Summer 5-23-2018

EXAMINING MANAGERIAL LEADERSHIP BEHAVIOR, PERCEIVED PROXIMITY, AND JOB SATISFACTION IN DISTRIBUTED WORK ARRANGEMENTS

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EXAMINING MANAGERIAL LEADERSHIP BEHAVIOR, PERCEIVED PROXIMITY, AND JOB SATISFACTION IN DISTRIBUTED WORK ARRANGEMENTS

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Human Resource Development

Jerry W. Gilley, Ed.D., Committee Chair

Soules College of Business

The University of Texas at Tyler
May 4, 2018

The University of Texas at Tyler
Tyler, Texas

This is to certify that the Doctoral Dissertation of

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Acknowledgements

I owe an incredible debt of gratitude to the members of my dissertation committee who helped guide my research and shepherded me through this study: Dr. Jerry Gilley, Dr. Ann Gilley, and Dr. Heshium Lawrence. Thank you for your wisdom, your guidance, and for helping me maintain momentum and focus throughout the process. I would especially like to thank my committee chair, Jerry, for the regular meetings and ideation sessions over multiple semesters that laid the foundation for this study and kept it on track. In addition, I owe a debt of gratitude to Dr. Scherie Lampe of the University of Wisconsin at Oshkosh, who first advised me to consider changing my interest and desire to develop others from purely an educational point of view to that of a business setting and mindset. I would also like to thank the University of Texas at Tyler for giving me the opportunity to pursue this degree and having the wisdom to house the Department of Human Resource Development within the school of business. I am grateful for the unique combination of research, theory, and practitioner expertise among the faculty and for the ability to become a part of this wonderful institution.

No student earns a Ph.D. on their own without a vibrant support network. I would like to thank the members of the 2015 doctoral cohort. You helped me make it through all of the late night struggles with coding, statistics, and keeping the drive alive while balancing school, work, and family commitments. Without you guys, I would not have enjoyed the journey half as much. I am honored to have become your friend and I am eager to see what each of you will accomplish in your career ahead. I would also like to thank my employer, Thrivent Financial, who supported my efforts by accommodating

class schedules, having a wonderful tuition reimbursement program, and a culture of employee development and growth. It has been a pleasure to have been able to apply my academic learning on the job almost every day since I began this program.

Finally, I would like to thank my family who have been my bedrock and foundation throughout this journey. I want to thank my mother, Katherine Macauley who was my first teacher and who I credit for instilling in me a love of learning that has served me well. Thank you to my mother-in-law and father-in-law Linda and Larry Calvert for the many times you helped us with the kids and with life. I want to thank my children, Arah and Jessie, who inspire me to do everything in my power to help build a better future for them to inherit. Most of all, however, I thank my wife Lindsay who put up with late nights, absent minded dinner conversations while half of my brain was still thinking through theoretical factor structures and ignoring the very real piles of laundry, dishes, and diapers that have a tendency to multiply when left unattended. Without her support, I would not have been able to finish this program.

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Abstract

EXAMINING MANAGERIAL LEADERSHIP BEHAVIOR, PERCEIVED PROXIMITY, AND JOB SATISFACTION IN DISTRIBUTED WORK ARRANGEMENTS

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May 4, 2018

More than 70% of all employers and managers utilize flexible or distributed work arrangements (Greenfield, 2017; World at work, 2017). Yet, it appears that few organizations are prepared to manage the relationship elements that come with a distributed workforce (Boss, 2017; Miller & Campell, 2013). Using structural equation modeling and data from 838 participants, the study examined the relationship between managerial behavior, perceived proximity, and job satisfaction within organizations that utilize distributed work. The results indicate that managerial behavior has a positive relationship with perceived proximity and employee job satisfaction and supports previous literature showing perceived proximity to be more reliable than objective physical distance when evaluating relationship outcomes.

Key words: virtual work, virtual team, distributed work, distributed team, virtual competence, remote employee, telecommute, telecommuting, telework, virtual management, remote managerial and leadership effectiveness, and e-leadership.

Chapter 1

Introduction and General Information

Background

The technological revolution fueled by the adoption of the personal computer and high-speed communication networks that began in the late 1980s and early 1990s has given today's employers unprecedented access to the world economy in terms of both potential customers and employee talent. In short, the Internet and its associated technologies have given modern business enterprises opportunities for tremendous scale and power that were unthinkable prior to the 1980s. Even startup operations run from spare bedrooms and garages in remote parts of the world have the power to tap intellectual talent in almost any location and deliver goods and services to global consumers through the power of the Internet. However, in the words of Stan Lee's Spider Man, "with great power, comes great responsibility" (Lee, 1962, p. 10) and many established firms appear ill-equipped to put this newfound power to productive use.

Many firms reduced or eliminated telecommuting policies in 2017, causing Bloomberg and others in the popular business press to declare that the full-time telecommuter will soon become extinct (Boss, 2017; Greenfield, 2017; Simons, 2017; Useem, 2017). It is particularly noteworthy that many of the firms that led the charge to recall full-time employees to the office were early adopters and advocates of remote employment policies and technology including Aetna Incorporated, Bank of America, BestBuy, Honeywell, Reddit, Yahoo, and IBM (Boss, 2017; Miller & Campell, 2013).

Despite these high-profile reversals, the vast majority of employers, more than 70%, still offer so called "flexible work arrangements" in which employees spend at least some time being independent and unsupervised even if the majority of the employee's time is spent in a traditional office setting (Greenfield, 2017; World at work, 2017). The organizational whiplash experienced by employees in the middle of these opposing trends to both embrace employee mobility and simultaneously retreat to more traditional models of employment has created organizational uncertainty for both managers and remote employees alike.

Although the popular business press focused much of its recent coverage on the relationship between employers and full-time telecommuters, the reality is that the telecommuting segment represents one aspect of a much larger shift in the workplace that has occurred in the decades since the 1980's. The spread of technologically-facilitated communication, personal computing power, and high-speed data networks has fundamentally altered the way in which work gets done at almost every level within almost every sector of the economy. As organizations increasingly embrace new workflow software and practices, employees generally no longer need to be in close proximity to collaborate and do work in service to their organization (Greenfield, 2017; World at work, 2017).

Increasingly, the nature of work is virtual, in which communication is largely asynchronous and mediated by technology, where individual employees may be geographically separated from coworkers and managers, and employee productivity can be measured in gigabytes of data rather than the number of widgets produced

(MacDuffie, 2007). The most obvious example of this distributed work reality is the permanent or full-time telecommuter. However, the nature of distributed work arrangements has spread far beyond the lone telecommuter to impact individuals who work in what may appear to be traditional settings. Even employees that sit next to coworkers in a traditional office setting are regularly part of departments and teams working across distances both small and large; collaborating via phone and computer networks with coworkers down the hall and around the world with equal facility (World at Work, 2017).

The existence of virtual work options positively impacts employee engagement both directly as a form of individual employee support and indirectly via perceived supervisor goal support (Masuda, Hotschlag, & Nicklin, 2017). Both the large numbers of employees impacted by distributed work and the ability of these work options to impact organizational outcomes demonstrate the need for human resource development (HRD) practitioners to engage with and understand this phenomenon. This understanding may prove especially useful to practitioners who assimilate it quickly enough to get ahead of the change curve that appears to be underway within the business community. While some established firms are indeed retreating from full-time virtual work arrangements in the face of organizational uncertainty, younger workers increasingly expect to be given the option to work remotely (Storr, 2016).

Statement of the Problem

Today's technology represents a tremendous opportunity for organizational leaders who seek to reduce overhead expense, tap into global talent pools, and increase

the velocity of production and organizational performance. Despite these obvious incentives, organizational leaders have not yet mastered the challenges that come with it (Cascio, 2000; Leibowitz, 2016). In fact, many leaders appear to be steering their organizations while navigating via the rear view mirror; choosing to retreat into familiar policies that have worked in the past rather than examining their own skills or pushing for research and best practices to adopt and leverage the capabilities of the new technological reality (Boss, 2017; Greenfield, 2017; Simons, 2017; Useem, 2017). For HRD researchers and practitioners concerned with organizational learning, performance, and change in service to their host organizations (Wang, Werner, Sun, Gilley, & Gilley, 2017), this organizational disconnect represents a significant problem that is likely to grow and demands attention from researchers.

Organizational context: distributed workplace arrangements. As a collective enterprise, organizations live and die by their pattern of values, attitudes, and beliefs that stem from shared experiences and contribution to a common effort. In short, the organization's culture determines the set of commonly accepted behavior that will determine its fate (Hoffman & Shipper, 2012; Hofstede, 1998). For distributed work environments, cultural fluency is less easily mastered by employees and organizational leaders as there are fewer directly shared experiences on which to base it (MacDuffie, 2007). Leaders within established organizations may be particularly sensitive to the cultural challenges presented by distributed work arrangements as many find themselves to be simultaneously managing collocated and distributed employees, with both groups experiencing the organization through disparate cultural contexts.

Perceived proximity and the distributed workplace. A relatively recent development in the distributed work literature may help leaders struggling to cope with the demands of distributed work. The introduction and examination of the paradox of perceived proximity (Cha, Park, & Lee, 2014; Chae, 2016; Dekker, Rutte, & Berg, 2015; O'Leary, Wilson, & Metiu, 2014; Wilson, Boyer, O'Leary, Metiu, & Jett, 2008) has yielded significant insights that leaders can use to understand and exploit the mechanisms behind the paradoxical phenomenon of being able to feel psychologically close to certain geographically distant colleagues while at the same time feeling psychologically distant from those who may be in close physical proximity (Wilson et al., 2008).

Leaders and managers who understand the factors contributing to perceived proximity should be able to use them to overcome the relationship development challenges typically associated with physical distance (Wilson et al., 2008) while those unfamiliar with it risk reducing their leadership effectiveness through lower quality relationships with followers who spend more than 2.5 days away from the office (Gajendran & Harrison, 2007). For firms seeking to embrace distributed work arrangements while maintaining a cohesive organizational identity, an understanding of proximity as a psychological and cultural construct is critical.

As the global economy continues to embrace knowledge work, organizational strategies to harness the power of its workforce over distance are expected to increase. The Bureau of Labor Statistics' June 2017 report stated that 43% of advanced degree holders already work from home. This is almost twice the rate of general US workers (22%) and more than three times the rate of those with only a high school diploma (12%).

This supports the notion that the impact of virtual work on organizations will be most keenly felt within its most highly skilled and highly productive employees.

Managerial and cross-cultural leadership. A common response to uncertainty and transition is the desire to regress to familiar patterns and strategies that have worked in the past. This psychological response is likely responsible for recent policy shifts away from distributed work in favor of more traditional management forms despite equivalent productivity between distant and collocated employees (Simons, 2017). For organizational leaders, a reduction in managerial anxiety and stress appears to be sufficient justification for the shift in policy. While understandable, this type of managerial practice is not a rational response given that the best way to combat long-term uncertainty for an organization is to maximize productivity rather than to minimize stress in the executive suite.

In many organizations there appears to be a fundamental disconnect between organizational attitudes toward distributed work, managerial behavior, and the firm's willingness to use distributed work as a competitive strategy. Leaders who fail to generate results through distributed work arrangements are more likely to blame the distributed work system in which they operate than point to their own lack of skill or managerial behavior. Meanwhile, those organizational leaders who are able to generate superior results in a distributed context often fail to capture their leadership techniques as best practices to be shared throughout the organization (Kruger & Dunning, 1999).

To understand the impact of managerial behavior within a distributed work context, it is critical to understand the relationship between the organization's leadership

and the culture and sub-cultures that exist within the firm. Although the dominant research paradigm dealing with leadership and cultures is focused on the cultural boundary conditions of leadership (Kirkman, Shapiro, Lu, & McGurrin, 2016; Schein, 2010; Taras, Kirkman, & Steel, 2010), this culturally divergent research perspective inherently limits the applicability of research insights for leaders in distributed work arrangements who typically must function across vast distances and with multiple cultural groups.

In addition to the differing social norms that naturally develop between distributed and collocated employees (Gajendran & Harrison, 2007), the large physical distances typically spanned by such systems require practitioners to seek solutions and lead their organizations across a variety of cultural contexts (MacDuffie, 2007). Leaders in distributed work arrangements must look outside of the culturally divergent body of literature for insights to apply to their work.

Culturally convergent leadership researchers seek to identify universal leadership behaviors and practices that transcend cultural boundary conditions at both the organizational and societal levels (Hoffman, Shipper, Davy, & Rotondo, 2014). This research paradigm posits the existence of universal practices that it attributes to the forces of globalization, the pervasiveness of communications technology, and the rise of international bodies of academic management accreditation such as the AACSB (Hafsi & Farashahi, 2005; House, Hanges, Javidan, Dorfman, & Gupta, 2004;). This close relationship with communication technology makes the culturally convergent leadership

research paradigm particularly attractive to those looking to understand generic or universal managerial behaviors in a distributed work context.

One model of universal leadership within the HRD literature is Hamlin's (2004) generic model for managerial and leadership effectiveness. Hamlin explored three empirical research studies on leadership and managerial effectiveness in the United Kingdom to develop his inventory of generic leadership behaviors. Using qualitative research techniques, he and his collaborators explored the published articles for meaning as if they were interview transcripts. In this way Hamlin empirically derived a set of effective management and leadership behaviors that are thought to hold true regardless of the cultural context in which they are applied. These behaviors serve as the foundation on which this study's assessment of managerial leadership behavior is based. Organizations may also utilize them as a framework through which they can assess and seek to improve the effectiveness of its managerial behavior.

Job satisfaction: a pivotal variable for HRD research. Research on managerial behavior has shown strong positive correlations with employee outcomes that are of utmost importance to organizational leaders such as organizational and occupational commitment, job satisfaction, job involvement, and work group effectiveness (Chen & Aryee, 2007; Hui, Au, & Fock, 2004; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). For HRD scholars, the connection between manager behavior and job satisfaction is of particular interest as job satisfaction is among the most frequently studied variables in behavioral research with a host of known relationships with other research variables (King & Williams, 2005). Therefore, understanding how newly emerging areas of

research relate to job satisfaction should allow researchers to derive and investigate numerous other theoretical relationships of practitioner and scholarly interest. This includes employee absenteeism, organizational commitment, customer-oriented behaviors, customer satisfaction, job performance, organizational citizenship behaviors, turnover/retention, employee health, and psychological well being (King & Williamson, 2005; Meyer et al., 2002; Wilkin, 2013).

Purpose of the Study

The purpose of the study was to provide insight into the properties of distributed and virtual work that pose unique management challenges within the context of established organizations and to explore the conceptual relationships and outcomes that may be predicted or influenced by managerial leadership behavior in the context of distributed work. This was accomplished through the synthesis and empirical testing of a theoretical model for the relationship between managerial leadership behavior, perceived proximity, and job satisfaction in a distributed work context.

Theoretical Underpinning

This study sought to understand employee outcomes within a distributed organizational context. It was therefore appropriate to ground this study within a conceptual framework that took internal, external, and performance outcome factors into account. While the ten different organizational components of Gilley and Gilley's (2002) organizational system blueprint would be an appropriate selection from within the HRD literature, the parsimony principal calls for research using the simplest theoretical

framework that can reliably meet the need and purpose of the research (Raykov & Marcoulides, 1999).

Hoffman and Shipper's (2012) model of the relationship between an organization's environmental context, leadership and management behavior, culture, and employee outcomes allowed for a more linear examination of a more limited set variables of interest to this study. Specifically, the interaction between managerial behavior and culture as it impacts employee outcomes provides an explanatory pathway that may prove be particularly useful when applied within the context of distributed work.

The theoretical compatibility between the cultural component of Hoffman and Shipper's (2012) model and Wilson et al.'s (2008) perceived proximity concept presents a compelling research opportunity to explore the psychological mechanisms underlying the shared values and mental models between groups of people with a common sense of identity over distance (Hoffman & Shipper, 2012; Hofstede, 1998; Wilson et al., 2008). O'Leary, Wilson, and Metiu (2014) showed perceived proximity to completely explain the observed variance between relationship quality and both objective distance and communication. In addition, they showed that perceived proximity was positively correlated with shared identity ($\beta = 0.47$, $p < 0.01$). The close relationship between perceived proximity and shared identity suggests that perceived proximity should replace traditional measures of organizational culture when applying the Hoffman and Shipper (2012) model to distributed work.

Overview of the Design of the Study

This study utilized a quantitative, cross-sectional methodology to explore the initial research validity of the proposed research model. The study made use of structural equation modeling to examine the strength of the relationship between managerial leadership behavior, perceived proximity, and job satisfaction for both remote and non-remote employees in organizations that make use of distributed work.

Significance of the Study

Established organizations in particular struggle to realize the promises of virtual work, remote employees, and distributed teams (Boss, 2017; Greenfield, 2017; Miller & Campell, 2013) despite rising employee interest in distributed work arrangements, especially among younger workers (Storr, 2016). Organizations require insights that will help them lead and manage distributed employees successfully if they are to realize the desired organizational outcomes from this type of employee/employer relationship.

This study explored the initial empirical evidence for the validity of the proposed research model, which is a synthesis of the three distinct bodies of literature: 1) virtual work, remote employees, and distributed teams; 2) organizational cultural and cross-cultural management; and 3) managerial and leadership effectiveness. The study represents a significant contribution to the remote work and distributed team literature while also adding to the theoretical understanding of managerial effectiveness within a distributed context. The study also contributes empirically based insights to the literature on virtual and remote employees as well as distributed teams. Specifically, the incorporation of perceived proximity as a cultural variable provides insight into

potentially causal mechanisms underlying previously confounding results in some distance work literature (Wilson et al., 2008).

In addition, the study has quantified the extent to which a set of concrete and generalizable managerial behaviors impact employee job satisfaction within distributed work settings. This insight will inform the work of organizations and HRD practitioners as they do the work to equip organizational leaders to manage the future workforce. Organizations must be equipped with exactly this type of predictive understanding if they are to manage remote employees effectively. Lastly, this study contributed to an emerging area of research by incorporating perceived proximity as an element of culture. By exploring perceived proximity's connection to job satisfaction, this study contributed foundational knowledge that will inform future research into the numerous other variables and constructs that may be affected by perceived proximity as a more widely applied variable in HRD research exploring employee relationships with the organization and each other.

Research Questions and Implications

This study explored three fundamental research questions: 1) *What are the properties of distributed work arrangements that pose unique challenges or problems for managers?* 2) *What managerial behaviors positively influence job satisfaction among employees that engage in distributed work?* and 3) *What are the mechanisms through which managerial behaviors impact job satisfaction among employees that engage in distributed work?* The integrated research model that emerged from the synthesis of the literature (see chapter 2) posits theoretical relationships between three distinct sets of

variables for employees operating within organizations that utilize distributed work. These include 1) managerial leadership behaviors; 2) perceived proximity; and 3) employee outcomes. Job satisfaction was selected as the employee outcome for this study due to its known relationships to other variables of interest to the HRD research community.

This study contributes to the field by empirically testing the mechanisms through which manager behavior impacts employee job satisfaction within the context of distributed work. The incorporation of perceived proximity as a cultural variable within the Hoffman and Shipper (2012) model provides insight into the evolving understanding of perceived proximity, while also shedding light on psychological mechanisms that may explain previously confounding results that have alternately found no impact or significant impacts on various outcomes that were attributable to distributed work (Wilson et al., 2008). This study also adds to the growing body of culturally convergent leadership literature through the use of Hamlin's (2004) managerial leadership behavior framework. Lastly, the results of the study and the theoretical relationships proposed by the model have expanded knowledge of the role and strength of perceived proximity as an emerging research variable.

Definition of Terms.

Collocated or collocation. "Individuals who are physically located close together and can work in face-to-face contexts" (Brewer, 2015, p. 8).

Delimitation. Deliberate boundary conditions or exclusions selectively employed by the researcher and the associated rationale for doing so (Quara, 2018).

Digital Native. Individuals with "an innate confidence in using new technologies" that informed the way in which they lived their life in a "permanent state of technological immersion and dependence" (Selwyn, 2009, p. 365).

Digital immigrant. Individuals characterized in binary opposition to digital natives; they are older, established in their habits, slow to recognize the value of technology, linear in thought, resistant to change, and wary of untested technology (Bayne & Ross, 2007; Evans & Evans, 2017; Salomon, 2014).

Distributed work. Arrangements in which "any of the following conditions are met... Individual workers are located in different physical locations; most normal communications and interactions, even with colleagues in the next office, are asynchronous. That is, they do not occur simultaneously, or the individual workers are not all working for the same organization, or are working within distinctively different parts of the same parent organization. They may have widely different terms of employment" (MacDuffie, 2007, p.553). According to Golden, Barnes-Farrell, and Mascharka (2009) and Purvanova (2014), distributed work can be defined as an organizational structure in which an employee engages in distributed or virtual work including telework, telecommuting, remote work, geographically dispersed, geographically distributed work, and virtual work.

Job satisfaction. "A pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1300) that is comprised of both an affective component (one's emotional response to one's employment) and

attitudinal component (one's individual's assessment and evaluation of his or her feelings) (Weiss, 2002).

Managerial leadership behaviors. The behavioral means by which organizational leaders elicit desired result through their direct reports and other members of an organization (Hamlin, 2004). The process by which an individual seeks to use their own behavior to influences that of a group to achieve a common goal (Northouse, 2016).

Nanny-ware. User-monitoring software tools designed to act as a digital stand-in for managers who are unable to physically observe employee's use of networked software and computer applications (West & Bowman, 2016). The emergence of nanny-ware is a relatively recent phenomenon that is generally disliked by employees and is known to erode trust, reduce employee engagement, and exacerbate feelings of psychological distance in distributed teams (Wilson et al., 2008).

Organizational culture. The pattern of values, attitudes, and beliefs shared by a particular group of people, which affect their behavior (Hoffman & Shipper, 2012; Hofstede, 1998).

Perceived proximity. "A dyadic and asymmetric construct which defines one person's perception of how close or how far another person is... unlike 'objective distance,' which can be observed or calculated by others, perceived proximity is [a subjectively evaluated state] known only to the focal person " (Wilston et al., 2008, p. 983).

Universal management practices. Simple universal: a given practice that holds true in all circumstances. Variform universal: a practice in which only subtle changes

need to be made to comply with employee expectations. Functional universal: a practice in which the relationship between various management and leadership behaviors and their associated employee outcome variables remains consistent in direction even if the exact expression of the behavior or the strength of the relationship may change in different contexts (Den Hartog, House, Hanges, Ruiz-Quintanilla & Dorfman, 1999).

Virtual work. Work arrangement "in which employees operate remotely from each other and from managers" (Cascio, 2000, p. 81). Virtual work is a necessary precondition for distributed work.

Assumptions, Limitations, and Delimitation.

This study is built on three primary assumptions. The first assumption is that all study participants fully understood all of the survey questions including both the wording and format of each survey item. The second assumption is that those study participants that remained after data cleaning provided honest and sincere responses to the survey questions to the best of their ability. Finally, the study assumed that participants answered each question in reference to the observed behavior of their current supervisor, their relationship with that individual, and their satisfaction with their current job.

In addition, the study included four main limitations known in advance. The first, and perhaps most fundamental limitation is its unidirectional design that includes only the bottom-up perspective of employees without any manager or coworker input. While this methodological approach is appropriate for an emerging area of research (Bryman & Bell, 2011), future studies are encouraged to adopt a multidirectional approach to both replicate and expand on the perspectives contained within this study.

Second, this study made use of quantitative cross-sectional survey methods. This means that while the directionality and strength of relationships between the study variables were successfully explored, causality was not able to be determined by this study. Future studies should build on the exploratory work of this study by incorporating experimental or longitudinal designs that will more effectively explore the nature of causality between the variables within the study.

Third, while increasingly large numbers of employees engage in distributed work, with the possible exception of full time telecommuters, "the vast majority of teams [and by extension, the employees on them] are neither perfectly co-located nor perfectly virtual" meaning that it is hard to isolate the impact of physical proximity within teams in real-world settings (Hoegl & Proserpio, 2004, p. 1162).

Fourth, the study relies on the subjective retrospective judgment of the study participants which did not include any direct observation and verification on the part of the researcher. For example, it is impossible to determine whether a study participant's rating of his or her manager represents an objectively accurate assessment of the manager's behavior within the organizational context in which they work.

While researchers generally seek to honor and reflect the complexity of their area of study within their study design, researchers cannot possibly incorporate all of the potentially valid relationships and mechanism that may be relevant to their work. This study includes one such deliberate exclusion that should be explored in future studies. Chong, VanEerde, Rutte, and Chai (2012) found that the relationship between team proximity and team communication could at least partially be understood by how the

team reacted to the externally imposed stressor stemming from the time pressure associated with team deadlines. While the study found no statistically relevant relationship overall between proximity and team communication, they found that when they controlled for low hindrance/high challenge team orientation relative to time pressure, proximity had a small yet statistically relevant relationship to communication quality.

When controlling for high hindrance/low challenge team orientation relative to time pressure, proximity once again had no statistical relationship to team communication quality. Given the findings of Chong et al. (2012), it is likely that other workplace stressors on the relationship communication pathway, such as the extra communication and coordination challenges associated with distributed work, would also be moderated by one's orientation toward that stressor.

While the incorporation of a hindrance/challenge framework to capture and incorporate the employee's attitude toward distributed work would no doubt add additional detail and richness to the research model, the parsimony principals (Raykov & Marcoulides, 1999) calls on researchers to look for the most basic useful research model that can extend knowledge. Often the best model is the simplest one that can be relied upon to work when it's needed. Therefore the decision was made to delimit this aspect of the study and deliberately exclude a challenge/hindrance orientation scale in an effort to examine the most basic model that is expected to generate insights that will guide future research and be useful to current HRD practitioners and business leaders..

Summary

This chapter began by introducing the background and a statement of the problem. It then placed the problem within the proper organizational context of distributed work and included an introduction to perceived proximity as an emerging variable of interest to research involving distributed work. Managerial challenges and implications for organizational culture were discussed as well as the rationale for selecting job satisfaction as the dependent variable in order to maximize the future research implications for the insights from this study.

The chapter included the purpose and theoretical underpinning of the study as well as an introduction to the study's design and significance as it addressed its primary research questions. The chapter also included definitions for key terms used throughout the study before concluding with the assumptions, limitations, and delimitation of the study. The literature review in chapter 2 surveys the literature pertaining to three main areas including virtual work, remote employees, and distributed teams; organizational culture and cross-cultural management; and managerial leadership behaviors and effectiveness. The chapter is organized into five content sections and a summary.

The materials and methods covered in Chapter 3 includes a brief introduction along with the purpose of the study, the research design and justification, a review of the theoretical model from chapter 2, and the study's hypotheses. The chapter includes an overview of the study's population and sample frame as well as the instruments, control variables, data collection procedures, and data cleaning procedures. Next the study's data analysis procedures are presented including steps to determine the reliability and validity

of the survey instruments. The study's assumptions and design limitations are revisited before concluding the chapter with a summary. Finally, Chapters 4 and 5 will present the statistical treatments, analysis, results, limitations, and discussion including the implications for theory, research, and practice.

Chapter 2

Literature Review

Introduction

Today's employers appear to have a love-hate relationship with technologically facilitated work. According to Bloomberg News and others in the popular business press, 2017 was declared the year that the permanent telecommuter officially began to go extinct (Boss, 2017; Greenfield, 2017; Simons, 2017; Useem, 2017). This is somewhat surprising given the growth in policies since 2003 that are designed to support employee flexibility and work-life balance. According to the World At Work 2017 report on trends in workplace flexibility; "teleworking... is one of the only programs to show significant growth since 2013, and it is likely that this trend will continue as technology makes teleworking easier and more convenient than ever before" (p. 6). Indeed, some of the very same coverage sounding the death knell for telecommuters also highlights data from the Society of Human Resource Management that showed the percentage of organizations offering some type of telecommuting arrangement grew from 20% in 1996 to more than 60%in 2017 (Greenfield, 2017).

More than 70% of all employers and managers utilize flexible work arrangements in which the majority of the employee's time is still spent in a traditional office setting (Greenfield, 2017; World at work, 2017). Some firms that allowed full-time telecommuting, such as Yahoo and IBM, reversed these positions in recent years and recalled their full-time remote workforce to the office (Boss, 2017; Miller & Campell, 2013). The contradictory impulse to embrace mobility and location flexibility for

employees while simultaneously rolling back distance-work policies has created organizational uncertainty for both managers and distributed employees alike.

While these recent highly publicized business decisions focused heavily on the full-time telecommuter, the reality is that this segment is simply the most visible and recognizable group that exists within a much larger established trend. The virtualization of work has become almost ubiquitous within the global workplace, leading most organizations to embrace virtual and distributed work practices within their organization (Greenfield, 2017; World at work, 2017).

Virtual work describes a work arrangement "in which employees operate remotely from each other and from managers" (Cascio, 2000, p.81). Virtual work is a necessary precondition for organizations to utilize distributed work arrangements in which "any of the following conditions are met... Individual workers are located in different physical locations; most normal communications and interactions, even with colleagues in the next office, are asynchronous. That is, they do not occur simultaneously, or the individual workers are not all working for the same organization, or are working within distinctively different parts of the same parent organization. They may have widely different terms of employment" (MacDuffie, 2007, p. 553).

In today's modern, often open plan working environment, distributed work is at once being done by both the lone telecommuter working from his or her home or other remote location, as well as the employee working in a more traditional office setting who, in order to do his or her job, must use technologically facilitated communication tools to collaborate with other employees who may be located some distance away, be it down

the hall, on another floor of the building, across town, across state lines, or even across the globe.

While recent news indicates that the reputation of distributed work is on the decline, the reality is that it has become the way that organizations get their work done. Virtual work systems have grown to impact more than 1.3 billion workers (Johns & Gratton, 2013) since the technology to support it first emerged in the late 1990s and early 2000s (Lipnack & Stamps, 1999). This provides ample evidence of the importance for HRD researchers and practitioners to study the phenomenon, especially as it appears to be undergoing significant change. While some established firms are indeed retreating from some aspects of distributed work, its relevance to organizations and their employees is far from extinct. Despite the recent pullback, interest in distributed work arrangements continues to grow, especially for younger workers just entering the job market.

A LinkedIn.com poll found that among Millennials, 85% indicated a desire to telecommute full-time (Storr, 2016). In addition, the allure of low overhead, access to global talent pools, and flexible work-flows remain a powerful competitive tool for both established firms and startup enterprises in particular to leverage the potential of distributed work to improve organizational performance (Cascio, 2000; Leibowitz, 2016). The well-publicized corporate retreats of Yahoo, IBM, and other organizations from full-time telecommuters suggest that established organizations are failing to reap the expected benefits of the most easily recognized group of employees utilizing distributed work arrangements (Boss, 2017; Greenfield, 2017; Miller & Campell, 2013). Organizations have not yet learned how to best leverage the technology available to them to generate

results. Therefore, this phenomenon is of key interest to both HRD researchers and practitioners who are charged with integrating the work of learning, performance, and change in service to their host organizations (Wang et al., 2017).

The fluid and potentially pervasive nature of virtual and distributed work is creating distinct challenges for organizational leaders and managers. As early as 2002, some studies reported approximately 60% of professional employees working at different geographic locations from their peers or direct managers (Kanawattanachai & Yoo, 2002). The U.S. Census Bureau's 2012 data reports that from 2002 to 2012 the number of individuals that reported working from home at least one day a week grew by approximately 35% to 13.4 million and the combined percentage of those regularly working from home at least two days a week or more reached 13.9% of all US workers (U.S. Census Bureau, 2012). In June 2017, the Bureau of Labor Statistics reported that as of 2016, 22% of workers reported doing some or all of their work from home, a 19% gain from data collected by the Bureau in 2003.

The Bureau's report went on to note that those with advanced degrees (43%) reported working from home at almost twice the rate of general US workers (22%), and more than three times the rate of those with only a high school diploma (12%). This suggests that virtual work is continuing to grow and it is growing fastest among highly skilled workers in the knowledge economy. In addition, according to the Society for Human Resource Management, the vast majority of those that do not work from home still report regularly meeting with others on their workplace teams as well as others

within their organization over distance (Maurer, 2015) and almost a third of workers in some studies indicate that they regularly engage in distributed work (Brewer, 2015).

The purpose of this systematic review is to identify and describe the properties of distributed work, to highlight the need for research from an HRD perspective, and to provide a theoretical model for effective managerial leadership behaviors with employees engaged in distributed work that leads to meaningful outcomes for organizations seeking to make use of these work arrangements. The research questions informing this review are threefold:

1. What are the properties of distributed work that pose unique management challenges within the context of established organizations?
2. What conceptual relationships and outcomes may be predicted or influenced by managerial behaviors when applied to employees engaged in distributed work?
3. What are the mechanisms through which managerial behaviors impact employee attitudinal outcomes (job satisfaction) in the context of distributed work?

After reviewing the literature search methodology, this review provides an examination of the existing literature from multiple academic disciplines related to distributed employee outcomes, organizational leadership and management behavior, organizational context, and culture.

The literature review is structured in seven sections. The initial section covers the nature of distributed and virtual work in order to examine the case for a differential approach to research and identification of best practices. Section two articulates the

elements of organizational culture that may impact remote work arrangements and positions the importance of the organizational and environmental context in which that work is carried out. The third section presents the literature on managerial and leadership behaviors and styles. The fourth section examines employee outcomes and the centrality of job satisfaction among worker attitudes. The fifth section positions a general model of the relationships between managerial behavior, perceived proximity, and employee outcomes that is tailored to distributed work applications. Section six presents future research implications and section seven provides a summary of the review.

Literature Review Methodology

Publications were identified, sorted, and examined following Torraco's (2016) staged review process. Keyword searches were used with several online databases including Business Source Complete, Education Source, Emerald, Psychology and Behavioral Sciences Collection, PsycINFO, SAGE: Management and Organization, ScienceDirect, SpringerLink, Wiley Online, and Google Scholar. Relevant search terms included: virtual work; virtual team; distributed work; distributed team; virtual competence; remote employee; telecommuter; telecommuting; telework; virtual management; remote managerial and leadership effectiveness; and e-leadership. Initial results included more than 3,360,000 articles with the term *virtual work* and at least one other term including *distributed, remote, employee, employer, manage, lead,* or *culture.* After an initial search and citation evaluation for relevant literature, the search parameters were refined to include references to virtual teams, telecommuting, or telecommuters, competence, and e-leaders or e-leadership. Lastly, a chain-review or snow-ball review

process was employed whereby the reference lists for all of the articles deemed relevant were evaluated for additional relevant literature.

Publications were selected for inclusion based on the degree to which they engaged with the phenomenon of distributed or virtual work, the organizational context or workplace culture, management or leadership behaviors, and employee outcomes. Selected works provided conceptual definitions, insight into related concepts and behavior mechanisms, and pointed to associated relationships or constructs of potential value to employers, HRD practitioners, and researchers looking for insight into how to drive organizational learning, performance, and change within the context of distributed work. A total of 227 publications were deemed sufficiently relevant to include.

Virtual Work

Virtual work and distributed work arrangements are most often defined in terms of how those doing the work differ from traditional, or collocated, employees. Collocated workers are "individuals who are physically located close together and can work in face-to-face contexts" (Brewer, 2015, p. 8). A distributed or virtual worker, on the other hand, generally either cannot collaborate in person with at least some number of his or her colleagues within the organization or chooses not to do so in order to work more efficiently by communicating and collaborating through some form of technology-facilitated means (Lipnack & Stamps, 1999; Lurey & Raisinghani, 2001; Montoya-Weiss, Massey, & Song, 2001; Staples & Ratnasingham, 1998; Warkentin, Sayeed, & Hightower, 1997).

While this definition may initially seem straightforward and clear in the context of an individual employee who is a full-time telecommuter, it can cause some confusion when applied more broadly to an organization. For example, few would intuitively consider an employee working in an office with a large number of other employees of the organization to be a remote or virtual worker. However, for organizations with teams spread over large office buildings or in multiple locations, many of these employees will be physically separated from their managers and may collectively represent a distributed workforce that relies on communication technologies to organize and carry out their work without face-to-face communication. Virtual and distributed work must therefore have a unique description that is not defined in opposition to something else. Instead, it should be defined in reference to its own characteristics (Montoya-Weiss et al., 2001).

Golden et al. (2009) and Purvanova (2014) define distributed work as an organizational structure in which an employee engages in distributed or virtual work including telework, telecommuting, remote work, geographically dispersed, geographically distributed, and virtual work. Distributed work arrangements therefore may exist at any number of levels including the individual, team, department, division, or organizational level.

The single most important defining characteristic of distributed and virtual work is the relative absence of face-to-face contact with coworkers when compared to more traditional employment arrangements (Hakonen & Lipponen, 2008; Kirkman, Rosen, Tesluk, & Gibson, 2004; Warkentin et al., 1997). While physical distance is also commonly associated with distributed employees and virtual work, there is no consensus

on a specific threshold of geographic separation beyond which one is considered a remote employee or part of a distributed team (Kraut, Fussell, Brennan, & Siegel, 2002; Wilson et al., 2008).

In their meta-analysis of telecommuting literature, Gajendran and Harrison (2007) point out the central theme of connection, both psychologically and operationally, with other employees within organizations for remote employees. Given that distributed employees are generally separated from some or all of the other employees with whom they work (Brewer, 2015), this highlights a second characteristic of distributed work: the existence of organizational networks mediated and facilitated by ubiquitous technology (Rasmussen & Wangel, 2007; Shachaf, 2008; Wilson et al., 2008). While most modern employees rely on technology to assist in the completion of their workflow, distributed work arrangements are distinguished by their singular reliance on technology for both their work outputs and their interactions with other members of the organization (Brewer, 2015; Darics, 2017). In short, "communication technology bridges physical distance" for distributed employees (Herd, 2016, p. 44) regardless of how small or large that physical distance may be.

A third defining characteristic of distributed employees and virtual work is that of reduced oversight and direct supervision (Herd, 2016; Rockmann & Pratt, 2015; Walvoord, Redden, Elliott, & Coovert, 2008). While some may point to the existence of nanny-ware (West & Bowman, 2016), or user-monitoring software tools, as a digital stand-in for managers being able to physically observe their distributed employees, it generally represents a negative managerial presence that exacerbates feelings of distance

and distrust (Wilson et al., 2008). Reliance on such digital tools has been shown to undermine employee's feelings of autonomy and reciprocal trust, while also straining managerial comfort with evaluating employees based solely on their results (West & Bowman, 2016; Wilson et al., 2008). As a result, managers frequently report greater difficulty managing their remote employees (Cascio, 2000; Cascio & Shurygailo, 2003) or expressing a preference for their duties related to their collocated employees over their remote staff even when there is no discernible difference in employee productivity between the two groups (Simons, 2017).

The Emergence of the Remote Employee and Distributed Workforce

The study of distributed work in its various forms first emerged as an area of serious social science research in the mid-1990s with Warkentin et al.'s (1997) exploratory study comparing the effectiveness of virtual teams using a web-based conference system to communicate and organize their work relative to other teams working face-to-face. While early research along these lines concluded that computer-based teams could not outperform traditional teams working face-to-face (Warkentin et al., 1997), it nonetheless recognized the reality that many organizations were already regularly using technology to bring together teams of employees from geographically and organizationally dispersed areas for a variety of workplace tasks. It also set the stage for one of the foundational works on the subject.

Lipnack and Stamps (1999) heralded distributed work, in the form of virtual teams as the "21st century organization[al]" solution needed "to meet the rapidly changing demands of the business environment" in the "age of the network" (p. 14).

Their work would become one of the most widely cited early works into the emergence of distributed work. Its publication coincided with the crest of the first wave of virtual work that would eventually grow to impact more than 1.3 billion workers within the next few years (Johns & Gratton, 2013). The foundation for distributed work was laid by the emergence of virtual work that burst onto the American work scene "on a large scale [beginning] in the early 1980s, when... virtual workers using nascent e-mail networks emerged. The new connectivity allowed an individual who might otherwise have worked inside a company, or at a specialized vendor serving a company, to set up a one-person shop instead" (Johns & Gratton, 2013, p. 4).

This new breed of employee was physically "removed from the immediate sphere of influence of management and co-workers" (Jackson, Gharavi, & Klobas, 2006, p. 219) in a way that they had never been before. They were no longer tied to a specific office, location, or support infrastructure to complete their work. While the impact of this first wave is still being felt today, it merely set the stage for what was to come as these virtual freelancers gave way in the early 2000s to the second wave when corporations began adopting newly available technology on a wider scale (Johns & Gratton, 2013).

While many of the organizations that embraced this technology no doubt did so primarily seeking their own organizational efficiencies, this also brought with it the ability for many employees to decouple their job responsibilities from a single physical location:

> "As interoffice communication has shifted from face-to-face conversations and paper memos to voice mail and then e-mail, it matters less and less whether

> colleagues are on the same wing or even the same continent. With virtual work serving the interests of both employees and employers, the number of highly skilled and untethered people has risen exponentially. Office-based infrastructure is less relevant, replaced by smarter personal technology and cloud computing. Top talent increasingly values—and demands—work-life balance. IBM, an early convert, has reached the point where more than 45% of its 400,000 contractors and employees work remotely" (Johns & Gratton, 2013, p. 5).

However, the initial exuberance of the second wave did not last. Employers realized that in their zeal to embrace the future, some had undercut what they felt to be the natural advantages in teamwork and social support that come with the traditional work environment (Greenfield, 2017; Pillis & Furumo, 2007).

Likewise, some workers began to question whether their distributed work lives lacked a sense of community and social richness. Some distributed workers at IBM suggested that what IBM really stood for was "I'm by myself" (Johns & Gratton, 2013, p. 5). These feelings gave rise in the 2010s to a less naive, and more targeted approach to distributed work and its underlying virtual work that has come to be characterized as the third, and current, wave of literature. Employers and researchers are asking increasingly targeted questions about "when virtuality help[s] or hinder[s]" the performance of individuals and teams (Schaubroeck & Yu, 2017, p. 1; see also Johns & Gratton, 2013). In addition, the current wave of distributed work has given rise to an even newer phenomenon of third-party run co-working spaces in which employers allow their employees the freedom to cross-pollinate ideas with employees from completely different

organizations through the use of communally occupied, third-party owned work environments that help address feelings of social and creative isolation that are sometimes associated with distributed work (Bouncken & Reuschl, 2016).

The Need for a Differential Approach.

While few deny its potential benefits, it is no longer a foregone conclusion for many companies that virtual and distributed work are the wave of the future. Organizations have learned that there is also a cost to workplace virtuality and physical distribution that some organizations may not be willing to pay (Pillis & Furumo, 2007). With large tech companies such as Yahoo and early adopters of virtual work such as IBM going so far as to recall their remote workforce (Boss, 2017; Miller & Campell, 2013), there is a clear need for HRD research and best practices. Organizational leaders and HRD practitioners must be armed with the latest insights if they are to realize distributed work's technologically facilitated promises of lower costs, larger talent pools, and greater organizational flexibility without compromising the culture of the organization or its connection to its employees.

The Organizational Culture and Context of Distributed Work Arrangements

Organizational culture is most commonly defined as the pattern of values, attitudes, and beliefs, shared by a particular group of people which affect their behavior (Hoffman & Shipper, 2012; Hofstede, 1998). Hofstede's (1998) work assessed culture primarily by assessing shared values and common group referents with the most important research findings coming from issues of congruence or conflict as it relates to culture's impact on the interaction between the individual and the organization.

The wildly disparate experience and work processes of collocated and distributed employees (MacDuffie, 2007) represent a significant step away from the kinds of shared experience that underlie the concept of organizational culture, leading to the expectation that the two groups are likely to develop their own unique cultural contexts that, while related by dint of the larger organizational connection, are also different from each other (Zakaria, Amelinckx, & Wilemon, 2004). For leaders of established organizations seeking to harness the benefits of distributed work arrangements, an understanding of the relationship between organizational culture and employee outcomes is critical for those likely to be simultaneously managing employees that experience the organization through disparate cultural contexts.

Cultural divergence-convergence theories. Research into management practices across differing cultures can be roughly divided into those that view management practices as culturally divergent or convergent (Hoffman & Shipper, 2012). The culturally divergent school (Hostfede, 2011; Jogulu, 2010; Taras et al., 2010) represents the majority of cross-cultural management research which seeks to identify the boundary conditions associated with the differing cultural norms, ideologies, and standards of behavior that make certain management practices effective in their culturally bound context.

Alternately, the culturally convergent research paradigm seeks to identify universal practices that transcend cultural boundary conditions. This model attributes the existence of universal practices to a number of underlying homogenizing causes including the forces of globalization, communication technology, and international

bodies of academic management accreditation such as the AACSB (Hafsi & Farashahi, 2005; House et al.,2004; Hoffman et al., 2014). Given its intimate relationship to the forces of globalism and communication technology, the culturally convergent paradigm is particularly attractive to researchers looking to identify managerial best practices for distributed work.

For culturally convergent researchers, management constants have been described along multiple dimensions including the simple universal, in which a given practice holds true in all circumstances, variform universal in which only subtle changes need to be made to make management behaviors comply with employee expectations, and functional universal practices in which the relationship between various management and leadership behaviors and employee outcome variables remains consistent in direction even if the exact expression of the behavior or the strength of the relationship may change (Den Hartog et al., 1999). Research into management constants that can be applied to a distributed workforce offers a promising avenue of research that may bolster management confidence and reduce leadership discomfort for those looking to utilize remote workers. Such research would be of particular value to managers and organizations that are just beginning to embrace distributed work or that are struggling to cope with the management challenges that come with it.

Digital natives and digital immigrants. Digital native, a term often applied to those highly skilled at navigating distributed work systems, was a term first coined by technologist Mark Prensky in a series of articles starting in 2001. He used the term to describe individuals with "an innate confidence in using new technologies" that informed

the way in which they lived their life in a "permanent state of technological immersion and dependence" (Selwyn, 2009, p. 365).

Initially applied to the so called net-generation born between 1977 and 1997 (Tapscott & Williams, 2008), who were young children when the first wave of virtual work emerged in the 1980s (Johns & Gratton, 2013), the term enforced the "common perception of [a] generational divide and disjuncture, with present cohorts of children and young people ascribed distinct technological characteristics that set them apart from their elders" (Selwyn, 2009, p. 365). The phrase has also been used more generally to describe those with a seemingly innate level of comfort and skill with various forms of technology (Akçayır, Dündar, & Akçayır, 2016; Margaryan, Littlejohn, & Vojt, 2011). This broader use of the term appears to have matured with the cohort to which it was first applied as those workers born in 1977 represent mid-career professionals who will be entering their 40s in 2017.

At an organizational level, a digital native organization would therefore be one in which reliance on technology to complete both the work of the organization and to interact with other employees is the norm. In addition, the use of that technology for a digital native organization represents little to no extra effort on the part of its employees or leaders, and is a setting in which it is safe for all parties to assume a certain base level of comfort and familiarity with a broad set of communication technologies in addition to any work-flow technology that may be required for specific job functions. Many startup organizations are considered digital native organizations by virtue of necessity. They have used technology, virtual work, distributed work arrangements, and virtual supply

chains to manage costs or access key talent to begin operations (Boell, Cecez-Kecmanovic, & Campbell, 2016).

Digital immigrants, by contrast, are characterized in binary opposition to digital natives. They are older, established in their habits, slow to recognize the value of technology, linear in thought, resistant to change, and wary of untested technology (Bayne & Ross, 2007; Evans & Evans, 2017; Salomon, 2014). A digital immigrant organization therefore is characterized by a dominant culture that can safely assume ready face-to-face interaction as the most readily accessible and abundant form of communication. Many of these firms may also have business models that were successfully established prior to the first wave of virtualization in the 1980s and their use of technology is generally motivated by desire to improve existing operations. In short, digital immigrant organizations must navigate an extra technological learning curve as they adapt their baseline assumptions for how members of their organization will communicate and interact with one another.

The technological motivations for established organizations generally represent a bid to adapt to outside forces in the hope of becoming more lean, responsive, and nimble (Bell & Kozlowski, 2002). Mature digital immigrant organizations most often focus their efforts on adopting new technologies to lower cost, increase access to talent regardless of their geographic location (Cascio, 2000), or to position flexibility on the job as a workplace benefit (Hakonen & Lipponen, 2008; Purvanova, 2014). However, these organizational aspirations can have significant unintended consequences (Gajendran & Harrison, 2007; Rockmann & Pratt, 2015).

A major cultural hurdle for digital immigrant organizations seeking digital naturalization is the paradox of perceived proximity (Chae, 2016; Wilson, et al., 2008). Perceived proximity is "a dyadic and asymmetric construct which defines one person's perception of how close or how far another person is... unlike 'objective distance,' which can be observed or calculated by others, perceived proximity is known only to the focal person " (Wilson et al., 2008, p. 983). It encompasses the paradoxical phenomenon of feeling psychologically close to certain geographically distant colleagues as well as the fact that one can feel psychologically distant from those who may be in close physical proximity through a dynamic combination of communication, social identification, and socio-organizational processes (Wilson et al., 2008).

While managers that understand the factors contributing to the perceived proximity may be able to "achieve many of the benefits of co-location without actually having employees work in one place" (Wilson et al., 2008, p. 979), those unfamiliar with it risk the accidental alienation of their followers and lower quality relationships that are commonly associated with employees who spend more than 2.5 days away from the office (Gajendran & Harrison, 2007). Simply put, "[t]reating proximity and distance in purely physical terms provides an incomplete view of how people experience it" (Wilson et al., 2008, p. 980). For organizations seeking to embrace distributed work arrangements that may include employees separated by as little as a few feet to as distant as the other side of the globe, an understanding of proximity as a psychological and cultural construct is critical.

The way in which organizational leaders, managers, and fellow employees interact will determine the extent to which distributed employees feel subjectively connected to the organization and the extent to which the organization will be reciprocally connected to its distributed employees regardless of their objective distance to an organizationally meaningful geographic location. "Because managers do not have a good model of what influences relationships at a distance, they resort to bringing team members together face-to-face (conditions with which they are familiar)" (Wilson et al., 2008, p. 994). In other words, distance is not entirely an objective phenomenon.

Another potential pitfall is the inability of managers to cope with parallel cultures-within-a-culture for organizations with an established and dominant culture operating primarily face-to-face among its executive teams while also utilizing distributed employees. This organizational reality may lead to a disconnect between leaders who are digital immigrants with authority to make decisions and those digital natives who carry out the work (Rockmann & Pratt, 2015). While managers and organizational leaders of digital immigrant organizations may be able to do much of their work face-to-face, remote employees cannot. Indeed, while worker outputs and objectives are generally the same for both distributed and collocated employees, the methods by which they execute their work duties are often vastly different from traditional employees (MacDuffie, 2007). Remote employees must either be fluent in the technology that allows them to do their work or develop the fluency of a digital native quickly by dint of the fact that they have no other means of creating value for their organization without it (Mechanic, 1962; Zakaria et al., 2004). This lack of familiarity with the technology used by their

distributed employees may pose a significant challenge for managers and organizational leaders charged with obtaining results through physically distant employees. After all how can you manage people and processes that you can't see (Helms & Raiszadeh, 2002) when you don't know how the underlying technology works that makes distributed work possible?

Managerial Leadership Behavior

In periods of uncertainty and transition, there is often an increase in the number of companies deciding to move away from remote work arrangements while simultaneously acknowledging that remote workers are just as productive as their collocated counterparts (Simons, 2017). This suggests that organizational attitudes toward distributed work and the organization's ability to employ it as a competitive strategy may have as much to do with the firm's beliefs about managerial technique as it has to do with actual productivity.

Kruger and Dunning (1999) illustrated the potential impact of discrepancies between one's self-assessment and actual skill level when evaluating one's self-performance. The their theory holds that those least skilled within social and intellectual domains are least aware of their own performance deficiencies. Meanwhile the most highly skilled tend to project their own level of skill onto others, rendering themselves unaware of the degree to which their skill is the exception rather than the rule.

At an organizational level the consequences of the Kruger-Dunning mechanism are clear and potentially costly as they relate to distributed work: leaders who fail to generate results through employees engaged in distributed work are more likely to blame their poor results on the fundamental character of the distributed work system itself rather

than their own behavior or lack of managerial skill. On the opposite extreme, those organizational leaders who are able to generate superior results through their native talent are more likely to assume that such results can be achieved relatively easily by others and that there is little reason to document and capture their leadership techniques as best practices to be shared with others. This suggests that to properly study the phenomenon of distributed work, one must also understand leadership and the extent to which managers demonstrate leadership behaviors in context in their organization.

From Great Man and trait-based to behavior theories of leadership. Among the earliest leadership theories to flourish in twentieth century Western leadership literature were the so called Great Man theories (Bolden, Gosling, Marturano, & Dennison, 2003; Spector, 2016). Male dominated and originating largely within a military tradition, the theory posited that leaders were born with certain innate qualities or traits that set them apart from others (Stogdill, 1974). Under this paradigm, as championed by Thomas Carlyle as early as the 1840's, leadership development was less a process of creating new leaders and more a process by which circumstances were created in which natural leaders could emerge and be recognized. Leaders were not made; rather, they were discovered (Spector, 2016).

While the majority of modern leadership scholars have moved beyond the great man theory and the search for a universal set of leadership traits (Stogdill, 1974), some scholars have revisited the idea of universally applicable insights into contemporary leadership behaviors. Those searching for universal leadership attributes believe that examining the "impulses that drive us toward authority figures... can, and should offer

valuable insights into how we—scholars, observers, and participants in the business world—react to corporate saviors" (Spector, 2016, p. 250). The search for comfort and familiarity provided by great man savior figures echoes the simplistic faith currently being evidenced by firms moving away from telecommuting policies in the belief that simply bringing their employees back to an office will automatically improve their organizational effectiveness. While scholars have moved beyond the widespread belief in the great man theories, humanity has not moved beyond the tendency to believe in simple solutions to complex organizational issues.

Trait-based theories eventually gave way to behavioral leadership theories in the 1940's that focused less on who leaders are and more on what they do (Bolden et al., 2003; Northouse, 2016). Largely dividing leadership actions into either task-oriented or relationship-oriented activities, behavioral leadership research has observed numerous different combinations of effective leadership behaviors and has classified them into various 'styles of leadership' (Blake, Mouton, & Bidwell, 1962; McGregor, 1960). In describing the behavioral leadership paradigm, it is important to understand that the theories do not posit the existence of a single "correct" way to lead. "The behavioral approach works not by telling leaders how to behave, but by describing the major components of their behavior. The behavioral approach reminds leaders that their actions toward others occur on a task level and a relationship level" (Northouse, 2016, p. 79).

The 1960's gave rise Situational Leadership theory with the work of Hershey and Blanchard who built on Reddin's 3-D management style theory and ultimately led to the creation of Blanchard's formal Situational Leadership Model II in 1985 (Blanchard,

Zigarmi, & Nelson, 1993; Bolden et al., 2003). Situational Leadership posits that every situation demands its own kind of leadership. Therefore, the central job of effective situational leaders is to monitor their environment and adapt their style to fit the demands of the situation at hand (Northouse, 2016). While behaviorists focus on either task-oriented or relationship-oriented activities, situational leadership categorizes leadership behaviors as directive, telling people what and how to do something, and supportive, ensuring that they have the knowledge and resources necessary to complete their goals (Blanchard et al., 1993). The effective situational leader understands both the competence and commitment of followers and adjusts his or her leadership style to meet the followers' needs.

The importance of meeting follower needs is underscored in both the path-goal and contingency theories of leadership. As a refinement of situational leadership, Contingency Theory attempts to identify the situational variables that best predict the most effective leadership style that a leader can adopt to meet the needs of his or her followers (Bolden et al., 2003; House, 1971). Path-Goal Theory builds on this approach by identifying follower motivations and positioning the goal of leadership as the desire "to enhance follower performance and follower satisfaction by focusing on follower motivation" (Northouse, 2016, p. 115). However, rather than adapting leadership style to meet the competence and commitment of one's followers as a situational leader might, the path-goal leader instead attempts to modify his or her style to meet follower's motivational needs (House, 1971).

Transactional theories, such as Leader-Member Exchange (LMX) Theory, came into being in the 1970s as researchers began to establish the ways in which leaders and followers jointly impacted each other as individuals rather than as a class (Gerstner & Day, 1997). "[B]efore [leader-member exchange] theory, researchers treated leadership as something leaders did toward all of their followers... in a collective way... [that] implied [a successful application of] an average leadership style" to their followers as a whole (Northouse, 2016, p. 137). A key concept in the early development of LMX theory is the idea of in-groups and out-groups that form "based on how well they work with the leader and how well the leader works with them" (Northouse, 2016, p. 138). This aspect of LMX theory has particular relevance for distributed work situations as relationships with collocated followers may develop into in-group relationship or be perceived as such by those working at a distance.

LMX's initial focus on group differences in which in-group followers receive a greater share of the mutual benefits of the leader-follower relationship with greater access to information, organizational resources, social influence, and leader-follower relationship quality relative to out-group followers, eventually gave way to more general research focusing on ways that leaders and all of their followers can improve the quality of their reciprocal relationships to improve organizational effectiveness (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995). Specifically, LMX research indicated that high-quality leader-member exchanges were associated with reduced employee turnover, positive performance evaluations, career advancement opportunities, higher levels of employee commitment, as well as a host of other desirable organizational outcomes (Graen & Uhl-

Bien, 1995). Furthermore, this avenue of LMX research suggested that the development of out-groups was not a foregone conclusion and that leaders and followers could cultivate high quality leader-member exchanges with each other as a matter of collective choice rather than organizational destiny (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995).

Among the most recent leadership theories to appear in the literature is Transformational Leadership Theory. While the term transformational leadership was first used by Downton in 1973, transformational leadership literature did not emerge in force until the 1980s and early 1990s, just as the first wave of virtual work technologies began impacting the U.S. economy and organizations struggled to cope with the massive change that came with it (Johns & Gratton, 2013). Therefore, it is not surprising that the central focus of transformational leadership is on the role of the leader as it relates to navigating organizational change (Bass, 1990).

Transformational leadership "is concerned with emotions, values, ethics, standards, and long-term goals...satisfying [the] needs [of followers] and treating them as full human beings" often using charismatic or visionary leadership techniques (Northouse, 2016, p. 161). Transformational leadership seeks to transcend transactional concepts such as organizational rewards between mutually benefitting parties and instead seeks the establishment of a meaningful connection between leaders, employees, and organizations that inspires employees to become better and more motivated versions of themselves (Bass, 1990). Transformational leadership is about forging meaningful connections between the inner lives of employees, the mission of the organization, and

leaders "learning to share the vision" (Bass, 1990, p. 19) for how to navigate into an uncertain future.

Importantly, leadership theories do not specify the organizational level at which "[l]eadership" occurs; it is simply "a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 2016, p. 6). While leaders may exist at all organizational levels, it is common for employees to define leadership as being associated with a higher organizational ranking than themselves. Many use the term *management* and *leadership* as synonyms in their daily work (Hamlin, 2004). Practitioners have attempted to apply numerous leadership theories to management development programs without consistent results: "[w]ritings about leadership... are not much clearer today than [they] were twenty-five years ago about what is a good leader and what a leader should be doing" (Schein, 2010, p. x). This has led some researchers once again to search for universal leadership constants, however, not in the form of traits from the great man era. Instead, they seek generic or universal leadership behaviors that can be discovered by empirical observation.

Hamlin's (2004) generic model for managerial and leadership effectiveness is one such attempt explicitly derived from an HRD perspective. Refuting the assertions of Avolio, Bass, and Jung (1999) that the lack of generalizability in leadership and management literature is due primarily to research design issues, Hamlin (2004) built on the work of Hamlin (1987), Thompson, Stuart, and Lindsay (1996), Bass (1997), House and Aditya (1997), Bennis (1999), Russ-Eft and Brennan (2001), and Agut and Grau (2002), who suggested the logical and theoretical existence of universal or generic

leadership and management behaviors. Hamlin (2004) explored three empirical research studies on leadership and managerial effectiveness in the United Kingdom using qualitative research techniques to interrogate the data for fresh insights and to build an empirically derived generic set of universally effective management and leadership behaviors.

Utilizing an open coding technique within a grounded theory approach, the author examined the data and findings from three quantitative studies that examined leadership and managerial effectiveness in three separate public-sector organizations. Managerial effectiveness was evaluated from multiple perspectives in all three studies including self-evaluation, top-down evaluation of managers by their organizational superior, and the bottom-up perspective in which managers were rated by their direct reports. With the help of two additional co-researchers, the team coded their data separately and then triangulated their findings to identify "the extent of internal generalization between the criteria of managerial effectiveness" across all three studies (Hamlin, 2004, p. 198).

The resulting generic model of managerial and leadership effectiveness identified six positive leadership criteria and five negative criteria that were common to all three studies. The six positive criteria were: 1. effective organization and proactive planning/management; 2. participative and supportive leadership/proactive team leadership; 3. empowerment and delegation; 4. genuine concern for people and their developmental needs; 5. open and personal approach/inclusive decision making; and finally 6. communication and consultation that keeps a wide range of stakeholders informed. The five negative criteria were: 1. lack of consideration or concern for

staff/autocratic or dictatorial style; 2. uncaring behavior including self-serving, undermining, and intimidation; 3. tolerance of poor performance and avoidance behavior; 4. abdication of leadership/managerial roles and responsibilities; and finally 5. negativity and resistance to new ideas (Hamlin, 2004). For organizations and leaders seeking to increase the effectiveness of distributed work systems, these broadly applicable leadership behaviors represent a framework for evaluating managerial behavior and avoiding the Dunning-Kruger (1999) trap of misattribution for employee outcomes.

Employee Outcomes and Job Satisfaction

Managerial behavior has been shown to have a positive relationship with employee outcomes such as organizational and occupational commitment, job satisfaction, job involvement, and work group effectiveness (Chen & Aryee, 2007; Hui et al., 2004; Meyer et al., 2002;). For behavioral researchers, the connection between managerial behavior and job satisfaction is of particular interest as it represents "a pivotal construct" that is also among "the most frequently studied variables in organizational behavior research in both the theoretical and empirical terms" (King & Williams, 2005, p. 176).

Among the earliest definitions of job satisfaction is Locke's 1976 definition from the *Handbook of Industrial Psychology* which defines job satisfaction as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences" (p. 1300). This initial definition has been refined over time to include two distinct elements: affect and attitude. The affective component of job satisfaction encompasses one's emotional response to one's employment. The attitudinal component of job satisfaction

represents an "evaluative judgment made with regard to an attitudinal object" (Weiss, 2002, p. 175). It is the individual's assessment and evaluation of how he or she feel about it. A full understanding of job satisfaction therefore requires one to understand both the employee's right-brain emotional response to work as well as the summative product of the employee's left-brain evaluation regarding the perceived self-relationship with his or her work. The relationship between managerial behavior and job satisfaction also creates a theoretical link to other outcomes that are known to be related to job satisfaction including absenteeism, organizational commitment, customer-oriented behaviors, customer satisfaction, job performance, organizational citizenship behaviors, turnover/retention, employee health, and psychological well-being (King & Williamson, 2005; Meyer et al., 2002; Wilkin, 2013).

Culture, Leadership, and Job Satisfaction: An Integrative Research Model for Distributed Work

Among the most far-reaching integrative conceptual frameworks for organizational studies in the HRD literature is Gilley and Gilley's (2002) organizational system blueprint. It offers a theoretical model for understanding organizations in their unique context and how each of the ten different organizational components including the external environment, the organization's mission and strategy, its leadership, culture, work climate, management, structure, policies and procedures, processes, and individual and collective performance interact to influence the eleventh and final component of the model, the organization's ultimate performance results (see Figure 1).

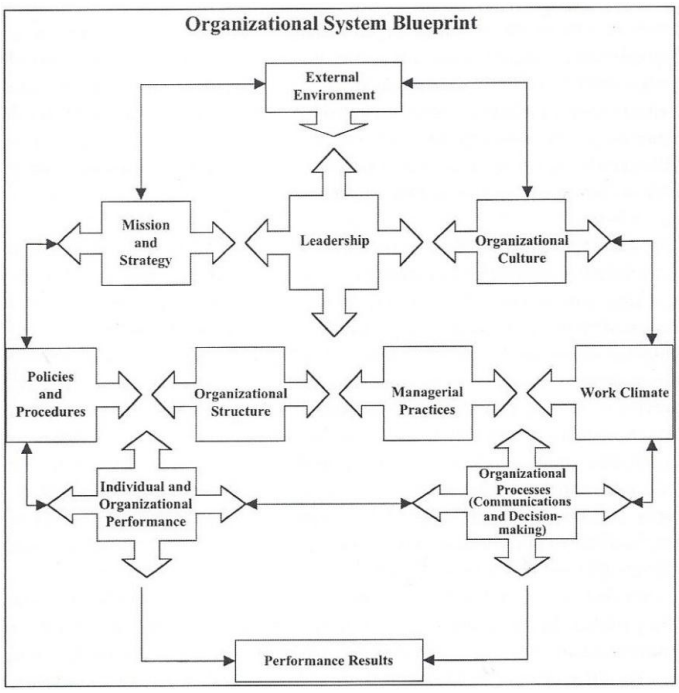

Figure 1.Gilley and Gilley's (2002) Organizational System Blueprint

While the model excels at providing a holistic view of an overall organization that is useful for diagnosing organizational dysfunction and managerial malpractice (Gilley, Gilley, Ambort-Clark, & Marion, 2014), it has yet to be empirically validated in its totality. Also, while the model's breadth and depth represent a tremendous source of value to HRD practitioners, it also represents a challenge for researchers with a narrower research agenda for which a more parsimonious research model would be preferable.

Hoffman and Shipper (2012) offer one such model that may be contextualized as a subset of the larger Gilley and Gilley (2002) system blueprint. They position the iterative reciprocal relationships in the Gilley and Gilley (2002) model between the environmental context, leadership and management practices, culture, and individual and work group outcomes as a more linear model which draws heavily from the right side of the Gilley and Gilley (2002) model (see Figure 2)

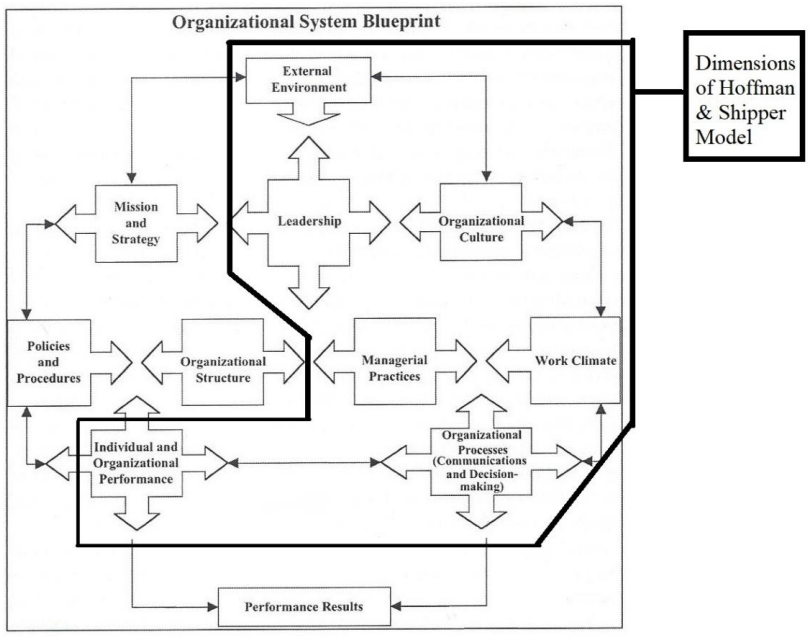

Figure 2. Mapping Hoffman and Shipper's (2012) Managerial Leadership Model onto Gilley and Gilley's (2002) Organizational System Blueprint

The Hoffman and Shipper (2012) model allows for closer examination of the role of culture as it informs the relationship between managerial behavior and employee outcomes in a way that may be particularly useful when applied to studies done in the context of distributed work (see Figure 3).

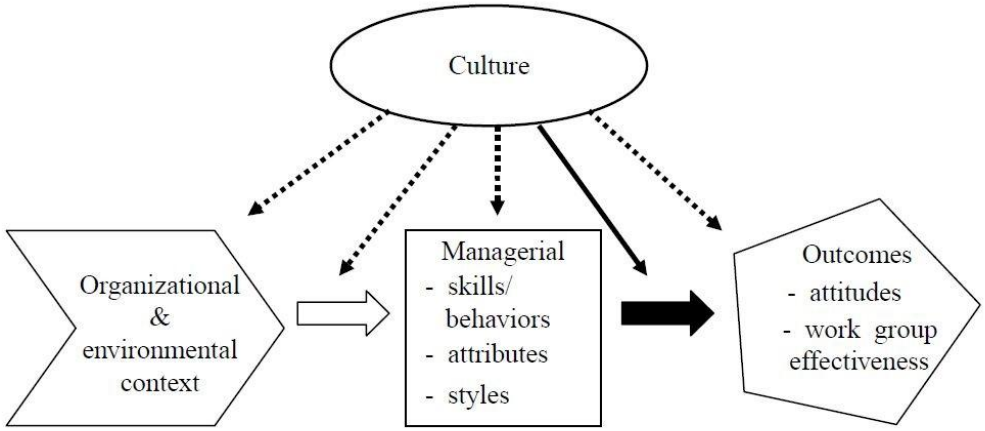

Figure 3. Hoffman and Shipper (2012) culture, managerial skill/behavior, and outcomes general model

"[D]ifferent cultures reflect different values" (Hoffman & Shipper, 2012, p. 1414) and the recent string of high profile companies such as Reddit, Yahoo, and IBM moving away from full-time telecommuting work arrangements demonstrates the organizational value that managers are currently placing on physical proximity and its more familiar forms of managerial oversight and control (Boss, 2017; Greenfield, 2017; Miller & Campell, 2013; Simons, 2017). However, this value set is diametrically opposed to the values of many employees who choose distributed work opportunities because they place a high value on autonomy, privacy, and flexibility (Simons, 2017) and sets the stage for potential organizational culture clashes between distributed employees and the larger organization (Spokane, Meir, & Catalano, 2000).

Understanding the needs of distributed employees in terms of culture and managerial behavior is especially useful given that Hoffman and Shipper's (2012) results indicated that the presence or absence of negative effects from cultural mismatches were

largely a function of managerial behavior. Hoffman and Shipper's results "indicate that cultural values tend to have a greater effect when a manager is less skilled than when the manager is highly skilled. When the manager is highly skilled, the interaction effects of culture tend to disappear" (2012, p. 1414). This represents a critical insight for organizations given that managerial skill and the behaviors that come with it can be developed and deficits can be overcome.

The role of managerial behavior in determining the extent to which culture influences employee outcomes is consistent with research into universal leadership/manager behaviors that are effective regardless of the cultural context (Hamlin, 2004). Furthermore, managerial behavior is especially important to study in distributed employee populations as "[l]eaders often say ‘I like my co-located team better than my [remote] team, but the work gets done just as well'" (Simons, 2017, p. 1). This suggests that while distributed employees may be just as productive as traditionally collocated employees, it is the behavior of the manager, and by extension the organization, that likely matters most in determining whether remote employees are integrated into the cultural fabric of the organization or whether they become a type of secondary class company citizen that is isolated from the rest of the firm.

Moreover, the general model may be particularly useful in studying attitudinal outcomes related to culture and managerial behavior as the

> "cultural interactions appeared to be more important when examining the managerial skills–attitude relationship than the skills–effectiveness relationship...For other outcomes – job attitudes – a divergent view (cultural

> variations exist) is supported when managers exhibit low levels of managerial skills while a convergent view (no cultural variation) is more evident when managers exhibit higher skill levels" (Hoffman & Shipper, 2012, p. 1430).

This suggests that cultural factors have a greater impact on employee outcomes when managerial behaviors indicate lower levels of skill and that this impact is greater for feeling-related employee outcomes than for performance-related outcomes. Given the recent flurry of firms cutting back on remote work arrangements based on manager sentiment rather than employee productivity, it would seem prudent to select this model to engage in focused research in a distributed work context to determine the relationship between managerial behavior and attitudinal employee outcomes such as job satisfaction.

However, to apply the Hoffman and Shipper (2012) model to a distributed work context, some modifications are required. Culture is ultimately about shared values and mental models between groups of people with a common sense of identity (Hoffman & Shipper, 2012; Hofstede, 1998). This sense of closeness stemming from shared experience and communal identity is also at the heart of the concept of perceived proximity (Wilson et al., 2008) and for distributed employees, especially those who may telecommute or work in physical isolation, it may well represent the single most important aspect of the way they experience the culture of the organization in their daily work. While any study involving cultural issues would likely benefit from incorporating perceived proximity as a cultural variable, for research into remote employees or distributed teams, it is vital.

Perceived proximity was first proposed as the product of a number of sub-factors including communication, identification, socio-organizational factors, and individual factors related to each employee (Wilson et al., 2008). It is a subjectively experienced attitudinal variable that is constructed of elements that can be measured objectively as well as those that cannot. Frequent meaningful and interactive communication is the most visible contributor to perceived proximity. These repeated communications build mental salience, the extent to which physically distant individuals remain top of mind, by creating opportunities for individuals to envision each other's context and thus reduce uncertainty as to the motivations or potential actions of others.

The second building block of perceived proximity is identification or the "self-categorization with respect to others" (Wilson et al., 2008, p. 986) that is impacted by three core processes: creating a basis for common ground (a process which is shared with communication); reducing uncertainty; and engendering positive attributions when real data are absent. The third sub-factor is socio-organizational and includes both the individual's organizational network structure, including the breadth and depth of relationships with others in the organization, and structural assurances or the "conditions that make things seem safe and fair in an organization" at the individual level (Wilson et al., 2008, p. 987).

These structural assurances are remarkably similar to the established procedural justice variable in social science research; however the way in which it must be applied and understood for remote or distributed workers is unique in that it is experienced by the employee through the consistent adoption of communication technology that makes

individuals and the team as a whole more salient (Wilson et al., 2008). To use a concrete example, managers and leaders at the home office need to be as good at using remote communication technology as the remote employees. If leaders must allocate extra time in meetings to troubleshoot technology or avoid its use due to personal preference, distributed employees cannot be assured of equal access and mental salience relative to their collocated peers.

Another critical structural assurance mechanism identified by Wilson et al. (2008) is role clarity; which many managers and leaders fail to provide their followers regardless of whether they work face-to-face or over distance (Walvoord et al., 2008). The final perceived proximity sub-factor is the combination of the individual employee's openness to the remote work experience and the cumulative perceptions formed from any prior experiences with dispersed work.

In 2014, O'Leary, Wilson, and Metiu streamlined and condensed the multi-factor conceptual framework for perceived proximity into a single-factor model that includes affective and cognitive elements. As with other subjective social science variables, such as job satisfaction, the affective aspect of perceived proximity encompasses one's feeling of emotional closeness to other employees or the organization (O'Leary et al., 2014). Meanwhile, "[t]he cognitive component refers to a mental assessment of how close or far a teammate seems" (O'Leary et al, 2014, p. 1222). Perceived proximity involves both the individual's assessment of closeness to another entity and an evaluation of how he or she feel about it.

O'Leary et al. (2014) demonstrated that perceived proximity completely mediates the relationship between relationship quality and both objective distance as well as communication. In addition, perceived proximity was shown to be positively related to shared identity (β= 0.47, $p < 0.01$) and to play an even more important role than either objective distance or shared identification when examining workplace relationships (see Figure 4).

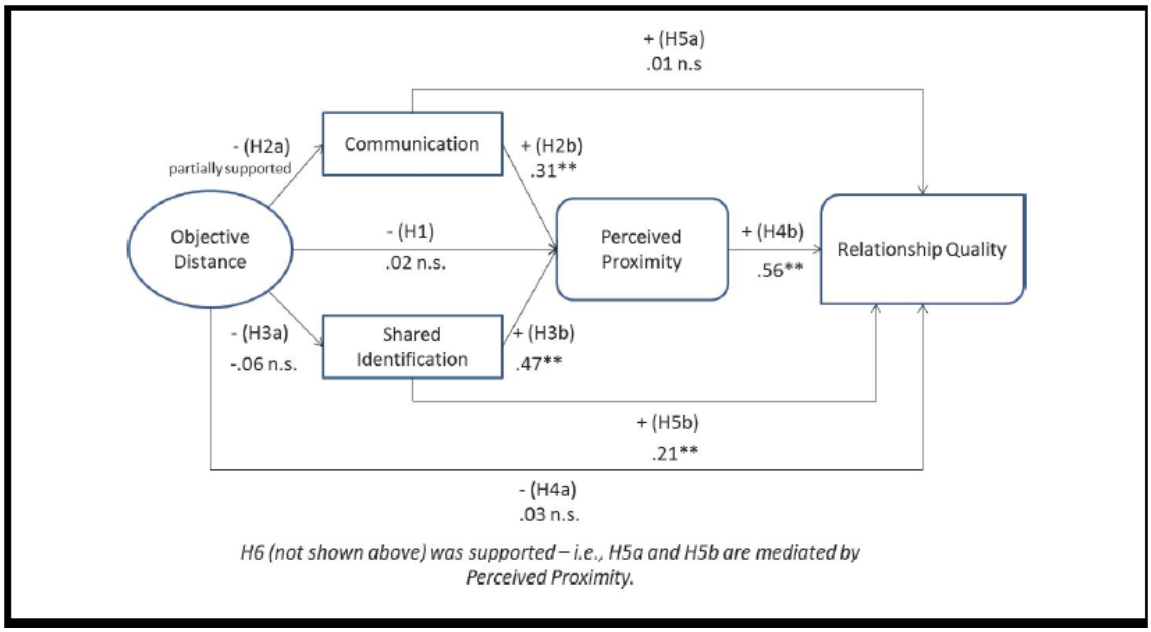

Figure 4. O'Leary et al (2014) Model of Objective Distance, Perceived Proximity, and Relationship Outcomes

Given culture's role as the vehicle through which employees experience a sense of shared identification, values, and behavioral norms, this suggests a very close theoretical compatibility between culture and perceived proximity for researchers operating within a distributed work context.

For those looking to equip organizational leaders to improve organizational performance through technology, a theoretical framework is necessary to guide research into the behavior that will be required of its front-line leaders to succeed and the nature of their relationship with their employees within a technologically mediated context. Integrating Gilley and Gilley's (2002) Organizational System Blueprint, Hoffman and Shipper's (2012) culture, managerial behavior and employee outcomes model, and Hamlin's (2004) universal managerial and leadership behaviors, with Wilson et al.'s (2008) perceived proximity variable results in the research model explored by this study (see Figure 5).

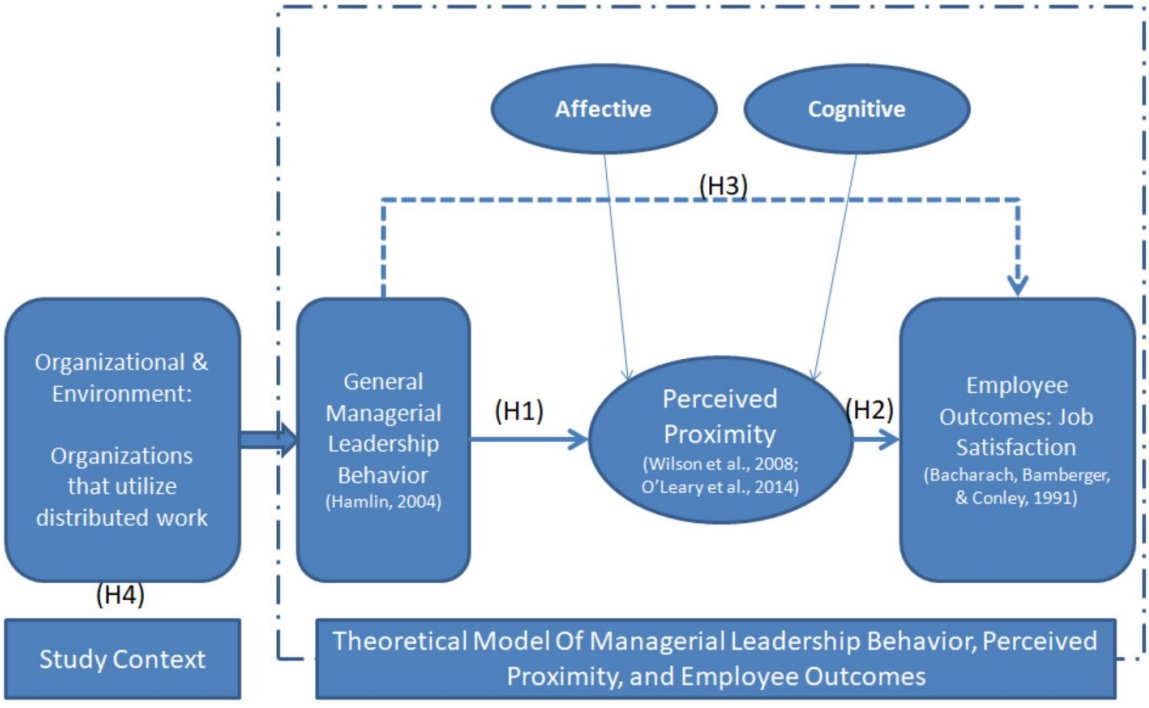

Figure 5. Theoretical model of managerial and leadership behavior, perceived proximity and employee outcomes

Research Implications

The research model represents a synthesis of the three distinct streams of literature: 1. virtual work, remote employees, and distributed teams; 2. organizational culture and cross-cultural management; and 3. managerial and leadership effectiveness. The model positions the current state of knowledge in each stream within a larger theoretical framework for practitioners seeking to encourage specific individual and organizational outcomes as well as researchers looking to explore and quantify the concepts, variables, mechanisms, and relationships associated with distributed work.

The study represents a significant contribution to distributed and virtual work literature while also adding to the theoretical understanding of managerial leadership behaviors as applied in a distributed or technologically mediated context. The model contributes to theories of managerial and leadership effectiveness with distributed and collocated teams in ways that can continue to be empirically tested and refined by future research. The addition and incorporation of perceived proximity as a cultural variable provided insight into mechanisms that may explain previously confounding results in the distance work literature (Wilson et al., 2008). In addition, the model also identifies concrete and generalizable managerial leaderships behaviors that organizations can utilize to positively impact the outcomes associated with distributed work. It is imperative for organizations to understand the dynamics of distributed work with enough predictive understanding to manage it effectively.

In addition to providing practitioner insights, the model suggests additional avenues of research. While the model incorporates perceived proximity as an element of

culture, more research will be needed on the numerous other variables and constructs whose relationship to perceived proximity may be extrapolated based on what this study has shown about its relationship with job satisfaction. "At the individual and dyadic levels," Wilson et al. (2008) "expect perceived proximity to predict willingness to work together in the future and beliefs about the efficacy of working at a distance" (p. 993).

However, it is also worth noting that excess levels of perceived proximity may be associated with negative outcomes such as feelings of hyper-surveillance or an unwillingness to listen to others because at high levels of perceived proximity one may assume that her or she already knows what others plan to say or are thinking. At unhealthily high levels, perceived proximity may actually undermine or subvert the underlying mechanisms of shared identification to destructive ends. Lastly, as a relatively new research construct, perceived proximity may also be successfully employed in more traditional work arrangements to begin exploring more fully the mechanisms through which collocated employees and teams feel close to one another and the impact that such closeness may have on the organization's performance. A summary of the relevant literature reviewed is shown in Table 1.

Table 1.
Literature Overview

Research Model	Managerial Leadership Behavior	Perceived Proximity	Job Satisfaction
Gilley and Gilley (2002) • Holistic model for organizational performance and employee outcomes explicitly derived from HRD literature. Shows where the research model fits for HRD practitioners. **Hoffman and Shipper (2012)** • Overall model structure and justification and connection between managerial behavior, culture, and employee outcomes **Hofstede (1998)** • Culture = shared values, mental models, and common identity provides theoretical justification for perceived proximity as culture variable in research model. **Wilson et al. (2008)** • Theoretical construct of perceived proximity **O'Leary et al. (2014)** • Validated instrument to measure perceived proximity **Hamlin (2004)** • Empirically derived universal managerial and leadership behavior inventory	**Hamlin (2004)** • Empirically derived universal managerial and leadership behavior inventory used in survey instrument **Bass (1997)** • Utilized Transformational leadership paradigm to argue for the theoretical existence of universal leadership behaviors that transcend organizational borders as well as national ones **Russ-Eft and Brennan (2001)** • Empirically supported common set of universal leadership behaviors within American and Canadian contexts **Agut and Grau (2002)** • Evidence of generic managerial competencies in the European context (Spain) **Den Hartog, House, Hanges, Ruiz-Quintanilla and Dorfman (1999)** • Leadership literature review including cross culturally generalizable leadership theory **Hoffman, Shipper, Davy, and Rotondo,(2014)** • Quantitative study using SEM to determine effectiveness of managerial effectiveness in cross-cultural setting	**Wilson et al. (2008)** • Theoretical construct of perceived proximity **O'Leary et al. (2014)** • Validated instrument to measure perceived proximity to be used in survey instrument **Chae (2016)** • Supports the theoretical relationship between perceived proximity and employee outcomes such as performance well as relationship outcomes such as trust **Dekker, Rutte, Van den Berg (2015)** • Examined and supported the importance of perceived proximity among isolated team members and its impact on team effectiveness	**Bacharach et al. (1991)** • Five-item job satisfaction relative to expectations scale selected for survey given its strong reliability and psychometrics in previous researching exploring work-home conflict among high skilled nurses and engineers engaged in distributed work **Meyer, Stanley, Herscovitch, & Topolnytsky (2002)** • Meta-analysis of antecedents, correlates, and consequences of organizational commitment. Job satisfaction found to be strongest correlation with org. commitment. **King & Williams (2005)** • Exploration of the known & theorized relationships that job satisfaction has with other social science variables as part of workplace religious expression discussion. **Chen and Aryee (2007)** • Examines the cultural mediation of employee work outcomes in Chinese context. Job satisfaction and perceived insider status found to be particularly sensitive to the cultural context in which they are experienced by employees.

Summary of the Chapter

This review identified and described the properties of distributed and virtual work and culminated in a synthesized theoretical research model that examined the role of managerial leadership behaviors that can be applied within a distributed work context. The examination combined multiple streams of academic literature including those related to distributed employee outcomes, their antecedents, managerial leadership behavior, organizational context, and culture.

The review started with an assessment of the nature of distributed and virtual work and examined the case for a differential approach to research and practice in a distributed context. The second section examined elements of organizational culture that

may impact distributed work arrangements and positioned the importance of the organizational and environmental context for distributed employees and their leaders. The third section reviewed the literature on managerial and leadership theories related to behaviors, styles, and effectiveness. The fourth section highlighted the centrality of job satisfaction among worker attitudes and its importance in exploratory and emerging research areas for HRD scholars while the fifth section built on the previous segments by synthesizing a general model of the relationships between managerial behavior, perceived proximity, and employee outcomes that is uniquely tailored to research within the context of distributed work. Finally, the future research implications of the synthesized model were discussed along with the role of perceived proximity as an emerging construct in behavioral and organizational research.

Chapter 3

Materials and Methods

Introduction

Chapter 3 presents the study's design and method. In the eight sections following the introduction, this chapter revisits the purpose of the study. It then presents the study's research questions and hypotheses that flow from the research model synthesized from the literature in Chapter 2 followed by the research design. Section four explores the study's target population and sample frame before delving into data collection considerations in section five, including the measures and psychometrics for each of the constructs and control variables within the study. Data analysis techniques are covered in the sixth chapter segment including the selected statistical treatments, reliability and validity procedures, as well as study assumptions and limitations. Finally, the chapter concludes with a summary.

Purpose of the Study

The purpose of this study was provide insight into the properties and challenges of managing distributed work and the conceptual relationships that may impact employee satisfaction among employees engaged in distributed work in their organizations. By exploring the impact of managerial behavior within a distributed work context, this study contributes to the theoretical understanding of distributed work and provides insights to improve practitioner performance. This was accomplished through the empirical testing of the research model for the relationship between managerial leadership behaviors,

perceived proximity, and job satisfaction in a distributed work context that was synthesized from the relevant literature in Chapter 2.

Research Questions, Research Model, and Hypotheses

The study was guided by three primary research questions:

1. What are the properties of distributed work arrangements that pose unique challenges or problems for managers as they lead their direct reports within their organization?
2. What managerial behaviors positively influence job satisfaction among employees that engage in distributed work?
3. What are the mechanisms through which managerial behaviors impact job satisfaction among employees that engage in distributed work?

In answering these research questions, the study sheds light on ways to address the organizational challenges associated with distributed work that are more productive than reflexively retreating from distributed work policies in the face of uncertainty.

To adequately explore the impact of managerial behavior on employees in a distributed work context, a theoretical framework was necessary to guide the study. The research model for this study synthesized elements of Gilley and Gilley's (2002) Organizational System Blueprint, Hoffman and Shipper's (2012) culture, managerial behavior and employee outcomes model, and Hamlin's (2004) universal managerial leadership behaviors, with Wilson's perceived proximity concept (see Figure 6).

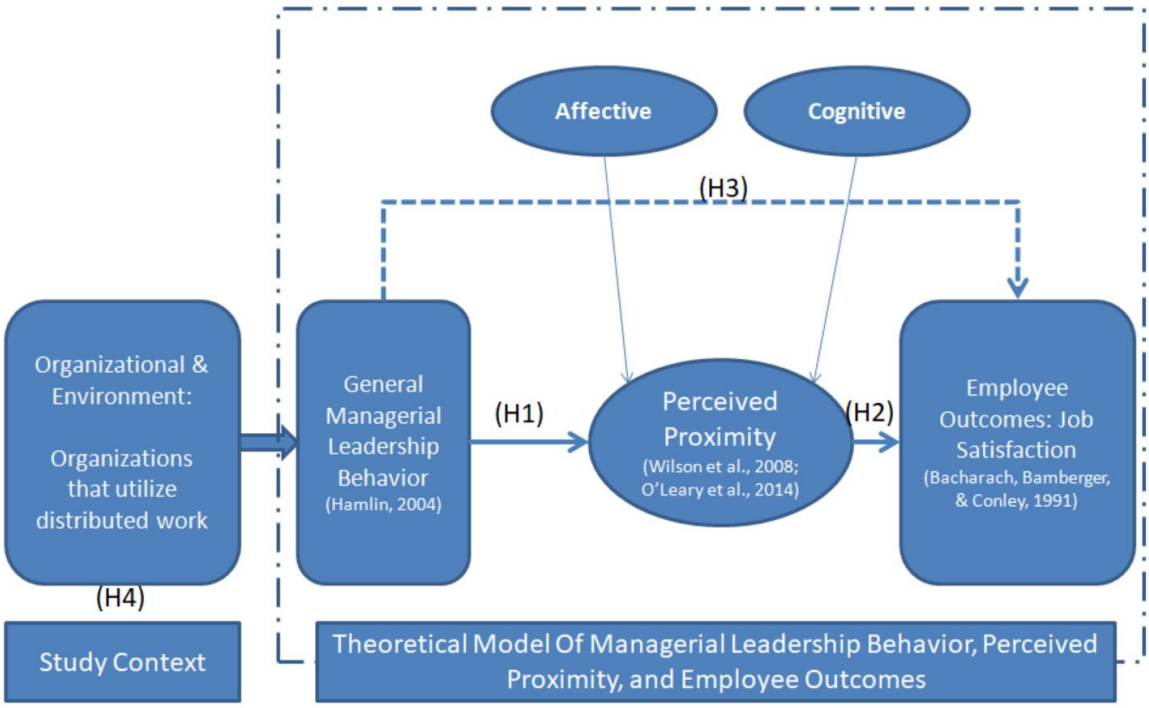

Figure 6. Theoretical model of managerial behavior, perceived proximity and employee outcomes

The theoretical model posited and explored relationships between three distinct sets of variables within the context of organizations that utilize distributed work arrangements including managerial leadership behaviors, organizational culture, and attitudinal outcomes. Job satisfaction was selected as the outcome for this study due to its known relationship to a much wider set of potential variables of interest to the HRD research community.

Hoffman and Shipper's (2012) results showed that the extent to which variables involving a sense of shared identity influenced employee outcomes is largely a function of managerial behavior. "When the manager is highly skilled, the interaction effects of culture tend to disappear" (Hoffman & Shipper, 2012, p. 1414). In addition, they showed

that employees' attitudinal outcomes were particularly sensitive to managerial behavior as the "cultural interactions appeared to be more important when examining the managerial skills–attitude relationship than the skills–effectiveness relationship" (Hoffman & Shipper, 2012, p. 1430). This supports the research models first hypothesis:

H_1: *Managerial leadership behavior is positively related to perceived proximity.*

Before the Hoffman and Shipper (2012) model can be productively applied to distributed work contexts, the role of culture must be fully understood. When evaluated in the context of distributed work, culture has a strong theoretical compatibility with perceived proximity, as both are rooted in notions of shared values and mental models between groups of people with a common sense of identity. One focuses on the individual's feelings of closeness to others, while the other is more concerned with social sameness (Hoffman & Shipper, 2012; Hofstede, 1998; Wilson et al., 2008). Perceived proximity has been shown to be a more powerful independent variable than objective distance when examining the relationship between communication, shared identity, and relationship quality (O'Leary et al., 2014). In fact, perceived proximity has been shown to fully intervene and explain the relationship between communication and relationship quality while also accounting for the most dominant explanatory pathway between shared identification and relationship quality as well. This provides support for hypotheses two through four below:

H_2: *Perceived proximity is positively related to employee job satisfaction.*

H_{3a}: *Managerial leadership behavior is positively related to employee job satisfaction.*

H_{3b}: *The relationship between managerial leadership behavior and employee job satisfaction will be explained by the intervening variable of perceived proximity.*

H_4: *The organizational context of the employee will not impact the power of perceived proximity to explain the relationship between managerial leadership behavior and job satisfaction.*

Research Design

As this study explored an emerging area of research, it utilized a non-experimental quantitative cross-sectional research design that was appropriate for the research maturity of its subject matter (Bryman & Bell, 2011). Survey responses were completed by participants in a single setting to explore the relationship between the study's independent variable (i.e., managerial leadership behavior), the endogenous perceived proximity variable and the dependent variable (i.e., employee job satisfaction). The study controlled for and examined the relationship between employee groups that either worked with other distributed employees while being collocated with their own manager, those that were collocated with other employees and not their manager, and those that were not collocated with any other employee within their organization.

Quantitative data was gathered, analyzed, and interpreted based on correlations within the general linear model. The study followed a positivist epistemology utilizing theory to generate and test hypotheses by gathering data that was primarily aimed at the explanation of human behavior and attitudes rather than a deep understanding of it (Bryman & Bell, 2011). While data cleaning was continuously performed during survey

deployment to monitor the number of valid survey responses collected, analysis was initiated after collection of the data was complete. Structural equation modeling was used in order to control for certain variables while also being able to determine relative strength of multi-factor relationships in a way that should help guide future research.

Population and Sample

The population for this study included full-time employees aged 18 or older who worked in organizations that utilized distributed work arrangements. Survey participants were not restricted to the United States, though they were required to complete the survey in English. These criteria were selected to maximize the number of eligible participants and were consistent with the culturally convergent research paradigm that informed the study's approach to assessing managerial leadership behaviors.

Following the procedures of O'Leary et al. (2014) the sample frame was drawn from individuals that participate on Amazon's Mechanical Turk (MTurk) platform. In addition to providing methodological consistency by using the same data collection platform on which the perceived proximity instrument was validated (O'Leary et al., 2014), MTurk has been shown to provide data that is at least as generalizable as other survey participant sources while providing access to a diverse population with significant work experience (Behrend, Sharek, Meade, & Wiebe, 2011). MTurk also provides access to a high number of young workers for whom remote work options are known to be particularly important as well as an over-representation of remote and distributed employees that represented the target population for this study (Buhrmester, Kwang, & Gosling, 2011)

While the precise number of valid survey responses needed to achieve a specific level of statistical power depends a great deal on how the various survey items actually load on their theoretical factor structures (Wolf, Harrington, Clark, & Miller, 2013) the study followed the suggested rule of thumb by continuing to collect responses and clean data in successive deployments until greater than 230 valid responses were collected, or roughly 10 times the number of indicators and scale scores on the final instrument. Due to reach of the MTurk platform, the final data cleaning resulted in a much larger number of valid surveys than the 10 to 1 rule of thumb (see Chapter 4).

Measures and psychometrics. This study used a combination of observed scores and previously validated construct measures. These measures were chosen based their psychometric properties as well as their development and use in complementary research contexts. Permission to use each measure was obtained and confirmations are displayed in the appendices of this dissertation (see Appendix B).

Managerial leadership behaviors were measured using survey questions derived from the six positive leadership behaviors in Hamlin's (2004) general managerial and leadership effectiveness model. These include: 1. effective organization and proactive planning/management; 2. participative and supportive leadership/proactive team leadership; 3. empowerment and delegation; 4. genuine concern for people and their developmental needs; 5. open and personal approach/inclusive decision making; and finally 6. communication and consultation that keeps a wide range of stakeholders informed. Survey items for each behavioral area were used to generate observed scores with values assigned to each component by the survey participant in relation to his or her

current manager. Utilizing the procedures of Zigarmi, Nimon, Houson, Witt, and Diehl (2011), the managerial behavior survey items were converted to six scales scores that were used as manifest indicators for the latent managerial behavior variable.

Perceived proximity was measured using O'Leary et. al.'s (2014) twelve item perceived proximity scale. The scale produced a good fit for a two-factor model [χ^2 = 207.8, df = 53, $p < .001$; TLI = .96; CFI = .963; RMSEA = .06] with strong reliability coefficients (α) for both the affective and cognitive factors (.91 and .92 respectively).

Job satisfaction was measured using Bacharach, Bamberger, and Conley's (1991) five-item satisfaction relative to expectations scale. This validated measure was selected for its strong reliability and psychometrics in previous research exploring work-home conflict among high skilled nurses and engineers engaged in distributed work [Chronbach's α = .88 among the engineers in the study and .90 among the nurses] (Bacharach et. al., 1991).

Control variables. The survey included standard control variables such as participant and manager gender, age, race, organizational tenure, and length of time in the employees current role. These variables are consistent with the types of control variables commonly collected when conducting behavioral leadership research (Bernerth, Cole, Tayler, & Walker, 2017). In addition, the survey also included a number of control variables related to the employees organizational arrangement and work context.

The organizational context, or how survey participants self-categorize their work arrangements in relation to their manager and their coworkers, was critical to determining whether there were any statistically significant group differences between the employee's

work arrangement and the power of perceived proximity to explain the relationship between managerial behavior and employee job satisfaction. Participants were required to categorize themselves into four different groups: 1. those that are collocated with both their manager and their coworkers; 2. those that are collocated with their manager and work with at least some coworkers over distance; 3. those that are collocated with at least some coworkers and interact with their manager over distance; and 4. those that are not collocated with any other employee of their organization and interact with both their manager and their coworkers over distance. Participants were also offered a 5th option if they felt that none of the previous categories described their current work situation. These categories were selected based on the expected differences between how each type of work situation may inform the employee's relationship with his or her manager and the daily experience with the organization.

Another important control variable was the duration of the relationship between the employee and his or her manager. This is consistent with the procedures used by O'Leary et. al. (2014) who pointed out that newly formed relationships may not have an established track record of communication to inform the employee's response to the survey. On the opposite extreme, long-held relationships may include previous negative experiences that may make it difficult for an employee to assess current managerial behavior. Controlling for relationship duration should help mitigate the impact of these issues on the results of the study.

Data Collection

Data collection procedures. The use of Amazon's MTurk platform to recruit survey participants greatly simplified the process of gaining access to study participants. The survey contained a number of screening questions that weeded out ineligible participants before directing participants to a page with introductory text that included an estimate of the time required to complete the survey along with an overview of the study's purpose, information about the researcher's affiliation with UT Tyler, and instructions for how to navigate and complete the survey on the MTurk system.

Participants were notified that their responses were completely confidential and were encouraged to answer every question truthfully and thoughtfully. All participants were required to provide their voluntary and informed consent before proceeding to the survey by clicking *I agree to participate* on the introductory page. Those who opted out of the survey were directed to a message thanking them for their consideration and terminating the survey. A complete copy of the survey, including the introductory text and consent indicators is available in Appendix A.

Data cleaning and preparation. The study utilized the statistical software package R to eliminate straight-line responders, those who rushed through the survey in less than five minutes and those that took longer than one hour to complete the survey. Partially complete or abandoned survey responses were also eliminated along with data outliers that may have thrown off the conclusions of the study if retained. Respondents failing to answer the instructional manipulation checks or bot-check indicators correctly were also removed from the data.

Data Analysis, Reliability, and Validity

After data cleaning, the procedures of Schumacker and Lomax (2016) were used with IBM® SPSS® Statistics and Amos 25 to fit the data to a measurement model before testing the theoretical and alternative models**.** Items and scale scores were analyzed to ensure that they loaded on their respective factors above the minimum threshold of .5 in order to be retained and both composite reliability values and average variance extracted (AVE) values were examined for evidence of adequate reliability and convergent validity (Bagozzi & Yi, 1988). The square root of AVE for individual factors was compared to the correlations between each of the other factors to see if the model provided sufficient evidence of discriminant validity before examining the factor correlations and selecting the best fitting model among the alternatives analyzed.

After selection of the best fitting measurement model, a structural model was tested using the same indicators and factor structure as the study's measurement model with the addition of appropriate error terms for the endogenous and dependent variables and structural paths. Because the affective and cognitive factors of perceived proximity are known to be highly correlated (O'Leary et al., 2014), it is reasonable and consistent with the theoretical model to expect shared method variance for these latent factors.

Finally, an alternative model with a direct path between managerial leadership and job satisfaction was used to test whether perceived proximity was a partially or fully intervening variable in the relationship between managerial leadership behavior and job satisfaction as presented in the study's theoretical research model. After selecting the best fitting model, the factor correlations and path coefficients were then analyzed to

determine the extent to which the data does or does not support the study's hypotheses. The results are presented in chapter 4.

Limitations

The study has four main limitations that were intrinsic to its design. First, the unidirectional design did not include the perspective of coworkers or managers. It relied instead on the subjective evaluation of employees only. Future studies should expand on this study by adopting a multidirectional approach that includes both managers and coworkers to provide validating and triangulation through multiple perspectives.

Second, this study made use of quantitative cross-sectional survey methods, meaning that a determination of causality is not possible. The third limitation is derived from the ecological validity of its subject matter. With the possible exception of full-time telecommuters, the nature of distributed work is messy and employees rarely engage in work that is perfectly collocated or perfectly distributed. This may have made it difficult for some survey respondents to untangle and isolate their feelings as they completed the survey.

Finally, the study's design meant that the subjective retrospective judgment of the study participants could not be verified through either direct observation or triangulation with other respondents who may report to the same manager. The accuracy of the employees assessment must be taken on faith and therefore represents a significant limitation.

Summary of the Chapter

This chapter explored the study's design and methodology. After a brief introduction, the purpose of the study was revisited before moving on to the research questions that guided the study. The hypotheses from the research model developed in Chapter 2 were presented followed by the study's research design. The fourth section reviewed the target population and sample frames before delving into data collection considerations in section five, including the measures and psychometrics for each of the study's constructs and control variables. The structural equation modeling techniques used for data analysis were addressed including procedures for assessing reliability and validity. Lastly, the study's limitations were discussed before a summary conclusion.

Chapter 4:

Results

Introduction

This chapter contains the data analysis and results of the study. In addition to the introduction, the chapter is organized in five sections. The first section will review the data collection procedures and describe the sample. Section two will review the study's measurement instruments followed by section three which will present the process of structural equation model development. These models will be analyzed in section four and the results and hypothesis testing will be presented in section five before concluding with a brief summary.

Data Collection and Sample Description

A total of 6,331 individuals started the survey, which was administered by Qualtrics and distributed by MTurk. In addition to providing methodological consistency with the methods used to validate the study's perceived proximity measure (O'Leary et al., 2014) Amazon's MTurk system has been shown to provide researchers with reliable data when survey techniques are used that exhort participants to answer honestly and require respondents to demonstrate attention to detail (Rouse, 2014; Mason & Suri, 2012; Buhrmester, Kwang, & Gosling, 2011).

After scrubbing the sample for participants who did not work full time, did not work for organizations that utilized distributed work within their company, and removing responses that failed the bot-check and instructional manipulation checks as well as straight-line responses, and surveys that were completed in either less than five minutes

or greater than 60 minutes, a total of 838 valid responses remained (see Table 2). The Sample included respondents from six continents with the majority being males (71.72%) hailing from Asia (58.11%), and describing themselves as having a managerial role (79.83%).

Participants identified themselves primarily as Millennials (85.32%) and were largely well-educated with 92.24% indicating some form of post-secondary education. Most participants described their current working arrangement as being a traditional collocation arrangement with both their manager and their coworkers (38.67%), though a significant portion of the participants had other work arrangements including working in the same physical space as their manager while collaborating with distant coworkers (29.12%), working in the same space as coworkers while reporting to a manager over distance (20.64%), and finally being a lone telecommuter (11.34%) or some other work arrangement (0.24%). Almost all participants (91.65%) reported having personal experience working with one or more colleagues over physical distance utilizing telecommunication technology.

The majority of survey respondents reported that their manager was male (76.01%) and that they had reported to that manager for five years or less (75.66%). The next most common duration of manager relationship length was six to ten years (18.02%). Survey participants reported working for firms with a relatively even distribution of ages. Almost the same number of participants reported working for companies that had been established within that last five years (22.32%) as reported working for firms 21 years old or older (22.79%). The most common age of the company

reflected in the survey was between six and ten years old (27.09%) with the remaining firms falling somewhere between 11 to 15 years old (17.54%) and 16 to 20 (10.26%).

Table 2

Descriptive Statistics

Demographics (n=838)

Characteristic	n	%
Participant Gender		
Male	601	71.72%
Female	237	28.28%
Work Description		
Traditional Collocation	324	38.67%
Collocated with manager, some distributed coworkers	244	29.12%
Same location as coworkers, manager in other location	173	20.64%
Primarily alone, Telecommuter	95	11.34%
Other	2	0.24%
Participant Experience Working With Distributed Colleagues		
Yes	768	91.65%
No	70	8.35%
Participant Location		
Asia	487	58.11%
North America	269	32.10%
South America	46	5.49%
Europe	29	3.46%
Australia	5	0.60%
Africa	2	0.24%
Participant Race		
American Indian or Alaska Native	38	4.53%
Asian	489	58.35%
White	226	26.97%
Hispanic or Latino	44	5.25%
Black or African American	35	4.18%
Native Hawaiian or Pacific Island.	2	0.24%
Other	4	0.48%
Participant Organizational Tenure		
5 years or less	530	63.25%
6 to 10 years	220	26.25%
11 to 15 years	53	6.32%
16 to 20 years	21	2.51%
21+ years	14	1.67%

Participant Role Tenure		
5 years or less	512	61.10%
6 to 10 years	197	23.51%
11 to 15 years	57	6.80%
16 to 20 years	33	3.94%
21+ years	39	4.65%
Participant Managing Others		
Yes	669	79.83%
No	169	20.17%
Generational Cohort		
Silent Gen (1945 or earlier)	6	0.72%
Boomer (1946-1964)	21	2.51%
Gen X (1965-1980)	96	11.46%
Millennial (1981-2000)	715	85.32%
Marital Status		
Single, never married	358	42.72%
Married	470	56.09%
Divorced or widowed	10	1.19%
Education Attainment		
Less than High School	2	0.24%
High School or Equivalent	63	7.52%
Bachelors	458	54.65%
Graduate	302	36.04%
Doctorate	13	1.55%
Gender of Manager		
Male	637	76.01%
Female	201	23.99%
Duration of Manager Relationship		
5 years or less	634	75.66%
6 to 10 years	151	18.02%
11 to 15 years	33	3.94%
16 to 20 years	15	1.79%
21+ years	5	0.60%
Age of Company/Firm		
5 years or less	187	22.32%
6 to 10 years	227	27.09%
11 to 15 years	147	17.54%
16 to 20 years	86	10.26%
21+ years	191	22.79%

Study Measures

To test the study's theoretical model (see Figure 7), this study used a combination of behavior scale scores and previously validated instruments measures.

These measures were chosen based their psychometric properties as well as their development and use in complementary research contexts.

Managerial leadership behaviors. These were measured using the positive behaviors from Hamlin's (2004) general managerial and leadership model including manager effectiveness, participative and supportive behaviors, empowerment and delegation, concern for people and their development, inclusivity, and communication. Survey items for each behavioral area were used to generate observed scores for each of the six behavior types. Following the procedures of Zigarmi, Nimon, Houson, Witt, and Diehl (2011), these were further refined into six behavioral scale scores that were used as manifest indicators for the latent managerial behavior variable.

Perceived proximity. This study utilized O'Leary et. al.'s (2014) 12 item perceived proximity scale which has previously been shown to produce a good fit when modeled as a single-factor latent variable [$\chi 2 = 207.8$, $df = 53$, $p < .001$; TLI = .96; CFI = .963; RMSEA = .06] with strong reliability coefficients (α) for both the affective and cognitive components of the construct (.91 and .92 respectively). As called for in Wilson, et. al.'s (2008) original conception, perceived proximity was initially modeled using a second order factor structure.

Job satisfaction. Bacharach et al.'s (1991) five-item satisfaction relative to expectations scale was selected for its strong reliability and psychometrics in previous research exploring work-home conflict among highly skilled nurses and engineers engaged in distributed work [Chronbach's α= .88 among the engineers in the study and .90 among the nurses] (Bacharach et al., 1991).

Control variables. The control variables are of particular importance to this study as they were used to determine whether there was support for the study's fourth hypothesis that the organizational context of the employee will not impact the power of perceived proximity to explain the relationship between managerial leadership behavior and job satisfaction. In addition to the standard behavioral research controls such as gender, age, race, education level, supervisory responsibilities, and time on the job, additional controls were selected based on their relationship to the organizational context of the employee's relationship with both his or her manager and distributed work. These control variables included organizational tenure as well as how survey participants self-categorized their work arrangements in relation to their manager and their coworkers. In addition, the duration of the relationship between the employee and his or her manager and the age of the firm were also considered to be critical to controlling for organizational context.

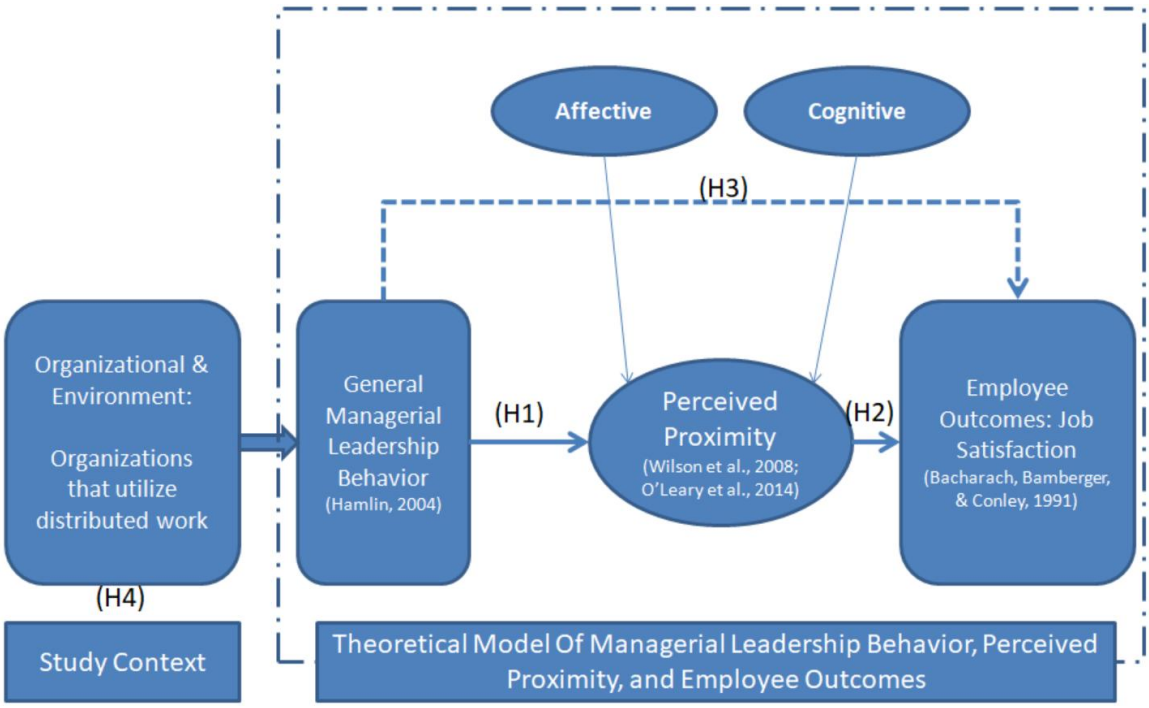

Figure 7. Theoretical model of managerial behavior, perceived proximity and employee outcomes

Model Development

Measurement model. . Given the imbalanced depths of managerial behavior scales, the procedures of Zigarmi et al. (2011) were used to convert these survey items into six scale scores that were used as manifest indicators for the latent managerial behavior variable. Perceived proximity was modeled using a second order factor structure which is consistent with Wilson et al.'s (2008) theoretical conception of the construct. Job satisfaction was modeled using the five items from Bacharach et al.'s (1991) job satisfaction relative to expectations scale.

Analysis

The procedures of Schumacker and Lomax (2016) were used to fit the data to a measurement model before testing the theoretical and alternative models. All three factors were allowed to correlate, and the Harman's single-factor test was used as a cursory examination for common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The sample covariance matrix was positive definite and analyzed using IBM® SPSS® Amos 25.0.0. Maximum likelihood estimation was used which relies on multivariate normality. The survey data was not multivariate normal (Mardia = 181.265, $p < .001$) so bootstrapping was used. Bootstrapped estimates revealed low bias values (less than .00); therefore, non-bootstrapped estimates are reported.

In addition to testing the theoretical model (see Figure 7), two additional models were tested. In the first alternative model, a direct path from managerial behavior to job satisfaction was added. Finally, the study's control variables were added to determine if the addition of the control variables would confound the relationships depicted in the best fitting structural model.

Results

The fit indices advocated by Schumacker and Lomax (2016) indicated that the three-factor correlated model fit the data better than the single factor model (see Table 3). With five degrees of freedom change between the two models, the delta chi-square ($\Delta\chi^2$=1,711.093) indicated that the three-factor correlated model had a statistically significantly better fit ($p < .001$) over the single factor model. The comparative fit index (CFI) also indicated that the three-factor correlated model fit the data better than the

single factor model as did the root measure square error approximation (RMSEA), standardized root mean square (SRMR), Akaike information criterion (AIC), and Bayesian information criterion (BIC). In addition, the three-factor correlated model had significantly fewer absolute correlation residual values great than .10 ($\Delta|CR| > 0.10 = 37$). These findings support the assumption that common method variance is unlikely to confound the results of the present study (Podsakoff et al., 2003).

Confirmatory factor analysis of the initial three-factor correlated model (measurement model 1) indicated the presence of a Heywood case. As illustrated in Table 4, the standardized regression weights for the cognitive components of perceived proximity's second order factor structure showed a factor loading greater than 1. The presence of the Heywood case required the model to be modified despite the fact that all factor loadings were above the minimum threshold of .5. With the exception of the items related to the cognitive aspects of perceived proximity and job satisfaction, most were above the more stringent threshold of .7, and all were less than .95 (Bagozzi & Yi, 1988; Kline, 2016). The presence of the Heywood case and the need to collapse perceived proximity is consistent with O'Leary et al. (2014) who also found it necessary to model perceived proximity as a first order factor.

Modeling perceived proximity as a first order factor eliminated the Heywood case and still fit the data better than the single factor model (see Table 3). With three degrees of freedom change between the single factor and non-Heywood model, the delta chi-square ($\Delta\chi^2$=1,704.293) indicated that the three-factor correlated model had a statistically significantly better fit ($p < .001$) over the single factor model. The CFI, RMSEA, SRMR,

AIC, and BIC also support this conclusion despite the fact that the change in perceived proximity led to an increase in the number of absolute correlation residual values great than .10 ($\Delta|CR| > 0.10 = 80$).

As illustrated in Table 5, the standardized regression weights, suggested an acceptable measurement model when perceived proximity is modeled as a first order factor. All of the factor loadings were above the minimum threshold of .5, with the exception of the items related to job satisfaction. Most were close to or above the more stringent threshold of .7, and all were less than .95 (Bagozzi & Yi, 1988; Kline, 2016). Examining the structure shows that all items loaded most heavily on their respective factors.

Table 3
Fit Indices for Measurement Models

Model	$\chi 2$	*df*	RMSEA	SRMR	CFI	AIC	BIC	# |CR| >0.10
1. Three-factor correlated*	662.874	225	.048	.0321	.965	764.874	1006.156	53
2. Single Factor	2373.967	230	0.106	.0762	.831	2465.967	2683.594	90
3. Three-factor correlated w/ first order PP	669.674	227	.048	.0324	.965	767.674	999.494	170
4. Three-factor correlated w/ first order PP -PPCog1, 2, 3, 5, -PPAF4	434.076	132	.052	.0293	.971	512.076	696.586	0
5. Single Factor - PPCog1, 2, 3, 5, -PPAF4	1617.864	135	.115	.0783	.859	1689.864	1860.181	71

Note. CR = correlation residual. The estimation for all models converged and were over-identified. Models marked with * indicate an inadmissible solution.

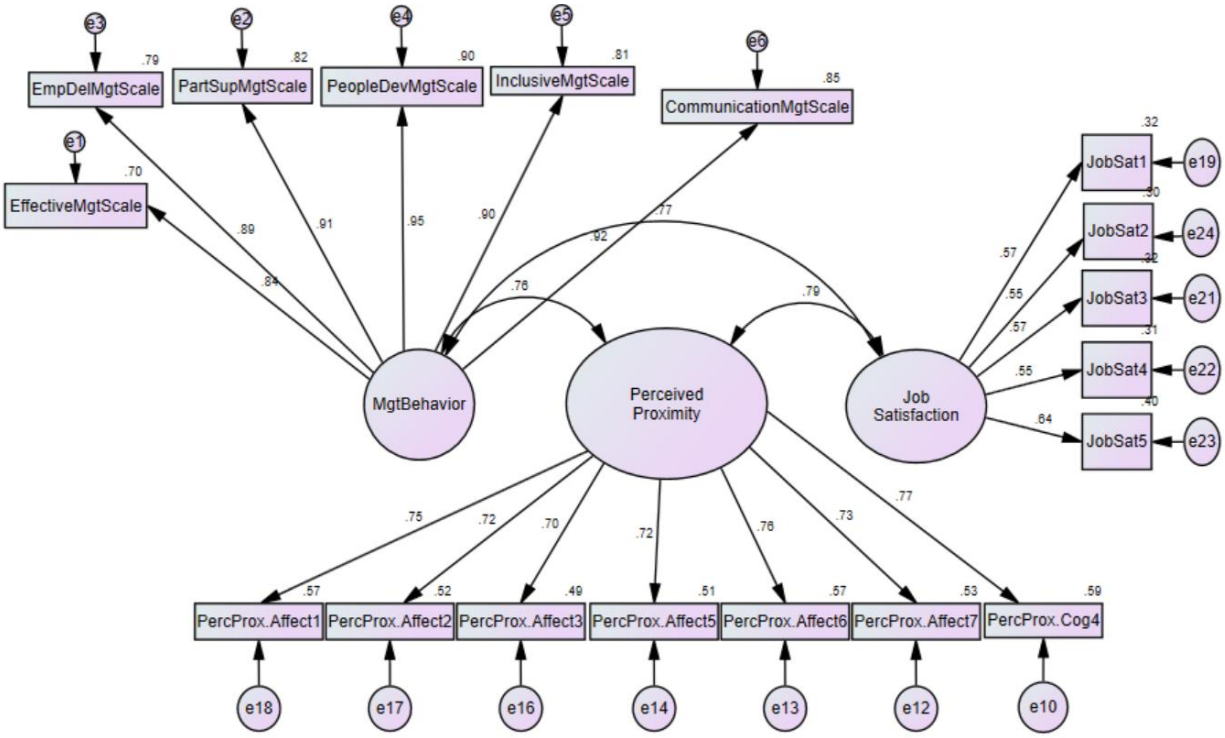

Figure 8. Measurement model 4 (standardized estimates)

Table 4
Pattern (P) and Structure (S) Coefficients for Measurement Model 1 (Three-Factor Correlated, Heywood Case)

Construct	Mgt Behavior		Perc. Prox.		Perc. Prox. Cog		Perc. Prox Aff.		Job Satisfaction	
Variable	P	S	P	S	P	S	P	S	P	S
Mgt Behavior										
EffectiveMgt	**.835**	**.835**		.640		.647		.624		.640
EmpDelMgt	**.887**	**.887**		.680		.688		.663		.680
PartSupMgt	**.906**	**.906**		.694		.702		.677		.694
PpleDevMgt	**.947**	**.947**		.725		.734		.708		.726
Incl. Mgt	**.901**	**.901**		.690		.698		.673		.691
Comm. Mgt	**.920**	**.920**		.705		.713		.688		.705
Perc. Prox Cog		.775	**1.012**	**1.012**						
PP Cog1		.542		.708	**.700**	**.700**		.691		.588
PP Cog2		.498		.650	**.642**	**.642**		.634		.504
PP Cog3		.531		.693	**.685**	**.685**		.677		.576
PP Cog4		.585		.763	**.754**	**.754**		.745		.635
PP Cog5		.402		.525	**.518**	**.518**		.512		.436
Perc. Prox Aff.		.747	**.976**	**.976**						
PP Aff1		.557		.727		.735	**.745**	**.745**		.604
PP Aff2		.550		.719		.727	**.736**	**.736**		.597
PP Aff3		.534		.697		.705	**.714**	**.714**		.579
PP Aff4		.514		.672		.679	**.688**	**.688**		.558
PP Aff5		.540		.705		.713	**.722**	**.722**		.586
PP Aff6		.554		.724		.732	**.742**	**.742**		.602
PP Aff7		.542		.708		.716	**.725**	**.725**		.588
Job Satisfact.										
JobSat1		.435		.471		.477		.460	**.567**	**.567**
JobSat2		.418		.454		.459		.443	**.546**	**.546**
JobSat3		.430		.466		.471		.455	**.561**	**.561**
JobSat4		.430		.467		.472		.456	**.562**	**.562**
JobSat5		.487		.528		.534		.515	**.635**	**.635**

*Note: Heywood error, model is inadmissible. Second order pattern (P) and structure (S) coefficients also presented for perceived proximity elements

Table 5

Pattern (P) and Structure (S) Coefficients for Measurement Model 3 (Three-Factor Correlated, with Perceived Proximity as First Order Factor)

Construct	Mgt Behavior		Perc. Prox.		Job Satisfaction	
Variable	P	S	P	S	P	S
Mgt Behavior						
EffectiveMgt	**.835**	**.835**		.637		.640
EmpDelMgt	**.887**	**.887**		.677		.680
PartSupMgt	**.906**	**.906**		.691		.694
PpleDevMgt	**.947**	**.947**		.722		.726
Incl. Mgt	**.901**	**.901**		.687		.691
Comm. Mgt	**.920**	**.920**		.702		.705
Perc. Prox						
PP Cog1		.532	**.698**	**.698**		.571
PP Cog2		.490	**.642**	**.642**		.526
PP Cog3		.521	**.683**	**.683**		.560
PP Cog4		.576	**.754**	**.754**		.618
PP Cog5		.392	**514**	**.514**		.421
PP Aff1		.552	**.741**	**.741**		.592
PP Aff2		.563	**.734**	**.734**		.604
PP Aff3		.548	**.712**	**.712**		.588
PP Aff4		.524	**.687**	**.687**		.562
PP Aff5		.543	**.718**	**.718**		.583
PP Aff6		.560	**.738**	**.738**		.601
PP Aff7		.565	**.723**	**.723**		.607
Job Satisfact.						
JobSat1		.435		.464	**.567**	**.567**
JobSat2		.418		.447	**.546**	**.546**
JobSat3		.430		.460	**.561**	**.561**
JobSat4		.430		.459	**.562**	**.562**
JobSat5		.487		.520	**.635**	**.635**

Table 6

Implied Correlations, Average Variance Extracted (AVE), and Composite Reliability (CR), Measurement Model 3

Variable	1	2	3
1. Mgt Behavior	.900		
2. Perc. Prox	.763	.698	
3. Job Sat.	.766	.819	.575
CR	.962	.919	.711
AVE	.810	.487	.331

Note. Square root of AVE along the diagonal

Reliability and validity. The range of composite reliability (CR; .711 - .962) and average variance extracted (AVE; .810 - .331), suggest adequate reliability and convergent validity for managerial behavior; however, both perceived proximity and job satisfaction appear to lack discriminant validity (Bagozzi & Yi, 1988; see Table 6). Therefore, all perceived proximity items with a factor loading of less than .7 (i.e., PPCog1, 2, 3, 5, and PP Aff4) were removed from the analysis. The removal of these cognitive perceived proximity items is consistent with O'Leary et al. (2014) who also found it necessary to reduce the perceived proximity to seven items and a single factor structure.

Pattern (P) and Structure (S) Coefficients were recalculated without the deleted items (see Table 7) as were CR and AVE (see Table 8). Examining the revised regression weights in Table 7 once again suggests an acceptable measurement model when perceived proximity is modeled as a first order factor. All of the factor loadings were again above the minimum threshold of .5. With the exception of the items related to job satisfaction, all of factor loadings were close to or above the more stringent threshold of .7, and all were less than .95 (Bagozzi & Yi, 1988; Kline, 2016). All items once again loaded most heavily on their respective factors.

The revised model (model 4) increased the AVE for perceived proximity (ΔAVE Perceived Proximity=.055) and increased model fit (ΔCFI = .006) relative to model 3. The composite reliability of perceived proximity was reduced by .027 yet remained above .7 overall for both perceived proximity and job satisfaction. These values still suggest adequate reliability and convergent validity; however, the square root of the

average variance extracted for perceived proximity and job satisfaction are less than the overall factor correlations in the model, suggesting that discriminant validity for perceived proximity and job satisfaction may be weak (Bagozzi & Yi, 1988; see Table 8). However, discriminant validity may be supported when absolute factor correlations are not excessive (i.e., ≥ .90) (Kline, 2016). Therefore, the remaining survey items were retained and model 4 was selected as the best fitting measurement model.

Table 7
Pattern (P) and Structure (S) Coefficients for Measurement Model 4 (Three-Factor Correlated, no PPCog1, 2, 3, 5, PPAff4)

Construct	Mgt Behavior		Perc. Prox.		Job Satisfaction	
Variable	P	S	P	S	P	S
Mgt Behavior						
EffectiveMgt	**.835**	**.835**		.632		.640
EmpDelMgt	**.887**	**.887**		.671		.679
PartSupMgt	**.907**	**.907**		.686		.694
PpleDevMgt	**.947**	**.947**		.717		.725
Incl. Mgt	**.901**	**.901**		.682		.690
Comm. Mgt	**.919**	**.919**		.696		.704
Perc. Prox						
PP Cog4		.581	**.767**	**.767**		.608
PP Aff1		.571	**.755**	**.755**		.598
PP Aff2		.545	**.720**	**.720**		.570
PP Aff3		.533	**.704**	**.704**		.557
PP Aff5		.542	**.716**	**.716**		.567
PP Aff6		.572	**.756**	**.756**		.598
PP Aff7		.553	**.731**	**.731**		.579
Job Satisfact.						
JobSat1		.433		.448	**.566**	**.566**
JobSat2		.419		.433	**.547**	**.547**
JobSat3		.435		.440	**.568**	**.568**
JobSat4		.424		.439	**.554**	**.554**
JobSat5		.487		.503	**.636**	**.636**

Table 8
Implied Correlations, Average Variance Extracted (AVE), and Composite Reliability (CR), Model 4

Variable	1	2	3
1. Mgt Behavior	.900		
2. Perc. Prox	.757	.736	
3. Job Sat.	.766	.792	.575
CR	.962	.892	.711
AVE	.810	.542	.331

Note. Square root of AVE along the diagonal

Structural models. After selection of the best fitting measurement model (measurement model 4), structural models were tested using the same indicators and factor structure with the addition of appropriate error terms for the endogenous and dependent variables and structural paths (see Table 9, model 1). The three-factor structure allowed for two structural models to be tested. First, the model most consistent with the study's theoretical model was tested with perceived proximity fully intervening in the relationship between managerial behavior and job satisfaction (model 1). The second model added a direct path between managerial behavior and job satisfaction.

Across the two structural models, model 2 represented a statistically significantly better fit with the best comparative fit index (ΔCFI=.005), lower chi-squared ($\Delta\chi^2$=54.401, $p<.001$), a higher R^2 (ΔR^2= .015) , a lower R^2_m (ΔR^2_m = . 004) and lower SRMR (ΔSRMR = .0110). In addition, the RMSEA for model 2 was slightly better than model 1 (ΔRMSEA = .005). While model 2 did not explain as much overall variance in job satisfaction as model 1, it had zero absolute correlation residuals that were greater than .10 as compared to four such instances in model 1. Therefore, Model 2 is considered

the best fitting model. The parameter estimates reported (see Table 10) were all positive and statistically different from zero.

Table 9
Fit Indices for Structural Models

Model	χ^2	*df*	RMSEA (90% CI)	SRMR	CFI	AIC	BIC	#|RC| > .10	R^2 (JobSat)	R^2_m
1. Mgt Behavior -> Perc. Prox -> Job Satisfaction	488.477	133	.057 (.051, .062)	.0403	.966	564.477	744.256	4	.677	.872
2. Mgt Behavior -> Perc. Prox -> Job Satisfaction and Mgt Behaviro -> Job Satisfaction	434.076	132	.052 (.047, .058)	.0293	.971	512.076	696.586	0	.692	.868
|Delta between Models 1and 2|	54.401	1	.005	.0110	.005	52.401	47.67	4	.015	.004

Note. RC = residual correlations. The estimation for all models converged and the solutions were admissible. R^2_m = overall R^2 for the path model

Table 10
Bootstrap Estimates of Direct and Indirect effects

Effect	Point estimate[a]	*SE*	95% *CI* LB	95% *CI* UP
Direct effect of perceived proximity on job satisfaction	.273	.043	.209	.356
Direct effect of managerial behavior on perceived proximity	.633	.038	.562	.690
Direct effect of managerial behavior on job satisfaction	.179	.035	.120	.239
Indirect effect of managerial behavior on job satisfaction through perceived proximity	.173	.025	.130	.218

Note. [a]Unstandardized estimate. SE=standard error, *CI* = confidence interval. LB = lower bound. UP = upper bound.

Table 11
Decomposition of Implied Correlations

Correlation	Direct	Indirect	Total	Spurious	Implied
Management Behavior, Job Satisfaction	.389	.376	.756	.010	.766
Perceived Proximity, Job Satisfaction	.497		.497	.295	.792

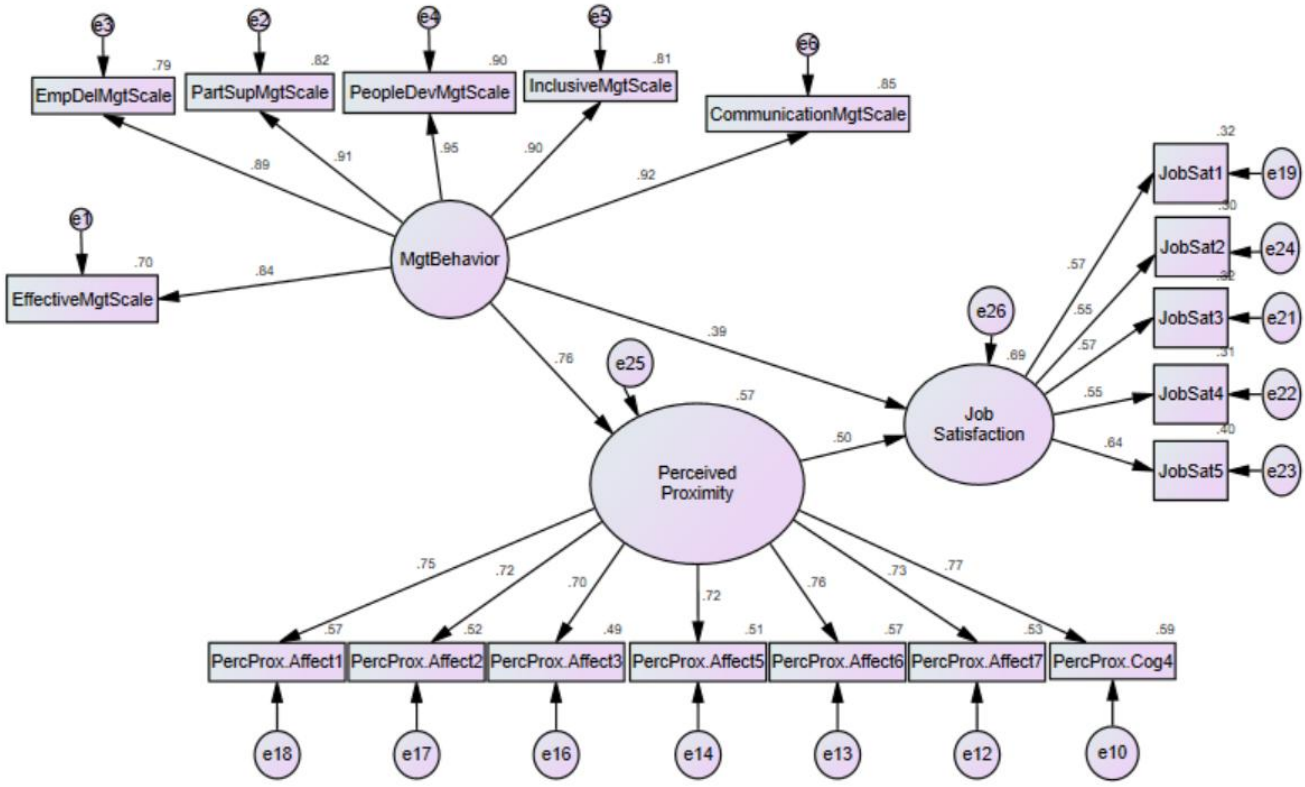

Figure 9. Structural model 2 with standardized estimates reported

Hypotheses testing. The factor correlations in Table 8 confirmed the first three hypotheses predicting positive relationships between managerial behavior and perceived proximity (H_1), perceived proximity and employee job satisfaction (H_2), and between managerial behavior and job satisfaction (H_{3a}) with all factor correlations being greater than 0.750.

H_1: *Managerial leadership behavior is positively related to perceived proximity.*

H_2: *Perceived proximity is positively related to employee job satisfaction.*

H_{3a}: *Managerial leadership behavior is positively related to employee job satisfaction.*

Structural model 2 provided partial support for hypothesis 3b. While the statistically significant improvements to model fit that came with the addition of a direct path from managerial behavior to job satisfaction undercut full support for hypothesis 3b, managerial behavior did have a partial indirect effect through perceived proximity. To support this partial indirect effect, note that the implied correlation in Table 11 between management behavior and job satisfaction is .766 and the standard weight between management behavior and job satisfaction is .389 in the best fitting structural model (model 2). To put it another way, 49.74% of the total correlation between management behavior and job satisfaction is explained by the intervening variable of perceived proximity.

H_{3b}: *The relationship between managerial leadership behavior and employee job satisfaction will be explained by the intervening variable of perceived proximity* was partially supported.

To test the fourth hypothesis, the study's control variables were added to structural model 2 as exogenous variables with direct paths to both perceived proximity and job satisfaction and were allowed to covary with each other and with managerial behavior to determine if the addition of the control variables may confound the relationships depicted in the best fitting structural model. The results displayed in Table 12 provide partial support for the fourth hypothesis. The most visible control variable associated with organizational context was the participant's description of his or her current work arrangement in which the physical proximity to coworkers and their manager were described. This variable did not impact the extent to which perceived proximity is able to

explain the relationship between managerial behavior and job satisfaction. This is consistent with previous literature indicating that perceived proximity has greater explanatory power than the physical location of employees in relation to their manager and each other.

In addition, the statistically significant pathways between participants that supervised others, time in their current position, and length of relationship with one's manager indicate that perceived proximity is subject to boundary conditions for which future researchers and practitioners must control. Lastly, it is worth noting that firm age had both a statistically significant (p <.05) and negative regression weight (-.030) on the direct path to perceived proximity. This is consistent with previous research indicating that established firms in particular have a difficult time adapting and utilizing technology to support relationships between employees and their supervisors.

H_4: *The organizational context of the employee will not impact the power of perceived proximity to explain the relationship between managerial leadership behavior and job satisfaction* was partially supported

Table 12

Statistical Significance of Direct Paths from Control Variables to Perceived Proximity and Job Satisfaction

Control Variable	Path to Perceived Proximity *p* value	Path to Job Satisfaction *p* value
1. **Work Arrangement**	.098	.463
2. Participant Gender	.314	**.015**
3. Participant Age (Birth Yr)	**<.001**	.724
4. Participant Ethnicity	**<.001**	.210
5. Education Level	.277	**.006**
6. **Supervises Others**	**<.001**	.961
7**. Time in Current Job**	**.001**	.655
8. Time with current Firm	**.035**	.589
9. **Length of relationship with manager**	**<.001**	.733
10. Gender of Manager	.547	**.023**
11. **Age of Firm**	**.036**	**.026**

Org context controls in bold. Statistically significant (p<.05) pathways in bold

Table 13

Summary of Study Findings

Hypothesis 1	Hypothesis 2	Hypothesis 3	Hypothesis 4
Managerial leadership behavior is positively related to perceived proximity. • Hypothesis 1 was supported: ➢ Positive correlation between managerial leadership behavior and perceived proximity was found to be .757.	**Perceived proximity is positively related to employee job satisfaction.** • Hypothesis 2 was supported: ➢ Positive correlation between perceived proximity and employee job satisfaction was found to be .792.	***3a: Managerial leadership behavior is positively related to employee job satisfaction.*** •Hypotheses 3a was supported: ➢ Positive correlation between managerial leadership behavior and employee job satisfaction was found to be .766. ***3b: The relationship between managerial leadership behavior and employee job satisfaction will be explained by the intervening variable of perceived proximity*** • Hypothesis 3b was partially supported: ➢ Roughly half (49.74%) of the total correlation between managerial leadership behavior and job satisfaction was explained by the intervening variable of perceived proximity.	**The organizational context of the employee will not impact the power of perceived proximity to explain the relationship between managerial leadership behavior and job satisfaction** • Hypothesis 4 was partially supported: ➢ Work arrangement (location and physical relationship to manager and coworkers) had no statistically significant relationships in the study. ➢ The presence of supervisory responsibilities did have a statistically significant impact on perceived proximity (weight = .225). ➢ Time in current job did have a statistically significant impact on perceived proximity (weight = .010). ➢ Length of relationship with manager did have a statistically significant impact on perceived proximity (weight = .145). ➢ Age of firm did have a statistically significant impact on perceived proximity (weight = -0.30).

Other notable findings
The managerial behavior latent factor regression weights and squared multiple correlation coefficients are of particular interest to HRD practitioners: • Managerial behaviors most closely associated with the command and control functions of management had the weakest overall impact on the latent managerial behavior variable. •Conversely, those behaviors most closely associated with leadership and inspiration such as employee learning and development, praise and recognition, and securing resources necessary for employee performance showed the strongest overall impact on the latent factor structure. •As a discipline that is concerned with organizational learning, employee development, and change in the service of the host organization (Wang et al., 2017), this represents a compelling finding for developmentally oriented researchers and practitioners.

Summary

This chapter presented the data analysis and results of the study. After a short introduction, the data collection procedures were presented and the sample described. The study's measures were reviewed and the structural equation models were developed. These models were then analyzed and the results discussed which included support for hypotheses 1 through 3a and partial support for 3b and 4.

Chapter 5:

Discussion

Introduction

This chapter contains four sections. The first is a discussion of the results from chapter 4 and how they relate to relevant literature. The second section discusses the implications of the study from the perspectives of theory, research, and practice. The third section revisits the study's limitations. The fourth and final section concludes with suggestions for future research.

Results Discussion

This section will examine each of the study's hypotheses and relate them to the relevant literature. As this was exploratory cross-sectional research, no causation may be determined. However, the results provide compelling new information into the role of both managerial behavior and perceived proximity in HRD research and practice.

Hypothesis 1, 2, 3_a. The study's theoretical model predicted a positive correlation between managerial leaderships behaviors, perceived proximity, and employee job satisfaction. This study found that given a one unit increase in managerial behavior scores, perceived proximity increased by a total of .757 units (see Table 14). This supports the study's first hypothesis that managerial behavior is positively related to perceived proximity. Decomposing the implied correlations (see Table 15) showed that for every one unit increase in perceived proximity, job satisfaction increased by .497 units. This supports the study's second hypothesis that perceived proximity is positively related to job satisfaction. The implied correlations decompositions further show that for

every one unit increase in managerial behavior scores, job satisfaction increased by a total of .756 units which was a combination of a direct effect of .389 and an indirect effect through perceived proximity of .376 units. This supports the study's hypothesis 3a that managerial behavior is positively related to job satisfaction.

These results are consistent with Hoffman and Shipper's (2012) results which showed that the extent to which variables involving a sense of shared identity influenced employee outcomes is largely a function of managerial behavior. The results are also consistent with previous research into perceived proximity which found it to be a powerful predictor when examining the relationship involving communication, shared identity, and relationship quality in distributed work environments (O'Leary, et. al., 2014; Wilson, et al., 2008).

Table 14
Implied Correlations, Average Variance Extracted (AVE), and Composite Reliability (CR), Model 4

Variable	1	2	3
1. Mgt Behavior	.900		
2. Perc. Prox	.757	.736	
3. Job Sat.	.766	.792	.575
CR	.962	.892	.711
AVE	.810	.542	.331

Note. Square root of AVE along the diagonal

Table 15
Decomposition of Implied Correlations

Correlation	Direct	Indirect	Total	Spurious	Implied
Management Behavior, Job Satisfaction	.389	.376	.756	.010	.766
Perceived Proximity, Job Satisfaction	.497		.497	.295	.792

Hypothesis 3_b. This study showed only partial support for hypothesis 3_b that perceived proximity would completely explain the relationship between managerial behavior and employee job satisfaction. While the data did not support the full intervention of perceived proximity in the model, managerial behavior did have a partial indirect effect through perceived proximity with 49.74% of the total correlation between management behavior and job satisfaction being explained by perceived proximity. This is in contrast to O'Leary et al. (2014) who showed perceived proximity to fully intervene and explain the relationship between communication and outcomes related to relationship quality while also accounting for the most dominant pathways between shared identification as well.

These findings may indicate that the theoretical model may be incomplete and that an intervening variable between managerial behavior and job satisfaction may be missing from the research model. It is also possible that these findings may simply reflect the fact that attitudinal outcomes are more complex than relationship quality outcomes. Finally, this finding may also be attributed to the relatively low factor loadings for the job satisfaction items relative to the other instruments in the study (see Table 16), and the resultant potential for discriminant validity issues between perceived proximity and job satisfaction mentioned in chapter 4.

Table 16

Pattern (P) and Structure (S) Coefficients for Measurement Model 4 (Three-Factor Correlated, no PPCog1, 2, 3, 5, PPAff4)

Construct	Mgt Behavior		Perc. Prox.		Job Satisfaction	
Variable	P	S	P	S	P	S
Mgt Behavior						
EffectiveMgt	**.835**	**.835**		.632		.640
EmpDelMgt	**.887**	**.887**		.671		.679
PartSupMgt	**.907**	**.907**		.686		.694
PpleDevMgt	**.947**	**.947**		.717		.725
Incl. Mgt	**.901**	**.901**		.682		.690
Comm. Mgt	**.919**	**.919**		.696		.704
Perc. Prox						
PP Cog4		.581	**.767**	**.767**		.608
PP Aff1		.571	**.755**	**.755**		.598
PP Aff2		.545	**.720**	**.720**		.570
PP Aff3		.533	**.704**	**.704**		.557
PP Aff5		.542	**.716**	**.716**		.567
PP Aff6		.572	**.756**	**.756**		.598
PP Aff7		.553	**.731**	**.731**		.579
Job Satisfact.						
JobSat1		.433		.448	**.566**	**.566**
JobSat2		.419		.433	**.547**	**.547**
JobSat3		.435		.440	**.568**	**.568**
JobSat4		.424		.439	**.554**	**.554**
JobSat5		.487		.503	**.636**	**.636**

Hypothesis 4. The study found limited support for the fourth hypothesis that the organizational context of the employee would not impact the power of perceived proximity to explain the relationship between managerial behavior and job satisfaction. The way that participants described their current work arrangement in terms of their physical proximity to both their coworkers and their manager had no effect on the extent to which perceived proximity explained the relationship between managerial behavior and job satisfaction. This is consistent with O'Leary et al. (2014) who showed perceived proximity to fully intervene in the relationship between communication, relationship

quality, and shared identification and that objective distance had no statistical significance in that relationship.

The study also showed that perceived proximity is sensitive to other situational or role variables such as supervisory duties, time in one's current position, and length of relationship with a manager (see table 17). The significance of the length of relationship with one's manager is consistent with previous literature (O'Leary et al., 2014) and along with the other situational control variables represent important contributions to understanding perceived proximity's boundary conditions. Lastly, the statistically significant ($p < .05$) and negative regression weight (-.030) on the direct path between firm age and perceived proximity is consistent with previous research indicating that established firms may have more difficulty adapting and leveraging communication technology to support their relationships with their employees (Ayoko, Konrad, & Boyle, 2012; Bartel, Wrzesniewski, & Wiesenfeld, 2012; Berry, 2011).

Table 17
Regression Weight and Statistical Significance of Direct Paths from Control Variables to Perceived Proximity and Job Satisfaction

Control Variable	Path to Perc.Proximity		Path to Job Satisfaction	
	Weight	*p* value	Weight	*p* value
1. **Work Arrangement**	.030	.098	.009	.463
2. Participant Gender	-.046	.314	-.076	**.015**
3. Participant Age (Birth Yr)	.016	**<.001**	-.001	.724
4. Participant Ethnicity	-.083	**<.001**	-.020	.210
5. Education Level	-.032	.277	-.057	**.006**
6. **Supervises Others**	.225	**<.001**	.002	.961
7**. Time in Current Job**	.010	**.001**	.001	.655
8. Time with Current Firm	-.065	**.035**	.012	.589
9. **Length of Manager Relationship**	.145	**<.001**	.009	.733
10. Gender of Manager	-.029	.547	-.076	**.023**
11. **Age of Firm**	-.030	**.036**	-.022	**.026**

Org context controls in bold. Statistically significant (p<.05) pathways in bold

Implications of the Study

Theory. This study introduced and explored the initial empirical evidence for the validity of a new research model. The study's theoretical model explained 86.8% of the overall variance observed in the data (see Table 18), representing a practically and statistically significant theoretical framework for the study. The research model successfully synthesized three distinct bodies of literature (i.e., virtual work, remote employees, and distributed teams; organizational culture and cross-cultural management; and managerial and leadership effectiveness) into a single theoretical structure that can be further expanded, refined, and applied to future research. Lastly, the study also contributed to the understanding of perceived proximity by showing that it is typically impacted by situational variables such as the presence or absence of supervisory duties, time in one's current position, and the length of relationship with one's manager.

Table 18
Fit Indices for Structural Models

Model	χ^2	*df*	RMSEA (90% CI)	SRMR	CFI	AIC	BIC	#|RC| > .10	R^2 (JobSat)	R^2_m
1. Mgt Behavior -> Perc. Prox -> Job Satisfaction	488.477	133	.057 (.051, .062)	.0403	.966	564.477	744.256	4	.677	.872
2. Mgt Behavior -> Perc. Prox -> Job Satisfaction and Mgt Behavior -> Job Satisfaction	434.076	132	.052 (.047, .058)	.0293	.971	512.076	696.586	0	.692	.868
|Delta between Models 1and 2|	54.401	1	.005	.0110	.005	52.401	47.67	4	.015	.004

Note. RC = residual correlations. The estimation for all models converged and the solutions were admissible. R^2_m = overall R^2 for the path model

Research. The study supported prior research findings that physical proximity to one's coworkers and manager has no effect on the explanatory power of perceived proximity or on employee job satisfaction. In addition, the study supported O'Leary et

al.'s (2014) finding that the data does not support a second order factor structure for perceived proximity. This stands in contrast to the theoretical structure of the variable originally proposed by Wilson et al. (2008) and lends support for this variable having a much simpler factor structure than originally theorized. In addition, this study lends further support to previous research showing perceived proximity to have positive relationships between variables having to do with communication, identification, and attitudinal outcomes (Hoffman & Shipper, 2012; O'Leary et al., 2014).

The study also demonstrated that Hamlin's universal leadership behavior framework can successfully be utilized to create a managerial behavior scale with strong predictive characteristics. Of the three constructs in this study, managerial behavior had by far the strongest factor structure (see Table 16) with all items loading on their theoretical factor structure above the most stringent threshold of .700 while also staying below the upper limit of .950 (Bagozzi & Yi, 1988; Kline, 2016).

This study has made a significant contribution to the remote work and distributed team literature while also adding to the theoretical understanding of managerial effectiveness within a distributed context. The study also contributed empirically based insights to the literature on virtual and remote employees as well as distributed teams. By relating perceived proximity to job satisfaction, future researchers should be able to derive and investigate numerous other theoretical relationships of practitioner and scholarly interest including absenteeism, presenteeism, organizational commitment, customer-oriented behaviors, customer satisfaction, job performance, organizational

citizenship behaviors, turnover/retention, employee health, and psychological well being (King & Williamson, 2005; Meyer et al., 2002; Wilkin, 2013).

Practice. This study generates a number of implications for practice. As firms increasingly look to technological solutions to increase capacity, lower production costs, and boost performance, it is critical that firms examine the impact of technology on employees, the nature of its business relationships, and employee performance as workers integrate, adapt to, and leverage the promise of technology in their work. The first implication of this study is that HRD practitioners must be able to provide predictive understanding of these mechanisms to their host organizations if they are to provide value in a changing business environment. The structural equation model depicted in Figure 10 is one step in that direction and shows several noteworthy paths from a practical standpoint.

Second, the strong path between perceived proximity and job satisfaction (.50) demonstrates the usefulness of considering and intentionally growing the levels of perceived proximity within any organization, and especially within those that utilize distributed work arrangements. While it is important to consider the potential downsides of having too much perceived proximity such as the employees feeling so psychologically close that they no longer need to validate their assumptions when ascribing motives to the behaviors of their coworkers, this study supports the notion that perceived proximity is like salt. Without it, organizational ingredients don't come together as well and lack the flavor of results desired by management. With too much,

the organizational flavor is thrown off entirely as the individual ingredients no longer contribute anything meaningful to the overall brine.

The third, and perhaps most important implication for practitioners is related to the role of the manager within organizations that utilize distributed work. While cross-sectional research cannot prove causation, the strong path between management behavior and perceived proximity (.760) may indicate that perceived proximity is a function of behavior and that the ability to increase it is a skill that may be acquired by managers within the organization. An examination of the managerial behavior latent factor regression weights and squared multiple correlation coefficients is especially of interest to HRD practitioners (see Table 19).

The single highest multiple correlation coefficient (.896) and regression weight (.947) within the management behavior factor structure was for the people development scale. This was followed by communications behavior (R^2= .845, regression weight = .919) and participative and supportive management (R^2= .822, regression weight = .907). Inclusive management behavior (R^2= .811, regression weight = .901), employee empowerment and delegation (R^2= .787, regression weight = .887), followed in turn. Lastly, effective management behaviors (R^2= .698, regression weight = .835) had the lowest multiple correlation coefficients and regression weights of the behavior scales tested.

These results are consistent with Hamlin's (2004) assertion that managers are often seen as leaders within organization by employees and that leadership can happen at any level within the organization. The data indicated that the managerial behaviors most

closely associated with the command and control functions of effective management such as running efficient meetings, being well prepared, and well organized had the weakest overall impact on the latent managerial behavior variable. Conversely, those behaviors most closely associated with leadership and inspiration such as employee learning and development, praise and recognition, and securing resources necessary for employee performance showed the strongest overall impact on the latent factor structure. As a discipline that is concerned with organizational learning, employee development, and change in the service of the host organization (Wang et al., 2017), this represents a compelling finding of the study in terms of the impact of developmentally oriented behaviors relative to the other managerial leadership behaviors in the survey.

Table 19
Managerial leadership behavior regression weights and squared multiple correlation coefficients ($R^2_{Managerial\ Behavior}$)

Managerial Behavior Scale	Regression Weight (latent path)	$R^2_{\text{Managerial behavior}}$
1. People Development Behavior	.947	.896
2. Communication Behavior Scale	.919	.845
3. Participative & Supportive Management	.907	.822
4. Inclusive Management behavior	.901	.811
5. Employee Empowerment & Delegation	.887	.787
6. Effective Management Behaviors	.835	.698

The role of the manager in the third implication highlights the importance of the fourth and final implication for practice. Organizations must train and equip their managers on the role of perceived proximity in their relationships with their direct reports. While performance management appears to no longer be an issue for distributed work arrangements (Herd, 2016), the employee/employer relationship embodied by supervisors and their direct reports is clearly an issue. In fact, this relational aspect may

largely explain the recent retreat from distributed work arrangements as "[l]eaders often say ‘I like my co-located team better than my [remote] team, but the work gets done just as well" (Simons, 2017, p.1). For these managers, perceived proximity and the ability to foster it intentionally may represent an important pathway that HRD practitioners can help build in order to support organizational performance.

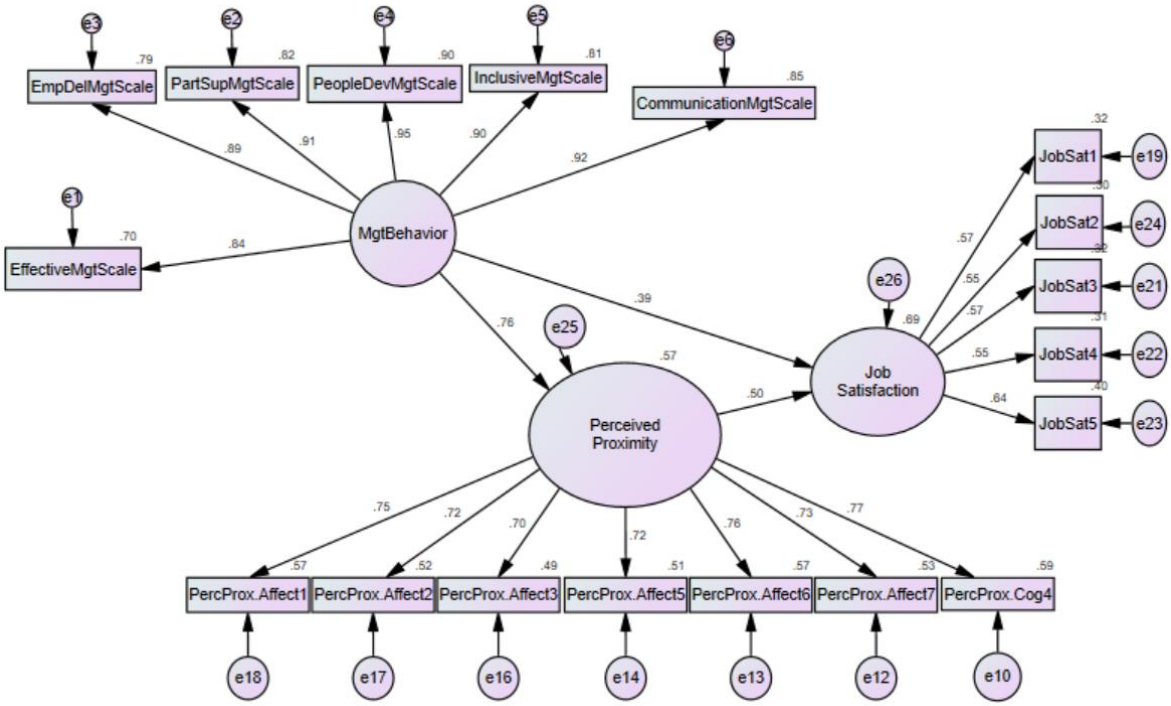

Figure 10. Structural model 2 with standardized estimates reported

Limitations

This study includes four fundamental limitations that were inherent to the study's design. First, the study utilized a unidirectional design that did not include the perspective of the manager or utilize any triangulation to validate the employees assessment of managerial behavior. The second limitation involves the use of quantitative cross-sectional survey methods. While directionality and relationship

strength in the study's variables were successfully explored, this study cannot make any claims to causality. Third, the nature of distributed work is hard to pin down. While telecommunication technology and computer networks are becoming increasingly ubiquitous, the line between a traditional work arrangement and a distributed work arrangement may be difficult to determine (Hoegl & Proserpio, 2004). The fourth and final inherent limitation is that the study relies on the subjective judgment of its participants to determine managerial behavior without any verification from the researcher.

In addition to the limitations that were baked into the study's design, the study could not rule out potential issues of discriminant validity between perceived proximity and job satisfaction. While the composite reliability of both perceived proximity and job satisfaction remained above .700, the square root of the average variance extracted for perceived proximity and job satisfaction were less than the overall factor correlations in the model (Bagozzi & Yi, 1988; see Table 7). While the absolute factor correlations were not excessive ($\geq$ .90) and the analysis was able to continue (Kline, 2016), this suggests that further refinement of the perceived proximity questionnaire may be in order. In addition, despite its successful use in other studies with distributed work populations, the study may have benefited from selecting a different measure for job satisfaction. Examining the factor loadings (see Table 16) it is clear that the job satisfaction measure had the weakest performance relative to the other study measures.

Future Research

This study points to several avenues for future research. First, this study supports the exploration of perceived proximity as a useful context variable that influences other social science variables such as attitudinal and performance outcomes. It suggests that future research may benefit from the addition of perceived proximity when examining relationships and variables that touch on elements of shared identification, communication and culture, especially when such research is done in the context of organizations utilizing distributed work arrangements.

Second, while unidirectional research methods are appropriate for emerging research (Bryman & Bell, 2011), future studies may wish to adopt a multidirectional approach that incorporates manager and coworker perspectives to both replicate and expand on the findings of this study. Third, future studies should build on the theoretical framework of this study by incorporating experimental or longitudinal designs that will more effectively explore the nature of causality for perceived proximity and HRD interventions that may lead to its development.

Fourth, the findings of Chong et al. (2012) indicate a high likelihood the incorporation of a hindrance/challenge framework into the theoretical model may be called for. Capturing and incorporate the employee's attitude toward distributed work would no doubt add additional detail and richness to the research model. It is likely that other workplace stressors on the relationship communication pathway, such as the extra communication and coordination challenges associated with distributed work, would also

be moderated by one's orientation toward that stressor and may further understanding of the mechanisms involved particularly for established organizations.

Fifth, this study adds additional support to literature showing that perceived proximity has greater predictive power than objective physical distance when examining outcomes within organizations that are impacted by personal relationships. In an increasingly global economy, this represents a powerful tool for the field of HRD that can be used in the service of their organization to equip leaders to drive organizational performance, learning, and change.

Summary

This chapter discussed the study's findings in four sections. Section one discussed the results from chapter four and related them to relevant literature. Section two explored the study's implications for theory, research, and practice. Section three reviewed the study's limitations and suggestions for future research were provided in section four.

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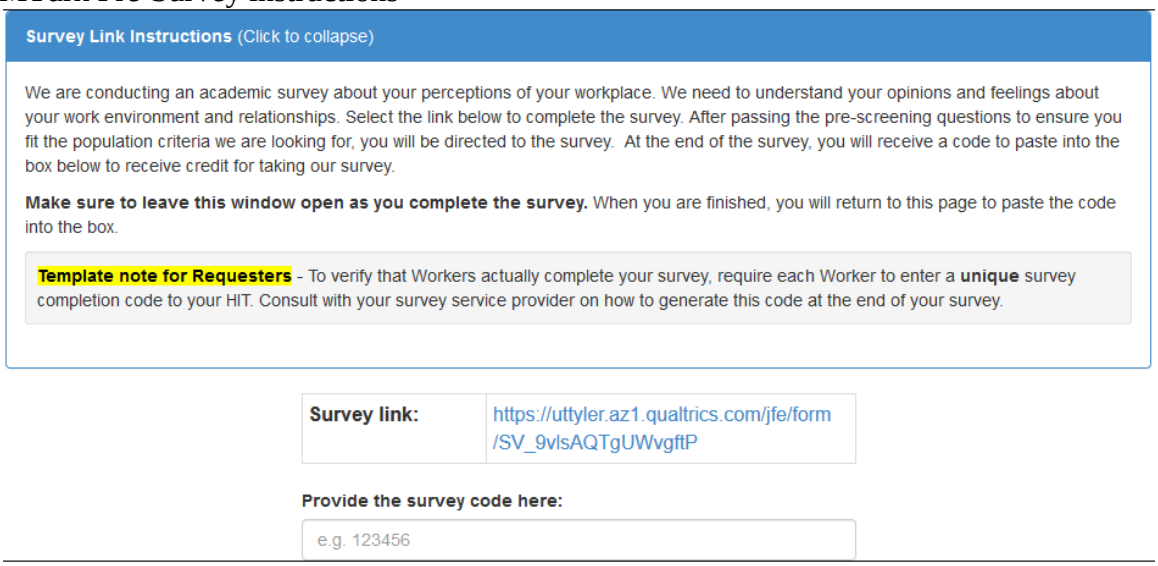
Appendix A. Survey Instructions and Participant Communications.

MTurk Pre-Survey instructions



Survey Link Instructions (Click to collapse)

We are conducting an academic survey about your perceptions of your workplace. We need to understand your opinions and feelings about your work environment and relationships. Select the link below to complete the survey. After passing the pre-screening questions to ensure you fit the population criteria we are looking for, you will be directed to the survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

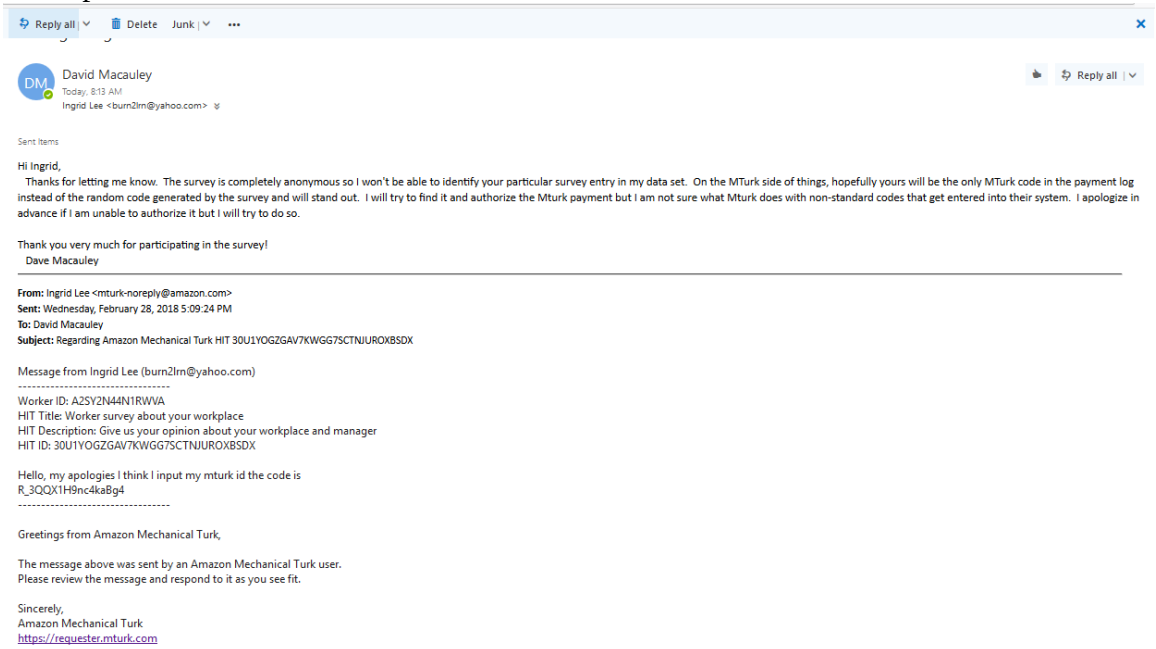
Template note for Requesters - To verify that Workers actually complete your survey, require each Worker to enter a **unique** survey completion code to your HIT. Consult with your survey service provider on how to generate this code at the end of your survey.

Survey link:	https://uttyler.az1.qualtrics.com/jfe/form/SV_9vlsAQTgUWvgftP

Provide the survey code here:

e.g. 123456

Participant communications:



Reply all | Delete | Junk | ...

David Macauley
Today, 8:13 AM
Ingrid Lee <burn2lrn@yahoo.com>

Reply all

Sent Items

Hi Ingrid,
Thanks for letting me know. The survey is completely anonymous so I won't be able to identify your particular survey entry in my data set. On the MTurk side of things, hopefully yours will be the only MTurk code in the payment log instead of the random code generated by the survey and will stand out. I will try to find it and authorize the Mturk payment but I am not sure what Mturk does with non-standard codes that get entered into their system. I apologize in advance if I am unable to authorize it but I will try to do so.

Thank you very much for participating in the survey!
Dave Macauley

From: Ingrid Lee <mturk-noreply@amazon.com>
Sent: Wednesday, February 28, 2018 5:09:24 PM
To: David Macauley
Subject: Regarding Amazon Mechanical Turk HIT 30U1YOGZGAV7KWGG7SCTNJUROXBSDX

Message from Ingrid Lee (burn2lrn@yahoo.com)

Worker ID: A2SY2N44N1RWVA
HIT Title: Worker survey about your workplace
HIT Description: Give us your opinion about your workplace and manager
HIT ID: 30U1YOGZGAV7KWGG7SCTNJUROXBSDX

Hello, my apologies I think I input my mturk id the code is
R_3QQX1H9nc4kaBg4

Greetings from Amazon Mechanical Turk,

The message above was sent by an Amazon Mechanical Turk user.
Please review the message and respond to it as you see fit.

Sincerely,
Amazon Mechanical Turk
https://requester.mturk.com

Re: Regarding Amazon Mechanical Turk Project (HIT Type) 3VHU2SWT4FHIETHHU7EYYWX1W8USPF

David Macauley

Sat 3/17/2018 3:54 PM

Sent Items

To:Arpit Jain <marketlotus@gmail.com>;

Hello Mr. Jain,
Thank you for your interest in my study. The question posed in your email indicates that you do not think the compensation is sufficient to participate. While I hope that many people will participate in the study, I would never encourage anyone to participate if they do not feel that they will be treated fairly in the process.

Thank you for reaching out,
David M.

From: Arpit Jain <mturk-noreply@amazon.com>
Sent: Tuesday, March 13, 2018 10:27:50 PM
To: David Macauley
Subject: Regarding Amazon Mechanical Turk Project (HIT Type) 3VHU2SWT4FHIETHHU7EYYWX1W8USPF

Message from Arpit Jain (marketlotus@gmail.com)

Worker ID: A10VLJT7V96D9W
HIT Set ID: 3VHU2SWT4FHIETHHU7EYYWX1W8USPF
HIT Title: Worker survey about your workplace
HIT Description: Give us your opinion about your workplace and manager

Mr. Macauley,

Do you think think it is fair to pay measly $0.25 for a 15 minute survey?

Best

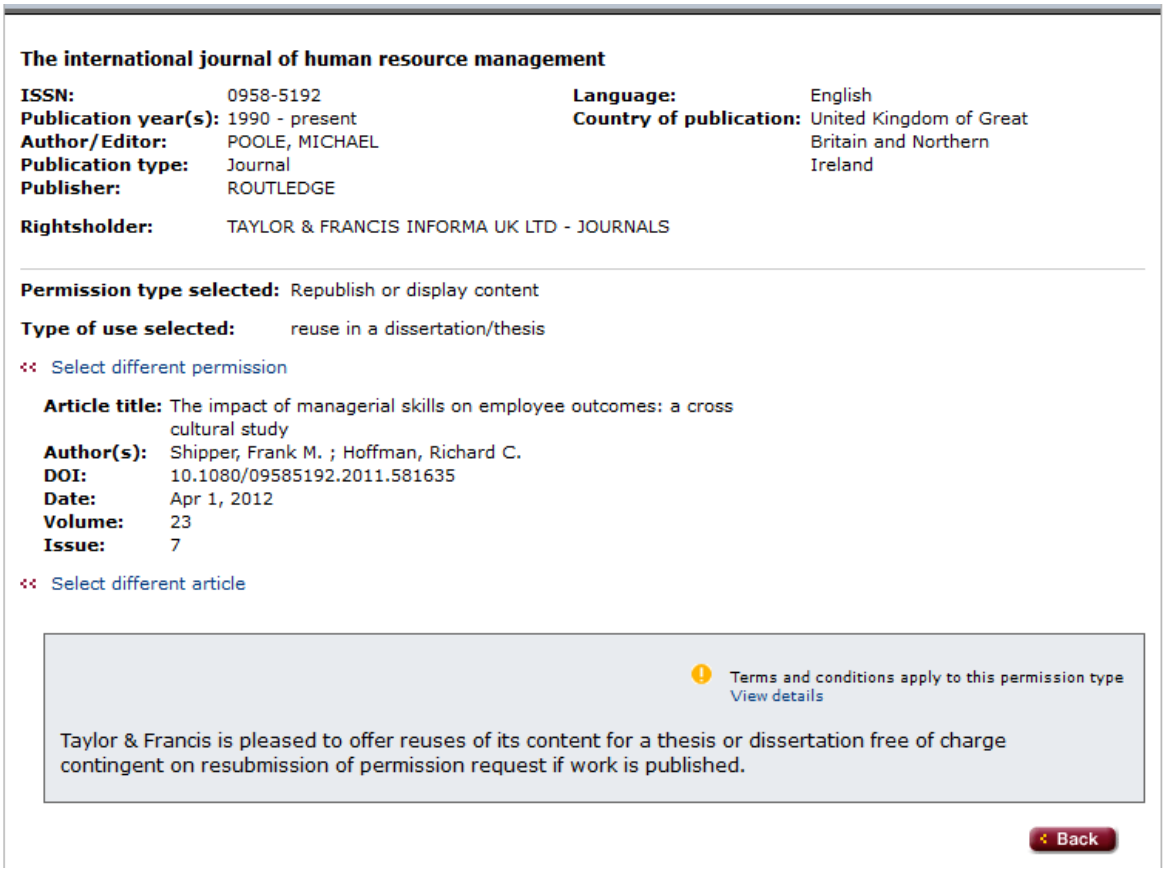
Greetings from Amazon Mechanical Turk,

The message above was sent by an Amazon Mechanical Turk user.
Please review the message and respond to it as you see fit.

Sincerely,
Amazon Mechanical Turk
https://requester.mturk.com

Appendix B. Copyright Requests

Copyright request for Hoffman & Shipper (2012) Model



The international journal of human resource management

ISSN:	0958-5192	**Language:**	English
Publication year(s):	1990 - present	**Country of publication:**	United Kingdom of Great Britain and Northern Ireland
Author/Editor:	POOLE, MICHAEL		
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Author(s): Shipper, Frank M. ; Hoffman, Richard C.
DOI: 10.1080/09585192.2011.581635
Date: Apr 1, 2012
Volume: 23
Issue: 7

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Copyright Authorization for O'Leary, et al (2014) Perceived Proximity measure

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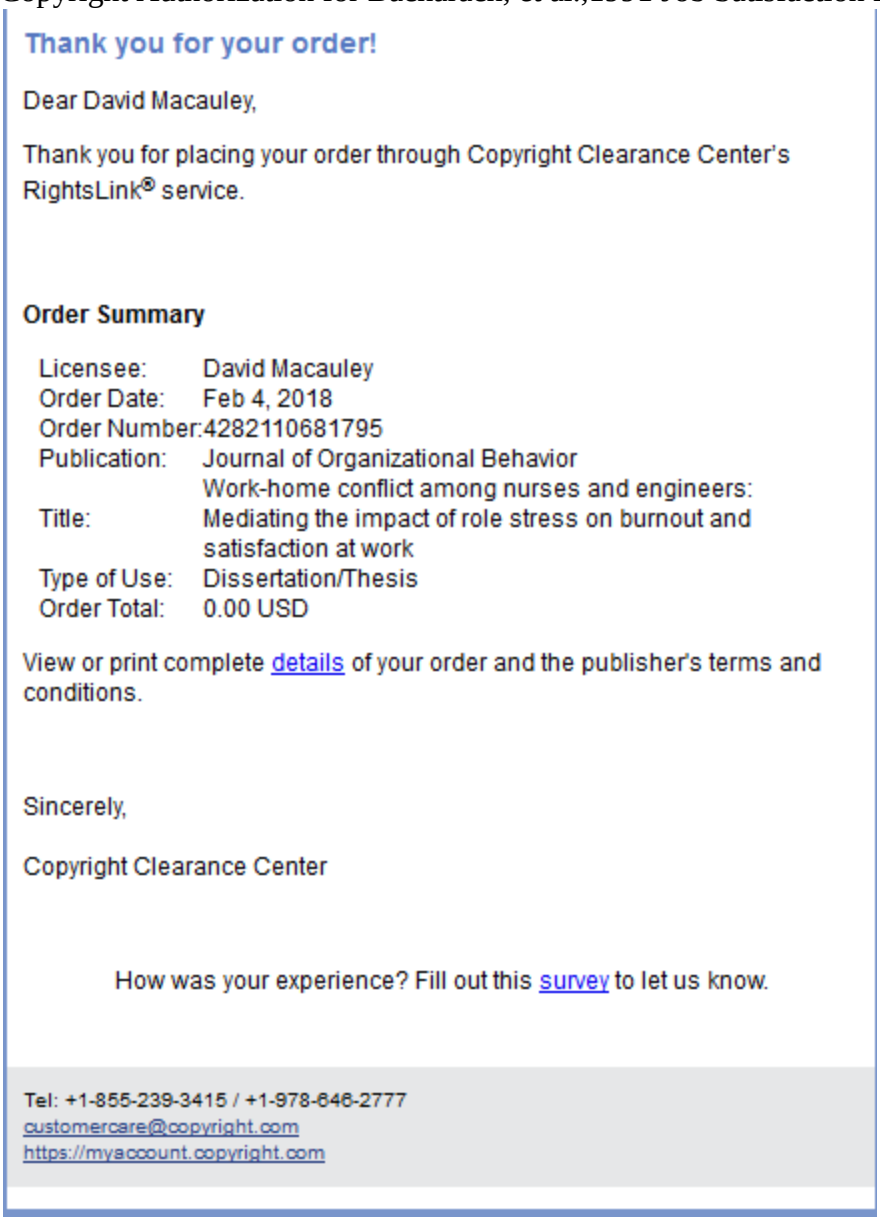
Appendix B. (Continued)

Copyright Authorization for Bacharach, et al.,1991 Job Satisfaction Instrument



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How was your experience? Fill out this survey to let us know.

Tel: +1-855-239-3415 / +1-978-646-2777
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https://myaccount.copyright.com

Appendix C. Survey Instrument

Screening

How many hours a week do you work?

- ○ Less than 10
- ○ More than 10 but less than 20
- ○ More than 20 but less than 30
- ○ More than 30 but less than 40
- ○ 40 hours or more

Where do you perform your work?

- ○ Antarctica
- ○ Australia
- ○ South America
- ○ Europe
- ○ Asia
- ○ Africa
- ○ North America

Does the organization you work for currently utilize any of the work conditions below?

- remote employees or telecommuters?
- teams, departments, or functions spread over multiple work locations?

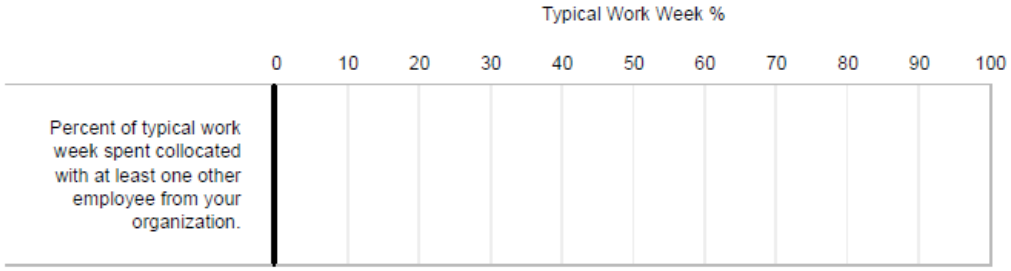
- ○ Yes
- ○ No

Select the option below that best reflects your **current** working arrangement in relation to your manager and coworkers:

- ○ I currently work in the same location as my manager and coworkers from my company.
- ○ I currently work in the same location as my manager and work with at least some of the coworkers from my company over distance.
- ○ I currently work in the same location as at least some coworkers from my company and interact with my manager over distance.
- ○ I currently work primarily away from others; I interact with both my supervisor and the coworkers from my company primarily over distance.
- ○ None of these describe my current work situation.

This question will only appear to those who indicated that they currently work primarily away from others and interact with others primarily over distance:

What percent of your typical work week do you spend in the same location as at least one other employee from the organization you work for?



Please select any of the following **work arrangements that you have personally experienced at any time since you began working**:

- ☐ I have worked in the same location as my manager and coworkers from my company.
- ☐ I have worked in the same location as my manager and have worked with at least some of the coworkers from my company over distance.
- ☐ I have worked in the same location as at least some coworkers from my company and interacted with my manager over distance.
- ☐ I have worked away from others; I have interacted with both my supervisor and the coworkers from my company primarily over distance.

What is the third word in this question: *How many stars are in the American flag?*

13

50

STARS

Informed Consent

Welcome to this survey for working professionals. The first step is to make sure you understand the purpose of this survey and to seek your consent to participate.

The purpose of this research project is to gather your opinion on certain factors which may exist in your workplace. This is a research project conducted by David Macauley as a requirement to fulfill a doctoral dissertation at the University of Texas at Tyler.

Your participation in this research study is completely voluntary. You may choose not to participate. If you decide to participate in this research study, you may withdraw at any time by closing your browser.

The procedure involves completing an online survey questions about your perceptions of your workplace and employing organization. You are being asked to participate in a survey that will take approximately 10 to 15 minutes to complete. After you read each question or statement, you will be asked to select the button that best corresponds to your response or provide a written response. You may need to scroll down the page to answer all the questions. Select NEXT to continue after each page.

To protect your confidentiality, your responses will be anonymous. No identifying information such as your name, department, email address, computer number or IP address will be collected. The researcher anticipates no side effects or risks associated with your participation in this study. The results of this study may be shared with The University of Texas at Tyler representatives but will be used only for scholarly purposes. Only a summary of the data will be shared during a final course presentation.

ELECTRONIC CONSENT: Please select your choice below.

Selecting the "Agree" button below indicates that:

- You have read the above information.
- You voluntarily agree to participate.
- You are at least 18 years of age.

If you do not wish to participate in the research study, please decline participation by clicking on the "Disagree" button.

○ Agree

○ Disagree

Demographics & Context

Please answer the following general questions about yourself. Remember, none of this information is tied to your identity.

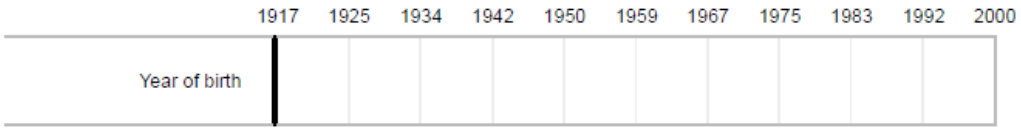
What is your gender?

- ○ Male
- ○ Female

What is your marital status?

- ○ Single, never married
- ○ Married
- ○ Divorced or Widowed

In what year were you born?



Please indicate the highest level of education that you have obtained. *If currently enrolled, report the highest degree received to date:*

- ○ Less than a high school degree or its equivalent
- ○ A high school degree or its equivalent
- ○ Bachelors degree
- ○ Graduate degree
- ○ Doctoral degree

How would you describe your ethnicity origin (or Race)?

- ○ American Indian or Alaska Native
- ○ Asian
- ○ Native Hawaiian or Pacific Islander
- ○ None of these describe me. I describe myself as...
- ○ White
- ○ Hispanic or Latino
- ○ Black or African American

Have you ever collaborated with someone in a professional capacity that you considered to be a remote employee, telecommuter, or distributed employee of the same organization as yourself?

- ○ Yes
- ○ No

In what industry do you work?

Appendix C. (Continued)

How many employers have you worked for in your career?

What is your current job title or function?

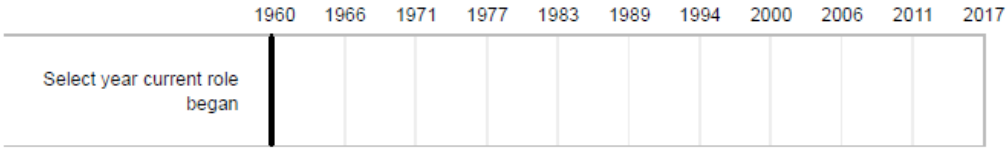
Do you manage or supervise people?

- Yes
- No

This question will only appear to those who indicated that they manage or supervise people.

How many people do you manage or supervise? Please use a number only, do not include words or text.

In what year did you begin your current role?



How long have you worked for your **present employer?**

- 5 years or less
- 6 to 10 years
- 11 to 15 years
- 16 to 20 years
- 21 years or more

How long have you reported to your **current supervisor?**

- 5 years or less
- 6 to 10 years
- 11 to 15 years
- 16 to 20 years
- 21 years or more

How long has your current employer been in business?

- My company has been in business for 5 years or less
- My company has been in business for 6 to 10 years
- My company has been in business for 11 to 15 years
- My company has been in business for 16 to 20 years
- My company has been in business for 21 years or more

What do you estimate the number of employees to be in your organization?

Mgr Lead Behaviors: Effective & Proactive

The following statements relate to your evaluation of your manager's leadership effectiveness. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions about your managers behavior relative to the prompt.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager sets high standards.	○	○	○	○	○	○	○
My manager is well prepared to act in business situations.	○	○	○	○	○	○	○
My manager proactively confronts or addresses issues that come up at work.	○	○	○	○	○	○	○
My manager ensures that his or her people follow proper protocols.	○	○	○	○	○	○	○
My manager thinks ahead.	○	○	○	○	○	○	○
My manager is an effective problem solver.	○	○	○	○	○	○	○
My manager gets things done on time	○	○	○	○	○	○	○
My manager is well organized.	○	○	○	○	○	○	○
My manager makes effective use of organizational resources & systems.	○	○	○	○	○	○	○
My manager communicates detailed plans and procedures for me to follow.	○	○	○	○	○	○	○
My manager runs effective meetings	○	○	○	○	○	○	○
My manager gathers the facts and does his or her homework to understand situations.	○	○	○	○	○	○	○

Mgr Lead Behaviors: Participative & Support

The following statements relate to your evaluation of your manager's ability to engage employees in decision making or to support and guide employees in their jobs. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager knows what motivates me.	○	○	○	○	○	○	○
My manager gets me the training I need.	○	○	○	○	○	○	○
My manager tells me when I am doing well.	○	○	○	○	○	○	○
My manager gives me guidance.	○	○	○	○	○	○	○
My manager gets me the help I need.	○	○	○	○	○	○	○
My manager defends his or her staff from unfair criticism.	○	○	○	○	○	○	○
My manager has my back when things get difficult at work.	○	○	○	○	○	○	○
My manager is someone that I can trust.	○	○	○	○	○	○	○
My manager listens to me and my concerns.	○	○	○	○	○	○	○
My manager actively supports me.	○	○	○	○	○	○	○
My manager helps team members learn from mistakes.	○	○	○	○	○	○	○
My manager cares about me as a person.	○	○	○	○	○	○	○
My manager coaches me on how to improve.	○	○	○	○	○	○	○

Mgr Lead Behaviors: Empowerment & Delegation

The following statements relate to employee empowerment and delegation of authority in your understanding by your manager. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager is comfortable stepping away from time to time and letting the team "run itself" for a while.	○	○	○	○	○	○	○
My manager gives me the freedom to make my own decisions without close supervision.	○	○	○	○	○	○	○
My manager is an effective delegator.	○	○	○	○	○	○	○
My manager is happy with me when I solve my own problems.	○	○	○	○	○	○	○
My manager encourages me to develop skills and abilities on my own.	○	○	○	○	○	○	○
My manager gives me the freedom to develop my own ideas.	○	○	○	○	○	○	○
My manager encourages me to take on new responsibilities.	○	○	○	○	○	○	○
My manager empowers me to run my own projects.	○	○	○	○	○	○	○
My manager makes sure that I know their priorities so that I don't have to ask them every time a decision is needed.	○	○	○	○	○	○	○
My manager encourages me to be independent.	○	○	○	○	○	○	○

Appendix C. (Continued)

IMC 1

Please select the little blue circle at the bottom of the screen.
Do not click on the scale items that are labeled from 1 to 9

This helps to screen out random clicking

	1	2	3	4	5	6	7	8	9	
Very Rarely	○	○	○	○	○	○	○	○	○	Very Frequently

You did not follow directions for the previous question. Please read the the survey instructions carefully.

○ Ok, I will. Take me to the next question.

Mgr Lead Behaviors: Concern for people & development

The following statements relate to your managers ability to meet the personal, professional, and developmental needs of employees that report to them. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager divides staff work assignments fairly.	○	○	○	○	○	○	○
My manager brings the achievements of individuals on his or her team to the attention of top management.	○	○	○	○	○	○	○
My manager responds quickly to staff problems.	○	○	○	○	○	○	○
My manager congratulates or praises the staff when they succeed.	○	○	○	○	○	○	○
My manager works hard to secure the resources needed by his or her team to do their jobs.	○	○	○	○	○	○	○
My manager works to advance the reputation of his or her team within the company.	○	○	○	○	○	○	○
My manager is skilled at dealing with his or her staff's difficult professional issues when they arise.	○	○	○	○	○	○	○
My manager is good at getting resources to support those wishing to develop new ideas or projects.	○	○	○	○	○	○	○
My manager takes the time to provide training to his or her team personally.	○	○	○	○	○	○	○
My manager responds appropriately to staff problems.	○	○	○	○	○	○	○
My manager promotes and supports the career developments of his or her staff.	○	○	○	○	○	○	○
My manager develops the talents of others.	○	○	○	○	○	○	○
My manager brings the achievements of his or her team to the attention of top management.	○	○	○	○	○	○	○
My manager is skilled at dealing with his or her staff's difficult personal issues when they arise.	○	○	○	○	○	○	○

Mgr Lead Behaviors: Inclusive Decision Making

The following statements relate to your assessment of your manager's ability to engage employees in decision making or to demonstrate support and guide employees in their jobs. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager seeks my input regarding how to commit our team's financial resources (budget).	○	○	○	○	○	○	○
My manager seeks out and balances multiple points of view when making decisions.	○	○	○	○	○	○	○
My manager actively seeks to include team members in meetings or projects.	○	○	○	○	○	○	○
My manager likes it when I offer my opinion on upcoming challenges.	○	○	○	○	○	○	○
My manager involves me in the planning process for our team.	○	○	○	○	○	○	○
My manager involves me in his or her decision making process.	○	○	○	○	○	○	○
My manager involves me in problem solving.	○	○	○	○	○	○	○
My manager actively listens to my ideas and opinions.	○	○	○	○	○	○	○
My manager seeks my input regarding how to commit our team's human resources (staffing).	○	○	○	○	○	○	○
My manager seeks my input when things change.	○	○	○	○	○	○	○

Mgr Lead Behaviors: Communications

The following statements relate to your manager's ability to communicate with employees that report to them. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

To what degree do you agree or disagree with the statements below about your manager?

	Strongly agree	Agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Disagree	Strongly Disagree
My manager uses feedback that he or she has gathered from his or her staff about policies and procedures when communicating with organizational leaders.	○	○	○	○	○	○	○
My manager regularly gathers feedback from staff about polices and procedures.	○	○	○	○	○	○	○
My manager keeps his or her team informed.	○	○	○	○	○	○	○
My manager makes him or herself available to me.	○	○	○	○	○	○	○
My manager makes him or herself available to their team.	○	○	○	○	○	○	○
My manager gathers all relevant facts before making judgments or decisions.	○	○	○	○	○	○	○
My manager holds frequent team meetings.	○	○	○	○	○	○	○
My manager keeps me informed.	○	○	○	○	○	○	○
My manager regularly sends important documents to his or her team.	○	○	○	○	○	○	○
My manager regularly sends me important documents.	○	○	○	○	○	○	○
My manager initiates special events or meetings to communicate information about important changes when they happen.	○	○	○	○	○	○	○

IMC 2

Please click on the selection for "9: Very Frequently."

This helps to screen out random clicking

	1	2	3	4	5	6	7	8	9	
Very Rarely	○	○	○	○	○	○	○	○	○	Very Frequently

You did not follow directions for the previous question. Please read the the survey instructions carefully.

○ Ok, I will. Take me to the next question.

Perceived Proximity

The following statements relate to your feelings about your manager. Please read and reflect on each prompt carefully and select the *degree to which you disagree or agree with each statement*

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

Describe how you feel about your manager using the following statements:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Even when we are not working in the same place, or haven't been in the same place for a while, I still feel close to my manager.	○	○	○	○	○
I have a warm feeling about my manager.	○	○	○	○	○
I feel connected to my manager.	○	○	○	○	○
I feel closer to my manager than the actual physical distance would suggest.	○	○	○	○	○
I feel close to my manager	○	○	○	○	○
Psychologically, my manager feels close.	○	○	○	○	○
Even when we're not actively working on something, I feel close to my manager.	○	○	○	○	○

Describe how you think about your manager using the following statements:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
With regard to work, I often think about my manager.	○	○	○	○	○
When I think of my manager, she/he seems close.	○	○	○	○	○
Physical distance doesn't matter in my relationship with my manager.	○	○	○	○	○
When I think of my manager, the distance between the two of us generally seems small.	○	○	○	○	○
Even when we haven't been in the same place, it hasn't seemed like I was far from my manager.	○	○	○	○	○

Job Attitude (Satisfaction)

The following statements relate to your satisfaction with your job. Please read and reflect on each prompt carefully and select the response that you believe most accurately reflects your thoughts or opinions.

Please be honest as there are no right or wrong answers and all answers are anonymous. Often, the best approach is to select the first response that comes to mind.

How satisfied are you with each of the following:

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
The chance your job gives you to do what you are best at.	○	○	○	○
Your present job in light of your career expectations.	○	○	○	○
The progress you are making toward the goals you set for yourself in your present position.	○	○	○	○
Your present job when you compare it to jobs in other organizations.	○	○	○	○
Your present job when you consider the expectations you had when you took the job	○	○	○	○

Appendix D. IRB Approval

THE UNIVERSITY OF TEXAS AT TYLER
3900 University Blvd. • Tyler, TX 75799 • 903.565.5774 • FAX: 903.565.5858

Office of Research and
Technology Transfer

Institutional Review
Board

February 20, 2018

Dear Mr. Macauley,

Your request to conduct the study: *Examining Managerial Leadership Behavior, Perceived Proximity, and Job Satisfaction in Distributed Work Arrangements,* IRB #Sp2018-104 has been approved by The University of Texas at Tyler Institutional Review Board as a study exempt from further IRB review. This approval includes a waiver of signed, written informed consent. In addition, please ensure that any research assistants are knowledgeable about research ethics and confidentiality, and any co-investigators have completed human protection training within the past three years, and have forwarded their certificates to the IRB office (G. Duke).
Please review the UT Tyler IRB Principal Investigator Responsibilities, and acknowledge your understanding of these responsibilities and the following through return of this email to the IRB Chair within one week after receipt of this approval letter:

- Prompt reporting to the UT Tyler IRB of any proposed changes to this research activity
- **Prompt reporting to the UT Tyler IRB and academic department administration will be done of any unanticipated problems involving risks to subjects or others**
- Suspension or termination of approval may be done if there is evidence of any serious or continuing noncompliance with Federal Regulations or any aberrations in original proposal.
- Any change in proposal procedures must be promptly reported to the IRB prior to implementing any changes except when necessary to eliminate apparent immediate hazards to the subject.
- Exempt with waiver

Best of luck in your research, and do not hesitate to contact me if you need any further assistance.

Sincerely,

Gloria Duke, PhD, RN

Gloria Duke, PhD, RN
Chair, UT Tyler IRB

Biosketch

David Macauley was raised in Pasadena California before graduating from Carleton College in Northfield Minnesota with a Bachelors degree in Theater Arts. David has worked in the finance industry for 11 years in multiple roles including sales, training, program development, and strategic initiatives. He currently holds a director position at Thrivent Financial, a not-for-profit fortune 500 financial services company.

David earned a Master of Business Administration from the UW Consortium program at UW Eau Claire as well as a Masters of Educational Leadership and a Social Justice graduate certificate from the University of Wisconsin at Oshkosh. David began his doctoral program at the University of Texas at Tyler in Fall 2015. His research interests include distributed work, leadership, organizational change, coaching and development, executive effectiveness, organizational learning and career development.