attitudes, and behaviors at work.

*{Your instructor has chosen to offer extra credit as an incentive for your taking the time to complete this survey. To ensure extra credit is properly awarded, you will be asked to provide your [identifying information, e.g., student ID number] at the close of the survey. Please be assured that this number cannot be linked to you by the study investigators, thus your responses to survey items are completely confidential. If you choose not to participate in this online survey, an alternate means of obtaining extra credit will be provided. Please contact your instructor before participating if you have any questions.}*¹⁹

As a token of our appreciation, you will also be given the opportunity to enter a drawing to win one of 25 Amazon.com gift cards at the end of the survey. You might win either a \$25.00 gift card (10 prizes with a verifiable retail value of \$25.00 each) or a \$10.00 gift card (15 prizes with a verifiable retail value of \$10.00 each). You will have an approximately 1 in 24 chance of receiving a prize. Participation in the drawing is voluntary and no personal information can be linked to your survey responses. You will also be given the opportunity to request a summary report of the study findings.

To be taken to the online survey, please click on the link below, or paste the link into your web browser:

[Survey hyperlink]

Thank you in advance for your interest and participation in this important research! Should you have any questions about this study or the prize drawing, please feel free to

¹⁹ This paragraph in italics appeared only in those cases in which the instructor specifically requested an extra credit incentive for participation.

contact us at kpe@uwm.edu. As a reminder, survey responses will be held in the strictest of confidence.

Sincerely,

Kyle Ehrhardt, PhD Candidate – Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee

Dr. Belle Rose Ragins, Professor of Management – Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee

Additional Gift Card Drawing Information

Pursuant with the laws of the State of Wisconsin and University of Wisconsin System policy, participation in the study is not needed to be eligible to enter the gift card drawing. You may alternatively enter the drawing by mailing your full name, email address, and telephone number, with a notation “Gift Card Entry” to:

University of Wisconsin-Milwaukee, Sheldon B. Lubar School of Business
Attn: Mr. Kyle Ehrhardt – Gift Card Entry
PO Box 742
Milwaukee, WI 53201

Such entries must be sent via U.S. Postal Service and be postmarked by [Date]. Limit one entry per person. Prizes shall be evaluated pursuant to the laws of the State of Wisconsin. Void where prohibited.

Appendix C: Validation Study Survey Measures

Psychological Attachment to Others at Work

Instructions: The following questions ask about your relationships with “others at work.” Throughout this survey, “others at work” refers to your coworkers, supervisors, or any other individuals employed by your organization. We are interested in how you feel about your relationships with others at work *in general*.

When thinking about my relationships with others at work, I feel...

1. Close to them ^a.
(Original item: “In my relationships with my work colleagues, I feel close to them”).
2. Connected to them ^b.
3. Attached to them ^a.
(Original item: “In my relationships with my work colleagues, I feel attached to them”).
4. A close bond with them ^a.
(Original item: “In my relationships with my work colleagues, I feel bonded to them”).
5. Committed to them ^b.
6. A sense of oneness with them ^b.
7. Like I belong with them ^b.
8. Devoted to them ^b.
9. Responsible for their welfare ^b.
10. A deep sense of caring for them ^b.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

^a Adapted from Richer and Vallerand (1998).

^b Developed for this study.

Relational Need Fulfillment: Needs & Supplies

Instructions preceding questions about supplies:

In this section, we would like you to describe the interactions you have with others at work. As a reminder, “others at work” refers to your coworkers, supervisors, or any other individuals employed by your organization.

To what degree do others at work...

Instructions preceding questions about needs:

In the previous section, you described the *actual* interactions you have with others at work.

In this section, we would like you to describe *your preferences when interacting with others at work*. In other words, we are interested in the interactions *you would prefer or desire to experience* in the workplace.

To what degree would you *prefer* that others at work...

Task Accomplishment

1. Help me solve job-related problems.
2. Help me get the resources I need to do my job.
3. Give me information that I need to do my job.
4. Offer me advice that helps me do my job.
5. Provide me with job-related feedback.

Career Development

1. Offer me opportunities for advancing my career.
2. Give me information that may help my career.
3. Help me get resources that may build my career.
4. Give me access to opportunities that may help my career.
5. Help me develop my career.

Sense Making

1. Give me information that helps me make sense of things at work.
2. Help me understand why things happen the way they do at work.
3. Give me insight on how to interpret or make sense of things happening at work.
4. Help me make sense out of workplace events.
5. Help me understand the rules of the road at work.

Provision of Meaning

1. Make me feel that I am appreciated.

2. Give me a sense that I am capable.
3. Make me feel that I am valued.
4. Help build my sense of competence.
5. Make me feel that I belong.

Personal Support

1. Provide me with support on personal matters.
2. Offer me help on personal issues or challenges.
3. Offer to listen to a problem I may be having.
4. Provide me with support or personal encouragement.
5. Go out of their way to help me with personal issues.

Scale anchors: 1 = *very rarely* to 7 = *very often*.

Subjective Experience of Relationships – Positive Regard

1. I feel that my coworkers like me.
2. I feel that my coworkers and I try to develop meaningful relationships with one another.
3. I feel that my coworkers understand me.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Carmeli et al. (2009)

Quality of Relationships Index²⁰

Right now, my relationships with others at work...

1. Are harmonious.
2. Are meaningful.
3. Are satisfying.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Senécal et al. (1992)

²⁰ Reflects a translation from French to English by a native French speaker.

Interpersonal Self-efficacy

1. If I see someone I'd like to meet, I go to that person instead of waiting for them to come to me.
2. When I'm trying to become friends with someone who seems uninterested at first, I don't give up every easily.
3. I don't handle myself well in social gatherings (R).
4. It is difficult for me to make new friends (R).
5. I have acquired my friends through my personal abilities at making friends.
6. If I meet someone interesting who's very hard to make friends with, I'll soon stop trying to make friends with that person (R).

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Sherer et al. (1982)

General Self-efficacy

1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me.
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Chen et al. (2001)

Core Self-evaluation

1. I am confident I get the success I deserve in life.
2. Sometimes I feel depressed. (R)
3. When I try, I generally succeed.

4. Sometimes when I fail I feel worthless. (R)
5. I complete tasks successfully.
6. Sometimes, I do not feel in control of my work. (R)
7. Overall, I am satisfied with myself.
8. I am filled with doubts about my competence. (R)
9. I determine what will happen in my life.
10. I do not feel in control of my success in my career (R)
11. I am capable of coping with most of my problems.
12. There are times when things look pretty bleak and hopeless to me. (R)

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Judge et al. (2003)

Social Desirability

1. I like to gossip at times.
2. There have been occasions when I took advantage of someone.
3. I'm always willing to admit it when I make a mistake.
4. I always try to practice what I preach.
5. I sometimes try to get even rather than forgive and forget.
6. At times I have really insisted on having things my own way.
7. There have been occasions when I felt like smashing things.
8. I never resent being asked to return a favor.
9. I have never been irked when people expressed ideas very different from my own.
10. I have never deliberately said something that hurt someone's feelings.

Scale: 1 = *True*, 2 = *False*

Source: Strahan and Gerbasi (1972), original items from Crowne and Marlowe (1960).

Appendix D: Dissertation Study Time 1 Survey Measures

Psychological Attachment to Others at Work

Instructions: The following questions ask about your relationships with “others at work.” Throughout this survey, “others at work” refers to your coworkers, supervisors, or any other individuals employed by your organization. We are interested in how you feel about your relationships with others at work *in general*.

When thinking about my relationships with others at work, I feel...

1. Close to them ^a.
2. Attached to them ^a.
3. A close bond with them ^a.
4. Committed to them ^b.
5. A sense of oneness with them ^b.
6. Like I belong with them ^b.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

^a Adapted from Richer and Vallerand (1998). See Appendix C for original items.

^b Developed for this study.

Relational Need Fulfillment: Needs & Supplies

Instructions preceding questions about supplies:

In this section, we would like you to describe the interactions you have with others at work. As a reminder, “others at work” refers to your coworkers, supervisors, or any other individuals employed by your organization.

To what degree do others at work...

Instructions preceding questions about needs:

In the previous section, you described the *actual* interactions you have with others at work.

In this section, we would like you to describe *your preferences when interacting with others at work*. In other words, we are interested in the interactions *you would prefer or desire to experience* in the workplace.

To what degree would you *prefer* that others at work...

Task Accomplishment

1. Help me solve job-related problems.
2. Help me get the resources I need to do my job.
3. Give me information that I need to do my job.

Career Development

1. Offer me opportunities for advancing my career.
2. Give me access to opportunities that may help my career.
3. Help me develop my career.

Sense Making

1. Help me understand why things happen the way they do at work.
2. Help me make sense out of workplace events.
3. Help me understand the rules of the road at work.

Provision of Meaning

1. Make me feel that I am appreciated.
2. Give me a sense that I am capable.
3. Make me feel that I am valued.

Personal Support

1. Provide me with support on personal matters.
2. Offer me help on personal issues or challenges.
3. Offer to listen to a problem I may be having.

Scale anchors: 1 = *very rarely* to 7 = *very often*.

Relational-interdependent Self-construal

1. My close relationships are an important reflection of who I am.
2. When I feel very close to someone, it often feels to me like the person is an important part of who I am.
3. I usually feel a strong sense of pride when someone close to me has an important accomplishment.

4. I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.
5. When I think of myself, I often think of my close friends or family also.
6. If a person hurts someone close to me, I feel personally hurt as well.
7. In general, my close relationships are an important part of my self-image.
8. Overall, my close relationships have very little to do with how I feel about myself. (RS)
9. My close relationships are unimportant to my sense of what kind of person I am. (RS)
10. My sense of pride comes from knowing who I have as close friends.
11. When I establish a close friendship with someone, I usually develop a strong sense of identification with that person.

Scale anchors: *1 = strongly disagree to 7 = strongly agree.*

Source: Cross et al. (2000)

Supplementary Fit (Value Congruence)

1. The things that I value in life are very similar to the things that my organization values.
2. My personal values match my organization's values and culture.
3. My organization's values and culture provide a good fit with the things that I value in life.

Scale anchors: *1 = strongly disagree to 7 = strongly agree.*

Source: Cable and DeRue (2002)

Perceived Organizational Support

1. The organization values my contribution to its well-being.
2. The organization fails to appreciate any extra effort from me. (R)
3. The organization would ignore any complaint from me. (R)
4. The organization really cares about my well-being.
5. Even if I did the best job possible, the organization would fail to notice. (R)
6. The organization cares about my general satisfaction at work.

7. The organization shows very little concern for me. (R)

8. The organization takes pride in my accomplishments at work.

Scale anchors: 1 = *strongly disagree* to 7 = *strongly agree*.

Source: Eisenberger et al. (1986)

Appendix E: Dissertation Study Time 2 Survey Measures

Organizational Commitment

1. How committed are you to this organization?
2. To what extent do you care about this organization?
3. How dedicated are you to this organization?
4. To what extent have you chosen to be committed to this organization?

Scale anchors: 1 = *not at all* to 5 = *extremely*.

Source: Klein et al. (2011)

Work Engagement

Physical Engagement

1. I work with intensity on my job.
2. I exert my full effort to my job.
3. I devote a lot of energy to my job.
4. I try my hardest to perform well on my job.
5. I strive as hard as I can to complete my job.
6. I exert a lot of energy on my job.

Emotional Engagement

1. I am enthusiastic in my job.
2. I feel energetic at my job.
3. I am interested in my job.
4. I am proud of my job.
5. I feel positive about my job.
6. I am excited about my job.

Cognitive Engagement

1. At work, my mind is focused on my job.
2. At work, I pay a lot of attention to my job.

3. At work, I focus a great deal of attention on my job.
4. At work, I am absorbed by my job.
5. At work, I concentrate on my job.
6. At work, I devote a lot of attention to my job.

Scale anchors: 1 = *strongly disagree* to 5 = *strongly agree*.

Source: Rich et al. (2010)

Appendix F: Invitation Email for the Time 1 Survey

Dear StudyResponse Project Participant:

We are requesting your assistance with wave 1 of a study conducted by researchers at University of Wisconsin – Milwaukee. The purpose of this research study is to examine the role interpersonal relationships play in employees' attitudes toward their workplace and the work they do on the job. You must be at least 18 years of age, reside in the US and currently employed full-time in order to participate in this study.

If you agree to participate, you will be asked to complete a total of three surveys over the course of approximately one year. The first survey (which is the current survey – i.e. wave 1) will take about 15-20 minutes to complete, the second survey (which you will receive in approximately 4-6 weeks) will take approximately 10-15 minutes to complete, and the third survey (which you will receive in approximately 10-11 months) will take approximately 5-10 minutes to complete. The questions will ask about your workplace relationships, your attitudes toward your organization, and about your personal attitudes and beliefs. Please be sure to indicate your study response number at the beginning of the survey as this is the only way we will be able to connect your responses to this survey to the next surveys. Completing all three surveys is very important for the success of this study.

If you choose not to respond within the first week, we will send you a reminder in one week. Note that instructions on how to discontinue your participation in StudyResponse and stop receiving emails from us appear at the end of this message.

This study is anonymous, so please do not enter any identifying information into the research instrument except your StudyResponse ID, which is <ID>. The researchers have pledged to keep your data confidential and only to report aggregated results in any published scientific study. Survey participation is on a first come first served basis. We are always interested in your opinions but please be aware that the survey might fill up fast.

As a token of our appreciation, you will receive an electronic gift certificate to Amazon.com in the value of \$5 after completing each of the three surveys. In other words, you will receive a \$5 gift certificate to Amazon.com after completing the first survey, a \$5 gift certificate to Amazon.com after completing the second survey, and a \$5 gift certificate to Amazon.com after completing the third survey. The gift certificates will be sent to you by email from StudyResponse approximately two weeks after the researchers receive the completed survey.

Note that your StudyResponse ID number is <ID> and that you must enter that number into the survey to be eligible for the direct payment.

Follow this link to participate:

<Web Link Here>

Participation in this study is voluntary and you may withdraw from participation at any time. If you have any questions you may contact one of the researchers:

Kyle Ehrhardt
University of Wisconsin – Milwaukee
kpe@uwm.edu

We very much appreciate your participation in the StudyResponse project and your willingness to consider completing this study.

You received this email because you signed up as a research participant for the StudyResponse project, which is based NY state, USA. You also provided a confirmation of that signup in a subsequent step. Although StudyResponse is not a commercial service and does not send unsolicited email, the project complies with the obligations of the 2003 CAN-SPAM act. In accordance with the act, you have the following options for ceasing participation in the StudyResponse project:

1. You may simply reply to this email with the word UNSUBSCRIBE in the subject.
2. You may use our self service account management interface at:

<http://studyresponse.net/update.htm>

3. You may contact a staff member of the StudyResponse project using the contact information provided below. For further information about the StudyResponse project, you may contact a member of the StudyResponse staff at help@studyresponse.net

Appendix G: Invitation Email for the Time 2 Survey

Dear StudyResponse Project Participant:

We are requesting your assistance with Wave 2 of a study conducted by researchers at University of Wisconsin – Milwaukee. The purpose of this research study is to examine the role interpersonal relationships play in employees' attitudes toward their workplace and the work they do on the job. You must be at least 18 years of age, reside in the US and currently employed full-time in order to participate.

Participation in this study involves completing a total of three surveys over the course of approximately one year. Thank you for completing the first survey about 4-6 weeks ago. The second survey (which is the current survey – i.e. Wave 2) will take about 10-15 minutes to complete and the third survey (which you will receive in approximately 10-11 months) will take approximately 5-10 minutes to complete. The questions will ask about your workplace relationships, your attitudes toward your organization, and about your personal attitudes and beliefs. Please be sure to indicate your Study Response ID number at the beginning of the survey as this is the only way we will be able to connect your responses to this survey to the previous and next surveys. Completing all three surveys is very important for the success of this study.

If you choose not to respond within the first week, we will send you a reminder in one week. Note that instructions on how to discontinue your participation in StudyResponse and stop receiving emails from us appear at the end of this message.

This study is anonymous, so please do not enter any identifying information into the research instrument except your StudyResponse ID, which is <ID>. The researchers have pledged to keep your data confidential and only to report aggregated results in any published scientific study. Survey participation is on a first come first served basis. We are always interested in your opinions but please be aware that the survey might fill up fast.

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Kyle Ehrhardt

University of Wisconsin – Milwaukee

kpe@uwm.edu

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1. You may simply reply to this email with the word UNSUBSCRIBE in the subject.
2. You may use our self service account management interface at:
<http://studyresponse.net/update.htm>
3. You may contact a staff member of the StudyResponse project using the contact information provided below.

* Conditions apply. In case of any clarifications, please feel free to contact us at help@studyresponse.net

For further information about the StudyResponse project, you may contact a member of the StudyResponse staff at help@studyresponse.net

Curriculum Vitae – Kyle Ehrhardt

EDUCATION

Ph.D. Management Science

University of Wisconsin-Milwaukee: May, 2014

Specialization: Organizational Behavior & Human Resource Management

Minor: International Business

Dissertation: Understanding the role of workplace relationships in employee commitment and engagement: A complementary fit perspective.

Dissertation Chair: Dr. Belle Rose Ragins

M.S. Sport Management

Illinois State University: December, 2005

B.A. (cum laude) Communication

Hanover College: May, 2003

PEER-REVIEWED JOURNAL PUBLICATIONS

Ehrhardt, K., Miller, J., Freeman, S., & Hom, P. (in press). Examining project commitment in cross-functional teams: Antecedents and relationship with team performance. *Journal of Business & Psychology*.

Prasad, V.K., Naidu, G.M., Murthy, K, Winkel, D.E., & **Ehrhardt, K.** (2013). Business venture growth for Indian women entrepreneurs: An examination of human and social capital resources. *Journal of Small Business & Entrepreneurship*, 26, 341-364.

Ragins, B.R., Gonzalez, J., **Ehrhardt, K.**, & Singh, R. (2012). Crossing the threshold: The spillover of community racial diversity and diversity climate to the workplace. *Personnel Psychology*, 65, 755-787.

Ehrhardt, K., Shaffer, M., Chiu, W.C.K, & Luk, D.M. (2012). “National” identity, perceived fairness, and organizational commitment in a Hong Kong context: A test of mediation effects. *International Journal of Human Resource Management*, 23, 4166-4191.

Ehrhardt, K., Miller, J., Freeman, S., & Hom, P. (2011). An examination of the relationship between training comprehensiveness and organizational commitment: Further exploration of training perceptions and employee attitudes. *Human Resource Development Quarterly*, 22, 459-489.

Prasad, V.K., Naidu, G.M., **Ehrhardt, K.**, Winkel, D.E., & Murthy, K. (2011). Exploring entrepreneurial fulfillment for women in India: An empirical study. *Journal of Enterprising Culture*, 19, 287-314.

Ehrhardt, K., McEvoy, C. D., & Beggs, B. A. (2011). Successor type and coaching performance in intercollegiate football. *International Journal of Sport Management*, 12, 288-300.

 BEST PAPER PROCEEDINGS

- Ragins, B.R., Lyness, K., **Ehrhardt, K.**, Murphy, D., & Capman, J. (2013). Anchoring relationships at work: Mentors as buffers to ambient racial discrimination. In J. Humphreys (Ed.), *Best Paper Proceedings of the 2013 Academy of Management Meeting* (Abstract only).
- Ragins, B.R., Gonzalez, J., **Ehrhardt, K.**, & Singh, R. (2012). The spillover of community racial diversity and diversity climate to the workplace. In L. Toombs (Ed.), *Best Paper Proceedings of the 2012 Academy of Management Meeting*.
- Ehrhardt, K.** (2010). Reconsidering the slack-performance relationship: A top manager characteristics contingency approach. In L. Toombs (Ed.), *Best Paper Proceedings of the 2010 Academy of Management Meeting*.

 CHAPTERS IN EDITED BOOKS

- Freeman, S. J., & **Ehrhardt, K.** (2012). The antecedents of downsizing. In J.C. Quick and G. Cooper (Eds.), *Downsizing: Is less still more?* (pp. 76-100). New York: Cambridge University Press.

 CONFERENCE PRESENTATIONS

- Ehrhardt, K.**, Ragins, B.R., Murphy, D., & Van Driel, M. (2014). The spillover of race-related hate crimes to the workplace. *Paper to be presented at the Society for Industrial-Organizational Psychology Annual Conference, Honolulu, HI. May 15-17.*
- Ragins, B.R., Lyness, K., **Ehrhardt, K.**, Murphy, D., & Capman, J. (2013). Anchoring relationships at work: Mentors as buffers to ambient racial discrimination. *Academy of Management Annual Meeting, Lake Buena Vista, FL. August 9-13.*
- Gonzalez, J., Ragins, B.R., **Ehrhardt, K.**, & Singh, R. (2013). Friends and family: The role of relationships in community and workplace attachment. *Academy of Management Annual Meeting, Lake Buena Vista, FL. August 9-13.*
- Ragins, B.R., Gonzalez, J., **Ehrhardt, K.**, & Singh, R. (2012). The spillover of community racial diversity and diversity climate to the workplace. *Paper presented at the Academy of Management Annual Meeting and Conference, Boston, MA. August 3-7.*
- Prasad, V.K., Naidu, G.M., Murthy, K, Winkel, D.E., & **Ehrhardt, K.** (2012). Venture growth for Indian women entrepreneurs: The influence of human and social capital resources. *Paper presented at the Academy of Management Annual Meeting and Conference, Boston, MA. August 3-7.*
- Prasad, V.K., & **Ehrhardt, K.** (2012). Network interaction of Indian women entrepreneurs: An examination across venture stages. *Paper presented at the International Academy of Business and Economics Annual Summer Conference, Venice, Italy. June 8-10.*
- Ehrhardt, K.**, Miller, J., Freeman, S., & Hom, P. (2012). Project commitment in cross-functional teams: Antecedents and relationship with performance. *Paper presented at the Society for Industrial-Organizational Psychology Annual Conference, San Diego, CA. April 26-28.*

- Ragins, B.R., Lyness, K.S., **Ehrhardt, K.**, Murphy, D., & Capman, J.F. (2011). Can the yin of mentoring counter the yang of a discriminatory workplace? Relational quality and mentor race as potential buffers to workplace discrimination. *Symposium: The yin and yang of mentoring: Exploring the continuum of mentoring relationships and experiences. Academy of Management Annual Meeting and Conference, San Antonio, TX. August 12-16.*
- Ehrhardt, K.**, Shaffer, M., Chiu, W.C.K., & Luk, D.M. (2011). Person-organization fit and turnover intentions in Hong Kong China: The influence of social self-efficacy and international experience in a salient interpersonal context, *Paper presented at the Academy of International Business Annual Meeting and Conference, Nagoya, Japan. June 24-28.*
- Ehrhardt, K.** (2011). Sport identity influences in an organizational context: A model of vocational and workplace outcomes. *Paper presented at the North American Society for Sport Management Annual Conference, London, Ontario. June 1-4.*
- McEvoy, C.D., **Ehrhardt, K.**, & Beggs, B.A. (2011). Coaching successor type and performance in intercollegiate athletics: An examination of moderating factors. *Paper presented at the Scholarly Conference on College Sport, Chapel Hill, NC. April 19-22.*
- Ehrhardt, K.**, Miller, J., Hom, P., & Freeman, S. (2011). Further exploration of training perceptions and employee attitudes: An examination of perceived training comprehensiveness and organizational commitment across eight organizations. *Paper presented at the Society for Industrial-Organizational Psychology Annual Conference, Chicago, IL. April 14-16.*
- Winkel, D., Vanevenhoven, J. P., & **Ehrhardt, K.** (2011). An organizing framework for entrepreneurial intentions research: An integration and extension of dominant intent-based models using social cognitive career theory. *Paper presented at the Annual Meeting and Conference of the United States Association for Small Business and Entrepreneurship, Myrtle Beach, SC. January 13-16.*
- Ehrhardt, K.**, Miller, J., Freeman, S., & Hom, P. (2010). New products and an old problem: Determining antecedents of project commitment in concurrent engineering teams. *Paper presented at the International Conference for Business, Management, and Economics, Izmir, Turkey. October 7-9.*
- Ehrhardt, K.** (2010). Reconsidering the slack-performance relationship: A top manager characteristics contingency approach. *Paper presented at the Academy of Management Annual Meeting and Conference, Montreal, Quebec. August 6-10.*
- Ehrhardt, K.** & Chiu, W.C.K. (2010). Perceived fairness and normative commitment in Hong Kong. *Paper presented at the Academy of Management Annual Meeting and Conference, Montreal, Quebec. August 6-10.*
- Ehrhardt, K.**, Shaffer, M., Luk, D.M., & Chiu, W.C.K. (2010). Extending the relationship between culture and organizational commitment in Hong Kong: The mediating role of justice. *Presented at the MBAA International Conference – Academy of International Business Midwest Chapter, Chicago, IL. March 24-26.*

McEvoy, C.D., **Ehrhardt, K.**, & Beggs, B.A. (2009). Who should I hire? A practical application of succession literature in intercollegiate athletics. *Presented at the Scholarly Conference on College Sport, Chapel Hill, NC. April 17-18.*

Ehrhardt, K., McEvoy, C. D., & Beggs, B. (2008), Coaching succession and intercollegiate men's basketball. *North American Society for Sport Management Annual Conference, Toronto, Ontario. May 28-31.*

Ehrhardt, K., McEvoy, C. D., & Beggs, B. (2006). Coaching succession and intercollegiate football. *North American Society for Sport Management Annual Conference, Kansas City, MO. May 31 - June 1.*

RESEARCH AWARDS

- 2013 Saroj Parasuraman Award for the outstanding publication on Gender and Diversity – awarded by the Gender & Diversity in Organizations Division of the Academy of Management
- 2013 Best Overall Paper Award – Careers Division of the Academy of Management
- 2012 Dorothy Harlow Best Overall Paper Award – Gender & Diversity in Organizations Division of the Academy of Management
- 2010 Robert J. Litschert Best Doctoral Student Paper Award Finalist – Business Policy & Strategy Division of the Academy of Management

ACADEMIC FELLOWSHIPS & SCHOLARSHIPS

- University of Wisconsin-Milwaukee Distinguished Graduate Student Fellowship, 2012/2013.
- Roger L. Fitzsimonds Doctoral Scholarship Award, 2011.
- University of Wisconsin-Milwaukee Business Advisory Council Award, 2010.
- University of Wisconsin-Milwaukee Graduate School Travel Award: 2010, 2012, 2014.

TEACHING EXPERIENCE

University of Wisconsin-Milwaukee: Classes Taught

- BUS ADM 330 Organizational Behavior
- BUS ADM 541 Cross-cultural Management
- BUS ADM 444 Human Resource Management

University of Wisconsin-Milwaukee: Teaching Assistant

- BUS ADM 311 Quality and Process Improvement

Sam Houston State University: Classes Taught

- MGMT 5345 Seminar in Team Leadership

TEACHING AWARDS

- Sheldon B. Lubar School of Business “Gold Star” Teaching Award, Spring 2012.

SERVICE AWARDS

- Academy of Management Careers Division Best Reviewer Award: 2012, 2013.

EDITORIAL & REVIEW ACTIVITIES

- **Editorial Board Member**

Journal of Business & Psychology, 2013 – Present

- **Ad-hoc Reviewer**

International Journal of Human Resource Management

Human Resource Development Quarterly

Human Resource Development International

New Media and Society

- **Special Assignments**

Academy of Management Careers Division Best Applied Paper Review Committee, 2013

- **Conference Reviewer**

Academy of Management, Academy of International Business, Society for Industrial and Organizational Psychology, Midwest Academy of Management, North American Society for Sport Management

WORK EXPERIENCE

- **Bostrom Center for Entrepreneurship, University of Wisconsin-Milwaukee.** (2010-2014).
Research Assistant for the “Women Entrepreneurs in India Project” and other entrepreneurship research projects – Principal investigator: Dr. Velagapudi K. Prasad. Responsible for data analysis and manuscript development resulting in journal publications and conference presentations.
- **Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee.** (2009-2010).
Research Assistant for the “Employee Commitment in Concurrent Engineering Teams Project” – Principal investigators: Dr. Janice S. Miller and Dr. Sarah J. Freeman. Responsible for data analysis and manuscript development resulting in journal publications and conference presentations.
- **United States Bowling Congress, Greendale, WI / Arlington, TX** (2005 – 2008).
Associate Director of High School, Collegiate, and Youth Development, 2007-2008
Research Analyst, 2006-2007
Operations Analyst, 2005-2006

PROFESSIONAL AFFILIATIONS

- Academy of Management (AOM)
- Society of Industrial/Organizational Psychology (SIOP)
- Society for Human Resource Management (SHRM)
- North American Society for Sport Management (NASSM)