

Context and Leadership in the Remote Environment

by

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Abstract

Context and Leadership in the Remote Environment

by Elizabeth Kelley

Previous models of leadership have been based on an assumption of face-to-face contact between the leader and the follower. Increasingly, however, advanced information technology is being used by organizations to enable employees to work at a distance from their managers. This deployment of technology is occurring without knowledge of the full extent of its impact on human dynamics. There is little empirical data to identify and explain the factors that contribute to the increased complexity of the remote environment and the relationships and processes through which these factors influence individuals' performance and satisfaction. The current research investigated the relationship between the remote context, perceptions of leadership and individual outcomes. Four studies were conducted, beginning with semi-structured interviews with remotely managed individuals to identify elements in the remote environment that they considered important to outcomes. In the subsequent three studies, an instrument was developed to measure these elements and a model of remote leadership was formulated and tested. Unplanned communication, regularly scheduled communication, prior relationships with one's manager, and individual control beliefs were found to significantly predict perceptions of transformational leadership in the remotely managed group. These relationships differed in the proximally managed group. However, in both groups, perceived transformational leadership predicted job satisfaction, organizational commitment and perceived managerial trust in the individual. Together these studies demonstrated that context matters to a greater degree in the remote environment than in the proximal one, and the process through which this occurs is the perception of transformational leadership. Traditionally, leadership has been viewed as a predictor of outcomes, either directly or through mediational processes. These findings suggest that context rather than leadership style may be the logical starting point for leadership models in the remote environment.

May, 2005

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Advanced information technology is increasingly used by organizations, particularly to enable employees to work at a distance from their managers, their work groups and/or their offices. For example, one recent report estimated that more than half of U.S. companies with greater than 5000 employees use virtual teams (Martins, Gilson, & Maynard, 2004). This deployment of technology is occurring without knowledge of the full extent of its impact on human dynamics. In some cases, failure rates for implementation are hovering around 70% (Avolio, Kahai, Dumdum, & Sivasubramaniam, 2001; Zigurs, 2003). Despite this, there has been minimal investigation into the nature of working in an environment in which the leader and follower are separated by physical distance and the majority of one's interaction with a manager and/or co-workers is conducted through technology (Martins et al., 2004). In fact, there is no firm agreement within the academic community as to whether a remote relationship constitutes a different kind of working arrangement. Certain researchers contend that the same behaviors are required of individuals and leaders in remote relationships as in proximal ones, with only the quantity or degree varying (Cohen, 2000; Maznevski, 2000). Other researchers assert that remote work relationships function within a different social context to such an extent that they are a separate construct, fundamentally different and more complex than the traditional arrangement, and as such, require different behaviors and strategies (Gluesing, 2000). Much of the existing literature reflects this latter view as its underlying premise. However, according to Kayworth and Leidner (2002), there is little empirical data available to confirm even this assumption, or to identify and explain the factors that contribute to the increased

complexity of the remote environment and the relationships and processes through which these factors influence individuals' performance and satisfaction.

The existing research and theory in the field of organizational behavior is based on a model in which individuals interact with their leaders and group members on a "face-to-face" basis (Kelloway, Barling, Kelley, Comtois, & Gatién, 2003) and aspects of this traditional context have been researched extensively. The few studies that do investigate the remote environment have focused primarily on groups that interact by means of computer mediated communication systems, with little attention to the individual experience and/or the contextual elements of this environment (Powell, Piccoli, & Ives, 2004; Staples, Hulland, & Higgins, 1999).

Extensive research has shown that leadership is an important predictor of individual and team outcomes in the traditional environment (Barling, Weber, & Kelloway, 1996; Bass, 1998; Dvir, Kass, & Shamir, 2004; Hogan, Curphy, & Hogan, 1994; Howell & Avolio, 1993; Lowe, Kroeck, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Shamir, House, & Arthur, 1993; Staples et al., 1999; Waldman, Ramirez, House, & Puranam, 2001). The salience of leadership has also been demonstrated in previous investigations into groups that interact largely through computer mediated communication systems; the findings suggest that leadership in this situation is vitally important and linked to group effectiveness (Fjermestad & Hiltz, 1998).

As organizations become increasingly reliant on technologically mediated communication, the extent to which the face-to-face model provides accurate descriptions of effective organizational arrangements and leadership behaviors remains in question.

Accordingly, I investigated the relationships among contextual factors, leader behaviors and employee characteristics, and the relationship of these elements to various outcomes within an environment characterized by physical distance and reduced face-to-face interaction between employees and their leaders. In particular, I considered the possibility that contextual factors are related to individual outcomes such as job satisfaction in a relationship mediated by perceived leader integrity, perceived leader support, leader behaviors and trust in leader. Moreover, individual follower's need for leadership was proposed as a moderator of these relationships.

Overview

My research comprised four studies. Because of the limited empirical knowledge that we have about remote leader-member relationships, I began, in the first study, to develop theory by exploring these relationships from the perspective of remotely managed individuals. Through in-depth interviews, I sought to identify the contextual aspects of remote leader-member relationships that participants found most important to their individual outcomes. In Study 2, I operationalized the constructs identified in Study 1. This involved formulating and pilot testing a survey on a small sample. In Study 3, I tested and refined the measurement model and proposed a structural model of remote leadership. This involved adding scales to the refined instrument to measure potential mediator, moderator and outcome variables, and testing the full survey on a large sample of individuals who worked in a remote environment. In study 4, I tested the boundary conditions of the model. Specifically, this involved administering the full survey to a second large sample, consisting of respondents working in both remote and proximal environments to determine differences. The cumulative findings of these four studies are

a significant first step toward answering some of the questions surrounding remote work arrangements. The majority of research previously investigating leadership questions has been based on the assumption of face-to-face interaction between leader and member. These studies suggest that this proximal model is not appropriate in the remote environment; in other words, context matters.

Definitional Issues

Working arrangements in which the leader and member are separated by distance have been referred to by several different labels: “remote leadership” (Kelloway et al., 2003), “virtual leadership” (Jarvenpaa & Tanriverdi, 2003; Kayworth & Leidner, 2002; Lipnack & Stamps, 1997), and “e-leadership” (Avolio, Kahai, & Dodge, 2000; Cascio & Shurygailo, 2003). The definition of each of these is approximately similar, but each has a slightly different meaning. For example, “remote leadership” can refer to a leader-member relationship, characterized by significant physical or social distance. Kelloway et al. (2003) used the term to refer to leadership via email. “Virtual leadership” could include the concept of emergent leadership and/or leadership substitutes, as well as leadership via electronic means. “E-leadership” has been defined as referring to situations in which the leader-member relationship and the collection and dissemination of information required to support organizational work also takes place via information technology. In my research, I used the term “remote leadership” to connote leader-member relationships in which members are at a physical distance from their leaders; specifically not collocated in the same building, causing face-to-face interaction to be reduced. I chose this label because it does not imply that other work relationships are also similarly mediated. Under these conditions, an individual may interact with his/her own

group or other organizational members either face-to-face or using some form of media; it is the form of interaction with the leader, generally dictated by the physical collocation arrangement, that defines the condition. For example, in the military context, platoon leaders in the field may report to a senior officer largely through technology, but much of the information required for their work comes from the field, and from their proximal colleagues (Shamir, Zakay, Brainin, & Popper, 2000). However, there may be some instances in which this definition is less applicable, such as campus layouts and corporate complexes. These arrangements, while constituting different buildings, and therefore conforming to the definition of remote leadership, do not necessarily imply reduced face-to-face contact. While this working definition is acceptable for exploratory research as presented here, other measures of remote leadership more accurately and unambiguously based on amount of face-to-face contact may be beneficially employed in future studies.

The Remote Context

It has been observed that it is impossible to understand behavior in organizations without an explicit consideration of the organizational context (Capelli & Sherer, 1991; House, Rousseau, & Thomas-Hunt, 1995; Pawar & Eastman, 1997). Indeed, three major models of leadership - path-goal theory (House, 1971), contingency theory of leadership (Fiedler, 1967), and the leadership substitutes model (Kerr & Jermier, 1978) - give consideration to context, either as a moderating influence as in path-goal, or as a pivotal factor as in contingency theory (Dvir, Eden, Avolio, & Shamir, 2002; Pillai & Meindl, 1998). Despite this theoretical and editorial recognition of the importance of context, there has been minimal direct investigation into the effect of specific contextual factors on leader behaviors and/or the leader-member relationship. A few studies have found

significant effects in the relationship between various types of leader behaviors and macro level contextual variables such as structure, climate, and net income (Cogliser & Schriesheim, 2000; Green, Anderson, & Shivers, 1996; Pillai & Meindl, 1998). Slightly more emphasis has been placed on the effect of work group factors on leadership and here too, positive effects have been demonstrated between variables such as collectivism, work unit size, and cohesiveness and leader behaviors and styles (Cogliser & Schriesheim, 2000; Kozlowski & Doherty, 1989; Pillai & Meindl, 1998). Little research has been conducted into the relationship between context and leadership at the individual level of analysis. The few empirical studies at this level generally deal with individual employee behaviors and characteristics as outcomes rather than predictors of leader behaviors (Dvir et al., 2002). One recent longitudinal study suggests that the developmental level of followers plays an important role in predicting transformational leadership (Dvir et al., 2002). However, further research is required to explain the fact that this effect is positive with indirect followers and negative with direct followers. There is even less research into contextual factors and their role in the remote leadership environment than in the traditional setting. Some prior studies have indirectly suggested that context may dictate whether remote work arrangements can be effective. For example, Straus and McGrath (1994) found that increased task interdependence and time constraints were linked to an increase in the productivity of face-to-face groups compared to virtual groups. Other researchers, such as Zack and McKenney (1994) have suggested that contextual variables may influence the effectiveness of the match between specific leader behaviors and follower outcomes. The remote environment differs from the proximal environment in several obvious ways, but for the most part, these factors have

been neither inventoried nor explored. Consideration of the remote environment suggests several variables that might define the context within which remote leader-member relationships are conducted and which may influence leader behaviors.

Distance

Remote working arrangements are generally characterized by physical distance between the individual and/or group members or leaders. Physical proximity has been shown to facilitate attraction through increased accessibility and familiarity (Moon, 1999). Also, proximity offers perceived likelihood of future interaction, which makes people more responsive to individuals who are nearer geographically (Latane, Liu, Nowak., Bonavento, & Zheng, 1995). In a study of the effect of perceived distance, Moon (1999) found that indications of distance were deduced from domain names included in email addresses (e.g. .ca or .au indicate Canada or Australia respectively) and these were used as a cue with which individuals judged both source credibility and information quality; these were perceived to be higher when the sender was judged to be nearer.

Most studies involving distance have focused specifically on its effect on leadership. Some researchers (Napier & Ferris, 1993) have argued that less functional distance should be associated with higher performance and follower satisfaction, and less subordinate withdrawal, suggesting that physical distance between followers and their leader should be minimized. Other researchers have gone so far as to observe that distance renders much of leadership impossible (Howell & Hall-Merenda, 1999; Kerr & Jermier, 1978).

Specifically, Antonakis & Atwater (2002) have theorized that the legitimacy of a leader is moderated by leader distance; they argue that followers who interact directly with their leaders are more able to directly evaluate the leader's performance than those who interact indirectly. Those who interact indirectly are more prone to rely on attributions of leader's performance. Furthermore, how followers come to identify with their leader is a function of distance (Kayworth & Leidner, 2002). Proximity may make the leader appear more human and fallible, thus, strengthening the identification effect (Yagil, 1998). Shamir and colleagues (2000) noted that it would be very difficult for geographically distant leaders to inspire confidence in followers through the display of exemplary acts, role modeling, or other symbolic gestures. Antonakis and Atwater (2002) found that physical distance may also make it difficult for a leader to monitor and rate follower performance. In hierarchical organizations, leaders' behaviors do not always have the same effects on different levels of followers, creating a discrepancy between perceived enacted and espoused values (Shamir et al., 2000). This is particularly likely when there is geographic distance between leaders and followers, face-to-face interaction is minimal, and the majority of information exchanges are electronic (Avolio et al., 2001; Warkentin, Sayeed, & Hightower, 1997). Clearly, the physical distance that is most often a part of remote leadership impacts the cultural/social elements of the leader-follower relationship in significant ways.

Reduced Face-to-Face Communication

In most cases of remote leadership, reduced face-to-face communication is the result of physical distance between the leader and the member. When face-to-face interaction is minimal, most communication is conducted using some form of media. The

implications of this reduced personal interaction have been examined to a limited extent in terms of groups, but little empirical work exists on its effects on individuals and their relationships with their managers, their coworkers and their jobs. Preliminary studies with groups suggests that some measure of face-to-face contact is associated with superior virtual team performance (Avolio et al., 2001; Cascio & Shurygailo, 2003; Hart & McLeod, 2002; Hedlund, Ilgen, & Hollenbeck, 1998; Jarvenpaa & Leidner, 1998; Kissler, 2001; Maznevski & Chudoba, 2000; Tyran, Tyran, & Shepherd, 2003; Zaccaro & Bader, 2002). The specific findings are inconsistent: some suggest that initial face-to-face meetings, even for a short duration, can enhance group members' liking for one another and could contribute to the development of trust (Weisband & Atwater, 1999). Others suggest that face-to-face contact is most beneficial at crucial times, such as strategy development (Maznevski & Chudoba, 2000). However, other studies have supported the hypothesis that communication is more a function of the context, setting, and timing than the characteristics of the media (Jarvenpaa, Knoll, & Leidner, 1998), reducing the importance of face-to-face interaction. According to Walther's (1996, 1997) social information processing theory, computer-mediated communication transmits as much social information as face-to-face communication, the only difference being a slower rate of transfer. Specifically, Walther (1996, 1997) found that social discussion, depth, and intimacy were greater in virtual groups than in face-to-face groups, even for groups with geographically dispersed and culturally diverse partners who had never met face-to-face. However, these results should be interpreted cautiously, since individuals have a tendency to resort to over-attributions on minimal social cues in virtual groups, as illustrated by Moon (1999).

Many of these studies have investigated the quality and quantity of communication with remote and face-to-face groups. E-mail and computer-conferencing have been found to be perceived as less “warm” than face-to-face communication (Fulk, Steinfeld, Schmitz, & Power, 1987). Moreover, communication quantity and consensus was higher in face-to-face groups than in the computer-mediated communication groups (Hiltz, Johnson, & Turoff, 1986; Martins et al., 2004; Straus, 1997), which has been found to correlate significantly with higher trust and increased team performance (Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998). Several studies suggest that, in a remote environment, higher volumes of messages, through multiple channels, are required to reduce the opportunity for misinterpretation (Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002), increasing the opportunity for information overload (Weisband & Atwater, 1999).

Other studies have examined the consequences of reduced face-to-face interaction caused by the loss of nonverbal cues (Weisband & Atwater, 1999). It has been estimated that these cues convey as much as two-thirds of the content of a message (McShane, 2004). For example, the telephone is capable of transmitting only about 37% of the sound frequency emitted by the human voice, making it difficult to detect nuances and differentiate among emotions (Workman, Kahnweiler, & Bommer, 2003). This loss of information can impact both leader and team performance and satisfaction, through, for example, misinterpretation of facts, greater role ambiguity, lack of trust, cue substitution, inaccurate perceptions of self and others, lowered leader influence and underdeveloped group cohesiveness (Antonakis & Atwater, 2002; Avolio et al., 2000; Avolio et al., 2001; Hart & McLeod, 2002; Jarvenpaa & Leidner, 1998; Kayworth &

Leidner, 2002; Moon, 1999; Shamir et al., 2000). This decrease in non-verbal cues has been posited as the reason why teams in a remote environment take longer to make decisions and members of these teams are less able to make inferences about other members' knowledge or anticipate other members' responses (Cramton, 2001; Hollingshead, McGrath, & O'Connor, 1993; Martins et al., 2004). Lack of nonverbal cues is hypothesized to reduce the degree to which interpersonal relations may develop between individuals (Cramton, 2001; Kayworth & Leidner, 2002; Weisband & Atwater, 1999), which in turn may lead to an increased sense of depersonalization (Andres, 2002).

The loss of nonverbal cues often translates into a loss of context cues that facilitate and regulate interaction (Straus & McGrath, 1994). Gestures such as head nods, quizzical looks, and eye contact provide direction to the course of the communication. In the absence of these, the pattern and flow of communication can be disrupted. This type of cue also provides feedback as to whether the message was understood, or requires further explanation or repetition, reducing ambiguity and error (Straus & McGrath, 1994).

The lack of social context cues in remote communication has been found to lead to increased negative communicative tone, including assertive and hostile language and an increased sense of depersonalization (Andres, 2002), hindering the development of relationships and ultimately, trust (Kayworth & Leidner, 2002). Because leader legitimacy, expertise, and status are conveyed, in part, by social context cues, technologically mediated communication may cause loss or distortion of this important information, impacting perceived expert or referent power, and thus leader influence. Sosik, Avolio, and Kahai (1997) stated that nonverbal cues, which characterize an

important element of charismatic leadership would be restricted if leader–follower interaction were mediated solely by written electronic means. Finally, the reduction in nonverbal cues limits the feedback individuals receive about their own behavior, contributing to lower self-awareness (Weisband & Atwater, 1999). With a greater sense of anonymity and fewer indications about the individuality of others, the remote environment may result in inaccurate perceptions of the contributions of self and others (Weisband & Atwater, 1999).

In contrast, there is some preliminary evidence that loss of nonverbal cues may be beneficial in certain ways. Virtual communication may eliminate bias toward others because individuals tend to be substantially influenced by source cues unrelated to content, such as physical attractiveness, age or speaking style. In the remote environment, these elements are not accessible. Further, in the presence of nonverbal cues, cognitive overload may result and it may be more difficult to evaluate others' contributions accurately (Weisband & Atwater, 1999).

Collocation

A related contextual feature of the remote work arrangement is the extent to which individuals are collocated with other organizational members. It is increasingly common for organizational members to belong to more than one work group, only some of which interact primarily through technologically mediated methods. As noted earlier, generally if a leader-member relationship is remote, the leader and member are not collocated. However, a number of other combinations is possible. Members might work entirely alone; they might be collocated with other members of their own group; they might be physically situated with members of other groups, while interacting with their own group,

their “ego network” (Fulk, 1993) through technology; or finally, the leader might be collocated with some members of the group and not with others.

The influence of collocated group members on individual outcomes has been extensively documented in the literature on groups (Bartkus, Howell, Parent, & Hartman, 1997; Cohen & Bailey, 1997; Gully, Devine, & Whitney, 1995; Mullen & Copper, 1994; Ray & Hall, 1995; Shanley & Langfred, 1998; Wech, Mossholder, Steel, & Bennett, 1998; Weisband & Atwater, 1999). The other arrangements have not been investigated to the same extent. To date it appears that there has been little exploration of the effect on the leader-member relationship when only the leader is distant and the team members are all collocated. Preliminary research on mixed collocation models suggests that the social influence of collocated organizational members, who are not part of the ego network, explained unique variance in individual attitudes and behaviors, even after ego-network-based social influence, media expertise, perceived task features, and demographic characteristics were controlled (Fulk, 1993). Finally, the situation in which the member is distant, while other members of the ego network are collocated with the leader has not specifically been explored in empirical studies. Some consequences of this type of mixed collocation arrangement can be inferred from research conducted by Cramton (2001). Her findings suggest that in teams in which only some members are collocated, the distant member often assumes that collocated members are sharing something they have missed, and these private exchanges have been the cause of friction. Moreover, members may perceive a greater need to use upward influence tactics and engage in impression management when they are distant from their leaders, while at the same time experiencing reduced opportunities to do so (Howell & Hall-Merenda, 1999). Some

research suggests that these are valid concerns; for example, Judge and Ferris (1993) noted that employees' performance ratings increased with the number of opportunities a supervisor had to observe them. The effect of various collocation arrangements on remote leader-member relationships and individual outcomes is potentially significant and remains to be explored.

Communication Quantity

Another potential consequence of reduced face-to-face contact is the lower incidence of overall communication between a member and a leader (Straus, 1997). Existing studies suggest that communication frequency itself is important in a remote environment (Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Maznevski & Chudoba, 2000). Hart and MacLeod (2002), for example, found that, in geographically dispersed teams, merely communicating more improved working relationships and job satisfaction among team members. Staples (2001) found that higher frequency of communication by the leader in the remote environment increased members' perceptions of trust. The experienced decrease in communication frequency in remote relationships may be partially accounted for by the difficulty in engaging in serendipitous communication when face-to-face interaction is limited (Gluesing, 2000). Chance encounters provide an opportunity for casual information sharing of both a task-related and a social nature. Existing studies have demonstrated that teams that send more social communication achieve higher trust and better social and emotional relationships (Jarvenpaa & Leidner, 1998). Prior studies suggest that, in leader-member interaction,

member-initiated communication in particular is correlated with enhanced perceptions of social support in the workplace. Moreover, the perception of support was found to increase as the length of the social interaction increased (Kirmeyer & Lin, 1987). Increased perception of support is linked to an increase in affective commitment (Lynch, Eisenberger, & Armeli, 1999) and to a decrease in stress (Cohen & Wills, 1985). In a remote environment, chance encounters do not occur and many members would understandably be reluctant to email or telephone their leaders for a lengthy “around the water cooler” chat (Gluesing, 2000; Handy, 1995). There is additional evidence suggesting that when social interaction does occur using computer mediated technology, it is often limited in length due to the physical effort involved with typing what are perceived as non-essential words (Daly, 1993; Straus, 1997; Straus & McGrath, 1994).

Media Selection and Use

Media has been characterized as existing along a continuum of “richness” which refers to its capacity for rapid feedback, language variety, personalization, and multiple cues (Daft & Lengel, 1984). The continuum ranges from email to face-to-face meetings, with email being the lowest in social presence. In previous studies, social presence has been correlated with variation in task orientation, depersonalization, communicative tone, and participation of members of virtual groups (Andres, 2002; Daft & Lengel, 1984).

Some research has demonstrated that the effectiveness of electronic communication depends on an appropriate match between media richness and message content (Daft & Lengel, 1984; Hart & McLeod, 2002; Kayworth & Leidner, 2002). For example, when tasks are routine and the content is straightforward, lean media (i.e. media that convey fewer nonverbal cues and more sparse feedback) may be appropriate. Richer media are

considered more appropriate for conveying complex or sensitive information (Daft & Lengel, 1984). However, other research suggests that perception of media richness is significantly influenced by contextual factors, such as nature of the task or group and cultural norms, as well as individual characteristics, such as expertise in the technology (Fulk, 1993; Hollingshead et al., 1993). For example, job pressures may lead an individual to choose media with rapid communication capability, such as telephone and email. Although a lean medium is most efficient for a routine task, individuals may choose to use rich media for lean tasks, as a result of social norms about how to communicate within a work group (Fulk, 1993). Clearly, attaining the appropriate match between technology and message does not entail the application of universal guidelines. Thus, not only do leaders in a remote relationship with their followers need a knowledge of communication technology, they require skill in determining the appropriate medium by which to send various types of information to different members, as well as in crafting the message appropriately (Blackburn, Furst, & Rosen, 2003).

Task

A large body of research, dating from the mid 20th century examines various elements of the relationship between task and leadership. In traditional work situations, the degree of task complexity, routineness and interdependence suggests various approaches to managing followers, depending on moderating factors, such as member characteristics and organizational culture. In the remote environment, however, these variables have been only minimally considered, and largely within the context of choice of media (Daft & Lengel, 1984).

Task type has been consistently found to moderate the effects of remoteness on team outcomes (Daly, 1993; Hedlund et al., 1998; Straus & McGrath, 1994). Prior studies suggest that task type is critical to the success and speed with which virtual groups make decisions (Daly, 1993; Hiltz et al., 1986). For instance, with an ambiguous task, the greater the degree of technologically mediated communication used by a group, the longer the group takes to reach a shared goal; this process, however, may assist in the development of a more focused goal (Straus & McGrath, 1994). Hollingshead (1993) found a difference in relative performance between face-to-face and computer-mediated groups, depending on type of task. For negotiation and intellectual tasks, initially face-to-face teams were found to perform significantly better, while there were no differences found on decision-making tasks. This difference decreased over time, suggesting the existence of a learning curve effect. Other studies suggest that idea generation tasks are performed by computer-mediated groups more effectively than by face-to-face groups (Martins et al., 2004; Straus & McGrath, 1994). Finally, evidence exists that computer-mediated communication is particularly inappropriate for groups facing highly interdependent tasks requiring significant levels of coordination and judgment (Hedlund et al., 1998; Straus & McGrath, 1994). Beyond these relationships between task type and choice of communication media, there is little known about the influence of task type in the remote environment. Since many individuals in a remote environment are knowledge workers, their tasks are generally nonroutine, complex and interdependent. This kind of task is often accomplished with a certain level of support offered to and by group members. The effect of this group interdependence in terms of leader-member

relationship is unknown, but may have implications for performance, attitudinal outcomes, and leadership substitutes (van der Vegt, Emans, & van de Vliert, 1998).

Individual Characteristics

The suitability of individuals to participate in remote leader-member relationships is a factor that has received minimal study. The existing research suggests that the importance of selection of members and leaders should not be underestimated – conducting remote relationships is not equally appropriate for everyone (Cascio, 1999). Moreover, individuals respond to the same situation and leadership style in different ways (Ehrhart & Klein, 2001). Such self-management qualities as responsibility, dependability, independence, and self-sufficiency, while desirable in face-to-face settings, have been theorized as crucial to the viability of remote work (Blackburn et al., 2003; Cascio, 1999; Shin, 2004; Sparrow, 2000). In order to effectively match the message with the medium, and craft the message appropriately, some measure of cultural sensitivity and awareness are considered requisite qualities for both leaders and followers in a remote environment (Blackburn et al., 2003). Shin (2004) has proposed a theoretical model that identifies individual qualities required to fit into virtual organizations, virtual teams, and virtual jobs, considering differing dimensions and degrees of virtuality, but this has not been tested.

There have been some preliminary investigations into the effect of personality dimensions of both leaders and followers on effectiveness in a remote situation. Openness to experience and extroversion, in particular, may impact individual's suitability for work in a computer-mediated setting; specifically, higher levels of extroversion have been positively related to higher levels of participation in computer-

mediated groups (Straus, 1996). However, Potter and Balthazard (2002) found that variance in extraversion in virtual team members had only a marginally negative impact on interactions among them. In a study of teleworkers and virtual teams, Workman et al. (2003) found support for the importance of cognitive style to both performance and satisfaction. Staples et al. (1999) suggest that remote work self-efficacy is the construct through which remote context variables affect individual outcomes. In the remote leader-member relationship, where there may be minimal direct supervision, self management attributes and a perception of self-efficacy in this setting appear to be important to both performance and satisfaction (Cascio, 1999; Shin, 2004; Sparrow, 2000).

There are existing studies on more pragmatic aspects of individual suitability for remote leader-member relationships. For example, a minimum level of technological competence is clearly vital for both leaders and followers in an environment in which technology forms the platform for communication; this implies that a willingness and ability to use existing and emerging communication technology is required (Kayworth & Leidner, 2002; Staples et al., 1999). Length of tenure in a virtual group has been shown to affect communication patterns (Ahuja & Galvin, 2003).

It has been reliably shown that the fit between personal and job characteristics are significantly associated with performance, job satisfaction and organizational commitment (Shin, 2004). The effect of the interaction of these with leadership style, however, has been less fully explored. Yammarino and Dubinsky (1994) observed that possible moderators of the effectiveness of transformational leadership have not been rigorously investigated. Researchers have suggested that personal characteristics may be one of these moderators. Klein and House (1995) for example, posit that some followers

are more susceptible to transformational leadership than others. Others have theorized that models of transformational leadership should consider follower self-efficacy, follower-leader value congruence and follower-leader similarity (Felfe, Tartler, & Liepmann, 2004). There has been limited empirical investigation in this area. deVries et al. (2002) found positive but weak support for need for leadership as a moderator of the relationship between perceptions of transformational leadership and job satisfaction. Podsakoff et al. (1996) found a negligible correlation between follower need for independence, transformational leadership and competence. Wofford et al. (2001) found some evidence that the interaction of follower growth strength need and perception of transformational leadership influenced satisfaction with supervision.

Leadership Style

Transformational Leadership

Arguably the most researched style of leadership is transformational leadership (Judge & Bono, 2000), which, as conceptualized by Bass (1985), enables followers to transcend their own self-interests for a higher collective vision and thereby, exceed performance expectations. It has been found to have differential effects on followers' performance, both directly and indirectly (Howell & Hall-Merenda, 1999). As noted earlier, over thirty-five studies have reported positive relationships between follower outcomes and performance and transformational leader behaviors (Kirkpatrick & Locke, 1996). Support has been both theoretical and empirical (Avolio, 1999; Barling et al., 1996; Dvir et al., 2002; Kirkpatrick & Locke, 1996; Lowe et al., 1996; Podsakoff et al., 1990). Transformational leader behaviors cluster into four factors (Bass, 1998) :) : communicating a compelling vision of the future (charisma); providing symbols and

emotional appeals to increase awareness of mutual goals (inspirational motivation); encouraging followers to question traditional ways of doing things (intellectual stimulation); and treating followers differently but equitably on a one-on-one basis (individualized consideration) (Howell & Hall-Merenda, 1999). Despite the extensive body of research, Howell and Hall-Merenda (1999) have observed that the question of how organizational context influences the emergence and effectiveness of transformational leadership is still a relatively unexplored area. This is particularly true when that context of the leader-member relationship is primarily situated in technology. The setting may negate or enhance the impact of various transformational leader behaviors. Behaviors not traditionally part of the transformational leadership model may assume greater significance in the virtual environment. Other contextual factors, such as task interdependence, amount of face-to-face contact, and follower characteristics may moderate the impact of these leader behaviors.

The few existing studies on transformational leadership at a distance have yielded conflicting findings about its overall effectiveness in this environment. Although distance may affect the leader-follower relationship, some studies suggest that it does not necessarily negate the effect of a transformational leadership style. One study found that distance actually strengthened the relation between idealized influence (charisma) and group performance, suggesting that physical proximity reduces the potency of the leader's visionary message (Antonakis & Atwater, 2002). Kelloway et al. (2003) found that individual motivation and individual performance, as well as group performance scores on a decision making task improved as a result of email messages with intellectually stimulating or charismatic characteristics. Further, individuals could perceive differences

in leadership styles in computer-mediated communications. However, Yagil (1998) demonstrated that close leaders have a greater impact on individual efficacy because they tailor their behaviors to the needs of individual followers. Followers see leader proximity as beneficial, because it allows the leader to customize confidence-building communications to the individual (individualized consideration and inspirational motivation) (Yagil, 1998). Howell and Hall-Merenda (1999) supported this finding. However, Yagil (1998) also found that distant leaders are still attributed charisma and have group-level effects as opposed to individual-level effects.

In remote applications of transformational leadership of groups, specific behaviors have been associated with perceptions of higher ability and benevolence among members, leading to a higher level of trust. By engaging in frequent communication and other behaviors, such as coaching, that increase group potency, for example, the leader can instill confidence in the members' benevolence to one another (Avolio et al., 2001). Anecdotal evidence and preliminary research suggest that, despite the distance, leaders can employ individualized consideration, to influence the moods and emotions of the group, a potential component of trust, by showing concern for each member's needs (Avolio et al., 2001; Jarvenpaa & Leidner, 1998). Also, by promoting electronic communication that encourages team members to consider the each individual's input and to recognize its value, leaders can focus the team on the goals of the collective (Avolio et al., 2001).

The intellectual stimulation component of transformational leadership encourages questioning of assumptions and a reframing of traditional thinking. The transformational leader in a remote relationship can utilize communication technology to provide

intellectual stimulation by increasing the level and nature of information exchange (Kelloway et al., 2003). Previous studies support the importance of frequent task related messages to perceptions of leader ability and influence (Avolio et al., 2001; Hart & McLeod, 2002; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998). Additionally, this activity may reveal information about members' ability, benevolence, and integrity, contributing to the development of unconditional trust and higher collective performance (Jarvenpaa & Leidner, 1998). Beyond these preliminary studies, most of which focus on the effect of transformational leadership in a virtual group setting, there has been little empirical study. The relationship between transformational leadership behaviors and individual perceptions and outcomes, in a remote relationship, have yet to be explored.

Trust

Researchers have recognized the significance of trust in leadership for at least four decades. For instance, it is a key concept in several leadership theories: transformational leadership, leader-member exchange, and the consideration dimension of leader behavior (Dirks & Ferrin, 2002). Trust has been defined in various ways, with differing components and little consensus (Kramer & Tyler, 1996). In fact, Atkinson and Butcher (2003) have recently observed that the definition of trust as a concept is one of the outstanding gaps in the management literature. Most definitions, however, include the concept of vulnerability: trust allows people to take part in risky activities that they cannot control or monitor and yet where they may be disappointed by the actions of others (Jarvenpaa et al., 1998). Specific attitudes involved in the formation of trust are: perceptions of others' ability (group of skills enabling individual to be trusted to be competent), benevolence (positive orientation of trustee to trustor – interpersonal care

and concern), and integrity (trustee's adherence to set of principles that trustor finds acceptable). Almost all definitions of trust fall into one of two categories – trust as relationship based, or trust as character based (Dirks & Ferrin, 2002). Trust conceptualized as relationship based is consistent with the processes inherent in transformational leadership (Bass, 1985).

Many researchers have provided evidence that, in face-to-face environments, leadership effects are mediated through perceived trust (Dirks & Ferrin, 2002; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Jung & Avolio, 2000; Kramer & Tyler, 1996). A meta-analysis by Dirks and Ferrin (2002) suggests that, in traditional settings, trust in leadership is most strongly related to work attitudes, followed by most of the citizenship behaviors, and finally job performance. The magnitude of this effect of trust on work outcomes is equivalent to or slightly larger than the effect of other frequently studied attitudinal variables, such as job satisfaction and organizational commitment (Dirks & Ferrin, 2002). Moreover, member trust in the direct leader was shown to be more highly correlated with performance than was trust in either organizational leadership or teammates (Dirks & Ferrin, 2002). Transformational leadership, in particular, has exhibited very high correlations with perceived trust in and satisfaction with leader (Dirks & Ferrin, 2002). Specifically, trust is necessary for transformational leaders to mobilize follower commitment towards their vision (Bass, 1985). Further, as an important antecedent to risk-taking behavior (Pillai, Schriesheim, & Williams, 1999), trust enables followers to be ready to take risks to support transformational leaders' attempts to change the status quo. When engaging in intellectual stimulation, leaders encourage their followers to rethink problems and take risks to solve them. When the follower-leader

relationship is characterized by a social bond, trust is more likely to result than when the relationship is purely transactional (Jung & Avolio, 2000; Pillai et al., 1999).

Transformational leader behaviors that enact individualized consideration develop and maintain that social bond (Bass, 1985). A significant component of transformational leadership is “walking the talk”, modeling the vision. This alignment between espoused and enacted values builds leader credibility, also resulting in increased trust (Bass, 1985; Shamir et al., 2000). There is some evidence for the indirect influence of transformational leadership on organizational citizenship behaviors through procedural justice and trust (Pillai et al., 1999). By emphasizing the collective vision and encouraging group identification, the transformational leader may increase the individual follower’s perception of procedural justice, which may result in increased trust in the leader and in followers’ tendency to engage in organizational citizenship behaviors (Pillai et al., 1999). However conceptualized, it appears that the dimensions of trust may not arise in the same manner in the case of a leader who does not frequently interact on a face-to-face basis with members. Jarvenpaa and Leidner (1998) argued that trust between players in a virtual context does not operate in the same manner as in face-to-face encounters. Specifically, a leader's competence and integrity is evident to followers when they have direct information on the leader's performance and behavior and are "close" to the leader. However, if followers are distant from the leader, they do not have access to this information. Therefore, the ways in which a leader is legitimized and trusted appears to be a function of leader distance (Kayworth & Leidner, 2002). There is some preliminary research into the role of trust in remote leadership (Avolio et al., 2000; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Lipnack & Stamps, 1997;

Sosik et al., 1997; Staples, 2001; Warkentin et al., 1997), but most of this research deals with virtual teams, and although it references trust, does not explore its specific role in leader effectiveness. A recent experiment by Hoyt and Blascovich (2003) however, explored the effect of transformational leadership in virtual student teams; their findings included trust as a mediator of the effect of leadership style on team performance. Staples (2001) found that for both remote and non-remote workers, trust in leader was found to significantly impact perceptions of performance, job satisfaction and job stress.

According to Dirks and Ferrin (2002), although the results of their meta-analysis indicated the existence of moderators, there have been few attempts to determine which contextual factors impact the relationship between trust in leadership and outcomes. They suggest that the greater the uncertainty in a context, the more significant trust becomes. At this point in organizational development, a remote relationship constitutes a higher level of uncertainty for both leaders and followers. Following Dirks and Ferrin's logic, in a remote setting, the relationship between trust in the leader and follower performance may be predicted or moderated by the context of the relationship itself. This remains to be explored.

There have been some isolated findings that suggest the development of trust in a remote relationship is more complex than in proximal one. For example, the level of media richness associated with the communication platform used may both negatively and positively affect the development of trust in remote relationships. Specifically, how a leader delivers his/her vision has a greater impact on follower perceptions than does the actual content of the message and other organizational performance cues. A weak delivery can act like 'noise' which undermines the impact of an inspirational message.

Thus, communicating at a distance, in the absence of nonverbal cues, may make it especially difficult for leaders to be inspirational (Kayworth & Leidner, 2002). The capacity for immediate feedback, the number of cues and channels used for information, the level of personalization, and the language variety influence receivers' perceptions of the sender's ability, benevolence, and integrity, which contribute to the development of trust (Avolio et al., 2001; Kayworth & Leidner, 2002).

At the same time, lean media does serve a useful purpose beyond communication of routine messages. It enables initial sorting into task relevant groups. Task relevance is the criterion used in the absence of irrelevant cues. This promotes the development of conditional trust, based on the ability of team members to forego stereotypes and classify attributes of leaders and team members that are relevant to performance, while minimizing the cognitive processing required (Avolio et al., 2001). With only minimal cues, members focus on their similarities – the group task – enhancing social identification (Avolio et al., 2001). Trust in a virtual team context might therefore be more strongly related to perceived ability and integrity, and less to benevolence (Jarvenpaa et al., 1998). Aside from these sparse findings, little is known about the development, or even the relative importance of trust between leader and member in a remote relationship.

Perceived Integrity

Related to the issue of trust is the perception of leader integrity. Depending on the perspective used in defining trust, perceived leader integrity is a separate construct or an integral part of it (Dirks & Ferrin, 2002). Two perspectives of trust have been identified in a recent meta-analysis: the relationship based perspective is centered on how the

follower understands the nature of the relationship with his/her leader. The character based perspective focuses on the follower's perception of the leader's character and how it influences a follower's sense of vulnerability in a hierarchical relationship. In both of these perspectives, trust is a perception held by the follower, rather than an absolute property of the relationship or the leader (Dirks & Ferrin, 2002). Perceived leader integrity, whether embedded in the conceptualization of trust or not, has been shown to be significantly related to leader effectiveness in proximal relationships (Craig & Gustafson, 1998; Parry & Proctor-Thomson, 2002; Pillai et al., 1999). This association has not been explored in the remote relationship, although Aubert and Kelsey (2003) concluded from their empirical study of virtual teams that ability and integrity are both antecedents of trust formation among team members.

Perceived Support

Researchers have long recognized the importance of social support as a significant predictor of individual work-related outcomes, such as job satisfaction, turnover intentions, and performance (Kirmeyer & Lin, 1987). Support is defined as members feeling that their leader values their contribution and cares about their well-being (Lynch et al., 1999). Preliminary research suggests that face-to-face interaction with one's supervisor significantly affects the perception of leader support (Kirmeyer & Lin, 1987). In fact, it has been suggested that social visiting by the leader may itself be construed as a source of social support (Cohen & Wills, 1985). These supportive behaviors are one method of enacting the individualized consideration component of transformational leadership in a proximal setting. However, in a remote relationship, face-to-face visiting is minimal, which may negatively impact the development of perceived leader support.

Further, one empirical study suggests that only longer, non-task-related interactions correlated with increased perceptions of social support; the shorter task related messages that characterize follower-leader interactions in a remote relationships do not (Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kiesler, Zubrow, Moses, & Geller, 1985; Lurey & Raisinghani, 2001; Walther, 1997; Warkentin et al., 1997).

The benefits of creating a context characterized by leader support do not end with its well-established stress reduction effect (Cohen & Wills, 1985); one study has suggested that, as perception of this positive interpersonal climate at work increases, so does subordinate-initiated communication about job responsibilities. In addition to keeping leaders informed and contributing to enhanced role clarity, these higher levels of follower-initiated communication increase follower perception of control, further strengthening the stress reduction effect (Fisher, 1984). Clearly, leading at a distance may create obstacles to the development of perceived leader support, with its attendant positive outcomes. The relationships among context, leader behaviors and employee perceptions in the remote environment have yet to be explored empirically.

Individual Outcomes

Job Satisfaction

A recent meta-analysis suggests that the mean true correlation between job satisfaction and job performance is .30 (Judge, Bono, Thoreson, & Patton, 2001). Job satisfaction, whether in a traditional or remote environment, is important. In general, lower levels of satisfaction have been reported in virtual teams than in face-to-face teams (Martins et al., 2004; Straus & McGrath, 1994; Warkentin et al., 1997), although there is some evidence that this changes over time (Chidambaram, 1996). The factors that influence job

satisfaction may vary between the two settings, but there has been only minimal research into the antecedents of job satisfaction in the remote environment, much of it dealing specifically with virtual teams. The technology itself has been explored as a factor related to job satisfaction. Morris, Marshall, and Rainer (2002) found, for example, that both user satisfaction with the technology and trust are positively related to job satisfaction in virtual teams. Kayworth and Leidner (2002) found a relationship between the use of numerous communication methods and satisfaction. Nature of task is also related to member satisfaction in virtual teams (Cappel & Windsor, 2000). Brainstorming and decision making tasks appear to provide more satisfaction in a virtual group, in part because of the reduction in production blocking and the greater range of alternatives that can be considered, while intellectual tasks resulted in reduced satisfaction (Martins et al., 2004; Straus & McGrath, 1994). Both cognition-based and affect-based trust were found to significantly impact job satisfaction of remote workers (Staples, 2001). The impact of other aspects of the remote context has yet to be explored.

Organizational Commitment

The concept of organizational commitment has been examined extensively over the last two decades, but there has been little research conducted into its antecedents and consequences in the remote environment. One study of telecommuters found that they experienced less role conflict, exhibited higher job satisfaction, and were more committed to the organization (Igarria & Guimaraes, 1999). Some inferences can be made from the empirical studies conducted in the proximal environment. It was found that organizational subculture was more strongly related to commitment than was organizational culture (Lok & Crawford, 1999). This has potential implications for the

organizational commitment of employees in a mixed collocation environment, for example, with group members are being influenced by different subcultures depending on whether they are distally or proximally located. This finding also suggests that context and other aspects of the culture of the remote workplace may be more influential than the culture of the larger organization, and should be managed to maximize organizational commitment. Satisfaction with the level of control over the work environment has exhibited strong correlation with the level of commitment (Lok & Crawford, 1999). In a remote leader-member relationship, the individual most likely will have a high level of control over the environment, but the factors affecting the satisfaction with that level of control have yet to be determined. Lok and Crawford (1999) also found that the leadership style variable, consideration, was relatively strongly related to organizational commitment, to a greater extent than the leadership style variable, structure. In a similar vein, Boshoff and Mels (1995) found that leadership styles that incorporated participation in decision making and goal setting increased individuals' organizational commitment. However, a meta-analysis by Mathieu and Zajac (1990) demonstrated that, in the traditional environment, the relationships between various leader behaviors and organizational commitment are contingent on other factors in the work environment. Clearly a remote work environment offers the possibility of numerous different factors at play.

The consequences of organizational commitment in the proximal environment have been the subject of extensive study. A strong, positive relationship between job satisfaction and organizational commitment has been consistently found (Lok & Crawford, 1999; Mathieu & Zajac, 1990). However, findings related to the direct impact

of organizational commitment on individual performance have been conflicting (Mathieu & Zajac, 1990). In one study of insurance salespeople, organizational commitment was found to exert a strong, positive influence on their internal service quality (Boshoff & Mels, 1995). However, other studies have found only weak correlations between the organizational commitment and performance, leading researchers to question whether mediational processes exist (Mathieu & Zajac, 1990). In a remote environment, the mediators may differ from those in proximal environment. The empirical studies conducted in the proximal environment suggest that organizational commitment may also be an important predictor and consequence in the remote environment; however, the related factors, the strength of the relationships, and the processes of influence have yet to be determined.

Summary

In the preceding review, I discussed three elements that the existing literature suggested may be salient in the remote environment – context characteristics, aspects of leadership style, and individual outcomes. For the most part, this literature deals with leadership based on a face-to-face model. Until now, there has been no other model. Most of the studies dealing with the remote environment focus on virtual teams, rather than the leader-member relationship. Despite its obvious limitations, the proximal literature does offer some suggestions for relationships in the remote environment that should be explored. Previous investigations in both environments suggest that there may be certain elements in the context that affect the leader-member relationship. Specifically, distance between the leader and the member, and the reduced face-to-face communication associated with that distance, are plausibly associated with how

individuals perceive their leaders. Consistent empirical findings on the importance of communication frequency and the match between content and media suggest that these elements may also be influencers. The effect of task interdependence, previously demonstrated in studies of computer-mediated groups, may also be an influencer. The voluminous conceptualizing about the role of individual characteristics in the remote environment suggests that these may play a role in the leader-member relationship and may affect individual outcomes. Although investigations into the effectiveness of transformational leadership style in the remote environment have yielded contradictory findings, it appears likely from research in the proximal environment that perceptions of transformational leadership will affect individual level outcomes in the remote environment as well. Furthermore, it may be that aspects of the remote context itself may influence those perceptions. Trust has been significantly associated with proximal transformational leadership, but there have been contradictory findings on the specific nature and direction of the relationship. In the remote environment, little is known other than that it appears that dimensions of trust arise differently in remote leadership than in proximal leadership. Perceived integrity and perceived support have both been linked to leader effectiveness in the proximal environment. Because these three constructs (trust, perceived leader integrity, and perceived leader support) have been related to each other and to transformational leadership in previous research, they may reasonably demonstrate the same relationship with context and outcomes in the remote environment. In terms of individual outcomes, the significant association between proximal leadership style, and job satisfaction and organizational commitment has been consistently demonstrated. Despite the fact that there has been little empirical investigation of the antecedents of

these outcomes in the remote environment, beyond some minimal and conflicting findings from studies using teleworkers and virtual groups, respectively, it is reasonable to ask whether similar relationships exist in the remote environment.

Clearly, the questions are numerous and the gaps in our knowledge are broad. There is a plethora of conceptualizing about the remote environment, and few empirical findings. The existing studies largely focus on virtual teams and group level relationships. Research is required to identify whether the context in which remote leadership takes place affects that process and individual level outcomes; if so, which characteristics of context are most influential; and what kinds of relationships exist among these contextual characteristics, leadership style, and individual level outcomes. A preliminary model, based on a review of the research, is presented in Figure 1. It includes context variables as predictors of trust in manager and perceptions of leadership style, leader integrity, and support, which, in turn, predict the individual level outcomes, job satisfaction and organizational commitment. Furthermore, the model includes individual need for leadership as a moderator of these relationships.

The Current Research

The preceding discussion demonstrated that further investigation of the remote leader-member relationship is both logically appealing and necessary. Decades of research have demonstrated that there is a significant association between leadership and individual level outcomes; (Howell & Hall-Merenda, 1999; Judge, Piccolo, & Ilies, 2004; Kahai, Sosik, & Avolio, 2003; Kirkpatrick & Locke, 1996; Yukl, 1998). This research has been predicated on the assumption that the leader-member relationship is conducted largely through face-to-face contact. Increasingly, however, leader-member relationships are

conducted remotely, with the associated decrease in face-to-face contact. As noted above, this remote model has not been empirically explored, in terms of its components, the relationships between them, or its effect on individuals. To date, we do

Figure 1

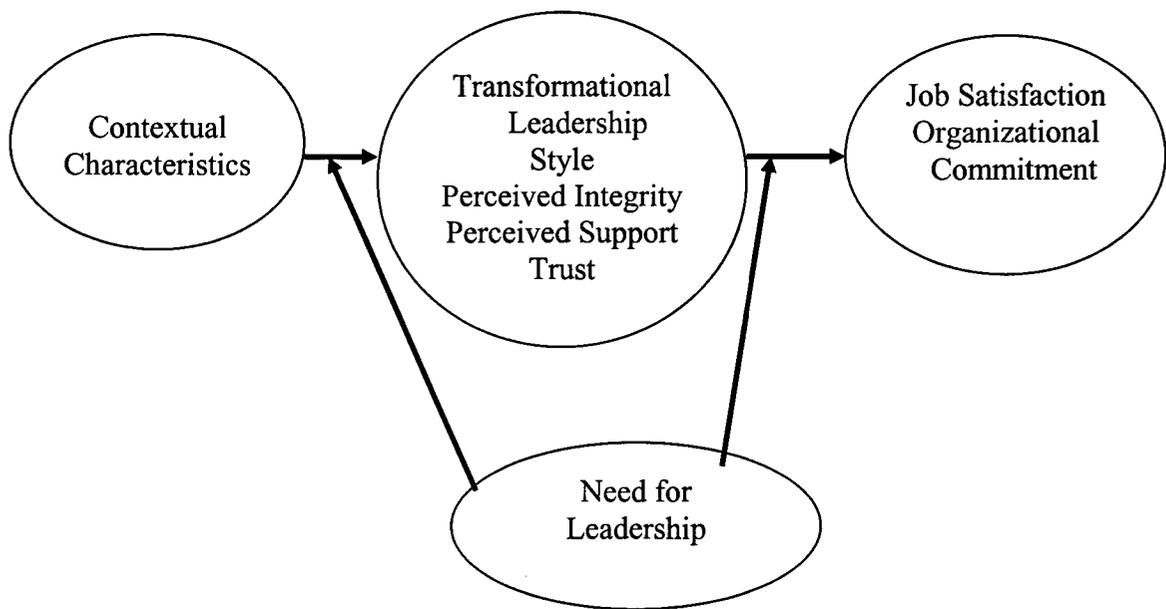


Figure 1. Preliminary conceptual model of remote leadership.

not know whether or not the remoteness itself constitutes a significantly different context and if it does, what characteristics of that context are important to the remote leader-member relationship. The current studies address these issues. One significant contribution is the use of a mixed method research design. In the first study presented here, I used semi-structured interviews to identify which characteristics of being managed remotely are important to individuals in such relationships. I then operationalized and refined these contextual characteristics in the second and third studies, and tested their predictive power in relationships that I hypothesized, based on existing literature in the proximal environment, to be important to individual level outcomes in the remote environment in the third and fourth studies. In the fourth and final study, I compared the fit of the hypothesized model to both remote and proximal leader-member relationships. Together, these studies extend our current understanding of the nature of the remote leader-member relationship and the impact of various characteristics of the context within which it resides. Furthermore, they provide a starting point for further research in the remote environment by providing a more appropriate alternative to the face-to-face model of leadership.

STUDY 1

Method

As noted earlier, there is minimal research into the contextual factors that influence the remote leader-member relationship and the processes through which these factors produce an effect. The purpose of this first stage of my research, therefore, is to identify salient contextual factors and to develop well-defined variables that could be subsequently used for hypothesis testing in a larger sample. A qualitative research methodology was used for this stage of my research because it is particularly well-equipped to isolate and define categories during the process of the research (McCracken, 1988). Given the exploratory nature of this phase of my research, I used McCracken's (1988) long interview process, which offers an efficient and rigorous technique with which to elicit data from individuals.

I used purposive sampling to select participants. This is a technique that enables the researcher to select cases that illustrate some 'feature or process' of interest (Silverman, 2000). In this study, the first requirement or "feature of interest" was that they were currently working, or had recently worked, in an environment in which they were not collocated with their immediate managers and the majority of their interaction with those managers was conducted through technology, rather than in face-to-face meetings. Consistent with the scope of this research, all were workers whose tasks require the creation, manipulation or use of information. Recruitment of these participants was by word of mouth; most were unknown to me personally.

Other than these two factors, I attempted to ensure maximum variation by selecting participants who varied in sex, length of job tenure, management level,

organization, and age. The group included three women and five men, whose ages ranged from late twenties to late fifties. They represented varying levels of management; two were senior managers, five were middle managers and one was a first level manager. Six of the participants had participated in remote leader-member relationships, as both leaders and members. Participants were drawn from seven different organizations, representing both profit and nonprofit agencies, in four different provinces.

Such a heterogeneous group of participants created an opportunity to identify a greater number of contextual factors salient to a remote leader-member relationship. By interviewing a selection of participants whose personal characteristics and remote experiences varied, I increased the opportunity to uncover assumptions and/or factors that I had not anticipated (Silverman, 2000). McCracken (1988; p. 22) calls this “manufacturing distance”, a necessary requirement for creating critical awareness of matters with which we may be familiar, and are subsequently blind to fully understanding.

I had originally intended to interview ten to twelve participants, but by the seventh and eighth interviews, participants highlighted only contextual factors that had been identified in earlier interviews. These factors were discussed in similar terms, using only slightly different examples. Because the purpose of the long interview method is not to secure generalizability, but rather to gain access to the cultural categories and assumptions of the participants (McCracken, 1988), this repetition of information signaled that theoretical saturation had been reached with eight interviews. To determine how widely these categories and assumptions exist in the rest of the world, it is necessary to use quantitative methods (McCracken, 1988); this was the objective of studies 3 and 4,

that were subsequently based on the results of Study 1, and which refined the preliminary conceptual model of remote leadership.

Long Interview Stages

Stage One – Review of Analytic Categories and Interview Design

The first step of the long interview is an extensive, critical reading of the existing literature relating to the topic being investigated. The literature review enables the researcher to begin to define the field, facilitating the construction of the interview guide. An additional benefit is that it is a way to manufacture distance (McCracken, 1988); by gaining familiarity with the field, and developing associated expectations, the researcher is then able to identify and explore counterexpectational data.

There is a large body of anecdotal writing, but only little empirical research on managing in remote environments. There has been some preliminary work conducted on “virtual teams”, but almost none on the dyadic leader/follower relationship which is the focus of my research. The relevant research that does exist is distributed through the literatures of various disciplines: organizational behavior, psychology, management information systems, and communications theory. Specifically, there are three streams of literature that might inform the current research: the voluminous body of work dealing with the dyadic leader/follower relationship in a proximal environment, the somewhat smaller amount work dealing with communication through technology, and an even smaller body of research that deals with the effect of distance on manager/follower relationships. These relevant literatures are reviewed in the Introduction, highlighting both various contextual factors that have been hypothesized as important in remote relationships and the processes through which these contextual factors exert influence.

The mediating effect of trust, in particular, was demonstrated in much of this research. This critical review contributed to the development of hypothesized relationships among specific contextual factors in remote leader-member relationship and the mechanisms through which they exert influence (Figure 1). The expectations created by this critical literature review provided a starting point, as well, for the construction of the interview guide and a template against which to contrast data that emerged from the interviews.

Stage Two – Review of Cultural Categories and Interview Design

This stage of the long interview process serves three purposes: to aid in construction of the interview guide by identifying categories and assumptions that had not been included in the literature reviewed; to identify the researcher's own cultural categories and their interrelationships so that they can be used to seek out matches and/or contrasts in the interview data; and to establish distance by creating a clearer picture of the researcher's own vision of the topic, facilitating a critical approach to it (McCracken, 1988). This analysis of cultural categories involves minutely examining one's own experience with and appreciation for the subject under investigation. Only by doing this can the researcher recognize what is new or different in the stories of participants.

This dissertation has been informed, in part, by my experience of living and working in two different locations, 90 km apart. I often experienced significant dissatisfaction with technologically mediated interactions with clients, colleagues, professors, and even my spouse, who spent the majority of his time in one location, while I was in the other. At the same time, the organization in which my spouse worked re-organized into cross-provincial work teams, and he found himself working in Nova Scotia, supervising individuals in Newfoundland and New Brunswick, with very little

time to meet them face-to-face. In my opinion, adding the 'natural' stress of the leader/follower relationship to the frustration created by interactions conducted via communication technology would lead to unhappy outcomes certainly for the employees, and possibly for managers in this situation as well. I began to question whether remote relationships can be productive and satisfying. In stage two of the long interview process, I examined my assumptions about communication in this environment and about leader/follower relationships in general.

During the analysis, I identified some underlying assumptions that might have led to my dissatisfaction with remote, technologically mediated interactions. This highlighted some contextual and personal factors and interrelationships that had not been supported by any of the research I reviewed. I realized, for example, that I assumed that email communication should be similar to face-to-face communication in tone and length. I experienced significant frustration with one-word replies to my long, carefully crafted messages; my reaction was to assume that the respondent was angry with me. I uncovered assumptions about the nature of the leader/follower relationship itself; I assumed the relationship has a certain tension resident within it. Moreover, my implicit assumption was that everyone wants a personal relationship with his/her manager. By uncovering assumptions such as these, stage two of the process enabled me to identify how my own characteristics and experience might bias my interviews and analysis. Thus, the review of cultural categories enabled me to leverage my experience with remote relationships by adding to the interview guide and by manufacturing distance for me from my own biases.

Stage Three – Discovery of Cultural Categories and the Interviewing Procedure

I developed an interview guide (Appendix A), based on the insights gained in stages one and two of the process. The purpose of the guide is to ensure that each respondent was asked the same questions in the same sequence, yet allow for impromptu probing as necessary. By capturing carefully formulated questions and prompts, the guide enabled me to focus on the content of the interview itself. In order to elicit information in the participant's own words, and consistent with the exploratory nature of the interviews, the guide used mostly "grand tour" questions, framed in a nondirective and general manner, that provided the opportunity for the respondent to open up the conversation (McCracken, 1988). I used "floating prompts", such as a murmured "really?", or a raised eyebrow, to sustain the participant's grand tour testimony in an unobtrusive manner. If factors and assumptions identified in stages one and two did not emerge spontaneously during the interview, I used "planned prompts". These were, however, included at the end of each section and not used until after the participant had told his/her primary story (McCracken, 1988). When original nuances were uncovered, general and specific probes, developed in real time, were used to explore the new findings. (e.g. a general probe "tell me about that" and a specific probe "why did you find regularly scheduled communication valuable?"). Where possible, interviews were conducted face-to-face; where distance prevented personal meetings, interviews were conducted on the telephone. All eight interviews were recorded and field notes were taken during each. The interview tapes were transcribed by a professional transcriptionist.

Stage Four – Discovery of Analytic Categories and Data Analysis

McCracken's (1988) five step analysis process was used to analyze each transcript. The first step required the isolation of each answer, ignoring its relationship to other answers. The purpose of this step was to discover the meaning in each separate segment of text before attempting to connect them together. Tables for each transcript captured the meanings with illustrative quotes (for an example, see Appendix B). During the second step, answers were analyzed in context of the rest of the same transcript and compared to previous research and the researcher's own cultural review. The third step examined connections between second step observations, with the focus of attention moving away from the actual transcript and towards observations made by the researcher. The fourth step involved drawing a number of general themes and patterns from the observations, with the goal of identifying intertheme consistency or contradiction. At this step, concepts were analyzed and rationalized; tables were constructed for each standalone concept (Appendix C) drawing together themes across the various transcripts. Finally, the fifth step involved drawing general themes together and subjecting them to final analysis (McCracken, 1988). The result of this analysis was a list of factors or characteristics of the remote leader-member relationship that appear to influence the leader/follower behaviors and outcomes, which, along with findings from the existing literature on remote and/or virtual environments and relationships, were incorporated as variables into a preliminary survey.

Evaluative Criteria

The reliability and validity of qualitative research cannot be judged by the same methods as those by which quantitative research is assessed. However, as with quantitative

research, the “trustworthiness” (Lincoln & Guba, 1985) of qualitative research must be demonstrated so that readers can have confidence in its findings. Lincoln & Guba (1985) identified four characteristics of qualitative research that establish its trustworthiness: credibility, transferability, dependability and confirmability. The long interview process used in this stage of my research was conducted in such a way that ensured these criteria were met.

Credibility

Credibility exists if readers are convinced that the data has been collected and analyzed following accepted procedures. To ensure credibility in this study, I conducted an extensive literature review, as discussed in stage one of the long interview process. From this, and the review of my own cultural categories, I developed a questionnaire that guided each interview. This process manufactured distance, allowing me to both recognize in the data, familiar patterns as well as contradictions of my prior knowledge and assumptions (McCracken, 1988). As well, following Lincoln & Guba (1985), throughout the process, I engaged in peer debriefing. I met with my advisor, colleagues and other stakeholders to feed back sections of the data and my interpretations of it, in order to assess whether there were interpretations that remained implicit in my own mind, that still required articulation. These sessions also provided an opportunity to test hypotheses that I was developing as the research progressed (Lincoln & Guba, 1985).

Transferability

Transferability is the extent to which findings have explanatory potential (Lincoln & Guba, 1985). In intent, transferability is similar to generalizability. However, the methods by which it is determined are different. In quantitative research, generalizability

is judged by the representativeness of the sample. In qualitative research, the applicability of the research can only be judged by the reader, and is facilitated through providing enough description of the research context that the reader may determine whether sufficient contextual similarity exists for the findings to be transferable. Because the findings from this stage of the research formed the basis for both the hypothesized model and the instrument used in the subsequent studies, it was particularly important that they be considered to have acceptable transferability. I enhanced transferability through the careful use of the interview techniques such as grand tour questions, floating and planned prompts. In depth description of the remote relationship context experienced by each respondent was captured through the consistent use of the interview questionnaire. As well, purposive respondent selection enabled me to explore the phenomenon in more than one context; my respondents varied not only in demographics, but also on other salient factors, such as levels of distance from their managers, frequency of face-to-face contact with their managers and previous knowledge of their managers.

Dependability

Dependability is analogous to the quantitative concept of reliability, or the extent to which the same findings would be discovered if the study were repeated with the same respondents in the same environment. This view is not applicable in qualitative research, however, because the researcher's interpretations must be factored into the process itself, as the research unfolds. Depending on the interpretations formulated during the data collection process, the research design itself may change. Therefore, it is necessary to reassure readers that the research is dependable, that the research findings have been

derived in a systematic manner and that changes are due to deliberate change in research design or in the phenomenon itself, rather than researcher instability and error (Lincoln & Guba, 1985) The stages of the long interview process facilitate this process. By manufacturing distance, as discussed in stages one and two, I reduced the chance of bias due to personal judgment and premature evaluation. Careful selection of respondents, who might hold varying views and who certainly had different types of remote experiences, aided in this process. The interview guide itself was crafted in neutral language, which allowed respondents to tell their stories using their own terms, rather than being directed by the wording of my questions,

Confirmability

Confirmability is the characteristic that describes research in which the results are determined by the respondent, rather than by the biases of the researcher (Lincoln & Guba, 1985). Through my use of the long interview process, I was able to ensure the existence of this characteristic in my research. I carefully followed and documented each step of the methodology. McCracken's stage two required me to examine and identify my own assumptions, expectations and biases relating to remote leadership. I realized that I held certain assumptions about the nature of the relationship, what employees want from such an arrangement, and that I was generally negatively predisposed toward this form of working. The resulting self-awareness sensitized me to the danger of interpreting the data exclusively through this lens; by providing a template against which to compare the data, it enabled me to be surprised by interpretations that contradicted my own perceptions. Specifically, for example, this ensured I was open to positive findings about remote leadership, as well as to negative ones that aligned with my predispositions. In

stage three, I used a carefully crafted questionnaire to ensure each interview was conducted in a consistent and neutral manner. Each interview transcript was subjected to the same analytic process moving from the specific to the more general, as prescribed by McCracken (1988). The five step analysis process of the long interview generates a form of audit trail - transcripts, individual concept tables, replete with thick description, and theme concept tables (for examples, see Appendixes B, C) - that provides yet another way to confirm the authenticity of the findings.

Results

This section defines and illustrates the emergent analytic categories that were derived from the analysis of data collected from eight respondents. The categories represent the contextual factors in the remote leader/follower environment that appear to influence employee outcomes. These categories were incorporated as variables into a preliminary model of remote leadership (Figure 1), and ultimately an instrument with which to test the proposed model in studies 3 and 4.

During this analytic process, I identified five categories (Appendix D). Within some of these categories, there were a number of distinct concepts. I constructed a concept table for each (Appendix C, for example). The final stage of this process involved rationalizing these concepts to develop the specific variables in the remote context that potentially influence employee outcomes. Through a process of comparing these concepts with each other, and with the scope and intent of my research, I arrived at a list of fourteen variables (Appendix E). A description of each analytic category and the concepts within those categories follows.

Analytic Categories

Learning Curve

There was a fairly strong perception among participants that it takes a certain amount of time and effort to become accustomed to working in a remote relationship, on the parts of both the manager and the employee. At first, working in a remote relationship with one's manager is difficult and prone to frustration.

“Some people I know that when they learned they had a remote manager, they literally panicked. Like “I can't work for somebody that's in another province.” (Greg)

Participants noted a number of methods that they developed over time for making the relationship run more smoothly. These techniques ranged from simply asking for more communication to developing a network of contacts collocated with the manager who could “chase them down” when necessary.

“It’s always key to sit and figure out what kind of relationship you’re going to have with the person that you’re going to be working with... ironically, it’s more incumbent upon the person who’s doing the reporting in to somebody else to figure out how that person works so that they can make the relationship work.” (Kim)

“It’s important to set up norms immediately...you have to understand the manager and be sure that they understand you; you need to develop protocols for communication” (Jan)

Once these individual processes had been developed and incorporated as a way of working, managing the remote leader-member relationship, with its reduced face-to-face interaction, became easier.

I know it was certainly a learning process for everybody ...the general feeling I get is that the company is getting better and better at it. (Greg)

As a parallel notion, participants observed that the learning curve concept applied to leaders as well as members.

“My manager ...is still in the learning curve of getting used to managing people remotely...patience is required.” (Greg)

I feel that you can work through that [difficulty], it can be done. Yourself and working with your supervisor. It takes time.” (Greg)

This suggests that patience and time is required of both parties, and that the learning curve is equally applicable to leaders and followers.

Support

In the practitioner and academic literatures, one of the concerns about remote leadership, and remote work in general, is that workers may feel isolated. This concern was also articulated by the interview participants; however, they described the importance of support from two different sources: both group members and industry colleagues outside the organization.

Group member support.

Predictably, the need for support from colleagues, especially members of one's own work group, in a remote environment was deemed more critical as task interdependence increased. With high levels of task interdependence, employees need to collaborate with others in their organizational unit in order to be effective. Being situated apart can impede this collaboration or at least make it more difficult. Higher levels of group support facilitate collaboration.

“The customer service planning group is very spread out, and we're trying to do a lot of collaborative work in a decentralized kind of environment – I don't think we're as effective as if we were all in a single place because the collaboration needs to get, it's sort of forced if you don't schedule face to face, conference call is never as effective as face to face really.

(Scott F.)

Beyond task interdependence, participants noted a contextual factor unique to the remote environment that also requires supportive group relationships. When individuals are not collocated with their managers, but other members of their group are, feelings of isolation and exclusion may arise.

“People feel a bit cut off or isolated from the team, particularly when there are a lot of people who are in one place rather than a handful of people who are dispersed. They don’t have a sense of what’s going on day to day, they don’t get to know their colleagues and peers as well as the others who are together. I think that’s a sense of frustration.” (Scott B.)

Moreover, when the individual is not physically located with his/her manager, but other members of the work group are, the potential exists for political behavior on the part of these proximal group members. Such political behavior may disadvantage the remote group member. When relationships among group members are not supportive and mutually beneficial, the potential for this damaging political behavior may increase. Participants related stories of individuals “badmouthing” their distant group member to his/her manager, with the target unaware and unable to defend him/herself.

“One person in my group was collocated with my manager in Nova Scotia. That person went in and complained to my boss about something I had done. He [the manager] arrived at conclusions before talking to me. This physical arrangement results in a lack of representation and discussion.” (Jan)

It appeared that group support may play an important role in the remote environment - it can enhance effectiveness in instances where work is highly interdependent, it can mitigate the potential for political behavior, and it can impact the potential for feelings of isolation.

Network support.

Participants extended the notion of support beyond the immediate work group or individuals in other parts of the organization. With modern communication technology, relationships are no longer constrained by the need to be physically present, offering the potential for obtaining valuable support outside one’s organization or even one’s

industry, in effect from a worldwide network of colleagues. As communicating through email and instant messaging becomes a normal way of conducting business, there appear to be fewer barriers to communicating with others across organizational and geographic boundaries; distance is no longer an issue. In that sense, technological mediation acts as an equalizer, and support can be obtained as easily from some one across the continent as from some one closer.

“So I’d call some one up in Vancouver, if I was having a problem or even just to check in... found that you felt a little bit alone. or more alone.. right, because you can’t just pop in again...that face to face conversation..so that you really relied on other people.”(Kelly)

“It was such a great talent pool that people frequently reached out to each other [in other companies] because they recognized everybody else’s expertise and really drew on it”(Kim)

In this way, individuals working in a remote environment have access to a much larger source of support than those accustomed to receiving support only from those with whom they interact on a face-to-face basis.

Communication

The content and frequency of messages from the manager was a topic of importance to participants, and focused to a large extent on the issue of whether messages were task-related or relationship-related. There were several concepts related to employee-manager communication.

Matching content and medium.

Participants observed that different types of message content were best handled by different media. Email was considered particularly effective for simple information delivery, for confirming agreements, and for managing impressions, by enabling

individuals to document decisions, actions and failures, and to bring successes to their managers' attention.

“If it was something that I just thought he needed to know about, I would use an email... people use email when they're trying to do CYA.” (Kim)

“I also like providing updates to my managers via email from time to time, as opposed to just on the phone ...or face to face. Because ... you have more time to plan out exactly what you're going to say, so that you make sure that it's quite powerful, whether it's an opportunity, or whether it's a success. And what I find works really well, is an email” (Kelly)

However, participants preferred to deal with issues that were personal, urgent or complex in person or over the phone, rather than by email. They considered other means of communication ineffective for negotiating or discussing sensitive issues, because of the potential for misunderstanding or missing valuable nonverbal information.

““I don't want to lose any time with people saying “oh, you didn't like what I did” or “I don't understand this... so because of the submessages and correcting, I would probably do that by phone.”” (George)

“You can tell by tone, you can hear whether they're anxious about something, you can hear their excitement... you can get pieces of information that you can't necessarily pull out through an email and you can ask questions that help you go in different directions and it helps you kind of uncover where the true interests are and why they need to get there.”(Kim)

One participant, George, termed contentious, sensitive, or political issues “hot” topics and summed up his view of dealing with these:

“ ..the hotter the issue, the more difficult it is to use any technology other than face-to-face.”

Although these participants were comfortable using technologically-mediated communication for certain purposes, such as information delivery, they believed that the more complicated and/or contentious issues are best handled in the traditional way - face-to-face.

Types of new communication media used.

Respondents mostly talked about interacting with their managers using three media – face-to-face, telephone, and email. A topic that often arises in the practitioner literature is the increased ease of managing distant workers through new and improved technologies, such as videoconferencing and instant messaging. Participants were less enthusiastic about the usefulness of videoconferencing as a substitute for face-to-face communication.

“ I don’t find video conferencing that effective – number one, to find a vehicle is not always that easy. Number two, there tends to be a lot of technical problems and you lose about 15 to 30 minutes before you even get the conference going. Three, it doesn’t get everybody who’s in the room”
(Kim)

“Video conferences? A logistical nightmare. (Scott F.)

Some other alternative platforms, such as Net Meeting and instant messaging appeared to have some utility in specific applications.

“[Net Meeting} ...and I do like that where everybody is on the same document, one person is controlling it, it shows you who’s in the meeting, you can post notes and you can follow along – it does force people to kind of stay with the agenda.” (Kim)

“Instant messaging....came along...and that seemed to help cause at least that way you could see when people came online... and you could throw comments back and forth

rather quickly... stuff you didn't want to do the phone thing for like 2 minutes... it's helping out with simple little communications." (Greg)

The adoption of newer communication technologies appeared to be limited, depending on the ease of use of the technology. Less cumbersome platforms, such as instant messaging, were perceived to have some utility.

Face-to-face communication.

The defining feature of remote management relationships is the low level of face-to-face communication. Two specific issues arise from this element – the frequency of face-to-face communication and the importance with which individual participants view it. The frequency varies by organization and group. In extreme situations, employees never actually see their managers. The importance appears to vary by individual participant, as evidenced by the range of opinions on the subject expressed by those interviewed. At one extreme, a participant observed that remote interaction with her manager is superior to face-to-face because her manager's "emotionality" and body language do not affect her thought processes. At the other end of the continuum, participants expressed some level of discontent or frustration with the lack of face-to-face communication:

"I don't know what it is about being physically present, but it seems to make a difference." (Scott F.)

For most of these participants, the importance of face-to-face communication depended on two other contextual variables - the existing relationship with the leader and the type of issue being handled. Face-to-face contact early in the relationship appeared to facilitate remote interaction on an ongoing basis.

“One of the key things is that I’ve had to at least meet the people once face-to-face and have some good discussion and get the initial feel. So when you’re talking to them on the phone you’re not just talking to the voice, you can actually stop and picture the person in your head.” (Greg)

“It would be very difficult kind of situation if there wasn’t a lot of face to face time spent initially at least, to develop a relationship and develop trust It’s really sort of a baseline requirement.” (Scott F.)

Participants expressed a preference for face-to-face interaction in certain circumstances. Some felt that performance and developmental feedback, for example, was more effectively given face-to-face.

“I would get the most developmental feedback, is when they were face to face with me.” (Kelly)

Similarly, as noted earlier, participants preferred dealing with sensitive or complex issues on a face-to-face basis.

[In dealing with ‘hot’ issues] “if I can make up for all of my inefficiencies by energy and convincing people to like me.. that’s the skills that we’ve used for generations so I appreciate the relationship based, the hot base, the face to face. The face to face relationship, whether we like it or not will take over and will help or hinder but usually help.”

So, although face-to-face communication appeared to be important to participants in some circumstances, other contextual factors in the remote environment appeared to influence its impact.

Regularly scheduled communication.

One of the unexpected findings in the interviews was the importance of having a specific, regular time designated for contact with the manager, usually by telephone.

I felt very important...to be able to have that time with the individual and I really cherished that time. (Kelly)

It appeared to affect participant attitudes, as well as to increase information exchange.

“It helped me have a sense of belonging, I guess, to the corporation and also ..., not necessarily loyalty, but to understand that the person I was reporting into didn't forget me 'cause I wasn't in their face.” (Kelly)

Throughout the interviews, participants made comments that reflected a belief that some things were too trivial to merit a telephone call or an email, but these were the kind of issues that would be mentioned during a casual encounter in a traditional work environment.

“You don't necessarily have that opportunity with some one offsite, because you don't want to inundate them with specific phone calls.” (Kelly)

Regularly scheduled telephone calls were used to deal with this type of issue in the remote environment.

“ I looked very forward to, 'cause it gave me the opportunity to either vent if I needed, identify some opportunities or bounce some ideas off of my manager at the time in a specific, personalized way, as opposed to just calling them.” (Kelly)

Input from the leader during regularly scheduled interactions was also considered important. One participant noted that he felt isolated and didn't understand what the important issues were, because his leader did not follow through on regularly scheduled teleconferences.

“[The impact is that] it separates me from knowing what the issues are that are important at any particular time. (Scott B.)

Frequency of regularly scheduled communication appeared to be important as well. For example, one participant reported that once per month was not frequent enough.

“Initially it was once/month, and then we boosted it up to every two weeks.” (Greg)

Regularly scheduled communication appeared to serve several purposes: it provided an opportunity for frequent exchange of information between participant and manager; it contributed to organizational commitment; and it appeared to mitigate some of the feeling of isolation that may exist in the remote environment.

Unplanned communication.

In a proximal environment, the amount of communication that an employee has with a manager can vary, but there is often a greater likelihood of interacting on an unplanned basis. An example given by one participant is as follows: the manager drops by the employee’s desk on his/her way past to ask a simple question, but may not make the effort to telephone a remote employee to ask the same thing. Moreover, the manager may stay and chat for a few minutes before continuing on. With a distant employee, even if he/she does phone or email to ask the question, the chat may not take place. Moreover, if collocated, the possibility always exists of encountering one’s manager in the washroom, the hallway, the elevator, or some other spot, and engaging in some task-related or social interaction. Participants explained how they occasionally “laid in wait” for their manager, so they could unobtrusively ask for clarification on an issue. These encounters contribute to building a relationship and are generally missing in the remote relationship.

“The one piece that I find with a manager onsite is that they would know ..., something about it, beforehand. Because I

might run into them in the hall, or something like that, and might just say “by the way, heads up.” (Kelly)

This serendipitous communication appeared to consist of three dimensions: frequency, leader availability, and leader-initiated communication. Participants noted that the frequency of communication is important and that generally, more is better.

[With the ineffective manager] I was working for the ‘air’; you never get in touch with them [the manager]; You never talk to them... you cannot have a remote relationship and not talk to the person. It’s just not a possibility. (Kim)

Some participants, however, voiced a concern that contact not be too frequent, lest it be perceived as lack of trust.

“My manager... is comfortable with assigning and being hands off, like not having to call me every 10 minutes ... I’ve heard of people who are being micromanaged even from a distance.” (Greg)

With few chance encounters, no “bumping into the boss” to ask that seemingly insignificant question, participants felt that being able to contact their leaders when they needed to and receiving a timely response is important.

“Being able to ask questions at the drop of a hat about whatever comes up during the course of the day and getting a timely response. Really that’s the key thing of remoteness.”(Greg)

Finally, communication should sometimes be initiated by the leader, and not always in response to a problem or a negative situation.

“One thing that I’ve heard over and over again ...that I don’t hear from them until it’s something bad...and that usually could mean anything from a complaint from an employee that goes right to them, it could be a complaint from a client, or it might even be because the numbers are bad.” (Kelly)

From a good perspective...one would call me sometimes, just out of the blue, just to chat to see how everything was going. (Kelly)

It appeared that, like regularly scheduled communication, unplanned communication can substitute for the serendipitous encounters that exist in the proximal environment.

Generally this type of communication, particularly when initiated by the leader, is perceived positively.

Trust

The importance of trust in a leader-member relationship was noted by all participants.

“That’s really important, establishing trust, understanding ...trust becomes important in a crisis” (Asad)

“The fact that we knew each other well and we were able to develop trust... I think it can lend itself to the effectiveness of the group.” (Scott F.)

Participants noted two factors in the context of a remote relationship that are related to trust – the existence of a prior leader-member relationship and the perceived level of leader trust in the member.

Prior knowledge.

The importance of a prior relationship with or knowledge of one’s manager in a remote environment was not discovered during the review of relevant literature. It therefore did not form part of my script for the initial interviews. However, it became increasingly clear that this was a concept of some importance. Because the long interview process is an iterative technique that allows for data to be analyzed and collected simultaneously, I was able to explore later respondents’ thoughts on this issue.

When an individual has a pre-existing relationship with the person who becomes his/her manager in a remote situation, it facilitates and streamlines the interactions. There appears to be an existing basis for trust.

Just the fact that we had a relationship already and trust made all the different. (Asad)

It was clear that we ...were ... very result-focused...I think it was based a lot on the relationship we [already] had. (Kim)

In a situation where I didn't have a prior relationship, it would be very difficult if there wasn't a lot of face-to-face time spent, initially at least, to sort of develop...a relationship and ...trust. (Scott F.)

Participants appeared to perceive a prior relationship as a substitute for frequent face-to-face communication, enabling the remote relationship to function more smoothly.

Manager trust in employee.

The concept of manager's trust in his/her employee emerged unexpectedly. Participants observed that it is necessary for them to be and to feel trusted by their managers in order to be effective. This is particularly true in an environment in which manager and employee are not collocated. Because the manager cannot observe the employee directly, he/she must trust that the employee is making good decisions, and being both effective and efficient.

“[There's an] Implied trust that you are being productive- trust that I'm doing my best, making good decisions.” (Jan)

When leaders and members are not collocated, the leader can only assess member performance by results and by feedback from others. If a leader receives negative feedback about a distant member, that member does not easily have the opportunity to place that feedback in context for the leader. In the absence of trust, the leader may reach

conclusions that are wrong and/or detrimental to the member, rather than giving the member the benefit of the doubt or asking for clarification.

“There is a preponderance of ability for others to comment [on your performance] and managers can jump to conclusions. You want them to come to you first” (Jan)

Whether or not members feel trusted by their leaders may thus impact how they perceive a remote relationship.

Control Beliefs

Some participants voiced their desire for a feeling of mastery over events in the remote work environment. This perception of control appeared to be related to understanding the issues that are driving the organization at any given time.

“What I find effective is something, someone who can communicate ... what the key drivers are that are requiring us to make the change.” (Kim)

“I’m not sure that he’s [the leader] given me enough guidance in where they want to go... we’re not seeing where we’re supposed to be. And it has the tendency to be the crisis du jour, rather than working to a bigger plan.. it has a tendency to throw a kink into my planning....” (Scott B.)

Organizational drivers may be difficult to discern when one is physically isolated from his/her manager and others in the organization, and not privy to the discussions that may place events and actions in context, especially in a quickly changing environment.

“[Onsite] you would overhear conversations, and you had a general sense of what was happening, what was relevant to you but you maybe weren’t directly responsible for it.” (Scott F.)

Another important manifestation of control in this environment is the members' perceived ability to regulate the frequency and type of communication with their leaders.

“[Everyone was], scared to say anything...but [I said to my manager] ‘You know I need more communication with you and I need to have your ear...I know you’re busy but ...’ so that’s worked. Just addressing it and saying ‘Look, I want to talk to you more.’” (Greg)

One participant, Jan, described the extraordinary efforts she makes to ensure that she can communicate with her distant manager when she needs to. Measures such as setting up networks of people to physically track down her manager; keeping her pager turned on 24 hours a day, seven days a week; setting up communication protocols and establishing availability expectations; and flagging important emails with the subject line “READ”, all give her some sense of control in the remote environment.

Finally, the perception of control was heightened by decision latitude. Jan observed that, in remote environments, often characterized by longer leader response time, having to escalate decisions is frustrating and leads to feelings of disempowerment. Scott B. echoed this sentiment, noting that at these times, his perceived lack of control results in feelings of being “disconnected.”

Discussion

The purpose of Study 1 was to identify and explore the contextual factors that affect individual outcomes in a remote leader-member relationship. As noted earlier, by following the interview and analysis process outlined by McCracken (1988), I derived eleven concepts that appeared to act as important influencers in that environment. A subsequent literature review confirmed that the majority of these concepts have yet to be specifically explored in this context. Some have been indirectly studied, while others have been considered only within the traditional organizational environment.

Learning Curve

There has been limited empirical investigation of the existence of a learning curve for those who work in a remote environment. Staples (2001) conducted a two phase study to compare the attitudes of remote (specifically teleworkers) and non-remote workers. During phase one focus groups, it was suggested that as experience in working in a remote environment increases, job stress decreases because the employee develops ways to deal with work/family conflict, communication issues, and builds networks. This hypothesis was not supported in Staples' subsequent large scale quantitative study, however. This research did not explore the potential relationships between increased job experience and other attitudinal outcomes such as job satisfaction, perceptions of leadership, and organizational commitment.

Support

Group Support

There is a significant body of research that establishes the importance of social support in dealing with stress, for example Cohen & Wills (1985), and in the remote

environment, perceived support has been associated with positive outcomes (Jarvenpaa & Leidner, 1998). Group support is necessary to perform well when tasks are highly interdependent and this too has been explored in remote environment (Hedlund et al., 1998; Straus & McGrath, 1994). However, the emergence from Study 1 of the additional idea that group support was considered important to mitigate the effects of isolation and political behavior enabled by a mixed collocation arrangement has received only minimal investigation. Cramton's (2001) study of information exchange in geographically dispersed teams highlighted the problem of unrecognized differences in contexts and the "leaky" nature of remote communication resulting in dispositional attributions, confusion and conflict. She observed that the collocated members were able to share context, resulting in common interpretations. In these cases, the remote members felt they were being left out of private exchanges, resulting in friction. This study of group members suggests that perceived political behaviors do exist in mixed collocation arrangements. However, it did not consider the role and potential complication of the leader-member relationship. The effect of group support in these situations has not yet been explored.

Network Support

A related concept in the category of support is the importance of having a network of colleagues and peers throughout the organization and industry on which to draw. The processes through which this type of support influences attitudes and results may be similar to those associated with social support generally, but in the participants' terms, this concept is something unique to working in a remote environment, and reflects the isolation they feel, both cognitively and socially. It appears that there has been no empirical investigation of this specific phenomenon.

Communication

Communication has been the topic of extensive research, both in the traditional and remote environments, with much of the latter focusing on virtual teams. Study 1 findings highlighted specific aspects of communication in the remote environment that have yet to be fully explored empirically.

Medium – Message Match

Most of the existing research focuses on choosing the medium with the appropriate level of richness for the message content (Daft & Lengel, 1984; Hart & McLeod, 2002; Kayworth & Leidner, 2002). The participants reflected this in their strongly voiced preference for telephone communication over any computer-mediated platform when dealing with any topics that were not straightforward information delivery; specifically for anything urgent, complex or personal the only acceptable substitute for face-to-face interaction was telephone. Interestingly, use of the telephone per se is not often explored in current investigations of remote interaction. Given its attributes of reasonable cost, high reliability, widespread accessibility and ability to carry a level of non-verbal cues, it could be a powerful tool in managing remotely.

Use of Communication Media

Despite the interest in the practitioner literature and more modest emphasis in academic literature, the use of evolving media such as videoconferencing was not perceived by Study 1 participants to be a useful substitute for face-to-face or telephone communication. Much of the empirical data on the effectiveness of videoconferencing systems is eight to ten years old. The major findings of this research, as summarized by Campbell (1997) suggest that such videoconferenced meetings are shorter and more task-

oriented; they are better structured and more orderly; and there is generally more equality of participation, opinion exchange and successful persuasion.

Other research of the same vintage suggests that the effectiveness of a videoconferencing interface may be task dependent (Gowan & Downs, 1994). Finally, another found that the problem-solving performance of the groups using videoconferencing was significantly higher than the performance of the groups who met face-to-face. One interpretation for this may be that face-to-face meetings may allow too much interpersonal "noise" to enable effective problem solving (Gowan & Downs, 1994). However, this study was conducted with undergraduate students in a short term laboratory experiment, in which such processes as the development of trust were not relevant. The generalizability of these findings to a 21st century remote leader-member relationship is suspect.

Other remote platforms were not of significant interest to Study 1 participants. While use of instant messaging is ubiquitous amongst young adults, it was not perceived as a useful substitute for face-to-face communication by participants. As younger adults enter the workforce in larger numbers, however, its importance may change. Some recent research on the use of instant messaging found that the ability to facilitate friendship development was considered an important feature of instant messaging for social use, and for work use, it was valued for its perceived capacity for information richness and volume (Huang & Chen, 2003). These preliminary findings suggest a larger role for instant messaging in the remote relationships of the future.

Face-to-Face Communication

The reduced frequency of face-to-face interaction is an integral characteristic of remote leadership. For the participants in Study 1, this was consistent. What varied was the importance with which they viewed face-to-face interaction with their leaders. The range of opinions reflects the inconsistency in the research on remote environments. While most studies suggest that some measure of face-to-face interaction is beneficial (Avolio & Kahai, 2003; Howell & Hall-Merenda, 1999), others suggest that remote communication is even more effective than face-to-face (Walther, 1997). This lack of consensus in both qualitative and quantitative studies suggests that remote relationships are far more than electronic versions of face-to-face ones and may, in fact, be subject to mediation by a range of contextual and personal variables.

Regularly Scheduled Communication

Participants in Study 1 repeatedly voiced the importance of the leader scheduling regular times to communicate and keeping to that schedule. The effect of this behavior increased participants' feelings of being important, made them feel like part of the group, and provided a time to discuss minor task-related items that seemed too unimportant to initiate communication to discuss. The importance of regularly scheduled communication is accepted in the practitioner literature on managing in a proximal environment; managers are often exhorted to hold regular staff meetings; for example, (Anshel, 1992). There has been little empirical investigation of this specific process. A number of studies demonstrate the importance of frequent interaction between manager and employee to trust formation, the perception of support and job satisfaction (Becerra & Gupta, 2003; Callan, 1993; Cramton, 2001; Kirmeyer & Lin, 1987; Wells & Kipnis,

2001). Research suggests that communication frequency has even more substantial effects in a remote environment where social interaction does not occur easily or by accident (Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Maznevski & Chudoba, 2000; Staples, 2001; Straus, 1997). Jarvenpaa et al. (1998) noted that predictability of communication and regular feedback improve communication effectiveness in virtual teams. Providing a regularly scheduled opportunity to communicate ensures a certain level of interaction. Beyond this, one possible explanation for its perceived importance could be that it provides an opportunity to exchange information that might not be considered significant enough to initiate an interaction with the leader, but is comfortably delivered within the framework of the regularly scheduled communication. In effect, regularly scheduled communication may act as a substitute for the serendipitous interaction that is absent from a remote environment. Finally, regularly scheduled meetings may make employees feel valued. Numerous studies on leadership have demonstrated that positive outcomes, such as increased job satisfaction, are associated with followers' perception of consideration (Judge et al., 2004; Seltzer & Bass, 1990). Study 1 findings suggest this may form an important part of the context of remote leader-member relationship.

Unplanned Communication

It appeared important to participants that occasionally their leaders “just called up to chat” in a proactive manner, rather than merely reacting to some problematic situation. In the proximal environment, a manager can somewhat effortlessly accomplish this by walking with an employee to the staff room, for example. This face-to-face “water cooler” communication can include the exchange of important information and contribute

to impression formation (Antonakis & Atwater, 2002). In the remote environment, where these chance or informal encounters do not occur, the effort required to communicate may result in a decrease in the overall frequency of communication (Jarvenpaa & Leidner, 1998; Jarvenpaa & Tanriverdi, 2003; Kayworth & Leidner, 2002). Participants expressed their need to communicate frequently in order to feel the existence of a relationship with their leaders. As noted earlier, frequency of communication has previously been associated with trust formation and job satisfaction (Becerra & Gupta, 2003; Callan, 1993; Cramton, 2001; Kirmeyer & Lin, 1987; Wells & Kipnis, 2001). As well, leader availability on a casual basis was important to participants.

Although there has been little exploration specifically of the effect of unplanned communication in the remote environment, there is a body of research that demonstrates the importance of certain transformational leadership behaviors, such as providing individualized consideration, in both the traditional and the remote environments (Avolio, 1999; Barling et al., 1996; Bass, 1998; Kelloway et al., 2003). Unplanned, informal interaction may be a vehicle through which these consideration behaviors are enacted, impacting perceptions of leadership (Judge et al., 2004).

Trust

It is not surprising that many of the comments made by participants related to the development of trust, since it has been the subject of extensive research in proximal leader-member relationships (Craig & Gustafson, 1998; Dirks & Ferrin, 2002; Howell & Hall-Merenda, 1999; Jung & Avolio, 2000; Pillai et al., 1999; Podsakoff et al., 1990). There are two aspects that have not fully emerged in existing research, however – the

importance of a prior relationship with the leader in facilitating a working relationship and the role of the leader's trust in the employee when working at a distance.

Prior Knowledge

Participants who seemed to attach no particular importance to face-to-face communication were the ones who had established relationships with their leaders before beginning to report to them through technology. This relationship applied even when the leader was known to the participant by reputation, or through a third party. This prior knowledge, either direct or indirect, seemed to mitigate the need for social communication, allowing the leader-member dyad to focus largely on task related issues. There may be two reasons for this: prior knowledge may increase trust as well as provide a shared understanding or "mutual knowledge" (Cramton, 2001), both of which have been associated with increased communication effectiveness.

In work on trust in face-to-face relationships, McKnight et al. (1998) found that good reputations help create cognitive-based trust, which Staples (2001) suggests is most important in the remote environment. How reputation affects trust between individuals in a remote environment, however, has not been specifically explored. Most studies in the remote environment deal with the relationships among group members rather than the leader/member dyad, and there have been contradictory findings. Alge, Wiethoff & Klein (2003) compared groups with a history to ad hoc groups in both face-to-face and remote settings. They found no difference in communication effectiveness or information sharing among collocated group members who had a prior history of working together compared to those who did not. However, virtual teams with a history were able to communicate as effectively as face-to-face teams in terms of openness/trust and information sharing,

while virtual teams without a history were less effective on these dimensions. Other studies in remote teams suggest that this form of prior knowledge is not required (Powell, Piccoli & Ives, 2004). For example, Jarvenpaa & Leidner (1998) found that in the absence of previous relationships, members begin working as if they are trustworthy and seek confirming or disconfirming evidence; they observed that this form of swift trust is fragile and temporal (Jarvenpaa & Leidner, 1998; Meyerson, Weick, & Kramer, 1996). Alge et al. (2003) suggest that these findings may be attributable to the use of research designs devoid of context, of which temporality forms an important part. Studies on virtual teams have almost exclusively used ad hoc groups, brought together for an experiment, with no history and no future (Alge et al., 2003). Findings by Mennecke & Valacich (1998) that members of a virtual group who had prior history were more satisfied, support the contention that this temporal condition may assume a more significant role in the remote environment. Hart and McLeod (2002) found that in geographically dispersed teams, members with strong personal relationships share a common understanding and require less clarification in their communication. There are several studies that support the importance of initial face-to-face meetings among members, a form of prior knowledge, before beginning work in a remote team environment (Avolio et al., 2000; Maznevski & Chudoba, 2000; Suchan & Hayzak, 2001). This face-to-face contact enables members to build shared knowledge and once this “shared interpretive context” (Alge et al., 2003) exists, individuals in remote relationships may be able to use leaner media, such as electronic mail, to communicate effectively. The existing studies have not specifically investigated the implications of

prior relationships or knowledge for the leader-member relationship in a remote environment.

Manager Trust in Employee

Participants voiced the need for their leaders to exhibit trust in their judgment and abilities. Much of the minimal research into the issue of perceived leader trust in employees in the remote environment is found in the literature on telecommuting (Harrington & Ruppel, 1999). These studies suggest that managers experience a lack of trust because they believe that they cannot manage what they cannot see, or, following Theory X thinking (McGregor, 1960), that employees will take the opportunity to avoid work unless directly monitored (Harrington & Ruppel, 1999). Because of this lack of direct control and contact, and because there is often heightened uncertainty in remote environments, trust in those being managed is a particularly important component of leadership in this context (Harrington & Ruppel, 1999). In fact, Harrington & Ruppel (1999) demonstrated that managerial trust has a direct impact on the adoption and diffusion of telecommuting arrangements as a work option.

There are implications for managerial trust arising from the nature of technologically mediated communication itself. Widespread access to technology changes the role of leader from provider of information to provider of strategic direction (Kayworth & Leidner, 2002). In this environment, leaders can no longer “release” important information in a controlled manner; members may have access to the same information that the leader has, and often before the leader does. Therefore, leaders must quickly communicate their strategic intent and trust that members are able to enact it. Study 1 findings are consistent with this; participants voiced their desire to be given the

“bigger picture”, the “reasoning behind” directives. Also, electronic communication is more indelible than before – emails and chat sessions leave virtual trails that can be followed. If used incorrectly or in error, these messages can damage trust; for example, what may previously have been spoken as an unofficial communication in hushed tones, can now be mistakenly disseminated to an entire organization by an erroneous click of a mouse. Leaders must trust members sufficiently to communicate sensitive information as needed. Finally, as Cramton (2001) has demonstrated, electronic communication can lead to significant errors in attribution; silence, for example, is often attributed to dispositional effects, when it may be the result of wrongly addressed emails, the recipient merely failing to understand that a response is required, or other innocuous reasons. All of these factors complicate the process of leader-member communication and increase the importance of leader trust in member. Most of the literature relating to the impact of these aspects of the leader-member relationships is anecdotal (Avolio & Kahai, 2003).

As noted earlier, in a mixed collocation environment, and with little opportunity for face-to-face interaction, there is an increased opportunity for third parties to influence a leader’s perception of and trust in distant members. This effect has not been investigated specifically, but related studies suggest its existence (Atkinson & Butcher, 2003; Burt & Knez, 1996; Cramton, 2001). Burt and Knez’s (1996) work, in particular, suggests that there is a predilection amongst organizational members for gossip and negative attributions, and that the leader-member relationship is inherently political. It is important, then, that members perceive that they are trusted by their leader and that decisions affecting them are not biased by such political behavior. Prior studies have already demonstrated the pragmatic effect of reduced face-to-face interaction in terms of

decreased ratings for distant employees (Judge & Ferris, 1993). In order for a remote environment to be perceived as supportive, members must feel that their leaders trust them enough to “give them the benefit of the doubt”. These are relationships that have not yet been empirically explored in this context.

Control Beliefs

The desire for control expressed by participants is consistent with findings of various studies, mainly in the face-to-face setting, but also in environments in which employees are monitored electronically. Ashford, Lee, & Bobko (1989) found that perceived lack of control or powerlessness at work increases perceptions of job insecurity, resulting in reduced organizational commitment, trust, job satisfaction. A comprehensive review of the research on control demonstrated that increased perceptions of employee control are directly related to various positive outcomes, such as decreased stress and increased performance and job satisfaction (Terry & Jimmieson, 1999). In electronically monitored environments, specifically, perceived lack of control has been shown to directly decrease job satisfaction (Aiello & Douthitt, 2001). There has been little empirical investigation of the relationship between perceived control and outcomes specifically in the remote environment.

Conclusion

The unique contribution of Study 1 resides in the identification of concepts that represent contextual characteristics that are perceived to be important by individuals actually working in a remote leader-member relationship. As noted earlier, the context within which the remote leader-member relationship is conducted has received little attention from researchers. The findings of this study suggest that certain characteristics

of this context may influence individual outcomes and attitudes in a significant manner. The eleven distinct concepts provide the basis for the development of a survey instrument, with which to test the relationships between them, leadership and outcome variables on a larger scale. The development of this instrument is the focus of Study 2.

STUDY 2

Method

Introduction

The goal of Study 2 was to develop a set of preliminary measures of remote context, derived from the findings of Study 1. The items, subjected to peer review and volunteer testing before being formatted into a Web-based survey, were completed by a small sample. These measures formed part of the survey of remote leadership, which was administered to a large sample in Study 3.

Participants

Subjects for this study were recruited largely by word of mouth and came from a range of organizations. There were 39 completed surveys. The sample consisted of a wide variety of individuals, many in either professional or management positions (10.3% and 20.5% respectively), as well as a large number of students (15.4%) and respondents who reported themselves to be in the “other” job category (23.1%). Most respondents were between the ages of 30 and 50 (64.1%) and had been in their current job more than 2 years (71.8%). The majority of respondents were female (33.3% male; 59% female).

To preserve anonymity, information about respondents’ location was not recorded. As a result, geographic distribution of the sample could not be determined. Given the recruitment method, however, it can be inferred that many of the respondents were from Atlantic Canada. Demographic information for the sample is presented in Table 1.

This sample consists mostly of workers who interact with their managers largely through technology. Only a small number of respondents (10.3%) reported that they see

their managers face-to-face at least two to three times per week, with a further 10.3% seeing their managers once per week. Larger percentages spent face-time with their managers once to 2 – 3 times per month (12.8% and 17.9% respectively). More than forty-six percent of respondents spent face-time with their managers every 2 – 3 months or less, with the largest percentage (25.6%) seeing their manager only two to three times/year.

Table 1
Age, Job Classification, Tenure, and Face Time with Manager
(Study 2) (N = 39)

Age:

Age	Valid Percent
20 – 29 years	12.8
30 – 39 years	28.2
40 – 49 years	35.9
50 – 59 years	15.4

Job:

Job Classification	Valid Percent
Professional	10.3
Technical	5.1
Management	20.5
Sales	15.4
Financial	2.6
Consultant	2.6
Student	15.4
Other	23.1

Tenure:

Time in Current Job	Valid Percent
Less than 6 months	2.6
6 – 12 months	10.3
1 – 2 years	10.3
More than 2 years	71.8

Face time with Manager:

Frequency of face-to-face interaction with manager	Valid Percent
Several times/day	5.1
Once/day	2.6
2 – 3 times/week	2.6
Once/week	10.3
2 – 3 times/month	17.9
Once/month	12.8
Every 2 – 3 months	20.5
2 – 3 times/year	25.6

Procedures and Measures

Email messages were sent to doctoral students and faculty at Saint Mary's University and Dalhousie University, as well as to individuals employed in the Consumer Strategic Planning group at Aliant, Inc., inviting them to voluntarily complete a web-based survey and to forward the link to colleagues. As an incentive, potential respondents were told that a donation of \$1.00 per completed survey would be given to the Children's Wish Foundation. Respondents were provided with information about the purpose and context of the study, and the link to the survey itself, and were required to click a box indicating informed consent before proceeding (see Appendix F). Upon completion of the survey, they were presented with a screen thanking them for their participation, providing them with contact information from which they could request a high level summary of results when available.

The objective of this study was to develop and test scales to measure the concepts identified by the qualitative research conducted in Study 1 (Appendix G). I developed scales for eight of these concepts and adapted existing scales for two. The eleventh concept, types of communication media used, was measured with a checklist. I used the original wording from the interview transcripts as much as possible in formulating scale items, but changed the names of the original concepts identified in Study 1 to shorter variable names that more accurately reflected the scale items. All scales consisted of closed-ended questions that could be answered only by clicking check boxes and drop down menus. Before testing, the proposed scales were circulated to a selection of professors and graduate students in psychology and management for comments. Several

suggestions were incorporated into the scales. The survey was tested by five volunteers before the final survey was activated on the Web.

For testing purposes, I developed more items than I assumed would be required in the final scales. I used three principles to guide my selection of items for the revised scales.

1. Scales should be as short as possible while still measuring the construct reliably and validly. It was important to control the length of the final survey instrument to increase response rate.
2. Each scale should be internally consistent, with Cronbach's alpha statistics of greater than .70.
3. Each scale should be as independent from each other as possible, to ensure that different constructs were being measured.

After collection of survey responses, I analyzed each scale to determine its alignment with these principles and revised them as necessary.

The following measures were used; where different, original concept names from Study 1 are indicated in parentheses.

1. Efficacy (Learning Curve). From the Study 1 category "Learning Curve", I developed a 13-item scale to measure the respondent's perception of readiness to perform in a remote environment, which encompassed the nuances expressed by Study 1 participants - perceptions of preparedness for the job, comfort with the technology, and progress along the learning curve, along with the need for patience. Items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 2
Initial Efficacy

Scale Item
1. When I started this job, I possessed relevant experience and training
2. When I started this job, I was comfortable with my level of knowledge about the way things are done in this organization.
3. Getting accustomed to being managed remotely takes patience.
4. When I started this job, I was comfortable with the various forms of technology I used to interact with my manager and my colleagues.
5. When I started this job, I could “hit the ground running”
6. When I started this job, I was able to do the job with minimal supervision.
7. When I started this job, I did not require much assistance.
8. The company is getting better and better managing remotely.
9. My manager is still learning to manage people remotely.
10. My manager and I are still working out the bugs in how we work together
11. My colleagues are still adjusting to remote management.
12. I am still adjusting to this form of management.
13. My colleagues and I are still working out the bugs in how we work together

2. Perceived Interdependence (Group Support). To measure the concept of “Group Support” identified in Study 1, I adapted van der Vegt’s (van der Vegt et al., 1998) eight-item Task Interdependence measure, using only the six items that measured the respondent’s assessment of the extent to which he/she depends on colleagues for information and support, as well as the extent to which colleagues depend on him/her for support and information. Items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 3
Initial Perceived Interdependence

Scale Item
1. My colleagues depend on me for information and advice
2. My colleagues depend on my help and support
3. My colleagues depend on me for doing their work well
4. I depend on my colleagues for information and advice.
5. I depend on the help and support of my colleagues.
6. I depend on my colleagues for doing my work well.

3. **Network Importance (Network Support).** To measure the concept of “Network Importance” identified in Study 1, I developed six items to measure perceptions of the importance of having and using a network of colleagues/friends in a remote situation. The items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 4
Initial Network Importance

Scale Item
1. I have learned to rely on my network of peers and colleagues.
2. I communicate frequently with members of my network.
3. I have a network of people who work in the same location as my manager.
4. I use my network to track down my manager sometimes.
5. I rely on my network of colleagues for advice.
6. I use my network of colleagues for social support.

4. **Message-Medium Match.** To measure the first two of the five concepts contained in the Study 1 category “Communication”, I developed a series of questions about the relative use of various types of media generally and in circumstances in which the message content is of a complex, urgent or personal nature. These were constructed in matrix format, matching medium and percentage of time used. Additionally, I developed three items designed to measure the respondent’s perception of the value of using email specifically. These items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 5
Initial Message-Medium Match

1. Email can be cumbersome.
2. Email is useful for delivering information.
3. Using email allows me to control the type and tone of the information I send to my manager.
4. In general I communicate with my manager: Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time
5. When I am dealing with a COMPLEX situation, I communicate with my manager Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time
6. When I am dealing with an URGENT matter, I communicate with my manager: Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time

7. When I have a personal problem, I communicate with my manager

Face-to-face:

100% 75% 50% 25% less than 25% of the time

Telephone (one to one):

100% 75% 50% 25% less than 25% of the time

Email:

100% 75% 50% 25% less than 25% of the time

Instant Messaging/Chat:

100% 75% 50% 25% less than 25% of the time

Videoconference:

100% 75% 50% 25% less than 25% of the time

5. Face-to-Face Importance (Face-to-face Communication). I developed a scale which measured frequency and the respondent's perception of the value of face-to-face communication. A single question asked respondents to indicate how often they see their managers, with a mutually exclusive choice of ten responses ranging from several times per day to never. Six other items were designed to reflect the respondent's feelings about the importance and utility of meeting their managers face-to-face. These six items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree)

Table 6

Initial Face-to-face Importance

Scale Item
1. Face to face meetings with my manager are valuable.
2. I get the most valuable feedback when I meet my manager face to face.
3. It's difficult to establish a relationship without meeting your manager face to face on a regular basis.
4. The hotter the issue the more difficult it is to use any technology other than face to face.
5. I am more effective interacting with my manager through technology than face to face.
6. It is important to have regularly scheduled face to face meetings with my manager.

6. Regularly Scheduled Communication. I developed a nine-item scale to measure the respondent's general frequency of communication with the manager, whether this includes regularly scheduled communication, and the respondent's perceptions of the usefulness of regularly scheduled communication. The frequency question offered a mutually exclusive choice of eight answers, ranging from several times per day to less than once every 2 – 3 months. The eight items relating specifically to regularly scheduled communication were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 7
Initial Regularly Scheduled Communication

Scale Item
1. My manager and I have regularly scheduled times to communicate.
2. My manager is consistently available for scheduled remote meetings
3. I look forward to regularly scheduled communication opportunities.
4. I value our regularly scheduled communications.
5. I use regularly scheduled interactions to bring my manager up to date on day to day happenings.
6. I save up quick questions and pieces of information to tell my manager during regularly scheduled communications.
7. Regularly scheduled communication opportunities improve the working relationship between my manager and me.
8. Regularly scheduled communication opportunities increase my sense of belonging.

7. Unplanned Communication. I developed an eleven-item scale to assess the respondent's perception of the extent and nature of informal, unplanned communication with his/her manager, as well as the ideas of manager availability, manager-initiated contact, and non-task-related communication. The items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).”

Table 8
Initial Unplanned Communication

Scale Item
1. My manager and I often communicate at unplanned times.
2. My manager will sometimes just call to check in.
3. My manager will sometimes just pick up the phone and call to chat about something.
4. Sometimes we use technology to throw comments back and forth quickly.
5. I don't tell my remote manager the kinds of thing I would if I ran into him/her in the hallway.
6. I don't have the opportunity for casual contact with my manager.
7. My manager and I touch base frequently.
8. My manager is always available for me.
9. I would like to be able to communicate informally with my manager more often.
10. I can talk to my manager about anything
11. My manager never gets in touch with me unless there's a problem

8. Prior Knowledge. I developed an eight-item scale to measure the extent to which the respondent was familiar with his/her manager and/or that manager's workgroup before beginning to work in the remote position. Because respondents seemed to vary in their level of prior relationships with their managers, I intended the variable to include a range of familiarity with the manager – personal relationship, acquaintance, knowledge by reputation or knowledge by relationship with manager's other direct reports. By broadening the variable in this way, I hoped to be able to ultimately gauge the degree of relationship necessary to affect outcomes in the remote environment. The items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 9
Initial Prior Knowledge

Scale Item
Before working for my manager:
1. I was acquainted with him/her.
2. I had a personal relationship with him/her
3. I knew him/her by reputation before reporting to him/her
4. I trusted him/her before I began reporting to him/her.
5. I made a point of learning about him/her before I began to report to him/her.
6. I knew other people in the work group
7. I had friends in the workgroup
8. I had a good sense of how things got done in this group

9. Manager Trust (Manager Trust in Employee). I developed a seven-item scale, adapted from Mishra's (1994) sixteen-item Trust in Management scale, that assessed the respondent's perception of the manager's level of trust in him/her. Mishra's original scale assessed four components of trust: concern for the welfare of employees and competence, openness and reliability of the manager, as perceived by the subordinate. To assess subordinate's perceived level of the trust of the manager in him/her, I selected and adapted items that measured three of the four components. Because concern for employees was not applicable, items measuring this component were not included. The items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 10
Initial Manager Trust

Scale Item
My manager believes that:
1. I am competent and knowledgeable
2. I do not try to get out of commitments
3. I communicate honestly
4. I can contribute to our organization's success
5. I am reliable
6. I would not mislead him/her in my communications
7. I can be counted on

10. Control (Control Beliefs). I used Ashford's Powerlessness scale (Ashford et al., 1989), a three-item measure that assesses respondents' perceptions of their level of mastery over events that affect them within the organization. One of these items represented the concept that understanding the organizational context translates into increased perceptions of control. I developed three additional items to measure respondents' perceptions of their control over access to their managers. The items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 11
Initial Control

Scale Item
1. I have enough power in this organization to control events that might affect my job
2. In this organization, I can prevent negative things from affecting my work situation.
3. I understand this organization well enough to be able to control things that affect me
4. I have control over when I see my manager face to face.
5. I am able to see my manager when I feel I need to.
6. I can get in touch with my manager when I have to.

Results

In order to refine the scales to adhere to the guiding principles – length, internal consistency and independence - I examined the Item-Total Correlation, the Squared Multiple Correlation and the wording of each item to determine the most parsimonious set of items with which to assess each domain. I also incorporated feedback from respondents on question formatting and wording. This resulted in a reduction in most scales and a change to the structure of matrix questions about types of media used for various types of messages. The resulting measures met all three guiding principles. The average scale length was four items; internal consistency levels range from .77 to .99; 61% of the correlations between variables were $< .20$, with no single correlation higher than .59. The descriptive statistics, internal consistency values and inter-correlations for the resulting scales are summarized in Table 12. These statistics are unavailable for Message-Medium Match, because, as tested, the scales were unworkable and required significant change.

1. Efficacy. At thirteen items, the length of this scale was a concern and the internal consistency was marginally acceptable (.70). Because items #2, 5, 6, 7, 9 and 11 exhibited the highest item-total correlations, I initially included them in the reliability analysis. This six-item scale yielded a Cronbach's alpha of .78. However, when I inspected these items as a set, it appeared that they were tapping slightly different domains. Instead of assessing the respondent's perception of his/her ability to function without assistance, items #9 and #11 appeared to measure the respondent's perception of colleagues' and manager's learning curve. When these two items were deleted, internal consistency increased to .81. The results of this step of the analysis indicated that if item #2 was also deleted, internal consistency would increase to .85. Therefore, I deleted item

#2 and the resulting scale of three items parsimoniously assessed only the respondents' perceptions of their job readiness and exhibited a higher Cronbach's alpha (see Appendix H) (Cronbach's alpha = .85).

Table 13
Efficacy Scale Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. When I started this job, I possessed relevant experience and training	.2771	.4163	.6913
2. When I started this job, I was comfortable with my level of knowledge about the way things are done in this organization.	.4929	.6376	.6615
3. Getting accustomed to being managing remotely takes patience.	.2140	.3119	.6973
4. When I started this job, I was comfortable with the various forms of technology I used to interact with my manager and my colleagues.	.2117	.4454	.7005
5. When I started this job, I could "hit the ground running"	.6014	.7677	.6448
6. When I started this job, I was able to do the job with minimal supervision.	.5305	.7225	.6576
7. When I started this job, I did not require much assistance.	.4780	.5843	.6624
8. The company is getting better and better managing remotely.	-.2164	.4637	.7461
9. My manager is still learning to manage people remotely.	.6123	.7171	.6425
10. My manager and I are still working out the bugs in how we work together	.4194	.6090	.6708
11. My colleagues are still adjusting to remote management.	.5632	.7701	.6501
12. I am still adjusting to this form of management.	.0444	.5756	.7244
13. My colleagues and I are still working out the bugs in how we work together	.0580	.6831	.7186

2. Perceived Interdependence. The Cronbach's alpha for the six-item scale was acceptable at .73. However, items #3 and 6 appeared to introduce a slightly different

meaning than that represented by the other four items - these two items referred to performance rather than support and the exchange of information. Therefore, I reduced this scale to the four items (#1, 2, 4, 5) that measure the respondent's perceived reciprocal dependence on colleagues for support and information exchange. The resulting scale achieved a satisfactory level of internal consistency (see Appendix I) (Cronbach's alpha = .80).

Table 14
Perceived Interdependence Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. My colleagues depend on me for information and advice	.4929	.8263	.6826
2. My colleagues depend on my help and support	.4558	.8223	.6939
3. My colleagues depend on me for doing their work well	.4356	.4673	.7052
4. I depend on my colleagues for information and advice.	.5460	.6652	.6886
5. I depend on the help and support of my colleagues.	.6144	.7067	.6646
6. I depend on my colleagues for doing my work well.	.4128	.5906	.7197

3. Network Importance. I initially used a six-item scale to measure the respondent's extent and nature of use of a network. After analyzing the item-total correlations, the Cronbach's alpha and the content of the six items, I selected three items (#1, 2, 5) that measured respondents' reliance on and frequency of use of a network. The resulting scale achieved satisfactory internal consistency (See Appendix J) (Cronbach's alpha = .80).

Table 15
Network Importance Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. I have learned to rely on my network of peers and colleagues.	.6422	.6985	.7020
2. I communicate frequently with members of my network.	.5512	.4544	.7194
3. I have a network of people who work in the same location as my manager.	.4956	.4260	.7325
4. I use my network to track down my manager sometimes.	.4629	.4930	.7515
5. I rely on my network of colleagues for advice.	.6364	.6405	.7034
6. I use my network of colleagues for social support.	.3683	.2833	.7709

4. Message-Media Match. To determine usage of different types of media for different types of messages, I initially used a series of questions about each type of message, formatted as a matrix, with responses indicating percentage of time each type of medium was used in this situation. Respondents reported that the format was confusing, and interpretation of the results was difficult. Therefore, I developed a single question that included three subsets - messages of an urgent, complex, and personal nature - with five options of media type for each (see Appendix K). Moreover, the three original questions about email use were not internally consistent and were subsequently deleted. The resulting scale was far shorter and more easily interpreted.

Table 16
Message-Media Match Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. Email can be cumbersome.	-.0441	.0165	.3687
2. Email is useful for delivering information.	.1976	.0605	-.2214
3. Using email allows me to control the type and tone of the information I send to my manager.	.0361	.0677	.0896
4. In general I communicate with my manager: Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time	n/a	n/a	n/a
5. When I am dealing with a COMPLEX situation, I communicate with my manager Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time	n/a	n/a	n/a

<p>6. When I am dealing with an URGENT matter, I communicate with my manager:</p> <p>Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p>	n/a	n/a	n/a
<p>7. When I have a personal problem, I communicate with my manager</p> <p>Face-to-face: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Telephone (one to one): <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Email: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Instant Messaging/Chat: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p> <p>Videoconference: <input type="checkbox"/> 100% <input type="checkbox"/> 75% <input type="checkbox"/> 50% <input type="checkbox"/> 25% <input type="checkbox"/> less than 25% of the time</p>	n/a	n/a	n/a

5. Face-to-face Importance. I initially assessed the importance given to face-to-face meetings with the respondent's manager with a six-item scale. The Cronbach's alpha for this scale was unacceptable at .54. When I analyzed the set of six items, it appeared that items #1, 2 and 6 assessed the respondent's perception of the value of face-to-face meetings with the manager; items #3, 4, and 5 appeared to assess related

but different constructs. Items #1, 2, and 6 achieved a satisfactory level of internal consistency and measured the single domain of perceived importance (Cronbach's alpha = .77) (see Appendix L).

Table 17
Face-to-face Importance Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. Face to face meetings with my manager are valuable.	.6132	.6953	.3384
2. I get the most valuable feedback when I meet my manager face to face.	.3397	.6239	.4671
3. It's difficult to establish a relationship without meeting your manager face to face on a regular basis.	.4369	.4710	.4063
4. The hotter the issue the more difficult it is to use any technology other than face to face.	.2841	.4623	.4945
5. I am more effective interacting with my manager through technology than face to face.	-.3104	.3368	.7009
6. It is important to have regularly scheduled face to face meetings with my manager.	.4372	.4546	.4182

6. Regularly Scheduled Communication. The initial scale included eight items that asked respondents whether they had regularly scheduled communication with their managers, and what they perceived the value of such an arrangement to be. Based on respondent feedback and statistical analysis, I revised both the content and format of this scale. I restructured the scale for subsequent studies, so that question #1 "My manager and I have regularly scheduled time to communicate" was formatted as a conditional question. If the respondent answered yes, she/he continued to answer the questions in the scale. If the answer was no, the respondent proceeded to the next

section (See Appendix M). This ensured that only respondents who have actually experienced this arrangement provided assessments of its perceived value. The remaining items yielded a Cronbach's alpha of .90, but at eight items, the scale was somewhat lengthy. I analyzed the items as a set and it appeared that item #2 measured manager reliability, a slightly different construct from the utility and value of regularly scheduled communication, the construct represented by the other items. Through an iterative process of reliability analysis, I reduced the length of the scale to four items, #4, 5, 7, and 8, that appeared to measure the same construct and achieved an acceptable level of internal consistency (Cronbach's alpha = .90).

Table 18
Regularly Scheduled Communication Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. My manager and I have regularly scheduled times to communicate.	.4376	.4415	.9106
2. My manager is consistently available for scheduled remote meetings	.5212	.3984	.9000
3. I look forward to regularly scheduled communication opportunities.	.8354	.8043	.8724
4. I value our regularly scheduled communications.	.8883	.8642	.8682
5. I use regularly scheduled interactions to bring my manager up to date on day to day happenings.	.6830	.6527	.8879
6. I save up quick questions and pieces of information to tell my manager during regularly scheduled communications.	.7066	.5936	.8839
7. Regularly scheduled communication opportunities improve the working relationship between my manager and me.	.8749	.8449	.8729
8. Regularly scheduled communication opportunities increase my sense of belonging.	.6516	.6911	.8889

7. Unplanned Communication. Initially I used an eleven-item scale to measure the extent to which the respondent's manager initiated communication on an unplanned basis. The internal consistency was unacceptable (Cronbach's alpha = .26) and length was a concern. An examination of the item-total correlations suggested that items #2, 3, 7, and 11 be included in a shortened scale. As well, I considered item #1 "My manager and I often communicate at unplanned times" important in assessing the construct of unplanned communication. The resulting five-item scale yielded an unacceptable Cronbach's alpha of .46. However, this step of the analysis suggested that item #11 be deleted. The resulting scale, consisting of items #1, 2, 3, and 7 measured respondent perception of the frequency of unplanned communication and achieved satisfactory internal consistency (Cronbach's alpha = .80) (See Appendix N).

Table 19
Unplanned Communication Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. My manager and I often communicate at unplanned times.	.2115	.3951	.2026
2. My manager will sometimes just call to check in.	.5301	.7504	-.0734
3. My manager will sometimes just pick up the phone and call to chat about something.	.5457	.7357	-.0978
4. Sometimes we use technology to throw comments back and forth quickly.	.2853	.3722	.1459
5. I don't tell my remote manager the kinds of thing I would if I ran into him/her in the hallway.	-.0585	.4484	.3061
6. I don't have the opportunity for casual contact with my manager.	-.0525	.6178	.3002
7. My manager and I touch base frequently.	.3014	.7018	.1367
8. My manager is always available for me.	.0189	.7310	.2717
9. I would like to be able to communicate informally with my manager more often.	-.2269	.3524	.3721
10. I can talk to my manager about anything	-.1102	.3346	.3141
11. My manager never gets in touch with me unless there's a problem	-.3840	.5797	.4387

8. Prior Knowledge. I initially measured the extent to which the respondent was familiar with both his/her manager and the manager's workgroup before the current job assignment using an eight-item scale. Cronbach's alpha was acceptable for this scale (Cronbach's alpha = .84), but length was a concern. Furthermore, when I analyzed the set of items, it appeared probable that item #4 would tap a domain, trust in manager, that was related to but different from the other items. I deleted this item, as well as item #5, which exhibited a markedly lower item-total correlation than the other items.

The resulting scale of six items (#1, 2, 3, 6, 7, 8) yielded satisfactory Cronbach's alpha of .84 and was an acceptable length (See Appendix O).

Table 20
Prior Knowledge Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. I was acquainted with him/her.	.7614	.7191	.7996
2. I had a personal relationship with him/her	.5258	.4972	.8319
3. I knew him/her by reputation before reporting to him/her	.6702	.5808	.8133
4. I trusted him/her before I began reporting to him/her.	.7497	.6817	.8044
5. I made a point of learning about him/her before I began to report to him/her.	.0898	.1823	.8751
6. I knew other people in the work group	.6545	.7037	.8155
7. I had friends in the workgroup	.5897	.6585	.8243
8. I had a good sense of how things got done in this group	.5818	.4736	.8258

9. **Manager Trust.** To measure respondents' perceptions of the extent to which they were trusted by their managers, I developed a seven-item scale, adapted from Mishra's (1994) sixteen-item Trust in Management scale. Mishra's original scale measures four components of trust: competence, openness, reliability and caring. From the perspective of managerial trust in the employee, I considered only the first three to be relevant, and adapted items that measured those components. I chose item # 3 to assess the openness component, item #5 to assess the reliability component, and item #7 to assess the competence component. The resulting three-item scale achieved satisfactory internal consistency (Cronbach's alpha = .99) (See Appendix P).

Table 21
Manager Trust Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
My manager believes that:			
1. I am competent and knowledgeable	.0067	.5028	.9470
2. I do not try to get out of commitments	.8291	.7819	.8796
3. I communicate honestly	.9195	.9568	.8599
4. I can contribute to our organization's success	.6287	.6662	.8967
5. I am reliable	.8399	.9472	.8710
6. I would not mislead him/her in my communications	.8999	.8917	.8635
7. I can be counted on	.8988	.9780	.8627

10. Control. Respondent perception of the control they exhibited over their surroundings was initially measured by the three-item Powerlessness scale (Ashford et al., 1989), supplemented by three items I developed for this study, which aimed to measure perceptions of control in the remote context (e.g. "I have control over when I see my manager face-to-face"; "I am able to see my manager when I need to"; and "I can get in touch with my manager when I need to"). The Cronbach's alpha for this scale was unacceptable at .60. Furthermore, when I analyzed the set of items, it was clear that different constructs were being assessed by the six items. Therefore, the three additional items were dropped and the original three items (#1, 2, 3) from the Ashford, Lee & Bobko scale were used in the next two studies (Cronbach's alpha = .85) (see Appendix Q). These items reliably measure respondents' perceptions of their level of control over organizational events.

Table 22
Control Results

Scale Item	Item-Total Correlation	Squared Multiple Correlation	α if Item Deleted
1. I have enough power in this organization to control events that might affect my job	.4572	.5633	.4869
2. In this organization, I can prevent negative things from affecting my work situation.	.4454	.5432	.4986
3. I understand this organization well enough to be able to control things that affect me	.5118	.6333	.4736
4. I have control over when I see my manager face to face.	.2989	.3621	.5630
5. I am able to see my manager when I feel I need to.	.2116	.5142	.6120
6. I can get in touch with my manager when I have to.	.0780	.4017	.6292

Table 12

Descriptive statistics, internal consistency values and inter-correlations for variables used in Study 2.

	M	SD	α [§]	1	2	3	4	5	6	7	8	9
1. Efficacy	4.70	1.23	.85	--								
2. Perceived Interdependence	4.99	.87	.80	.12	--							
3. Face-to-Face Communication	5.28	1.14	.77	-.55**	.22	--						
4 Regularly Scheduled Communication	4.60	1.64	.90	-.49**	.45**	.52**	--					
5. Unplanned Communication	4.39	1.44	.80	.06	.31	.02	.14	--				
6. Network Importance	5.38	1.00	.80	-.07	.59**	.24	.46**	.31	--			
7. Prior Knowledge	3.83	1.44	.84	.16	-.04	-.16	-.22	.09	-.00	--		
8. Manager Trust	6.09	1.1	.99	.12	.04	.10	-.08	.24	.15	-.14	--	
9. Control	4.07	1.25	.85	.26	.21	-.19	.07	.10	-.03	-.11	-.15	--

Note: Listwise N for correlations = 36

§Cronbach's index of internal consistency for revised scale

** p<.01, * p<.05

Discussion

Study 2 was conducted to develop and test an instrument with which to measure the contextual elements that had been identified in Study 1 as relevant in a remote leadership relationship. The result is an instrument that incorporates the findings of Study 1 and adheres to the guiding principles noted earlier: conciseness, internal consistency and orthogonality.

The initial version of the instrument measured ten different constructs using sixty-eight items. The revised version measured the same constructs using forty-two items. Although it is acceptable in certain circumstances to develop an item pool 50% larger than the final scale (de Vellis, 1991), my initial scales were approximately twice as large as I anticipated I would need. Respondents were not negatively impacted by this length because the online format, with drop down boxes, enabled them to complete the instrument accurately in approximately twelve minutes. Through statistical and rational analysis, as well as respondent input, I was able to reduce the overall length by 40%. The wording of the scale items was inspired by the responses of the participants in Study 1 interviews, which may have contributed to the fact that they presented no apparent difficulties. However, the format of the scale used to measure the variable entitled "Message-Media Match" was problematic in terms of interpretation of results. I changed the format from a matrix style scale to individual questions with subsections and mutually exclusive options for answers. The resulting instrument was concise and user-friendly, which are important characteristics in achieving acceptable response rates in subsequent studies (Yammarino, Skinner, & Childers, 1991).

The internal consistency of the resulting set of scales was high, with each exceeding .7, the recommended level of Cronbach's alpha (Nunnally, 1978). The corrected item-total correlation coefficient of the 42 items in the final scales ranged from .4396 to .9599. The high values of these two indicators of internal consistency demonstrate that the resulting scales are unidimensional.

This study resulted in seven original and two adapted scales, most of which were nearly orthogonal (Table 12), as well as a series of easy-to-answer questions to measure frequency and type of communication. There were few correlations that attained significance at the $p < .01$ level and those that did were of moderate magnitude, ranging from .45 to .55, suggesting that the scales each measure a different facet of the remote environment.

In summary, the outcome of Study 2 is a set of scales and questions that measure a significant, but previously unexplored aspect of remote leadership – the context. Taken together they provide an instrument that demonstrates high internal consistency and orthogonality, while being concise and easy to understand. This instrument was tested on a large sample in Study 3.

STUDY 3

Method

Introduction

The first goal of Study 3 was to assess and refine the measurement model developed in Study 2. To determine whether the variables represented orthogonal and internally reliable constructs, I conducted a factor analysis and incorporated the results into further testing. The second goal of Study 3 was to use the resulting measures to test hypotheses about the relationships amongst the contextual characteristics, leadership style, individual characteristics and individual outcomes in the remote management relationship. Specifically I wanted to test the hypothesis that contextual factors predict perceptions of transformational leadership, which in turn predicts individual level outcomes. The role of context in predicting perceptions of leadership has been recognized in theory for some time (Antonakis, Avolio, & Sivasubramaniam, 2003; Fiedler, 1967; House, 1971), but there has been little empirical investigation into this effect, in either the proximal or the remote environment. In contrast, the association between perceptions of transformational leadership and positive individual outcomes in the face-to-face environment has been fully supported by research (Barling et al., 1996; Dvir et al., 2002; Kirkpatrick & Locke, 1996). Furthermore, I wanted to determine whether the individual characteristic, need for leadership, moderated any of these relationships.

In the proximal environment, there has been extensive investigation of the moderating effect of a range of individual characteristics on the relationship between leadership style and individual outcomes (Dvash & Mannheim, 2001; Ehrhart & Klein,

2001; Felfe & Schyns, 2002; Howell & Avolio, 1993; Kirkpatrick & Locke, 1996; Schriesheim, 1980; Shamir & Howell, 1999; Wofford et al., 2001) which have largely demonstrated weak to moderate effects (de Vries et al., 2002). In the remote environment, to date, only a few specific individual attributes, such as remote self-efficacy and cognitive style, have been investigated and found to both directly and indirectly affect individual outcomes (Staples et al., 1999; Workman et al., 2003). Certainly the salience of individual characteristics in this environment has been proposed in a number of conceptual pieces (Avolio et al., 2000; Shin, 2004). However, beyond that, the relationship between individual characteristics, leadership style and outcomes in a remote environment has not been investigated. Given the differences between the two environments, it appears plausible that how individuals perceive their leader may be influenced by individual characteristics to a greater degree in a relationship characterized by distance. The variable, need for leadership, is an acquired need and is contextual, based on the individual's assessments of the particular situation (de Vries et al., 2002). For example, if the context is such that the individual perceives a lack of competence or experiences feelings of reduced efficacy, the assistance of the leader will be welcomed. In a different setting, however, in which the same individual may be more confident, the intervention of the leader may be undesirable (de Vries et al., 2002). The proposed moderating variable is inclusive enough to reflect variations in the levels of the contextual characteristics identified as important by the participants in Study 1. As specific to the leader-member interaction as this variable is, it could reasonably be expected to exhibit significant effects on the relationships between these contextual characteristics and perceptions of leadership style.

Therefore, the following hypotheses are proposed:

Hypothesis 1: Need for leadership will moderate the relationships between perceptions of transformational leadership and the following contextual variables:

- 1a: control
- 1b: prior knowledge
- 1c: regularly scheduled communication
- 1d: unplanned communication
- 1e: perceived interdependence
- 1f: face-to-face importance
- 1g: efficacy
- 1h: network importance

There has been some investigation into the role played by individual characteristics in the relationship between transformational leadership and individual outcomes in the proximal environment (Felfe et al., 2004). In fact, de Vries and colleagues (2002) specifically investigated the effect of individual need for leadership on job satisfaction and found a small moderating effect; high need for leadership was associated with a slightly stronger relationship between transformational leadership and job satisfaction than was low need for leadership. Other research suggests a slightly positive correlation between perceived transformational leadership and followers' occupational self-efficacy (Felfe et al., 2004). On a contradictory note, other findings suggest only negligible relationships between followers' need for independence, transformational leadership and competence (Podsakoff et al., 1996). There is no research that has tested these relationships yet in the remote environment, but given the strength of the evidence from the proximal environment, it is reasonable to assume that individual characteristics may influence these relationships.

Therefore the following hypotheses are proposed:

Hypothesis 2: Need for leadership will moderate the relationships between transformational leadership and the individual outcomes:

- 2a: job satisfaction
- 2b: organizational commitment
- 2c: manager trust

The research in the proximal environment strongly demonstrates that transformational leadership predicts individual level outcomes, such as job satisfaction and organizational commitment (Barling et al., 1996; Bycio, Hackett, & Allen, 1995; Podsakoff et al., 1990). However, transformational leadership has seldom been considered as a mediating variable (Bommer, Rubin, & Baldwin, 2004). Despite much theorizing, the empirical evidence is thin; Bommer, Rubin and Baldwin (2004) recently demonstrated that two contextual variables, cynicism about organizational change and peer leadership behavior, explained 24% of the variation in transformational leadership, suggesting that contextual characteristics may play a substantial role in the prediction of transformational leadership. Not only is there little research into antecedents of transformational leadership in the proximal environment, there is even less in the remote environment. Participants in the qualitative interviews in Study 1 voiced their perception that contextual characteristics strongly influenced their relationships with their remote managers. Therefore, it seems plausible, that, given the strength of context in the remote environment, as suggested both in the literature and by the participants in Study 1, context characteristics of the remote leader-member relationship may function as antecedents of perceptions of transformational leadership,

which in turn predict job satisfaction, organizational commitment and perceptions of manager trust. The prediction of job satisfaction and organizational commitment has been repeatedly demonstrated, as noted above. The prediction of perceived manager trust has not previously been explored, but the findings of Study 1 suggest that it may be an important outcome in the remote relationship that is characterized by distance and limited face-to-face contact. When a follower perceives that a leader exhibits respect and consideration, encouragement to think in new ways and challenge assumptions, and gives encouragement, the follower's sense of self-efficacy may be increased. Self-efficacy has been previously associated with perceptions of leader effectiveness (Felfe & Schyns, 2002; van Knippenberg, van Knippenberg, de Cremer, & Hogg, 2004). Furthermore, when followers perceive that the manager acts in a supportive and considerate manner, they may feel less vulnerable to the effects of wrong attributions by and third party political influences on the manager; in other words, they may perceive a level of manager trust in them.

Therefore, the following hypotheses are proposed:

Hypothesis 3: Perceptions of transformational leadership will mediate the relationships between contextual characteristics and individual level outcomes:

3a₁: control and job satisfaction,

3a₂: control and organizational commitment

3a₃: control and manager trust

3b₁: prior knowledge and job satisfaction

3b₂: prior knowledge and organizational commitment

3b₃: prior knowledge and manager trust

3c₁: regularly scheduled communication and job satisfaction

3c₂: regularly scheduled communication and organizational commitment

3c₃: regularly scheduled communication and manager trust

3d₁: unplanned communication and job satisfaction
 3d₂: unplanned communication and organizational commitment
 3d₃: unplanned communication and manager trust

3e₁: perceived interdependence and job satisfaction
 3e₂: perceived interdependence and organizational commitment
 3e₃: perceived interdependence and manager trust

3f₁: face-to-face importance and job satisfaction
 3f₂: face-to-face importance and organizational commitment
 3f₃: face-to-face importance and manager trust

3g₁: efficacy and job satisfaction
 3g₂: efficacy and organizational commitment
 3g₃: efficacy and manager trust

3h₁: network importance and job satisfaction
 3h₂: network importance and organizational commitment
 3h₃: network importance and manager trust

Participants

The subjects for this study were employees of Nortel Networks who worked as fulltime telecommuters. There were 701 valid responses, representing a response rate of 27%. The sample consisted mostly of individuals in either professional or management positions (40.9% and 31.4% respectively), with the majority (75.6%) between the ages of 30 and 50. Most respondents (89%) had been in their current job more than two years. The majority of respondents were male (64.1% male; 35.9% female).

To preserve anonymity, information about respondents' location was not recorded, so geographic distribution of the sample could not be determined. The nature of this workforce, however, is that they are dispersed worldwide. Many respondents self-identified in separate emails as residing in Europe, Asia and the United States, as well as Canada. Demographic information for the sample is presented in Table 23.

This sample could be described as consisting mostly of workers who largely interact with their managers through technology. Only a small number of respondents (3.6%) reported that they see their managers face-to-face at least two to three times per week, with a further 4.7% seeing their managers once per week. Similar percentages spent face-time with their managers once to 2 – 3 times per month (9.8% and 10.5% respectively). More than seventy percent of respondents spent face-time with their managers every 2 – 3 months or less, with the largest percentage (22%) never seeing their manager. More than 72% of respondents were located in a different province and/or country than their managers, while only 15% were located in the same city and 3.7% in the same building.

Table 23

Age, Job Classification, Tenure, Face Time and Physical Remoteness from Manager
(Study 3) (N = 701)

Age:

Age	Valid Percent
20 – 29 years	2.3
30 – 39 years	30.1
40 – 49 years	45.5
50 – 59 years	19.3
60+ years	2.7

Job:

Job Classification	Valid Percent
Professional	40.9
Technical	31.4
Management	21.6
Clerical	1.0
Other	5.0

Tenure:

Time in Current Job	Valid Percent
Less than 6 months	1.7
6 – 12 months	3.3
1 – 2 years	5.4
More than 2 years	89

Distance from Manager:

Location of manager	Valid Percent
In the same building	3.7
In a different building, same city	9.0
In the same province/state, different city	15.0
In a different province/state and/or country	72.3

Face time with Manager:

Frequency of face-to-face interaction with manager	Valid Percent
Several times/day	.1
Once/day	.6
2 – 3 times/week	2.9
Once/week	4.7
2 – 3 times/month	10.5
Once/month	9.8
Every 2 – 3 months	11.8
2 – 3 times/year	17.2
Once/year	20.3
Never	22.1

Procedures and Measures

An email message was sent by Peter Browne, VP, Real Estate and Business Continuity Planning, Nortel Networks, to 2600 fulltime telecommuters inviting them to voluntarily complete a web-based survey on remote leadership (see Appendix R). Respondents were provided with information about the purpose and context of the study, and the link to the survey itself, and required to click a box indicating informed consent before proceeding (see Appendix F). Upon completion of the survey, they were presented with a screen thanking them for their participation, providing them with contact information from which they could request a high level summary of results when available.

The survey included closed-ended questions that could be answered only by clicking check boxes and drop down menus. The preliminary section of the survey asked respondents questions about the context of their jobs, including variables that had been highlighted as important during the preceding qualitative research. These variables included: physical distance from manager; number of face-to-face contacts with manager; type of medium used to interact with manager when dealing with issues that were personal, complex, or urgent; and type and frequency of communication with manager. Scales had been developed in Study 2 to assess other aspects of the working relationship, again, emphasizing conditions that were considered important in a remote relationship; items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). These scales measured the following variables:

Efficacy. This three-item scale measured the respondent's feeling of preparedness when beginning the job (Cronbach's alpha = .87). (See Appendix H)

Perceived Interdependence. This four-item scale measured the respondent's assessment of the extent to which he/she depends on colleagues for information and support, as well as the extent to which colleagues depend on him/her for support and information (Cronbach's alpha = .86). (See Appendix I).

Network Importance. The extent to which the respondent used and relied upon a network was measured using a three-item scale. (Cronbach's alpha = .87). (See Appendix J).

Face-to-face Importance. The importance given to face-to-face meetings with the respondent's manager was assessed using a three-item scale. (Cronbach's alpha = .87). (See Appendix L).

Regularly Scheduled Communication. If the respondent and his/her manager established regular times for communication, respondents were asked to complete this four-item scale, which measured the importance of these interactions to the respondent (Cronbach's alpha = .97). (See Appendix M).

Unplanned Communication. This four-item scale measured the extent to which the respondent's manager initiated communication on an unplanned basis (Cronbach's alpha = .82). (See Appendix N).

Prior Knowledge. The extent to which the respondent was familiar with his/her manager and the manager's group before the current job assignment was measured using a six-item scale (Cronbach's alpha = .84). (See Appendix O).

Manager Trust. Manager trust in the respondent, as perceived by the respondent, was measured by three-item scale (Cronbach's alpha = .95). (See Appendix P).

Other variables that were hypothesized to affect outcomes in a remote context were measured using existing scales, with psychometrically acceptable properties. All variables, except for transformational leadership, were rated on 7 point response scale ranging from 1 (very strongly disagree) to 7 (very strongly agree).

Control. Respondent perception of the control they exhibited over their surroundings was measured by the three-item Powerlessness scale (Ashford et al., 1989). In this study, Cronbach's alpha = .88 (See Appendix Q).

Transformational Leadership. Leadership style was measured using the seven-item Global Transformational Leadership scale (Carless, Wearing, & Mann, 2000). Items were rated on a 5 point scale, ranging from 1 (rarely or never) to 5 (very frequently, if not always). This measure was found to assess a single global construct of transformational leadership, and to have acceptable discriminant and convergent validity. In this study, Cronbach's alpha = .95). (See Appendix Y.) Because I was using this short assessment instrument, I included three other measures of leadership constructs, related to components of transformational leadership: perceived leader integrity, perceived supervisory support and trust in manager.

Perceived Leader Integrity. Perceived leader integrity was measured using twelve items from the thirty-item Perceived Leader Integrity Scale (PLIS) developed by Craig & Gustafson (1998). The PLIS has demonstrated satisfactory internal consistency, with a stable Cronbach's alpha greater than .97 across differing populations. As well, in testing, the PLIS has demonstrated both satisfactory convergent and discriminant validity. From the results of exploratory factor analysis, the PLIS appears to be a unidimensional instrument (Craig & Gustafson, 1998). In order to minimize the length of the survey, for

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this study, only the 12 items with the highest factor loadings were selected. Cronbach's alpha for the subset of this scale = .96. (See Appendix T)

Perceived Supervisory Support. To assess employees' perception that their supervisor valued their contribution and cared about their well-being, an adapted version of the eight-item Shortened Perceived Organizational Support (SPOS) scale was used. In this version, the word "organization" was replaced with the term "supervisor". In use, the internal reliabilities of this adapted scale ranged from .81 to .90 (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002). In this study, Cronbach's alpha = .91. (See Appendix U)

Trust in Manager. Trust in manager was measured using the sixteen-item version of the Trust in Management scale (Mishra & Mishra, 1994). This scale measures four components of trust: openness, competence, reliability, and concern. These items have been shown to have acceptable levels of validity and reliability and were found to load on a single factor in a factor analysis (Mishra, 1993; Spreitzer & Mishra, 1999). The trust construct, comprising four dimensions achieved a satisfactory Cronbach alpha reliability (e.g. .93) in other studies (Spreitzer & Mishra, 1999). In this study, Cronbach's alpha = .97. (See Appendix S).

Organizational Commitment. To measure affective organizational commitment, the six-item version of the Organizational Commitment scale was used (Allen & Meyer, 1990). This scale has been shown to have acceptable psychometric properties in previous research (Allen & Meyer, 1996). In this study, Cronbach's alpha = .81. (See Appendix V).

Need for Leadership. To examine the moderating effect of the employee's need for leadership, the seventeen-item scale developed by de Vries, Roeb, and Taillieuc (2002) was used. The scale has previously been shown to be unidimensional and have high reliabilities in studies among agents of an insurance company (coefficient alpha =.91) and employees of three municipalities ($\alpha =.92$). The convergent and discriminant validity of this scale have also been shown to be satisfactory (de Vries et al., 2002). In this study, Cronbach's alpha = .88. (See Appendix W).

Job satisfaction. To assess job satisfaction, the five-item general satisfaction scale from the Job Diagnostic Survey (Hackman & Oldham, 1975) was used. In this study, Cronbach's alpha = .85. (See Appendix X)

Results

An initial screening of the data for univariate and multivariate outliers and violations of assumptions, including non-linearity, non-normality, multicollinearity and heteroskedasticity was conducted. Other than noted below, no outliers were identified and no assumptions were violated. Four measures, instant messaging, other communication, collocation and remote status exhibited substantial skew. More than half of respondents reported that they had never used instant messaging or “other” methods to communicate with their managers. Ninety-six per cent of respondents were not located with their managers and more than half were not in a mixed collocation arrangement. These four measures were therefore omitted from further analysis. For all subsequent analyses, missing data were treated using listwise deletion.

Factor Analysis

To assess the factorial validity of the scales developed in the previous two studies, I conducted an exploratory principal components analysis with Varimax rotation on thirty-six items using SPSS. Tabachnick and Fidell (2001) suggest that loadings above .55 are good, while those below .32 should not be interpreted. Following this suggestion, I chose .55 as the cutoff for interpretation. All loadings are presented in Table 24, with those above .55 presented in bold typeface. Nine factors were extracted based on the fact that their eigenvalues were greater than 1 (Tabachnik & Fidell, 2001). All items except one loaded on only one factor, resulting in a simple structure for all nine factors. Item Q. 7 loaded strongly on Factor 4 and weakly on Factor 7. Both oblique and orthogonal rotations yielded the same factor structure. For clarity I present only the orthogonal loadings in Table 24.

Table 24
Factor Loadings and Communalities

Item	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	F ₈	F ₉	h ²
Q1. When I started this job, I could "hit the ground running."	.04	.00	.02	.07	.06	.02	.04	.10	.89	.79
Q.2 When I started this job, I was able to do the job.	.06	-.01	.02	-.00	.04	-.06	-.03	.06	.88	.77
Q.3 When I started this job, I did not require much assistance.	-.03	.00	-.04	.05	.09	-.08	.07	.05	.90	.81
Q.4 My colleagues depend on me for information and advice.	.02	-.01	.07	.81	.19	-.09	.08	.14	.15	.66
Q.5 My colleagues depend on my help and support.	-.02	-.02	.08	.85	.19	-.07	.08	.09	.11	.72
Q.6 I depend on my colleagues for information and advice.	.06	.04	.11	.82	.01	.05	.29	.01	-.05	.67
Q.7 I depend on the help and support of my colleagues.	.09	.11	.08	.76	-.01	.04	.34	-.03	-.07	.58
Q.8 Face-to-face meetings with my manager are valuable.	.06	.02	.11	.05	-.01	.87	.06	-.02	.00	.76
Q.9 I get the most valuable feedback when I meet with my	.03	-.01	.03	-.04	-.10	.88	.05	-.06	-.05	.77

manager face-to-face.										
Q.10 It is important to have regularly scheduled face-to-face meetings with my manager.	-.04	.03	.06	-.07	-.08	.88	.04	-.01	.02	.77
Q.11 In general, how often do you see your manager face-to-face?	.08	-.15	.14	-.02	-.03	.53	-.22	.04	-.10	.28
Q.12 In general, how often do you exchange email with your manager?	.05	.17	.73	.15	-.03	.04	-.11	.01	.01	.53
Q.13 In general, how often do talk on the telephone with your manager?	.13	.16	.77	.07	-.01	.04	-.06	.02	-.00	.59
Q. 14 I value our regularly scheduled communications.	.04	.96	.05	.03	-.03	-.01	.02	.06	.01	.92
Q.15 I use regularly scheduled interactions to bring my manager up to date on day-to-day happenings.	.02	.95	.02	.01	.05	-.07	.02	.07	.02	.90
Q.16 Regularly scheduled communication opportunities improve the working relationship between my	.03	.97	-.01	.04	.02	-.01	.01	.05	-.02	.94

manager and me.										
Q.17 Regularly scheduled communication opportunities improve the working relationship between my manager and me.	.04	.96	-.01	.02	.02	.08	.01	.04	-.03	.92
Q.18 My manager and I often communicate at unplanned times.	.13	-.18	.66	.09	.02	.18	.23	-.02	-.04	.44
Q.19 My manager will sometimes just call or drop by to check in.	.04	-.11	.74	-.02	.10	.03	.08	.11	-.17	.55
Q.20 My manager will sometimes just pick up the phone and call to chat about something.	.03	.10	.75	-.02	.08	.04	.11	.15	-.03	.56
Q.21 My manager and I touch base frequently.	.06	.08	.81	.09	.11	.06	.04	.13	.03	.66
Q.22 I have learned to rely on my network of peers and colleagues.	.02	.00	.02	.20	.08	-.02	.87	.07	.06	.76
Q.23 I communicate frequently with members of my network.	-.05	.02	.08	.19	.11	0.04	.83	.09	.07	.69
Q.24 I rely on my network of colleagues for advice.	.05	.03	.11	.24	-.01	.03	.82	.04	-.05	.67

Q.25 Before working for my present manager, I was acquainted with him/her	.84	-.01	.08	.03	.04	-.05	-.06	.01	.06	.71
Q.26 Before working for my present manager, I had a personal relationship with him/her.	.76	-.03	.14	.08	-.01	.06	-.06	.02	.01	.58
Q.27 Before working for my present manager, I knew him/her by reputation before reporting to him/her.	.81	-.00	.12	.04	-.04	.03	-.03	.06	.01	.66
Q.28 Before working for my present manager, I knew other people in the workgroup.	.82	.03	.01	.00	.06	.03	.11	.03	.03	.67
Q.29 Before working for my present manager, I had friends in the workgroup.	.82	.07	.00	.00	.05	.02	.08	.05	-.01	.67
Q.30 Before working for my present manager, I had a good sense of how things got done in this group.	.85	.06	.07	-.01	.07	.02	.03	.09	.03	.72
Q.31 I have enough power in this organization to control events that	.08	.09	.10	.07	.11	-.01	.06	.87	.07	.76

affect my job.										
Q.32 In this organization, I can prevent negative things from affecting my work situation.	.09	.10	.14	.05	.08	-.02	.05	.88	.05	.77
Q.33 I understand this organization well enough to be able to control things that affect me.	.08	.02	.13	.07	.06	-.02	.07	.89	.10	.79
Q.34 My manager believes that I communicate honestly.	.07	.03	.14	.10	.88	-.08	.06	.07	.05	.77
Q.35 I am reliable.	.05	.04	.08	.12	.95	-.07	.06	.09	.07	.90
Q.36 My manager believes that I can be counted on.	.05	.04	.08	.11	.94	-.08	.05	.09	.08	.88
Total Eigenvalue	6.06	3.96	3.80	3.21	2.78	2.28	1.95	1.82	1.46	
% of Variance	16.85	11.00	10.57	8.92	7.66	6.33	5.41	5.06	4.05	

Factor: Prior Knowledge

The factor was defined by six items and accounted for 16.85% of the total rotated variance. Items were meant to assess the extent to which the respondent was familiar with the manager and/or the manager's group before entering into the remote relationship. Q. 25, Q. 26, Q. 28 and Q. 29 asked whether the respondent had a personal relationship or was acquainted with the manager or some one in that manager's group. Q. 27 asked whether the respondent knew the manager by reputation and Q. 30 asked if the respondent had a sense of how the group worked. All six items loaded strongly on a single factor. Because the items measured both direct and indirect knowledge of the manager, group members and manner of group functioning, the factor name "prior knowledge" is appropriate.

Factor: Regularly Scheduled Communication

The factor was defined by five items and accounted for 11.00% of the total variance. This factor represents the concept of regularly scheduled communication. Items ask about the respondents' perceptions of the importance, use and impact of having regularly scheduled times to communicate with their managers. The wording of the items and the factor name itself are taken from words used by interview participants in Study 1. All items loaded very strongly on this one factor, with no cross loadings.

Factor: Unplanned Communication

This factor was defined by six items and accounted for 10.57% of the total variance. It represents the concept of unscheduled and informal communication, in contrast to the more formal regularly scheduled interactions and the manager-

initiated interactions in response to a specific problem. The items measure the respondents' perception of the extent to which such unplanned communication takes place. Two of the items, Q. 20 and Q. 21, refer to manager-initiated communication specifically. The other two questions, Q. 19 and Q. 22, are initiator neutral. These items loaded strongly together, ranging from .66 to .81. Two other items also loaded strongly with this factor: frequency of telephone and email communication loaded .77 and .73 respectively. Two of the questions (Q. 19 and Q. 20) specifically refer to the manager "calling" or picking up the "phone". The other two questions (Q. 18 and Q. 21) do not specify the communication medium, but with the ubiquitous use of email, it is not surprising that email frequency is related to unplanned, informal communication. No other items loaded on this factor.

Factor: Perceived Interdependence

The factor was defined by four items and accounted for 8.92% of the total variance. It represents the reciprocal need for information and support between a respondent and his or her colleagues. This is meant to reflect the relationship between individuals within the same organization. Q. 4 and Q. 5 reflect the respondent's perception of colleagues' need for information and support or received interdependence, while Q. 6 and Q. 7 measure the respondent's perception of his/her own dependence on colleagues (initiated interdependence) (van der Vegt et al., 1998). All four items loaded strongly on one factor, ranging from .76 to .81. The only cross loading occurred with one item. Q. 7, "I depend on the help and support of my colleagues" loaded .76 on "perceived

interdependence” and .34 on Factor 7 called “network importance”. Adhering to my cutoff point of .55, I ignored this duplicate loading.

Factor: Manager Trust

The factor was defined by three items and accounted for 7.66% of the total variance. It represents respondents’ beliefs about their managers’ trust in them. All items load strongly on the single factor, ranging from .88 to .95. The items reflect the respondents’ perceptions about their managers’ belief in their honesty and reliability. These have been included in various studies as components of trust (Dirks & Ferrin, 2002; Kramer & Tyler, 1996), suggesting that this is respondents’ perception of their managers’ trust in them.

Factor: Face-to-Face Importance

The factor was defined by three items and accounted for 6.33% of the total variance. It measures the importance with which respondents view face-to-face interactions with their managers. Q. 8 and Q. 10 directly deal with importance, while Q. 9 measures respondents’ perceptions that they receive the most important feedback in face-to-face interactions. These three items exhibit very high loadings of .87, .88, and .88 on the factor. The fourth question in this section asks about frequency of face-to-face communication. Although this item loaded fairly highly (.53) and uniquely on this factor, it did not meet the cutoff of .55 and was deleted.

Factor: Network Importance

The factor was defined by three items and accounted for 5.41% of the total variance. It measures respondents' perceptions that they have and use a network of contacts. The use of the term "network" implies that these individuals are not part of the respondents' workgroups. In the qualitative interviews in Study 1, this term was used to refer specifically to contacts with individuals outside of the organization or the industry. This construct differs from "perceived interdependence" in this implied reliance on a network of external individuals for support and advice, while "perceived interdependence" represents a measure of task interdependence, through its emphasis on reciprocal need for exchange of information and advice with group and/or organizational members. The three items exhibited strong loadings of .82, .83 and .87, with no cross loadings.

Factor: Control

The factor was defined by three items and accounted for 5.06% of the total variance. It represents respondents' perceptions that they have some measure of mastery over their work situations. These items constitute a previously developed Powerlessness Scale (Ashford et al., 1989). In Study 2, the scale included other items that had been developed in response to findings in Study 1. However, the internal consistency of the enhanced scale was not acceptable, and the new items were deleted. The original three items load strongly (.87, .88 and .89) on a single factor and measure the construct sufficiently. Because the word "control" reflects the concepts expressed by respondents in Study 1 more accurately than the word "powerlessness", and is, in fact used in two of the three items, I chose to call this scale "control" in subsequent analysis.

Factor: Efficacy

The factor was defined by three items and accounted for 4.05% of the total variance. It represents respondents' perceptions of job readiness, that they were able to function effectively when they began their current jobs. The intent of these three items collectively was to detect the presence of a learning curve in working at a distance from one's manager. All items loaded very strongly (.88, .89, .90) on a single factor. Because these items reflect participants' beliefs about their ability to do the job, the label "efficacy" is appropriate.

Correlation Analysis

Descriptive statistics and correlations for all study variables are displayed in Table 25. The majority of variables demonstrated little or no association. However, the four leadership constructs, trust, perceived leader integrity, perceived managerial support and transformational leadership, exhibited substantial collinearity, with correlations ranging from .60 to .84. This suggested that the shortened measure of transformational leadership itself was sufficient to assess the perception of the extent to which respondents perceived their managers to exhibit all four components of transformational leadership. Therefore, since leadership is the focus of this research, I omitted all but the measure of transformational leadership from further analysis. After removal of these variables, 81% of correlations were at .20 or below. The highest correlation was a moderate .64, between job satisfaction and organizational commitment. This overall low incidence of correlation provides assurance that the common method variance effect is minimal (Lindell & Whitney, 2001). As illustrated in Table 25,

of the 120 correlations in the matrix, 71% were correlated at .20 or less; 20 were correlated $<.05$; 29 were correlated between .05 and .10, and 36 were correlated .11 - .20. The remaining 29% demonstrated low to moderate association.

Table 25

Descriptive statistics, internal consistency values and inter-correlations for variables used in Study 3

	<i>M</i>	<i>SD</i>	α^{\S}	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Prior Knowledge	3.71	1.79	.90	1															
2 Regularly Scheduled Communication	3.01	2.69	.98	.05	--														
3. Unplanned Communication	4.68	1.40	.82	.20**	.01	--													
4. Perceived Interdependence	5.55	1.03	.87	.09*	.09*	.18**	--												
5. Manager Trust	6.43	.77	.95	.11**	.08*	.19**	.23**	--											
6. Face-to-Face Importance	4.11	1.56	.87	.06	-.03	.14**	-.03	-.15**	--										
7. Network Importance	5.93	.96	.87	.06	.06	.16**	.48*	.16**	.03	--									
8. Control	4.33	1.37	.89	.16**	.16**	.23**	.17**	.20**	-.04	.18**	--								
9. Efficacy	5.46	1.32	.87	.05	.01	.01	.09*	.15**	-.07	.06	.17**	--							
10. Perceived Leader Integrity	6.36	.95	.97	.09*	.14**	.17**	.15**	.35**	-.04	.08*	.20**	.06	--						
11. Perceived Manager Support	5.79	.96	.92	.17**	.17**	.34**	.18**	.47**	-.04	.07	.28**	.05	.71**	--					
12. Trust in Manager	5.94	1.05	.98	.21**	.18**	.31**	.17**	.41**	-.00	.05	.30**	.03	.71**	.84**	--				
13. Transformational Leadership	5.42	1.2	.95	.18**	.19**	.35**	.18**	.34**	-.00	.06	.29**	.04	.60**	.80**	.84**	--			
14. Need for Leadership	4.39	.90	.89	.03	.04	.03	.07	-.09*	.22**	.11**	-.03	-.15**	.03	.05	.06	.09*	--		
15. Job Satisfaction	5.31	1.09	.86	.10**	.08*	.16**	.12**	.36**	-.12**	.04	.30**	.15**	.35**	.46**	.48**	.53**	-.05	--	
16. Organizational Commitment	5.01	1.18	.82	.15**	.09*	.27**	.19**	.32**	-.10**	.17**	.35**	.09*	.31**	.44**	.40**	.47**	.04	.64**	--

Note: Listwise N for correlations = 688

 \S Cronbach's index of internal consistency for revised scale** $p < .01$, * $p < .05$

Hypothesis Tests

Hypothesis 1 states that the relationships between contextual factors in a remote leadership situation and perceptions of transformational leadership will be moderated by individual characteristics, as measured by need for leadership. To test this hypothesis, I conducted a series of tests for the presence of need for leadership as a moderator (see Table 26).

To assess whether the contextual variables were related to perceptions of transformational leadership and whether need for leadership moderates those relationships, I conducted a series of moderated multiple regressions (Baron & Kenny, 1986). To avoid issues of multicollinearity among the predictors, I standardized all predictors before computing their interaction terms (Aiken & West, 1991). In each case, the two main effects (i.e., predictor and moderator) were entered on the first step of the regression with the cross-product of the two (i.e., the interaction) entered on the second step.

Two criteria were used to evaluate the contribution of the interaction to the prediction. First, I assessed the statistical significance of the change in R^2 associated with the interaction term. Second, because these tests lack power (Aiken & West, 1991), I also evaluated the absolute magnitude of the change in R^2 . An interaction term that accounted for 1% or more of criterion variance was retained for further analyses.

The results for the moderated regression analysis for need for leadership on context variables and transformational leadership are summarized in Table 26. As shown, for all predictor variables except face-to-face importance, the interaction term met neither of the two criteria outlined above. In the case of face-to-face importance, the interaction

	Variable	<i>B</i>	β	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i> Δ	<i>F</i> <i>Regression</i>
Unplanned Communication								
Step 1	Need for Leadership	.09*	.08*	.36**	.13**	.13**	51.54**	
	Unplanned Communication	.42**	.35**					
Step 2	Need for Leadership	.09*	.08*	.36	.13	.00	1.87	
	Unplanned Communication	.42*	.35*					
	Need for Leadership x Unplanned Communication	-.05	-.05					35.02**
Perceived Interdependence								
Step 1	Need for Leadership	.09*	.07*	.20**	.04**	.04**	14.16**	
	Perceived Interdependence	.21**	.18**					
Step 2	Need for Leadership	.09*	.07*	.20	.04	.00	.10	
	Perceived Interdependence	.22**	.18**					
	Need for Leadership x Perceived Interdependence	.01	.01					9.46**
Face-to-face Importance								
Step 1	Need for Leadership	.11*	.09*	.09*	.01*	.01*	2.95	
	Face-to-face Importance	-.03	-.02					
Step 2	Need for Leadership	.10*	.09*	.14**	.02**	.01**	6.92**	
	Face-to-face Importance	-.02	-.02					
	Need for Leadership x Face-to-face Importance	-.12**	-.10**					4.29**
Efficacy								
Step 1	Need for Leadership	.11**	.09**	.10*	.01*	.01*	3.78*	
	Efficacy	.07	.06					
Step 2	Need for Leadership	.10*	.09*	.12	.01	.00	2.17	

	Variable	<i>B</i>	β	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i> Δ	<i>F</i> <i>Regression</i>
	Efficacy	.07	.06					
	Need for Leadership x Efficacy	.07	.06					3.25*
Network Importance								
Step 1	Need for Leadership	.10*	.08*	.11*	.01*	.01*	4.01*	
	Network Importance	.07	.06					
Step 2	Need for Leadership	.10*	.08*	.11	.01	.00	1.12	
	Network Importance	.07	.06					
	Need for Leadership x Network Importance	.04	.04					3.05*

** p<.01; *p<.05

was associated with a significant change in R^2 and accounted for 1% of the criterion variance. It appears that the relationship between face-to-face importance and transformational leadership is moderated by the individual's need for leadership. The relationships between each of the other context variables and transformational leadership are not moderated by need for leadership. Hypotheses $1_a - 1_e$, 1_g , 1_h were not supported; hypothesis 1_f was supported .

Hypothesis 2 states that the relationships between perceptions of transformational leadership and specific outcomes will be moderated by individual characteristics, as measured by need for leadership. To assess whether perceptions of transformational leadership are related to the three outcome variables, job satisfaction, organizational commitment and manager trust, and whether need for leadership moderates those relationships, I conducted a second series of moderated multiple regressions. Again, I standardized all predictors before computing their interaction terms (Aiken & West, 1991). In each case, the two main effects (i.e., predictor and moderator) were entered on the first step of the regression with the cross-product of the two (i.e., the interaction) entered on the second step.

I used the two criteria noted above - statistical significance of the change in R^2 associated with the interaction term and absolute magnitude of the change in R^2 . An interaction term that accounted for more than 1% of criterion variance was retained for further analyses.

The results of the moderated regression analysis for need for leadership on transformational leadership and three outcome variables are summarized in Table 27. As

Table 27
Moderated Multiple Regression for Need for Leadership on Transformational Leadership and Job Satisfaction, Organizational Commitment and Manager Trust

	Variable	<i>B</i>	β	<i>R</i>	<i>R</i> ²	ΔR^2	<i>F</i> Δ	<i>F</i> Regression
Job Satisfaction								
Step 1	Need for Leadership	-.10	-.10	.54*	.29*	.29*	141.23**	
	Transformational Leadership	.58*	.54*					
Step 2	Need for Leadership	-.10	-.09	.54	.29	.00	.03	
	Transformational Leadership	.36*	.30*					
	Need for Leadership x Transformational Leadership	.00	.00					94.03**
Organizational Commitment								
Step 1	Need for Leadership	-.01	-.01	.47*	.22*	.22*	96.99**	
	Transformational Leadership	.55*	.47*					
Step 2	Need for Leadership	-.01	-.01	.47	.22	.00	.21	
	Transformational Leadership	.55*	.47*					
	Need for Leadership x Transformational Leadership	-.02	-.02					64.66**
Manager Trust								
Step 1	Need for Leadership	-.09*	-.12*	.36*	.13*	.13*	53.06**	

	Variable	<i>B</i>	β	<i>R</i>	R^2	ΔR^2	<i>F</i>Δ	<i>F</i> <i>Regression</i>
	Transformational Leadership	.27*	.36*					
Step 2	Need for Leadership	-.09*	-.12*	.37	.14	.00	2.41	
	Transformational Leadership	.28*	.36*					
	Need for Leadership x Transformational Leadership	.04	.06					36.25**

* $p < .001$

shown, for each criterion, the interaction term met neither of the two criteria outlined above. In none of the cases was the interaction associated with a significant change in R^2 nor did the interaction term account for more than 1% of criterion variance in any of the analyses. It appears that the relationships between transformational leadership and the three outcome variables, job satisfaction, organizational commitment and manager trust, are not moderated by need for leadership. Hypotheses 2_a – 2_c were not supported.

Hypothesis 3 states that transformational leadership will mediate the relationship between the contextual factors and individual outcomes in a remote leadership situation. Baron and Kenny (1986) suggest that to test for mediation, three regression equations should be estimated: a) regression of the mediator on the independent variable b) regression of the dependent variable on the independent variable; and c) regression of the dependent variable on both the independent variable and the mediator.

For mediation to exist, the following conditions must hold (Baron & Kenny, 1986):

- | | |
|-------------|--|
| Condition 1 | The independent variables must be significantly associated with the mediator in the first equation. |
| Condition 2 | The independent variables must be significantly associated with the dependent variables in the second equation |
| Condition 3 | The mediator must be significantly associated with the dependent variable in the third equation. |

Three outcomes are possible relating to these conditions.

Outcome 1 – Partial Mediation All three conditions are met, and the β for the

independent variable is lower in the presence of the mediator.

Outcome 2 – Full Mediation	All three conditions are met, the β for the independent variable is lower in the presence of the mediator, and is non significant.
Outcome 3 – Non Mediation	Condition 1 is not met. Conditions 1 and 2 are met, but condition 3 is not. Conditions 1 and 3 are met, but condition 2 is not.

To assess condition 1, I regressed the proposed mediator, transformational leadership, on each of the independent context variables. The results are presented in Table 28. An examination of the β weights shows that all but two of the context variables, efficacy and face-to-face importance, met condition 1. For efficacy, $\beta = .00$, $t(690) = -.00$, $p > .99$; for face-to-face importance, $\beta = -.03$, $t(690) = -.92$, $p > .36$. These variables are neither mediated nor have an indirect effect (outcome 5) and were omitted from further analysis (Baron & Kenny, 1986). Hypotheses 3f₁₋₃ and 3g₁₋₃ were not supported. The remaining six context variables, prior knowledge, regularly scheduled communication, unplanned communication, perceived interdependence, network importance and control, all contributed significantly to prediction of transformational leadership and thus, met condition 1. These were retained for further analysis.

To assess condition 2, I conducted a series of regressions, in which each outcome variable, job satisfaction, organizational commitment and manager trust respectively, was regressed on the remaining independent context variables. The results are presented in Table 28. To assess condition 3, I repeated the series of regressions, including the

proposed mediator, transformational leadership, as an independent variable. A comparison of the β weights and significance levels suggest a mixed interaction pattern for each dependent variable.

Job Satisfaction:

Condition 3 was met using job satisfaction as the dependent variable; for transformational leadership, $\beta = .50$, $p < .01$. The relationship between job satisfaction and control appears to be partially mediated by transformational leadership (outcome 1).

Table 28

Results of Test for Mediation

	IVs	DV Transformational Leadership	DV Job Satisfaction	DV Organizational Commitment	DV Manag er Trust
Test 1		β			
	Prior Knowledge	.09*			
	Regularly Scheduled Communication	.15**			
	Unplanned Communication	.29**			
	Perceived Interdependence	.12**			
	Face-to-Face Importance	-.03			
	Network Importance	-.08*			
	Control	.18**			
	Efficacy	.00			
Test 2					
			β	β	β
	Prior Knowledge		.04	.06	.04
	Regularly Scheduled Communication		.04	.04	.04
	Unplanned Communication		.07*	.16**	.12**
	Perceived Interdependence		.08*	.08	.17**
	Network Importance		-.07	.05	.03
	Control		.27**	.27**	.13**
Test 3					
	Prior Knowledge		.00	.03	.02
	Regularly Scheduled Communication		-.04	-.02	.00
	Unplanned Communication		-.06	.06	.05

			DV Job Satisfaction β	DV Organizational Commitment β	DV Manag er Trust β
	Perceived Interdependence		.03	.04	.14**
	Network Importance		-.02	.08*	.05
	Control		.17**	.20**	.08*
	TFL		.50**	.38**	.27**

** p < .01

*p < .05

All three conditions were met and when the effect of transformational leadership was controlled, the β for control decreased from .27, $p < .01$ in the second equation to .17, $p < .01$ in the third equation indicating partial mediation (Baron & Kenny, 1986).

Hypothesis 3a₁ was partially supported. The pattern of results for unplanned communication and perceived interdependence suggests total mediation. All three conditions were met for both variables. When condition 2 was assessed for unplanned communication, $\beta = .07$, $p < .05$; when the effect of transformational leadership was controlled, $\beta = -.06$, $p > .05$. For perceived interdependence, when condition 2 was assessed, $\beta = .08$, $p < .05$; when the effect of transformational leadership was controlled, $\beta = .03$, $p > .05$. Because neither unplanned communication nor perceived interdependence as independent variables have a significant effect on the dependent variable, job satisfaction, when the proposed mediator, transformational leadership, is controlled, it appears that the relationship between these variables and job satisfaction is fully mediated by transformational leadership (outcome 2) (Baron & Kenny, 1986).

Hypotheses 3d₁ and 3e₁ were supported. Prior knowledge, regularly scheduled communication, and network importance met conditions 1 and 3, but not condition 2 (outcome 3), suggesting no effect by each on job satisfaction. For prior knowledge, when condition 2 was assessed, $\beta = .04$, $p > .05$; for regularly scheduled communication, $\beta = .04$, $p > .05$; for network importance, $\beta = -.07$, $p > .05$. Hypotheses 3b₁, 3c₁ and 3h₁ were not supported.

Organizational Commitment:

Condition 3 was met using organizational commitment as the dependent variable; for transformational leadership, $\beta = .38$, $p < .01$. The relationship between organizational

commitment and control appears to be partially mediated by transformational leadership (outcome 1). All three conditions were met and when the effect of transformational leadership is controlled, the β for control decreases from .27, $p < .01$ in step 2 to .20, $p < .01$ in step 3, indicating partial mediation (Baron & Kenny, 1986). Hypothesis 3a₂ was partially supported. The pattern of results for unplanned communication suggests total mediation. All three conditions were met and in step two, $\beta = .16$, $p < .01$; in step three, $\beta = .06$, $p > .05$. Because unplanned communication as an independent variable has no significant effect on the dependent variable, organizational commitment, when the proposed mediator, transformational leadership, is controlled, it appears that the relationship is fully mediated by transformational leadership (Baron & Kenny, 1986). Hypothesis 3d₂ was supported. Prior knowledge, regularly scheduled communication, perceived interdependence and network importance met conditions 1 and 3, but not condition 2 (outcome 3), suggesting no effect by each on organizational commitment. For prior knowledge, when condition 2 was assessed, $\beta = .06$, $p > .05$; for regularly scheduled communication, $\beta = .04$, $p > .05$; for perceived interdependence, $\beta = .08$, $p > .05$; and for network importance, $\beta = .05$, $p > .05$. Hypotheses 3b₂, 3c₂, 3e₂, and 3h₂ were not supported.

Manager Trust:

Condition 3 was met using manager trust as the dependent variable, for transformational leadership, $\beta = .27$, $p < .01$. The relationships between manager trust and control and manager trust and perceived interdependence appear to be partially mediated by transformational leadership (outcome 1). All three conditions were met. The β for control decreased from $\beta = .13$, $p < .01$ in the second equation to $\beta = .08$, $p < .05$ in

the third equation when the effect of transformational leadership was controlled, indicating partial mediation (Baron & Kenny, 1986). Similarly, the β for perceived interdependence decreased from $\beta = .17, p < .01$ in the second equation to $\beta = .14, p < .01$ in the third equation when the effect of transformational leadership was controlled, indicating partial mediation. Hypotheses 3a₃ and 3e₃ were partially supported. The pattern of results for unplanned communication suggests total mediation. For unplanned communication, in the second equation, $\beta = .12, p < .01$; in the third equation, $\beta = .05, p > .05$. Because unplanned communication as an independent variable has no significant effect on the dependent variable, manager trust, when the proposed mediator, transformational leadership, is controlled, it appears that the relationship is fully mediated. Hypothesis 3d₃ was supported. Prior knowledge, regularly scheduled communication, and network importance met conditions 1 and 3, but not condition 2 (outcome 3), suggesting no effect by each on manager trust. For prior knowledge, when condition 2 was assessed, $\beta = .04, p > .05$; for regularly scheduled communication, $\beta = .04, p > .05$; and for network importance, $\beta = .03, p > .05$. Hypotheses 3b₃, 3c₃, and 3h₃ were not supported. Table 29 summarizes the results of the tests of all three hypotheses.

Table 29
Results of Hypotheses Tests

Hypothesis 1: Need for leadership will moderate the relationship between perceptions of transformational leadership and contextual variables:	
1a: control	Not supported
1b: prior knowledge	Not supported
1c: regularly scheduled communication	Not supported
1d: unplanned communication	Not supported
1e: perceived interdependence	Not supported
1f: face-to-face importance	Supported
1g: efficacy	Not supported
1h: network importance	Not supported
Hypothesis 2: Need for leadership will moderate the relationships between transformational leadership and individual outcomes:	
2a: job satisfaction	Not supported
2b: organizational commitment	Not supported
2c: manager trust	Not supported
Hypothesis 3: Transformational leadership will mediate the relationships between contextual variables and individual outcomes:	
3a ₁ : control and job satisfaction	Partially supported
3a ₂ : control and organizational commitment	Partially supported
3a ₃ : control and manager trust	Partially supported
3b ₁ : prior knowledge and job satisfaction	Not supported
3b ₂ : prior knowledge and organizational commitment	Not supported
3b ₃ : prior knowledge and manager trust	Not supported
3c ₁ : regularly scheduled communication and job satisfaction	Not supported
3c ₂ : regularly scheduled communication and organizational commitment	Not supported
3c ₃ : regularly scheduled communication and manager trust	Not supported
3d ₁ : unplanned communication and job satisfaction	Supported
3d ₂ : unplanned communication and organizational commitment	Supported
3d ₃ : unplanned communication and manager trust	Supported
3e ₁ : perceived interdependence and job satisfaction	Supported
3e ₂ : perceived interdependence and organizational commitment	Not supported
3e ₃ : perceived interdependence and manager trust	Partially supported
3f ₁ : face-to-face importance and job satisfaction	Not supported
3f ₂ : face-to-face importance and organizational commitment	Not supported
3f ₃ : face-to-face importance and manager trust	Not supported
3g ₁ : efficacy and job satisfaction	Not supported
3g ₂ : efficacy and organizational commitment	Not supported
3g ₃ : efficacy and manager trust	Not supported
3h ₁ : network importance and job satisfaction	Not supported
3h ₂ : network importance and organizational commitment	Not supported
3h ₃ : network importance and manager trust	Not supported

Discussion

Study 3 was conducted to test, on a large sample, the proposed measures of context in a remote leadership condition and to examine the relationships among the variables represented by these measures, leading ultimately to the development of a model of remote leadership. A major achievement of this study is a set of contextual variables that demonstrate a clean and simple factor structure that essentially replicated the findings of Study 1, with only two variations. Preliminary analysis revealed substantial skew in respondents' reports of usage of instant messaging and other communication media, as well as collocation arrangements; these variables were omitted from further analysis. The remaining two forms of media usage, email and telephone, loaded highly on and were subsequently combined with unplanned communication as a single factor. In this sample, more than 87% of respondents were located in a different city, different province/state, or different country than their managers. It is logical to assume that the majority of unplanned communication would take place by email or telephone. The medium-message match variable also appeared to be redundant, as well as being difficult to interpret. Approximately 80% of respondents use telephone and email to deal with urgent and/or personal issues; while for complex issues, approximately 50% used email and 50% used telephone. Because respondents had indicated that almost all of their communication with their managers was by telephone and email, this question added little new information, and no predictive value. Accordingly, it was deleted from further analysis.

Because of concerns about survey length and response rate, I had used a substantially shortened instrument with which to measure perceived transformational leadership behaviors (Carless et al., 2000). Therefore, I included individual measures of

leader integrity, trust, and perceived support to ensure that all four factors of transformational leadership were assessed. However, the substantial collinearity among these variables suggests that the shortened version itself was sufficient to assess the perception of the extent to which managers exhibit these behaviors. I omitted all but the measure of transformational leadership from further analysis.

With such a large number of statistical tests, there is an inflated chance of Type 1 error; i.e. rejecting the null hypothesis when it is true. When variables are not independent, as is the case in much of social science research, the error rate is difficult to estimate. One alternative for dealing with this is to perform a Bonferroni adjustment to the significance level to preserve the family-wise error rate at .05. However, this may be too stringent, especially for exploratory research, resulting in an inflated risk of Type 11 error, the chance of accepting the null hypothesis when it is false. Since the purpose of this research was to identify concepts and develop relationships between them in an emerging field, I chose not to adjust the error rate in Study 3 because the resulting relationships would be tested with a confirmatory technique in Study 4.

Hypotheses 1_a – 1_h proposed that the interaction between follower characteristics, measured as need for leadership, and remote relationship context characteristics would play a significant role in the prediction of perceptions of transformational leadership. These hypotheses were not supported, with the exception of hypothesis 1_f, pertaining to the interaction between face-to-face importance and need for leadership, which accounted for 1% of the variance in perceptions of transformational leadership. The effect of this specific interaction has not been empirically investigated previously but the size of the variance explained is consistent with effect sizes found in related studies on the effect of

the interaction of individual characteristics and perceptions of transformational leadership on individual outcomes in face-to-face environments (de Vries et al., 2002; Podsakoff et al., 1996; Wofford et al., 2001). Hypotheses 2_a– 2_c, which pertain to these latter relationships in the remote environment, were not supported in this study. There were no significant interactions, suggesting that in the remote environment, follower characteristics may not moderate the relationship between perceptions of transformational leadership and individual outcomes. This finding is not consistent with current conceptualizing about the remote environment and, as the first empirical test of the importance of individual characteristics, represents an important contribution by raising questions about our understanding of the role of individual characteristics.

Hypotheses 3_{a1} – 3_{h3} stated that the contextual variables of the remote environment - control, prior knowledge, regularly scheduled communication, unplanned communication, perceived interdependence, face-to-face-importance, efficacy, and network importance respectively - would affect individual outcomes – job satisfaction, organizational commitment, and manager trust in employee - through the mediating variable, transformational leadership. There is substantial research demonstrating the positive relationship between transformational leadership and these outcomes in the traditional environment (Felfe et al., 2004; Podsakoff et al., 1996). Preliminary research in the remote environment suggests similar positive effects (Kelloway et al., 2003). However, there have been no previous studies in this environment that have investigated the role of leadership as a mediating variable. The pattern of mixed interaction results in this study suggested that the role of leadership in remote context-outcome relationships should be considered.

Control was significantly associated with transformational leadership and all three individual outcomes (job satisfaction, organizational commitment and manager trust in employee) , to a lesser degree in the presence of transformational leadership, suggesting partial mediation (Baron & Kenny, 1986). Perceived control has been previously been directly associated with individual and organizational outcomes, such as performance, job satisfaction, organizational commitment, stress and organizational climate, in research in face-to-face environments (Aiello & Douthitt, 2001; Ashford et al., 1989; Fisher, 1984; Lok & Crawford, 1999; Schat & Kelloway, 2000; Spector, 1986; Terry & Jimmieson, 1999; Yagil, 2002). Perceived control is considered especially important in service organizations where employees frequently operate on their own and are difficult to monitor (Yagil, 2002). Using this logic, perceived control may be particularly important in the remote context, where similar conditions exist. Being separated from their leader and other group members creates the potential for individuals to feel especially powerless. Leader behaviors can mitigate this perception (Wells & Kipnis, 2001). Although the relationship between perceived control and transformational leadership has not been explicitly investigated previously, control, as an element of empowerment (Ozaralli, 2003), has been significantly associated with transformational leadership in a number of studies in the face-to-face environment (Kark, Shamir, & Chen, 2003; Ozaralli, 2003). Most studies that have investigated this relationship have focused on leadership effects on follower characteristics (Dvir & Shamir, 2003). However, several authors have suggested that transformational leadership is a reciprocal process in which both leader and follower are changed by one another; in effect, that follower characteristics have the potential to predict leadership (Burns, 1978; Dvir & Shamir,

2003; Klein & House, 1995; Shamir & Howell, 2000; Yukl, 1999). In a longitudinal study, Dvir and Shamir (2003) found that followers' initial level of development, including the level of empowerment, predicted transformational leadership ratings over time. Another line of reasoning supports the predictive role of follower characteristics, such as control beliefs, on perceptions of transformational leadership. Dasborough and Ashkanasy (2002) have postulated that members' attributions about their leaders' intentions influence whether or not the members perceive the leader to be truly transformational. The finding of partial mediation in this study suggests that, as in the face-to-face environment, in a remote environment, perceived control is directly associated with individual outcomes of job satisfaction, organizational commitment and perceived manager trust in employee as well as through the perception of transformational leadership.

Hypotheses 3d₁ – 3d₃ stated that unplanned communication would affect individual outcomes through the mediating role of perceived transformational leadership. These hypotheses were fully supported. Respondents' perceptions of the importance and frequency of unplanned communication appeared to affect their job satisfaction, organizational commitment and perception of the extent to which they are trusted by their managers, only in the presence of transformational leadership behaviors. Unplanned communication is a vehicle for enacting all four elements of transformational leadership, but particularly individualized consideration. The very act of “touching base” or “checking in” implies a consideration for the individual. In the presence of additional transformational leadership behaviors relating to message content itself, unplanned communication can act as a significant predictor of individual outcomes. The importance

of unplanned or serendipitous communication has not been previously explored in either the face-to-face or remote environment. However, engaging in unplanned communication clearly increases overall interaction frequency, which has been directly associated with positive individual outcomes in both types of environment (Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Maznevski & Chudoba, 2000; Staples, 2001). Moreover, perceptions of trust in leader and support by leader, variables highly correlated with transformational leadership in this study, were found to be significantly associated with increased communication frequency in a remote environment (Kirmeyer & Lin, 1987; Staples, 2001). By breaking down the concept of communication into two types, unplanned and regularly scheduled, this study has added to our understanding of the relative importance of each, enhancing our ability to translate research findings into specific leader behaviors.

Hypotheses 3e₁ – 3e₃ state that perceived interdependence would affect individual outcomes through the mediating role of perceived transformational leadership. Transformational leadership totally mediated the relationship between perceived interdependence and job satisfaction, and partially mediated the relationship between perceived interdependence and manager trust in employee. However, perceived interdependence was not significantly associated with the individual outcome, organizational commitment, suggesting the absence of a mediator between these two variables (Baron & Kenny, 1986). There is empirical evidence that in a face-to-face group setting, perceived interdependence is related to certain leader behaviors, such as goal setting and performance rewards (Wageman, 1995). Moreover, Kiggundu (1983) demonstrated that perceived interdependence has significant motivating potential. A long

history of research has demonstrated the relationship between group cohesiveness and individual outcomes, such as job satisfaction (Dobbins & Zaccaro, 1986).

Transformational leadership behaviors have been linked to increased group cohesiveness and trust in the face-to-face environment. The transformational leader can instill confidence in the benevolence of group members through behaviors such as coaching and promoting communication that encourages each member to consider and solicit the input of others, and focus individual members on the goals of the team (Avolio et al., 2001). In remote teams, Cramton (2001) found that even when group members had interdependent tasks and engaged in substantial information exchange, confusion, conflict and dispositional attributions resulted if the group was situated in a mixed collocation arrangement. However, in this study, mixed collocation was not a factor for the majority of respondents. The finding of total mediation in the remote environment clarifies and supports the relationships suggested by these previous empirical studies.

Atkinson and Butcher (2003) note that there is a marked lack of empirical work that considers the organizationally embedded social context of trust. The perception of manager trust in employee, in particular, has not been explored in either the face-to-face or remote environment. The finding that perceived interdependence affects this perception through perceptions of transformational leadership is a first step toward considering the context and process by which trust develops. It may be that, by using transformational leader behaviors to increase group cohesiveness and perceived interdependence, the leader creates a general climate of trust and support, increasing follower perception of managerial trust.

Transformational leadership did not appear to mediate the relationships between

prior knowledge, regularly scheduled communication, face-to-face importance, efficacy, and network importance and individual outcomes. Face-to-face importance was not significantly associated with transformational leadership. It may be that because transformational leadership behaviors are discernible through technological mediation (Kelloway et al., 2003), they are independent of the importance of face-to-face communication to the individual. Efficacy was not significantly associated with transformational leadership; this lack of effect may be attributable to timing. Efficacy in this study assesses the respondent's perception of being able to do the job when first assigned to it. Current leader behaviors would likely not influence that perception retroactively. Although prior knowledge, regularly scheduled communication and network importance were significantly associated with transformational leadership, they exhibited no direct effect on individual outcomes, suggesting a causal linkage effect (Kirkpatrick & Locke, 1996). This pattern of relationships requires further study.

This study demonstrates that contextual characteristics predict perceptions of transformational leadership, which in turn predict job satisfaction, organizational commitment, and manager trust. The original set of eight characteristics that Study 1 participants had voiced as important in a remote leader-member relationship, was reduced to six. Analysis demonstrated that two of these characteristics, efficacy and face-to-face importance, do not predict perceptions of transformational leadership. Furthermore, this study suggests that individual characteristics, assessed here as need for leadership, may not moderate the relationships between context characteristics, outcomes, and perceptions of transformational leadership in a remote environment. These findings thus provide the basis for a model that specifies how these refined variables are related. The proposed

model of remote leadership is depicted in Figure 2. It is this model that is subsequently tested in the fourth and final study of this program of research.

Figure 2

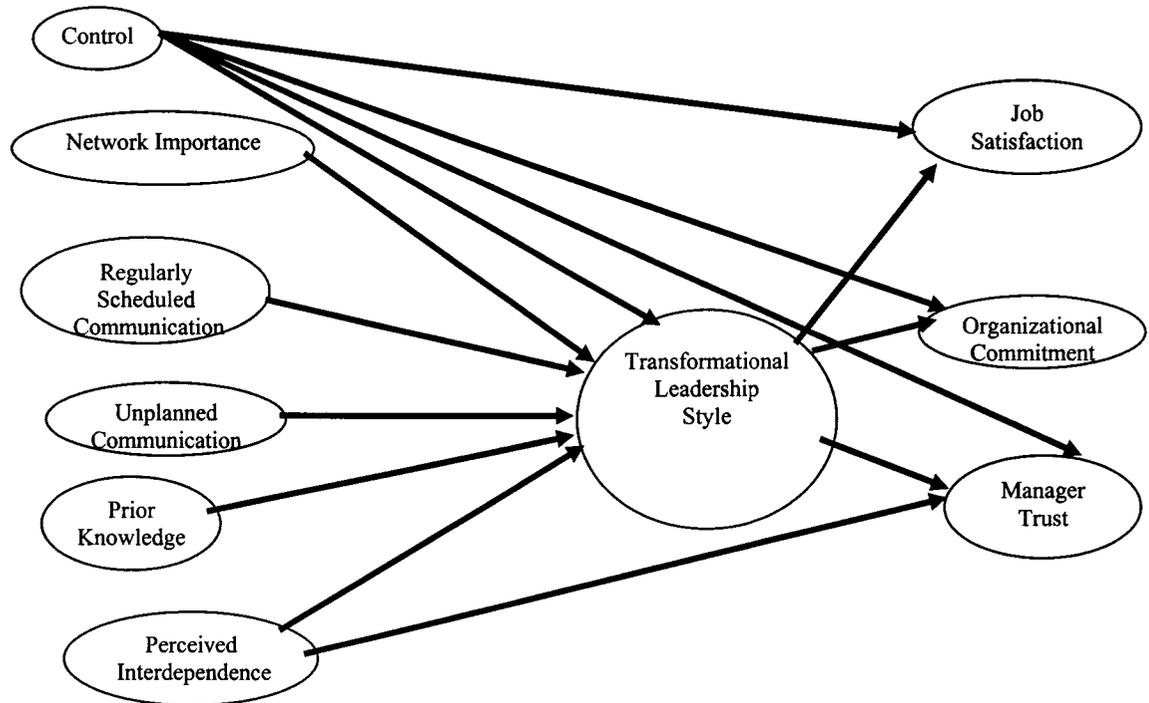


Figure 2. Proposed model of remote leadership.

STUDY 4

Method

Introduction

Leadership research to date has been based on the model in which the leader-member relationship is conducted largely through face-to-face interaction (Kelloway et al., 2003). The fundamental assumption in the current research is that this model is not appropriate for a remote leader-member relationship, which is generally characterized by reduced levels of overall interaction and face-to-face interaction even more so. Therefore, the primary goal of this fourth and final study was to test the boundary conditions of the proposed model of remote leadership by determining its fit in two different environments. A second goal was to determine whether the remote and proximal groups differ significantly on the context characteristics that have been suggested by participants in Study 1 and subsequent statistical analysis as being important in remote leader-member relationships.

Participants

Subjects for this study were drawn from various populations, reached by advertising to members of targeted associations and list serves, as well as by word of mouth. There were 402 valid responses to a survey posted on the World Wide Web.

The sample consisted mostly of individuals in either professional or management positions (33.8 and 49% respectively), with the majority (67%) between the ages of 30 and 50. Most respondents (64%) had been in their current job more than two years. The sample was evenly split along gender lines, with male respondents comprising 48.8% and female respondents comprising 51.3%.

To preserve anonymity, information about respondents' location and place of employment was not recorded, so geographic distribution of the sample could not be determined. The methods and tools used in recruitment suggest that the majority of the sample is North American, however. Demographic information for the sample is presented in Table 30.

The majority of respondents (56.9%) reported that they see their managers face-to-face at least two to three times per week, with a further 6.8% seeing their managers once per week. A large percentage (36.4) spent face-time with their managers two to three times per month or less. More than sixty percent of respondents were located in the same building as their managers, while approximately 29% were located in a different city or province/state from their manager. It is the members of this latter group that are considered to be remotely managed.

Table 30.

Age, Job Classification, Tenure, Face Time and Physical Remoteness from Manager

(Study 3)

(N = 402)

Age:

Age	Valid Percent
20 – 29 years	19.0
30 – 39 years	34.5
40 – 49 years	32.0
50 – 59 years	12.8
59+ years	1.8

Tenure:

Time in Current Job	Valid Percent
Less than 6 months	4.5
6 – 12 months	11.9
1 – 2 years	18.9
More than 2 years	63.9

Face time with Manager:

Frequency of face-to-face interaction with manager	Valid Percent
Several times/day	34.1
Once/day	9.8
2 – 3 times/week	13.0
Once/week	6.8
2 – 3 times/month	8.5
Once/month	8.3
Every 2 – 3 months	8.0
2 – 3 times/year	8.3
Once/year	2.3
Never	1.0

Job:

Job Classification	Valid Percent
Professional	33.8
Technical	6.1
Management	49.0
Clerical	5.1
Other	6.1

Distance from Manager:

Location of manager	Valid Percent
In the same building	61.3
In the same city	9.2
In the same province/state	10.4
In the same country	18.4

Procedures and Measures

Respondents were invited, by means of email, to participate in a web-based study on remote leadership. As an incentive, potential respondents were told that a donation of \$1.00/completed survey would be given to the Children's Wish Foundation. They were provided with information about the purpose and context of the study, and the link to the survey itself, and required to click a box indicating informed consent before proceeding (Appendix F). Upon completion of the survey, they were presented with a screen thanking them for their participation, providing them with contact information from which they could request a high level summary of results when available.

The survey included closed-ended questions that could be answered only by clicking check boxes and drop down menus. The preliminary section of the survey asked respondents questions about the context of their jobs, including variables that had been highlighted as important in Study 1. These variables included: physical distance from manager; number of face-to-face contacts with manager; type of medium used to interact with manager and whether or not there were scheduled times for communication with the manager. The main section included scales that had been developed in Study 2 and refined in Study 3 to assess other aspects of the working relationship, again, emphasizing conditions that were considered important in a remote leader-member relationship; items were rated on a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). These scales measured the following variables:

Perceived Interdependence. This four-item scale measured the respondent's assessment of the extent to which he/she depends on colleagues for information and

support, as well as the extent to which colleagues depend on him/her for support and information (Cronbach's alpha = .83) (Appendix I).

Network Importance. The extent to which the respondent used and relied upon a network was measured using a three-item scale. (Cronbach's alpha = .88). (Appendix J).

Regularly Scheduled Communication. If the respondent and his/her manager established regular times for communication, respondents were asked to complete this four-item scale, which measured the importance of these interactions to the respondent (Cronbach's alpha = .87). (Appendix M).

Unplanned Communication. This four-item scale measured the extent to which the respondent's manager initiated communication on an unplanned basis (Cronbach's alpha = .76). (Appendix N).

Prior Knowledge. The extent to which the respondent was familiar with his/her manager and/or the group before the current job assignment was measured using a 6-item scale (Cronbach's alpha = .84). (Appendix O).

Manager Trust. Trust in the respondent, as perceived by the respondent, was measured by three-item scale (Cronbach's alpha = .97). (Appendix P).

Other variables that were hypothesized to be outcomes or be significantly associated with outcomes in a remote context were measured using existing scales, with psychometrically acceptable properties. All variables, except for transformational leadership, were rated on 7 point response scale ranging from 1 (very strongly disagree) to 7 (very strongly agree).

Control. Respondent perception of the control they exhibited over their surroundings was measured by the three-item Powerlessness scale (Ashford et al., 1989). In this study, Cronbach's alpha = .88. (Appendix Q)

Organizational Commitment. To measure affective organizational commitment, the six-item version of the Organizational Commitment scale was used (Allen & Meyer, 1990). This scale has been shown to have acceptable psychometric properties in previous research (Allen & Meyer, 1996). In this study, Cronbach's alpha = .86. (See Appendix V)

Job Satisfaction. To assess job satisfaction, the five-item general satisfaction scale from the Job Diagnostic Survey (Hackman & Oldham, 1975) was used. In this study, Cronbach's alpha = .82. (See Appendix X)

Transformational Leadership. Leadership style was measured using the seven-item Global Transformational Leadership scale (Carless et al., 2000). Items were rated on a 5 point scale, ranging from 1 (rarely or never) to 5 (very frequently, if not always). In previous research, this measure was found to assess a single global construct of transformational leadership, and to have acceptable discriminant and convergent validity. In this study, Cronbach's alpha = .95. (Appendix Y.)

Method of Data Analysis

I conducted a MANCOVA analysis to determine if the remote and proximal samples varied significantly on any of the study variables. I then used structural equation modeling to test the fit of model of remote leadership hypothesized in Study 3. The proposed structural model was tested as a series of nested model comparisons. The proposed model was a partially mediated model in which the effects of remote context on

outcomes were thought to be partially mediated by transformational leadership. Accordingly, following the sequence explained by Kelloway (1998), I tested partially-mediated, fully-mediated, and non-mediated models. For each model, I assessed absolute fit using the root mean squared error of approximation (RMSEA), goodness-of-fit (GFI) and adjusted goodness-of-fit (AGFI) indices; comparative fit using normed fit index (NFI) comparative fit (CFI) indices and parsimonious fit using the parsimonious normed fit index (PNFI). I compared the models using the chi-squared difference test. I then tested the best fitting model on the proximal sample.

Results

An initial screening of the data for univariate and multivariate outliers and violations of assumptions, including non-linearity, non-normality, multicollinearity and heteroskedasticity was conducted. No outliers were identified and no assumptions were violated. For all analyses, missing data were treated using listwise deletion.

Descriptive statistics and correlations for all study variables are displayed in Table 31. The majority of variables demonstrated little or no association. As noted in Study 3, this overall low incidence of correlation provides some assurance that the effect of common method variance is minimal (Lindell & Whitney, 2001). As illustrated in Table 31, of the 45 correlations in the matrix, 60% were correlated at .20 or less: one was correlated $<.05$; six were correlated between .05 and .10, and 20 were correlated .11 - .20. The remaining 40% demonstrated low to moderate association.

Prior to testing the models of interest, I formed two subsamples comprising proximally and remotely led employees. If a respondent and manager were collocated in the same building, the respondent was assigned to the proximally managed group (N =241). All other respondents (i.e., all those who worked in a location separate from their manager), were assigned to the remotely managed group (N=151).

Initial exploratory analysis suggested that these two groups differed on gender and age. The proximally managed group comprised more female respondents (58.1%) than did the remotely managed group (40.8%). Thirty-four per cent of respondents were in the 20 -29 age bracket in each group; however, in the remote group, 39.5% of respondents were in the 30 – 39 age bracket, while only 27.4% of respondents in the proximal group

Table 31

Descriptive statistics, internal consistency values and inter-correlations for variables used in Study 4.

	<i>M</i>	<i>SD</i>	α^{δ}	1	2	3	4	5	6	7	8	9	10
1. Perceived Interdependence	5.42	1.08	.83	--									
2. Network Importance	5.58	1.07	.88	.52**	--								
3. Regularly Scheduled Communication	5.80	2.15	.94	.12*	.11*	--							
4. Unplanned Communication	4.86	1.41	.76	.23**	.08	.13**	--						
5. Prior Knowledge	3.25	1.82	.84	.06	.08	.09	.13*	--					
6. Control	4.37	1.45	.88	.21**	.15**	.15**	.22**	.19**	--				
7. Transformational Leadership	5.0	1.52	.95	.25**	.19**	.19**	.37**	.17**	.35**	--			
8. Manager Trust	6.29	.92	.95	.23**	.06	.09	.20**	.04	.26**	.34**	--		
9. Job Satisfaction	5.06	1.16	.82	.16**	.12*	.13*	.15**	.14**	.45**	.46**	.32**	--	
10. Organizational Commitment	4.81	1.40	.86	.23**	.19**	.14**	.20**	.12*	.45**	.49**	.30**	.62**	--

Note: Listwise N for correlations = 395

 α^{δ} = Cronbach's index of internal consistency** $p < .01$, * $p < .05$

were in this bracket. There were more respondents in the under 20 age bracket in the proximal group (26.1%) compared to the remote group (8.6%). To assess group differences on the study variables, I conducted a MANCOVA using age and gender as covariates, remote vs. proximal management as the independent variable and all ten study variables as the dependent variables. The MANCOVA tests for mean differences between two groups. To assess group differences, I used the multivariate test based on Wilks' lambda, with subsequent univariate tests evaluated using a Bonferroni adjusted alpha level.¹ With the use of the Wilk's criterion, the combined DV's were significantly related to group membership, $F(10, 375) = 2.55, p < .01$ and to each of the covariates; age, $F(10, 375) = 3.31, p < .01$ and gender, $F(10, 375) = 2.61, p < .01$. One variable, unplanned communication, $F(1, 386) = 9.27$, was significant at the adjusted level of .005, when age and gender were controlled.

Examination of the estimated marginal means revealed that for the remotely managed group, the mean score for unplanned communication was 4.59, while for the proximally managed group, the mean score was 5.05, indicating that the respondents in the proximally managed group reported more frequent unplanned communication than did the remotely managed group.

To assess the structural model proposed in Study 3, I conducted a series of nested model comparisons, using Lisrel 8.14, on both groups, proximally and remotely managed. The starting point for the path analysis was a fully mediated model, using data

¹Before determining statistical significance of the individual F-tests, a Bonferroni adjustment is carried out in order to ensure that the Type 1 error is not inflated. To obtain a more conservative significance value, the study alpha is divided by the number of dependent variables used in the MANCOVA analysis, and the resulting value is the rejection criteria. In this case, 10 dependent variables were used, therefore the rejection criteria for the individual F-tests becomes .005 (.05 divided by 10). If any of the individual F-tests has a significance value of .005 or less, the results are statistically significant at the .05 alpha level.

from the remotely managed group, with the six contextual variables acting as exogenous variables which predict transformational leadership, which in turn predicts job satisfaction, organizational commitment and manager trust. Fit statistics are included below in Table 32.

Table 32
Model Fit Statistics

	Fully Mediated (Remote)	Final Partially Mediated (Remote)	Partially Mediated (Proximal)
χ^2	$\chi^2 (18) = 54.55$ p<.01	$\chi^2 (17) = 21.01$, ns	$\chi^2 (17) = 35.07$ p<.01
GFI	.94	.97	.97
AGFI	.81	.92	.91
RMSEA	.12	.04	.07
CFI	.89	.99	.96
NFI	.86	.95	.92
PNFI	.34	.36	.35

The fully mediated model did not provide an adequate fit to the data [$\chi^2 (18) = 54.55$, p < .01; GFI = .94; AGFI = .81; RMSEA = .12; NFI = .86; CFI = .89; PNFI = .34]. The partially mediated model, suggested in Study 3, with all six contextual variables, provided a better fit to the data than did the fully mediated model, $\chi^2_{\text{difference}(3)} = 35.14$, p < .01; $\chi^2 (15) = 19.41$, ns; GFI = .98; AGFI = .91; RMSEA = .05; NFI = .95; CFI = .99; PNFI = .32. The test of close fit demonstrates that the RMSEA (p < .51) is not

significantly different from .05, deemed to indicate a very good fit to the data (Kelloway, 1998).

Standardized parameter estimates for the final model are presented in Figure 3. As shown, job satisfaction ($\beta = .29, p < .01$), organizational commitment ($\beta = .36, p < .01$) and manager trust ($\beta = .29, p < .01$) were all predicted by transformational leadership. Job satisfaction ($\beta = .36, p < .01$), organizational commitment ($\beta = .39, p < .01$) and manager trust ($\beta = .20, p < .01$) were also predicted by control. Transformational leadership in turn was predicted by control ($\beta = .22, p < .01$), regularly scheduled communication ($\beta = .14, p < .01$), unplanned communication ($\beta = .38, p < .01$), and prior knowledge ($\beta = .14, p < .01$). However, perceived interdependence and network importance did not significantly predict transformational leadership. Deleting these two nonsignificant paths did not result in a significant change to the model fit, [$\chi^2_{\text{difference}}(2) = 1.60, ns$]. For the remotely managed group, the model explained 17% of the variance in manager trust, 30% of the variance in job satisfaction, 39% of the variance in

Figure 3

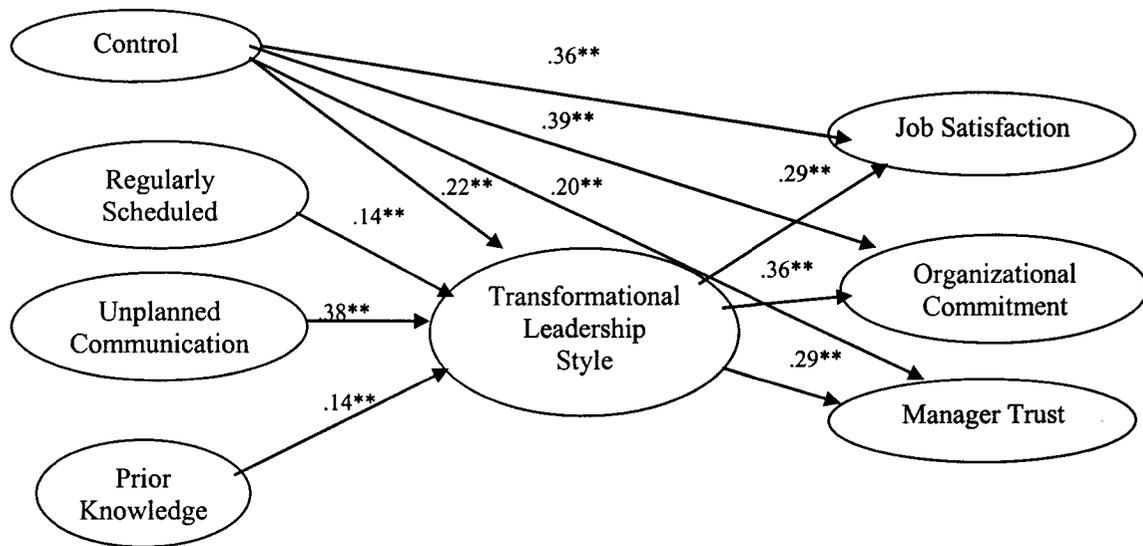


Figure 3. Revised partially mediated model of remote leadership (remote sample).

Figure 4

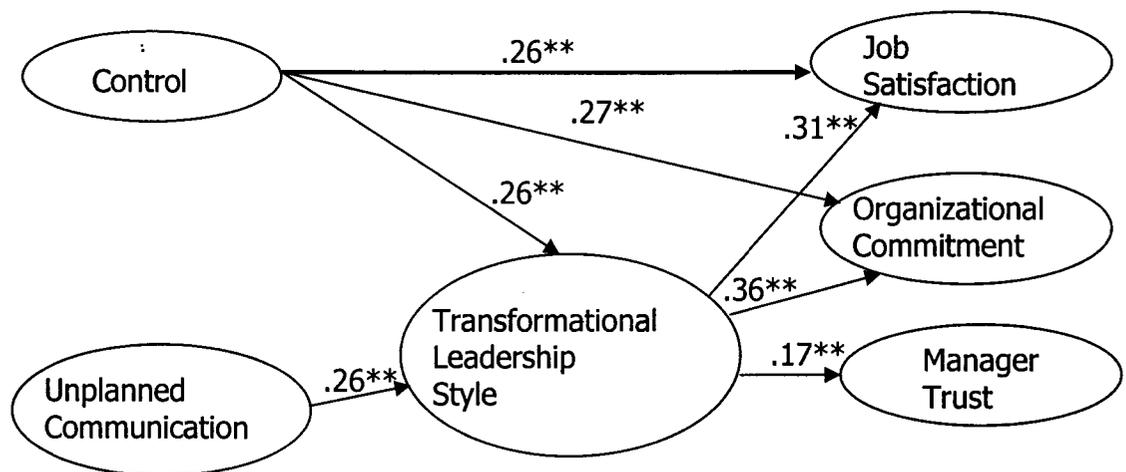


Figure 4. Partially mediated model of remote leadership (proximal sample)

organizational commitment, and 35% of the variance in perceptions of transformational leadership.

The partially mediated model did not adequately fit the data for the proximally managed group [$\chi^2(17) = 35.07, p < .01$; GFI = .97; AGFI = .91; RMSEA = .07; NFI = .92; CFI = .96; PNFI = .35]. Job satisfaction ($\beta = .31, p < .01$), organizational commitment ($\beta = .36, p < .01$) and manager trust ($\beta = .17, p < .01$) were all predicted by transformational leadership. Job satisfaction ($\beta = .26, p < .01$) and organizational commitment ($\beta = .27, p < .01$) were also predicted by control. In this sample, control did not significantly predict manager trust.

Transformational leadership in turn was predicted by control ($\beta = .26, p < .01$) and unplanned communication ($\beta = .26, p < .01$). Regularly scheduled communication and prior knowledge did not significantly predict transformational leadership in this sample. For the proximal group, the model explained 12% of the variance in manager trust, 31% of the variance in job satisfaction, 29% of the variance in organizational commitment, and 16% of the variance in perceptions of transformational leadership. The standardized parameter estimates and squared multiple correlations are generally lower than those in the remote sample, suggesting that these contextual characteristics are not as important in the proximal environment as in the remote one. This finding is consistent with the results of the MANCOVA analysis that demonstrated an overall significant difference between the proximally and remotely managed groups, and significance of unplanned communication at the adjusted level of .005.

Discussion

Study 4 offers three major insights. First, it provides a preliminary model of the relationships between the salient characteristics of work context, perceptions of leadership and individual outcomes in the remote environment. Second, it suggests that leadership style acts as a mediator between work context and individual outcomes for those who are managed from a distance; in other words, context predicts perceptions of leadership. Third, the study provides evidence that the experience of being managed proximally differs qualitatively from the experience of being managed remotely and that this difference resides in the context.

The finding of significant difference between the two samples contributes to the argument surrounding the experience of being managed from a distance. As previously noted, some authors have theorized that it is only the “degree” of individual and leader behaviors required that varies (Cohen, 2000; Maznevski, 2000). Others have countered that such a different environment requires completely different leader behavior (Gluesing, 2000). Little previous empirical work contributes to the resolution of this debate. The findings of Study 4 demonstrate that there is a significant difference between the two groups, even when demographic factors are controlled.

The model of remote leadership developed in this study provides further evidence that the differences between the remote and proximal management relationships vary by more than a matter of degree of leader behaviors. The model is a very good fit to the data from the remote sample, and includes four context variables as significant predictors of perceptions of transformational leadership, which in turn predicts job satisfaction,

organizational commitment and perceptions of manager trust. This same model does not adequately fit the data from the non-remote sample and in fact, includes non-significant paths from two of the context variables, regularly scheduled communication and prior knowledge, to transformational leadership. These differences suggest that the context within which a leader-member relationship is conducted is more salient in the remote environment than in the proximal environment. In remote jobs, context matters to a greater degree than in proximal jobs.

Many of the relationships on the exogenous side of the model have been suggested, directly or indirectly, by previous research. However, these studies have focused either on proximally managed individuals or remotely managed groups; none have examined the remote leader-member relationship. Four context variables - unplanned communication, regularly scheduled communication, prior knowledge, and control - have been found in this study to significantly predict perceptions of transformational leadership; their importance in a remote management relationship was originally suggested by the findings of Study 1, rather than by any previously published research.

The results of the MANCOVA analysis suggest that remote management relationships appear to be characterized by a lower level of unplanned communication than are proximal management relationships. This in itself is not surprising. The lack of opportunity for serendipitous communication at a distance has previously been acknowledged (Gluesing, 2000). However, this variable also includes frequency of usage of email and telephone communication - proximal managers use email and telephone more than distant ones. Because increased face-to-face communication is usually a

feature of proximal management, these findings suggest that more face-to-face communication encourages higher communication frequency through other channels as well. Although one might anticipate a higher level of usage of alternate media in a remote relationship, this does not appear to be the case. The relationship between proximity and increased attraction may explain the higher communication frequency in proximal relationships (Latane et al., 1995; Moon, 1999). Unfortunately, this result may have a negative impact on the outcomes in a remote relationship. Numerous studies in this environment have demonstrated the significant links between increased communication frequency and positive individual and group outcomes (Hart & McLeod, 2002; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Staples, 2001). So, while existing research suggests that higher use of email and telephone communication would be beneficial in the remote environment, these findings appear to indicate that higher usage is occurring in situations where face-to-face communication is also higher.

Furthermore, the model developed in this study suggests that unplanned communication is a significant predictor of perceptions of transformational leadership in both remote and proximal leader-member relationships. As noted, higher levels of unplanned communication reflect increased communication frequency. As well, unplanned communication may create a perception within the individual of being important to the leader. Consideration behaviors have long been a part of leadership theories. Although research findings have been mixed, a recent meta-analysis suggests that consideration behaviors are strongly related to member satisfaction with leader and job, as well as leader effectiveness (Judge et al., 2004). Frequent unplanned

communication is consistent with the individualized consideration element of transformational leadership (Bass, 1985).

There has been little prior empirical investigation of the importance of regularly scheduled communication. Jarvenpaa and Leidner (1998) suggested that predictability of communication improves virtual team effectiveness. As discussed earlier, other researchers have noted the importance of communication frequency. The findings of Study 4, however, suggest that in the remote environment, regularly scheduled communication between the leader and the member significantly influences the member's perceptions of transformational leadership, which in turn has been extensively associated with positive outcomes (Kelloway et al., 2003). The path is not significant in the proximal environment. It may be that regularly scheduled communication achieves an effect beyond the increase in communication frequency; it may create a perception of being valued by the leader. This would partially explain the difference on this path in the two models; conveying a sense of consideration may be more easily achieved when leader and member are collocated. Furthermore, it may result in an increase in trust in the leader, as he/she demonstrates reliability in adhering to the schedule. Trust and individualized consideration have previously been demonstrated to be important predictors and/or components of transformational leadership (Bass, 1985; Dirks & Ferrin, 2002).

Prior knowledge or "history" between group members may increase trust or mutual knowledge, both of which have been associated with increased communication effectiveness (Cramton, 2001). Despite the mixed findings on the importance of history or prior knowledge in the remote environment (Alge et al., 2003; Cramton, 2001; Hart &

McLeod, 2002; Jarvenpaa et al., 1998; Powell et al., 2004), no studies have explored its effect specifically on the leader-member relationship in this environment. In an experimental investigation of proximal charismatic leadership, however, Puffer (1990) found that knowledge of the leader's performance and decision style resulted in attributing charisma to the leader. The findings of Study 4 indicate that, in the remote environment, prior knowledge of the leader and/or the group contributes to prediction of leadership perceptions, but not so in the proximal model. It may be that prior knowledge of the leader, his/her reputation, or the group provides a prior basis of trust, which has been significantly associated with perceptions of leadership (Dirks & Ferrin, 2002; Hart & McLeod, 2002; McKnight et al., 1998; Mennecke & Valacich, 1998). In the proximal relationship, trust can be developed in the more traditional manner, through face-to-face contact. It may also be that in the remotely managed workers feel more vulnerable than do their proximally managed counterparts, and therefore a pre-existing basis for trust is significant.

Control is the final exogenous variable in the model of remote leadership. Control has been the topic of extensive empirical investigation in the proximal environment, but less so in the remote environment. In the proximal management context, previous research has suggested that control beliefs positively and directly impact individual outcomes, such as job satisfaction (Furnham, 1992), and increased trust in manager (Brashear, Manolis, & Brooks, 2005). The analysis of the non-remote sample in Study 4 partially supports these previous findings; however, the direct effect of control on individual outcomes was smaller than in the remote sample and in the proximal sample, the path between control and the perception of manager trust was non-significant. This

increased effect of control in the remote relationship may reflect the potential for remote workers to feel excluded and out of touch with organizational politics; control beliefs may be translated in this environment into a perception of being trusted by their managers. This connection may not be as relevant in the proximal leader-member relationship.

Although control is typically conceptualized as being predicted by transformational leadership, it appears plausible that in the remote leader-member relationship, the causal flow may be reversed; the perception of control may predict perceptions of transformational leadership by invoking the trust component, enhancing overall leadership perception, with its resulting positive individual outcomes. In fact, previous related studies in the remote environment focused on the effect of control beliefs in a virtual team setting have linked perceptions of individual control with trust among team members (Piccoli & Ives, 2003). The indirect effect of control on individual outcomes through perceptions of transformational leadership may be related to trust in the same way. Further, it may be that participants whose self-schema (Payne, 1987) incorporates feelings of control selectively receive, process and interpret more clearly those leader behaviours that align with their beliefs; in other words, the behaviours that appear to be more empowering. Since an empowering style is a central mechanism in transformational leadership for building commitment (Avolio, 1999), they would thus perceive their leaders to be transformational. However, the direction of this causation is clearly a topic for further research.

The model of remote leadership developed and tested in Study 4 suggests that transformational leadership is predicted by the four context variables discussed above

and, in turn predicts the individual outcomes, job satisfaction, organizational commitment and manager trust. The model explains 35% of the variance in perceptions of transformational leadership for the remote sample, and only 16% of the variance for the proximal sample. As discussed above, perceptions of transformational leadership are substantially influenced by specific elements in the remote context, while this is not the case in the proximal environment. However, the role of transformational leadership as a predictor of outcomes is quite similar in both samples. As noted earlier, positive relationships between transformational leader behaviors and follower outcomes have been reported in more than thirty-five studies ((Kirkpatrick & Locke, 1996; Judge & Bono, 2000). In fact, at least two of these studies employed true experimental designs (Barling et al, 1996; Kirkpatrick & Locke, 1996) to establish the causal sequence from transformational leader behaviours to positive individual level outcomes. It is not surprising, therefore, that transformational leadership significantly predicts job satisfaction and organizational commitment in both samples in Study 4. It appears that, although the perception of transformational leadership is strongly influenced by context in the remote environment and not to the same degree in the proximal environment, once a follower perceives a leader to be transformational, the outcomes are similar, regardless of how that perception was established.

In both samples, perceptions of transformational leadership significantly predict perceptions of manager trust. The remote model explains 17% of the variance in manager trust, while the proximal model explains 12%. Although some studies have explored manager trust from the manager's perspective (Harrington & Ruppel, 1999), there appears to be no previous research into followers' perceptions of managerial trust, in

terms of either antecedents or consequences. The specific process by which perceptions of transformational leadership predict a higher perception of manager trust is as yet unclear, but it may be related to an increase in self-efficacy as a result of transformational leader behaviors. One of the goals of transformational leadership is to convey leader confidence in followers' abilities and this is enacted through behaviors such as open communication, intellectual stimulation, and participative decision making (Bass, 1985). A follower receiving such a message may feel an increased sense of self-efficacy, associated with a perception of being trusted by the manager. Although there are contradictory findings about the nature of the relationship between self-efficacy and leader effectiveness, there is evidence of a significant association between them (Felfe & Schyns, 2002; van Knippenberg et al., 2004). The findings of Study 4 suggest that this association is important in both environments, although to a greater extent in the remote leader-member relationship.

GENERAL DISCUSSION

Findings

The main goal of this program of research was to advance our knowledge of the nature of the remote leader-member relationship; specifically, to identify if the contextual characteristics of that relationship influence the impact of leadership on individual outcomes. Together these studies provide strong evidence for the argument that the remote environment requires a new model of leadership, different from previous models that have been based on the premise of face-to-face interaction. Because of the lack of prior empirical investigation into this question (Martins et al., 2004), I began my research with an exploratory study, the purpose of which was to identify aspects of the remote environment that individuals actually working in that environment considered important to the leader-member relationship. As the research evolved, I identified relationship context characteristics (Study 1), developed, tested and refined an instrument to assess these characteristics (Studies 2 and 3), formulated and tested a theoretical model of the relationships among these characteristics, leadership and outcomes (Studies 3 and 4), and tested the boundary conditions of the model, on both a remote and non-remote sample (Study 4). The results of these investigations collectively achieve the goal of extending our knowledge about the nature of remote work by: a) identifying an empirically derived set of remote contextual characteristics that influence the impact of leadership on individual level outcomes; b) demonstrating specifically that these characteristics predict perceptions of transformational leadership, which in turn predicts individual level outcomes; c) demonstrating that the role of individual characteristics, assessed as need for leadership, may not be as influential in the remote environment as has been

previously theorized; and d) demonstrating that the fundamental assumption of face-to-face leader-follower interaction is not the most appropriate model in the remote environment. I discuss these four major findings, their implications, the limitations of the research and suggestions for extending this investigation in the following section.

Finding 1: Context Matters

There has been substantial conceptualizing about the remote environment and far less empirical investigation (Avolio et al., 2000; Avolio & Kahai, 2003; Cascio, 1999; Cascio & Shurygailo, 2003; Davis, 2004; Fairfield-Sonn, 1999; Jarvenpaa et al., 1998; Kissler, 2001; Lipnack & Stamps, 1997); as noted earlier, a consensus has not been reached among researchers as to the extent or nature of the difference of the environment. Theorists have variously characterized the remote work environment as one of isolation (Bailey & Kurland, 2002), creating feelings of exclusion (Cramton, 2001), as well as increased flexibility and perceptions of autonomy (Bailey & Kurland, 2002). There has been little empirical investigation, however, of how individuals who work in this environment perceive it or the relationships which are conducted within it. The objective of Study 1 was to explore which specific characteristics of the remote relationship environment impact individual outcomes, from the perspective of those who actually work in such an environment. These participants clearly voiced a view that the remote relationship is, in fact, qualitatively different in terms of the context within which it is conducted. The findings of Study 1, refined and tested in subsequent studies, begin the process of developing an understanding of that difference. Beginning with an initial list of eleven concepts that participants suggested were important context characteristics of a remote leader-member relationship, and proceeding through subsequent analysis of their

roles as predictors, as previously outlined, the result is a set of four variables - control beliefs, regularly scheduled communication, unplanned communication and prior knowledge of the manager – that significantly predict perceptions of transformational leadership in the remote sample.

Knowing which specific characteristics of the remote relationship context predict perceptions of transformational leadership advances the knowledge from theoretical to practical. The importance of the two different aspects of communication, regularly scheduled and unplanned, was expressed by participants in Study 1 and demonstrated statistically in studies 3 and 4. Regularly scheduled communication with the manager appeared to be associated with several different processes. Participants reported ‘saving up’ items to discuss that they felt were too insignificant to initiate an interaction for, but that they wanted their manager to know; this kind of interaction would take place during a chance face-to-face encounter in the proximal relationship. It may be that regularly scheduled communication serves as a proxy for the serendipitous communication that takes place in the traditional workplace. Regularly scheduled communication may also predict trust in the manager, which has been significantly associated in previous research with transformational leadership in proximal relationships (Arnold, Barling, & Kelloway, 2001; Dirks & Ferrin, 2002; Jung & Avolio, 2000) and was found to be highly correlated with transformational leadership in Study 3. It may be that the manager’s adherence to the schedule contributed to a judgment of manager reliability, a component of trust (Mishra & Mishra, 1994). Despite varying definitions of trust in the literature, most also include the concept of care or benevolence (Dirks & Ferrin, 2002; Kramer & Tyler, 1996). Regularly scheduled communication may increase trust by being perceived as

interpersonal care and concern. Previous researchers have suggested that the greater the uncertainty in a context, the more significant trust becomes (Dirks & Ferrin, 2002). The significant prediction of transformational leadership by these two forms of communication is plausibly due to the increased significance of trust in the complex and ambiguous remote environment. So, although Shamir and Howell (1999) noted that it is unclear whether individuals can identify with and trust remote leaders due to the cold, de-emphasized social and human context of interaction in such situations, these results suggest that when leaders account for the remote context, they may be perceived as transformational, with its empirically demonstrated positive outcomes.

At the same time, interview participants expressed their feelings of being valued when their managers called them “to just chat”, rather than only contacting them in response to a problem. They felt that relationships with their managers were far more effective when norms of frequent, unplanned communication were in place. Furthermore, participants expressed their satisfaction when the culture was such that either party could initiate this communication. Individualized consideration is one of the elements of transformational leadership; unplanned communication may be perceived as evidence of interpersonal concern and may therefore strengthen assessments of transformational leadership.

Prior knowledge of the manager and/or the work group is the third relationship context characteristic to significantly predict perceptions of transformational leadership. Some preliminary research into virtual teams suggests that prior knowledge makes no difference to trust and open communication in collocated teams but that it does nullify the difference between remote and collocated teams (Alge et al., 2003). Other researchers

have suggested that prior knowledge is unnecessary because virtual teams make use of swift trust (Jarvenpaa et al., 1998; Meyerson et al., 1996; Powell et al., 2004). Affirming the importance of context, Alge et al. (2003) attribute these contradictory results to the use of ad hoc student teams, groups devoid of context, of which temporality is a part. Several researchers have observed that for virtual teams, an initial face-to-face meeting may increase team performance and member satisfaction by establishing a basis of trust (Avolio et al., 2000; Maznevski & Chudoba, 2000; Suchan & Hayzak, 2001). This is consistent with the observations of participants in Study 1 that meeting their leader face-to-face was a defining moment in their relationships; afterward, communication was positively affected. It may be that at the dyadic level, the prediction of transformational leadership by prior knowledge is similarly related to trust. Prior knowledge contributes to a mutual basis of understanding (Cramton, 2001) and facilitates a trusting relationship, even in the absence of nonverbal cues that are available in rich media (Daft & Lengel, 1984). Trust is associated with transformational leadership as discussed above.

The fourth relationship context characteristic that predicts transformational leadership is control beliefs. Control beliefs have previously been associated with trust in manager (Brashear et al., 2005) as well as individual outcomes, such as job satisfaction and organizational commitment (Furnham, 1992) in the proximal environment. The findings in this research are consistent with these previous findings; in the remote environment, control predicts transformational leadership, job satisfaction, organizational commitment and perception of manager trust. Control is the only relationship context characteristic that exerts direct influence on individual outcomes, in addition to predicting transformational leadership. It may be that the importance of control is heightened in the

remote environment, with its complexities. One could speculate that in the remote context, members may feel more in control, with less direct supervision, or alternatively, they could perceive themselves to be at the mercy of technology, unable to contact their leaders when they need to and/or unable to accurately interpret interactions in the absence of nonverbal cues. A sense of mastery over events has been associated with increased ability to cope with occupational stress (Yagil, 2002). Control beliefs may mitigate feelings of powerlessness created by being isolated from the political activity surrounding the manager (Cramton, 2001; Powell et al., 2004), resulting in increased satisfaction. Because transformational leaders are considered to act in empowering ways, the sense of being in control may lead individuals to interpret leader behaviors as transformational, indirectly predicting satisfaction, commitment and perceptions of manager trust.

Finding 2: Perceptions of Transformational Leadership Mediates the Relationships between Context Characteristics and Individual Outcomes

Early in the development of this model of remote leadership, I considered that trust, perceived leader integrity and perceived managerial support would, with transformational leadership, mediate the relationships between relationship context and outcomes. The voluminous literature demonstrating the importance of trust in leadership (Dirks & Ferrin, 2002) suggested that it should be included as a separate variable. Little empirical attention has been paid to the embedded social context of trust, and the process of its development in management relationships is not fully understood; there is not even a consensus on a definition of trust (Atkinson & Butcher, 2003). Depending on the theorist, the components included in the construct called “trust” will vary. For these reasons, I chose to initially include measurements of perceived leader integrity, perceived managerial support and trust in manager, in addition to perceptions of transformational

leadership, as mediating variables in the model. In Study 3, however, analysis revealed collinearity among these concepts. Because the focus of the research is on leadership itself, I chose to omit these variables from further analysis, leaving perceptions of transformational leadership as the single mediating variable in the proposed model.

Models of leadership traditionally pose leadership style as the independent variable, which affects individual outcomes directly and/or indirectly, frequently with contextual variables as moderators or mediators. The possibility that leadership style may play a mediating role has not been empirically investigated to any extent. One study of proximal students and instructors by Walumbwa, Wu and Ojode (2004) demonstrated that perceptions of transformational leadership mediated the relationship between student gender and outcomes. This appears to be an isolated example. In contrast, this program of research suggests that, in the remote environment, perceived leadership style is not an independent variable, but is predicted by characteristics of the relationship context, and in turn, predicts individual outcomes. Furthermore, the findings suggest that these relationships between context and perceptions of transformational leadership are not significant in the proximal environment. However, the findings also demonstrate that perceptions of transformational leadership directly predict individual outcomes, regardless of the relationship context. This is consistent with an impressive volume of research that has demonstrated a positive association of transformational leadership with desirable outcomes (Dvir et al., 2002; Judge & Bono, 2000; Kirkpatrick & Locke, 1996). Once a leader is perceived to be transformational, the outcomes are similar. How that perception is created differs in each environment. As previously discussed, in the remote environment, relationship context matters by predicting perceptions of transformational

leadership. It may be that in the remote environment, context is so omnipresent that it filters the way in which individuals perceive and interpret leader behaviors. The “remote” relationship environment is, after all, defined by its context – and that context is fundamentally different from the environment in which the majority of leader-member, indeed most human, relationships have been conducted since the dawn of history. The context of the proximal relationships is equated with “normal” and may therefore not be differentially influential in individuals’ perceptions and judgments. This possibly explains the lack of consideration of relationship context as the predictor of leadership style in most previous research, since most leadership models are predicated on the face-to-face relationship. The findings of this research demonstrate that these models are not applicable in an environment in which relationship context is not “normal”. To manage perceptions of leadership style in the remote environment, it is not sufficient to exhibit specific transformational behaviors; leaders must manage, consider, and adapt to the characteristics of the context in which the relationships are conducted.

Finding 3: Individual Characteristic, Need for Leadership, Does Not Moderate Remote Relationships

A substantial amount of conceptualizing about teleworking, virtual teams, and the remote environment give consideration to the concept of individual differences and how they influence outcomes in these situations (Cascio, 1999; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Potter & Balthazard, 2002; Shin, 2004; Sparrow, 2000; Straus, 1996; Workman et al., 2003). With the exception of the influence of gender, however, there has been little investigation of the role played by individual differences in the remote environment (Powell et al., 2004). Accordingly, I investigated the possibility that individual characteristics might moderate the relationships between relationship

context characteristics, perceptions of transformational leadership, and individual outcomes. To capture the widest range of individual differences, without creating an unacceptably long instrument, I used the measure entitled “need for leadership” (de Vries et al., 2002). The need for leadership is a parsimonious measure, linked to a variety of personal, task, and organizational factors at the same time. In the proximal environment, this variable demonstrated significant, but weak effects on the leadership-outcome relationship (de Vries et al., 2002). Given the differences between the remote and proximal environments, it appeared logical that not all followers would be an appropriate match for the remote job. However, there was limited interaction effect between need for leadership, relationship context, perceptions of leadership style, and outcomes; only the interaction between face-to-face importance and need for leadership had a significant association with perceptions of transformational leadership, explaining precisely 1% of the variance. This analysis was conducted on a large sample of remote workers from the same organization. I considered that the lack of significant findings might be attributable to restricted range on the variable – perhaps only individuals with a low need for leadership were placed in these jobs, or responded to the survey. However, the responses to this measure were distributed normally. Perhaps the measure itself is the reason that the findings were non-significant. By trying to capture information on too many individual characteristics, it may be diluting the effect of a salient few.

With the breadth of research demonstrating the importance of person-job fit (Shin, 2004), it is only logical to conclude that some individuals may not be suited for work in the remote environment. This effect requires further investigation with specific individual differences.

Finding 4: Remote Leader-Member Relationships Differ from Proximal Relationships

A substantial body of research and theory has repeatedly demonstrated that leadership is an important predictor of individual, team and organizational outcomes. For example, a quick search of the scholarly journals indexed in the database, ABI, using the subject heading “leadership” retrieved nearly 7000 articles. This body of knowledge is based on a model in which individuals interact with their leaders in a “face-to-face” relationship (Kelloway et al., 2003). Although preliminary research in the area of group decision support systems suggests that leadership in environments in which group members interact largely through technology is vitally important and associated with effectiveness (Fjermestad & Hiltz, 1998), we know very little about whether the face-to-face model accurately describes leader effectiveness in the remote environment. Much of the previous research into the remote environment has focused solely on teams, rather than on the leader-follower relationship. A search in the ABI database on remote or virtual leadership retrieved 34 articles, only five of which were empirical studies. Yet, despite this lack of knowledge of the processes and factors involved in remote leadership, managers are increasingly asked to manage their employees from afar (Martins et al., 2004), meaning that the majority of their interaction takes place over some form of media, rather than face-to-face.

Theorizing in the existing literature often refers to the remote environment as different and more complex than the proximal environment. Yet there is little empirical research available to confirm this assumption, or to identify and explain the factors that

contribute to its increased complexity (Kayworth & Leidner, 2002). Furthermore, there is still debate among researchers on this very point (Cohen, 2000; Gluesing, 2000; Maznevski, 2000); the fact that there may be different processes and factors involved in leader-member relationships in a remote environment has not previously been demonstrated empirically. Therefore, we continue to rely on the face-to-face model of leadership to explain and manage these relationships.

Perhaps the most fundamental finding of this program of research is that there are qualitative differences between a remote leader-follower relationship and a proximal one, beyond simply of a degree of behavior. In Study 1, the interview participants collectively voiced their conviction that the two experiences were different. In Study 4, this view was supported by statistical analysis. The results of the MANCOVA suggested significant differences between the two groups, even when age and gender were controlled. Specifically, the remotely managed group reported significantly less unplanned communication and surprisingly, less communication over technologically mediated platforms than did the proximal group. Frequency of communication has previously been significantly associated with positive individual outcomes, particularly in the remote relationship (Hart & McLeod, 2002; Jarvenpaa et al., 1998; Jarvenpaa & Leidner, 1998; Kayworth & Leidner, 2002; Staples, 2001), suggesting that outcomes, such as satisfaction, may be reduced for individuals in a remote leader-member relationship if this contextual characteristic is not managed appropriately.

It is noteworthy that although these context characteristics did not significantly predict perceptions of transformational leadership in the proximal sample, the relationships between transformational leadership and job satisfaction, organizational

commitment and manager trust are similar in both models. Perceptions of transformational leadership are differentially predicted in the two environments; however, once that perception exists, it appears to predict job satisfaction and organizational commitment regardless of proximity. This finding further strengthens the argument that the remote and proximal leadership environments are different. It is consistent with previous findings that transformational leadership behaviors are effective in a remote environment (Kelloway et al., 2003) and may raise questions about previous findings that suggest otherwise. For example, Howell, Neufeld and Avolio (2005) found that physical distance negatively moderated the relationship between transformational leadership and unit performance. The findings of the current studies suggest that if leader behavior is adapted to match the unique remote relationship context, followers will perceive that leader to be transformational, which will positively predict job satisfaction and organizational commitment.

Potential Limitations

The current studies have deepened our understanding of the remote leader-member relationship. Although there are obvious benefits associated with this program of research, there are also a number of limitations that must be acknowledged. The sequential mixed method design of this research used qualitative techniques to explore participant views and subsequently used these views to develop and test both an instrument and model on two large samples, providing a measure of triangulation of results (Creswell, 2003).

The current studies relied on self-report measures. Method variance as a source of bias in self-report measures is often a concern, particularly in relation to acquiescence or social desirability. Acquiescence is the tendency for respondents to agree or disagree with all items, regardless of content. Social desirability is the tendency for respondents to choose what they perceive to be the socially desirable response, regardless of its truth (Spector, 1987). In a study of the effect of these two concerns, Spector (1987) found that neither acquiescence nor social desirability were a source of method bias in the measurement of affect and perceptions in organizations. He later noted (1994) that a design using self-report instruments can be a useful first step in deriving hypotheses about how people react to jobs. Because remote leadership is a topic that has received very limited empirical study, the use of self-report measures of job characteristics and leader traits appears to be appropriate in this program of research. Furthermore, Lindell and Whitney (2001) observed that correlations among self-reports of characteristics of the job and leader traits represent low vulnerability to common method variance (p. 119). The variables used in the current studies can be included in this category of low vulnerability, because they represent contextual characteristics of remote jobs and perceptions of transformational leadership style. Finally, Spector (1987) has observed that there appears to be a heuristic rule about self-report measures that suggests, somewhat facetiously, that they all correlate at .30. Statistical analysis of the data in studies 3 and 4 provides some measure of assurance that method variance is not a source of bias; in all of these studies, the majority of the correlations were .20 or below. Specifically, in Study 3, 81% of correlations were .20 or below. Similarly in Study 4, 58% of the correlations were < .20. Although these points suggest that common method variance does not

account for the results obtained in the current studies, the exclusive use of self-report measures can pose a risk. I believe that the current research makes a valuable contribution to the literature of remote leadership. These are some of the first studies to consider the relationships of remote context, leadership, and individual level outcomes. As little is known about these relationships, valuable information can be obtained from self-report data. However, further research should endeavor to supplement self-report measures with objective indicators. .

Non-response bias is often a concern in large survey-based investigations, such as the ones I conducted in Studies 3 and 4, and it is another potential limitation. Non-response bias poses a threat to the generalizability of the findings if the obtained responses do not adequately reflect the attitudes of the population as a whole (Schalm & Kelloway, 2002). In Study 3, the sample consisted entirely of telecommuters at Nortel Networks. It is possible that those who were most satisfied with their remote assignments or most committed to the organization were more likely to complete the survey than were other individuals. However, an inspection of the distributions of these two variables suggests that this is not the case: for job satisfaction, $\underline{M} = 5.06$, $\underline{SD} = 1.16$ and for organizational commitment, $\underline{M} = 4.81$, $\underline{SD} = 1.40$, both on a seven-point scale. Furthermore, low response rates only bias study results if the non-response distorts the effect of interest (Schalm & Kelloway, 2002). In an investigation of previously published works, Schalm and Kelloway found a small, statistically insignificant negative relationship between the response rates of surveys and the reported effect sizes between variables, leading them to conclude that non-response bias would not substantially affect the findings.

A final limitation is the largely cross-sectional nature of the current studies. Because data were collected concurrently, the causal sequence of the relationships cannot be fully determined. Although the structural model supported in Study 4 provided a good fit to the data, it is possible that there are other models that would also provide an acceptable fit. However, the sequential nature of the research, in which each study built on the results of the previous study, suggests that the model is appropriate and that other alternate structural relationships may be less plausible. In particular, the support provided by the large scale quantitative studies for the findings of the exploratory, qualitative study suggests that the relationships are as represented by the model. Specifically, the prediction of perceptions of transformational leadership by each of the contextual characteristics is plausible, while in some cases, reverse causality is not. For example, it is not reasonable to hypothesize that follower perceptions of leadership cause the frequency of leader-initiated unplanned communication to increase. Nor is it feasible that they cause the leader to schedule regular interactions and to adhere to that schedule. Certainly, followers' perceptions of leadership cannot rewrite history and establish prior knowledge, where none existed. It is far more likely that knowledge of the leader's behavior predict perceptions of the leader, as previously argued by Puffer (1990). The prediction of perceptions of transformational leadership by control beliefs is the only relationship on the exogenous side of the model that could logically exhibit reverse causality. It could be argued that when followers perceive a leader to be transformational, their beliefs in their control over the work environment increase. There is little empirical evidence that proves causality in either direction. This is clearly an area worthy of further research.

There are at least two prior studies that support the causal sequence from transformational leadership to individual outcomes in the proximal environment. In a true experimental design, Barling and colleagues (1996) found evidence of causal influence of transformational leadership on subordinates' perceptions, attitudes, and performance. Similarly, Kirkpatrick and Locke (1996) found some support for a causal linkage model of transformational leadership effects on individual outcomes. The fact that there were no significant differences between these relationships in the proximal and remote environments suggests that these causal influences apply in both environments. However, this suggestion should certainly be tested in future research.

Suggestions for Future Research

A number of ideas for pertinent future research have arisen from the current studies. Some of these ideas were noted in the previous discussion of limitations. Although self-report measures are acceptable in emerging areas of research, they are not the preferred method of investigating relationships as our knowledge grows. Future studies into the relationships described above would benefit from the use of additional, objective indicators. For example, in addition to job satisfaction, organizational commitment and manager trust, the use of objective indicators and/or third party reports may be beneficial. A longitudinal investigation to examine the effects over time of the relationship context variables would add dimension to our knowledge. For example, the existence and effect of the learning curve, suggested by Study 1 participants, and the effect of prior knowledge could both be more accurately assessed in a longitudinal study that measured follower attitudes from assignment to a remote job to a specific point in time. Similarly, the effect of manager tenure in a remote assignment could be

investigated longitudinally. As noted earlier, research into the relationship between control beliefs and perceptions of transformational leadership should be conducted in a design that demonstrates the direction of causality. In addition to questions of causality, future research to investigate the possible role of leadership attributions (Hall & Lord, 1995) may be beneficial; it may be that some phenomenon specific to the remote context, such as a heightened need for situational control, causes individuals to attribute their individual outcomes to leadership.

The effect of individual characteristics on the remote leader-member relationship requires further investigation. It would be beneficial to investigate the relationship between variables in the model and specific individual characteristics, suggested by previous research in the remote environment, such as disposition to trust (Brown, Poole, & Rodgers, 2004).

Because this is a new field of investigation, the topics for further research are numerous. However, three of the more obvious areas relate to cross-cultural effects, multiple levels of analysis and the role of trust. With the nature of remote work itself, which enables individuals from multiple geographic and/or national areas to work together, it would be beneficial to test the model on cross cultural samples to determine its utility in managing multinational workforces.

Much of the research into the remote environment has been conducted at the group level of analysis. The topic of virtual teams has received far more attention than has the effect of the remote relationship on the individual. Further research should continue testing the applicability of the model at the group level. Although perceived interdependence and network importance were included in the model initially, they

proved to be non-significant in the prediction of perceptions of transformational leadership. It may be that further qualitative study would identify other contextual characteristics that predict transformational leadership in the remote team environment. It is also plausible to assume that certain group characteristics might act as moderators of the relationships described in the model.

Trust has been mentioned many times in this document. Originally hypothesized as a mediator, it was omitted from further analysis because of statistical considerations. However, its relationship with the various factors in the model have been repeatedly conceptualized and sometimes empirically demonstrated in the proximal, and to a lesser extent, the remote environments. Trust, like leadership, is still not fully understood (Dirks & Ferrin, 2002); researchers cannot even agree on a common definition. Despite this, I believe it plays a pivotal, if indirect role in leader-member relationships in both environments, and perhaps more so in the remote environment, in which followers may feel especially vulnerable. The specific role of trust and the processes by which it is developed in the remote environment are significant areas for further research. We have upwards of six decades of research and theorizing about proximal leadership and we still have unanswered questions; it is not surprising that there are so many promising areas for further research about a phenomenon that is so recent.

Implications

This research substantially contributes to our knowledge of a relatively unexplored area and has a number of important implications for both research and practice. First of all, the current studies demonstrate the importance of considering context when investigating remote working arrangements. The results of both the qualitative and

quantitative investigations suggest that the context of remote leader-member relationships differs in significant ways from the context in which proximal relationships are conducted. Research in this area should no longer be premised on the face-to-face model of relationships. In a related vein, the use of perception of leadership style as an independent variable should be re-examined; certainly this research suggests that it does not apply in the remote relationship environment, since perception of transformational leadership has been found in these studies to be predicted by contextual characteristics. It may be that, even in the proximal environment, other variables should be explored as predictors of perceptions of leadership. The research provides more support for association between transformational leadership style and positive individual level outcomes, with some assurance that this effect applies in differing environments. A final consideration for future empirical investigations suggested by these findings is that relationship context be integrated into research design. To date, many of the studies on remote work have used ad hoc student groups (Alge et al., 2003; Mennecke & Valacich, 1998); given the importance of relationship context suggested by the current research, the generalizability of findings from studies that rely entirely on such samples may be in question.

In a practical vein, the findings of this research are exciting and can provide direction to individuals charged with managing individuals remotely. The “good” news is that it is possible to establish perceptions of transformational leadership from a distance and that once established, positive outcomes result. The “bad” news is that establishing this perception takes work. The remote leader-follower relationship should be characterized by open, honest communication, in which individuals feel free to initiate

casual interaction through various media. To create perceptions of transformational leadership, frequent interaction is required. That interaction is of two types – unplanned and regularly scheduled. Managers should plan for “unplanned” communication, and telephone, email, or visit remote followers on an ad hoc basis, and not merely in response to a problem situation or issue. Managers should schedule regular times to communicate and keep those commitments – an onerous task if the span of control is wide. This regularly scheduled communication can be conducted through various media; it is the predictability and reliability of the interactions that matter. Managers should avoid the pitfall of having more frequent communication only with those with whom it is easy to communicate – the proximal followers. Proximal followers naturally have more opportunities for interaction; managers must manufacture similar opportunities for remote followers.

Managers can do little to create prior knowledge where none exists; however, they can still create that mutual basis of knowledge that prior relationships establish. Initial face-to-face contact with remote followers may serve as a proxy for prior knowledge (Avolio et al., 2000; Maznevski & Chudoba, 2000).

Control beliefs are particularly important in the remote environment, which may be complex and isolating. Enhancing control beliefs in followers requires specific leader behaviors and job design factors. Significant levels of decision and process control have been associated with control beliefs (Brashear et al., 2005), suggesting that an empowering management style is important to perceptions of control (Conger & Kanungo, 1988; Spreitzer, 1995). Creating an atmosphere of trust in both directions also contributes to the formation of control beliefs. The varying components of trust are

invoked by differing leader behaviors that convince followers of one's reliability, ability, and benevolence (Kramer & Tyler, 1996).

The direction from the findings of this research on the issue of selection of employees for remote assignments is that individual characteristics do not significantly influence perceptions of transformational leadership or individual outcomes of job satisfaction, organizational commitment and perceived manager trust. However, as discussed earlier, I believe this finding requires further investigation before being incorporated into management practice. It may be that, with the appropriate match between relationship context and perceived leadership style, positive individual outcomes will result, regardless of the individual characteristics; however, it may also be, as noted above, that problems with the measure itself contributed to the finding of no interaction. Certainly, Study 1 uncovered differing reactions from different participants, ranging from thriving in such a relationship to struggling somewhat ineffectively in one.

In summary, this research suggests five important actions for managers of remote employees to take to create the contextual conditions that lead to positive individual outcomes:

a) create a climate of open, honest communication, in which employees feel free to contact you when they need to

b) plan to engage in unplanned communication - engage in unsolicited communication by phone or email, "just to check in"

c) establish regular times to communicate with their direct reports and adhere to that schedule

- d) in the absence of a prior relationship, arrange for face-to-face communication as early in the relationship as possible,
- e) keep employees informed of the reasons behind your decisions, give them the benefit of the doubt when problems arise, and give them latitude in decision making.

A similar list of “do nots” for both leaders and members could include the following:

- a) do not assume that your email messages have, in fact, been clear, or even received; the onus is on the sender to ensure that the message has been received and understood; as individuals become more comfortable with cyberspace, they tend to become more complacent, relying naively on the infallibility of technology
- b) as a member, do not assume that you cannot influence the communication protocols; take responsibility for asking for more frequent or different communication, if that is what is required
- c) as a leader, do not assume that the same level or type of communication will suit every member and do not interpret silence as acquiescence
- d) as a leader or a member, do not assume that a remote relationship requires the same behaviour as a proximal leader-member relationship; it appears to be an essentially different arrangement and both parties must factor that into their behaviour
- e) as either a leader or a member, do not be discouraged with remote relationships; with effort and experience on the part of both participants, these relationships can have positive outcomes.

Summary and Conclusions

This research moved from general exploratory findings, through the development of a validated instrument with which to assess remote relationship context, to hypothesized relationships, and finally to an empirically substantiated model of remote leadership. The current research thus contributes some of the first empirical information to the field of remote leadership, an area of study still in its infancy, and has widespread implications for research and practice. The findings suggest that there are significant differences between remote and proximal leadership, that these differences reside in the remote leader-member relationship context, of which four characteristics predict perceptions of transformational leadership; unplanned communication, regularly scheduled communication, prior knowledge and control. Furthermore, the findings suggest that once perceptions of transformational leadership are established, the individual outcomes are similar in both the remote and proximal environments.

The current studies make a contribution to resolving the ongoing debate about whether or not the remote environment is different and suggest relationships deserving of further research. The findings provide a solid starting point for an extended program of research that considers the applicability of the model in cross cultural environments and at differing levels of analysis, and the role of individual characteristics in the remote leader-member relationship. This research also has important implications for practitioners, by providing specific, empirically-based guidance to individuals charged with managing remotely.

We live in a world where technologically mediated communication is rapidly replacing face-to-face contact, and we have little understanding of how this affects

human interaction, especially in the workplace. These studies suggest that it may require a different way of managing. I urge researchers to pursue further investigation of the relationships demonstrated here. We cannot manage what we do not understand. In the absence of this understanding, we risk settling for something “good enough” in organizational relationships, and losing much in the process.

He broke off, and she fancied that he looked sad. She could not be sure, for the Machine did not transmit nuances of expression. It only gave a general idea of people - an idea that was good enough for all practical purposes.... The imponderable bloom, declared by a discredited philosophy to be the actual essence of intercourse, was rightly ignored by the Machine, just as the imponderable bloom of the grape was ignored by the manufacturers of artificial fruit. Something 'good enough' had long since been accepted by our race.” (Forster, 1947)

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Appendix A

Study 1: Interview Guide

1. Tell me about your experience of reporting to a manager who was in a different geographic location. (Grand Tour)

Planned prompts:

- a) How long did that situation continue?
- b) Describe your job? (Complexity, interdependence, level of formalization provided by training, etc.)
- c) How did you and she/he communicate? (Types of media used; percentage of face-to-face component)
- d) How frequently did you and she/he communicate?
- e) Who initiated the communication and what percentage of the time?

2. Tell me about how your manager behaved. (Grand Tour)

Planned prompts:

- a) What were the messages like in terms of tone and approach?
- b) Did you feel that there was a personal relationship?
- c) Did you understand the task and if so, how did you reach that understanding?
- d) How did your manager give you direction?

3. Tell me about a time when you required assistance from your manager? (Grand Tour)

Planned prompts:

- (a) Were you able to reach your manager quickly enough?
- (b) What medium did you use?
- (c) How did your manager respond?
- (d) Was that effective?
- (e) Were you satisfied with the advice/assistance/response?
- (f) How did his/her response differ from that of a face-to-face manager?

4. What is effective leadership? (Grand Tour)

Planned prompts:

- a) How did this leader rate in terms of effectiveness? Why?
- b) How motivated were you? What part did your manager play in that?
- c) Can you give me stories of good or bad interactions, from your own or others' experiences?

5. Given the choice which would you prefer – remote or face-to-face leadership? Why or why not?(Grand Tour)

Planned prompts:

- (a) How did you feel about your job? (satisfaction)
- (b) How did you feel about the organization? Were you considering leaving?
(organizational commitment)
- (c) How did you feel about your relationship with your manager?
- (d) Do you feel that you were as effective in this situation as you could have been?
Why or why not?

6. What advice would you give to a person who is new to remote management?

Appendix B
Example of Transcript Table
“Kelly”

CONCEPT	DESCRIPTION WORDS
Autonomy	<ul style="list-style-type: none"> - there was very little micromanaging in the sense that you're really able to have a freer rein and personalize yourself quite a bit more, - I prefer remote
How well you like being managed remotely is influenced by the stage of career	<ul style="list-style-type: none"> - it was difficult, because I began my managing career with an offsite, again, with a manager that wasn't onsite, in the sense that I don't believe I was able to get some of that great feedback that you could get from some one seeing you in action. - When I started out my career, having someone face to face would have helped tremendously, now I get to the point where I prefer the remote because I don't want to be micromanaged.
Developmental feedback difficult to get	<ul style="list-style-type: none"> - that core competency feedback and the skill feedback that you would normally get from some one onsite.
Task oriented communication	<ul style="list-style-type: none"> - it was all looking at the numbers, so it was less of the personality points...t you don't get a chance to get that warm and fuzzy feedback, and that core competency feedback and the skill feedback that you would normally get from some one onsite. Normally what they're looking at and what they can really only look at is the numbers.
<p>Criticality of consistent, regular communication</p> <ul style="list-style-type: none"> - development - org commitment - belongingness <p>In both directions!</p>	<ul style="list-style-type: none"> - that was very key, as well, ... to have that consistent contact, whether it be a weekly meeting, a bi-weekly meeting, or anything like that. That to me really helped my development and helped me have a sense of belonging, I guess, to the corporation and also to ah, not necessarily loyalty, but to understand that the person I was reporting into didn't forget me 'cause I wasn't in their face, so to speak. - a weekly meeting over the phone, scheduled meeting, which I know myself, I looked very forward to, 'cause it gave me the opportunity to either 1) vent if I needed, identify some opportunities or bounce some ideas off of my manager at the time in a specific, personalized way, as opposed to just calling them one of...that time was booked for me. Um so it..I felt very important, let's put it that way, to be able to have that time with the individual and I really cherished that time

	<ul style="list-style-type: none"> - you communicate with them on the good and the bad, to let them know what's going on and if there is something that might, that you foresee could become bigger, whether it be from performance or employees, or anything like that, just let them know so they're not blindsided by anything.
<p>Communication vehicles - phone used to ensure clarity in complicated situations</p>	<ul style="list-style-type: none"> - normally over the phone - Email was used very often and that was typically the primary source of contact off the once a week meetings or the occasional call. - I would have sent a general email and ... because it's very hard not to get personal on those things ...and you have to be very sure... when you're talking with some one like that, so what I would do, is we would follow up with a conversation afterwards. Just to make sure that all of the points that I outlined in the email were taken in the correct context by my manager, and that nothing was left out.
<p>Use of email – message content important – concise, task related, considered – also allows you to position things more carefully</p>	<ul style="list-style-type: none"> - I learned very quickly to condense and summarize. - it really helped me understand what was important to that manager as well...I could get concerns or issues or even successes identified more quickly, if I could put it in the format that they were able to read quickly and understand. - I also like providing updates to my managers via email from time to time, as opposed to just on the phone ...or face to face. Because ... you have more time to plan out exactly what you're going to say, so that you make sure that it's quite powerful, whether it's an opportunity, or whether it's a success. - share your successes whenever you have them. And what I find works really well, is an email
<p>Accessibility</p>	<ul style="list-style-type: none"> - I was always able to call my managers at any time.. - Although ... out of sight out of mind, it was a little bit obviously more difficult to get in touch with some one by phone, as opposed to just walking into their office.. and popping your head in... -
<p>Face to face contact</p>	<ul style="list-style-type: none"> - That would arise usually from a regularly scheduled visit. Umm anywhere..it would normally be once a quarter - could include a visit from not only my direct manager, but their managers as well, - a lot more informal - we would then talk to the staff...they'd get some feedback as well. I think it's pretty critical.. to get the

	<p>feedback of my employees as well.</p> <ul style="list-style-type: none"> - having that discussion face to face, there was a certain timeline that you had 'cause the individual was only there for a certain amount of time. So, um, it would be, yeah, it would come fairly quickly after they were there - I would get the most developmental feedback, is when they were face to face with me. - That is something that any call center manager, I'm sure dreads, is when your boss's boss .. comes down and sits down with the people who report into you ...you hope that you've managed well enough...that they have brought everything to you and they're open enough with you, so that when ... they're speaking with your manager, that there's really nothing of a surprise.
Importance of providing context in communication	<ul style="list-style-type: none"> - his emails were very blunt, they could be lengthy, but they were well rounded as well, in the sense that there was reasoning behind it, it wasn't just a go-do, but the communication was from start to finish, just so there was a clear understanding as to what was needed, but more importantly why.
Remote context seen to shield from politics through focus on results	<ul style="list-style-type: none"> - I never experienced was any of the other political maneuverings - that allows you to do is to focus on the business at hand, as opposed to worrying about any political maneuverings around there.
Importance of network of colleagues – leadership substitute	<p>We also communicated quite a bit with different people around the country. All of us were remotely managed ..ah, ... and again, talking to the fact that you can't always get a hold of the person, you learn to rely on a network a LOT more than you would rely on one person. So I'd call some one up in Vancouver, if I was having a problem or even just to check in. You ...I found that you felt a little bit alone.or more alone.. right, because you can't just pop in again...that face to face conversation..so that you really relied on other people.</p>
Timing is a difference in dealing with situations	<p>it should be dealt with quicker if the manager is onsite.</p>
Serendipitous communication opportunities missing in remote - so managers are involved in more details and more interpersonal issues if onsite	<p>the one piece that I find with a manager onsite, is that they would know some slight, something about it, beforehand. Because I might run into them in the hall, or something like that, and might just say "by the way, heads up." So you have that opportunity to do with the manager on site whereas you don't necessarily have that opportunity with some one offsite, because you don't also want to inundate them with specific phone calls.</p> <ul style="list-style-type: none"> - When you're remotely managed, they don't see your

	<p>successes, so much as they sometimes see your failures 'cause that's when they're contacted.</p>
<p>What separates good remote leaders from bad?</p> <ul style="list-style-type: none"> - communication - concern for development 	<ul style="list-style-type: none"> - fantastic in terms of the followup – clear, consistent, concise feedback, as well as sharing goals and really promoting a team environment - [the poor ones]were less involved in progressing Myself, more involved in progressing themselves. - one thing that I've heard over and over again ..that I don't hear from them until it's something bad...and that usually could mean anything from a complaint from an employee that goes right to them; it could be a complaint from a client, or it might even be because the numbers are bad. - from a good perspective, from a remote managing, ... one of the individuals, who would call me sometimes, just out of the blue, just to chat to see how everything was going, ah, ask questions if they would receive any complaints from someone or anything like that, investigate them, and ask questions and ask work with me, to identify what the root cause is to come up with a solution.

Appendix C

Example of a Concept Card
Trust

INFORMANT	DESCRIPTION/COMMENTS
Participant B	<p>“We had a chance through that [recruitment] process to kind of get to know each other and you know I think he felt very much a similar sort of responsibility for, you know, moving me as his player into an organization... So the trust came from the fact that I was his player.</p> <p>Matt was a politically astute kind of guy. I didn't not trust him, but I didn't really get that close to him either, you know...his primary focus was fixing his mandate and so it wasn't that I didn't trust him, it's just that I understood where his energies were..., I trusted him enough”</p> <p>[The ineffective manager] - she predominately spoke about her other team members of the management in derogatory ways. It was always a conversation about people.</p>
Participant C Equally concerned with manager's trust in her	<p>“it's important to be honest” “I trusted my boss during job loss crisis but others less so because there was no need to invest myself”</p> <p>“Implied trust that you are being productive trust – that I'm doing my best, making good decisions – preponderance of ability for others to comment – managers can jump to conclusions – come to you first”</p>
Participant D	<p>“Don't play any games. Because it isn't hot... immediate, because chances are you don't get a quick comeback, nobody gets a chance to check it out. A little white lie</p>

	<p>snowballs so fast...Any kind of power move snowballs so fast .. that you can very quickly move away from what your outcomes were going to be into some kind of internecine warfare that you don't even understand.”</p> <p>“Make sure that agreements are constantly referred to and never changed or if they are changed, they are mutually changed and enough thought has gone into the change that everybody agrees with it, not thinking you agreed with it.”</p>
Participant A	<p>“In my previous (face to face) group, the fact that we knew each other well and we were able to develop trust, I think, as a group, and know each other reasonably well. I think it can lend itself to the effectiveness of the group in that we would be prepared to have a very vigorous debate or discussion on a point, or series of points, and had conversations. On this remote team, everybody's still very polite, hesitant to take somebody on in a very sort of vigorous ...I think there was personal connection, personal level of trust lends to greater effectiveness and I think everybody's got a personal relationship, there's a professional kind of commitment to make sure the work gets done, ah, later on there's a personal commitment to sort of help of your friends sort of thing, so everybody would have been always prepared discussing and assist somebody who was overwhelmed or needed help with something”</p>
Participant E	<p>“That's really important, establishing trust, understanding”</p> <p>“Trust becomes important in a crisis – credibility”</p> <p>“I didn't make a significant effort to get to know [my manager]. I should have. In order to establish trust, [you need] more than deliverable on time – it's a personal relationship.”</p>

	<p>“It boiled down to a question of trust – couldn’t build it through emails, conference calls, not enough”</p>
Participant F	<p>“I never experienced ... any of the other political maneuverings...that allows you to do is to focus on the business at hand, as opposed to worrying about any political maneuverings around there.”</p>

Appendix D

Analytic Categories
Study 1

1. Learning Curve
2. Support
 - a. Group Member Support
 - b. Network Support
3. Communication
 - a. Matching Content and Medium
 - b. Types of New Communication Media Used
 - c. Face-to-face Communication
 - d. Regularly Scheduled Communication
 - e. Unplanned Communication
4. Trust
 - a. Prior Knowledge
 - b. Manager Trust in Employee
5. Control Beliefs

Appendix E

Variables Developed from Study 1

1. Efficacy (Learning Curve)*
2. Perceived Interdependence (Group Member Support)
3. Email Usage
4. Phone Usage
5. Instant Messaging Usage
6. Other Communication Media Usage
7. Facetime (Face-to-face Communication)
8. Face-to-Face Importance (Face-to-face Communication)
9. Regularly Scheduled Communication
10. Unplanned Communication
11. Network Importance
12. Control
13. Prior Knowledge
14. Manager Trust in Subordinate

* Terms in parentheses represent the original names of the concepts derived in Study 1

Appendix F

INFORMED CONSENT FORM

Remote Leadership**Elizabeth Kelley**

Department of Management

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I am doctoral student in the Department of Management at Saint Mary's University. As part of my doctoral thesis, I am conducting research under the supervision of Dr. Kevin Kelloway. I am inviting you to participate in my study. The purpose of the study is to examine the factors that influence leader effectiveness in a technologically mediated environment.

This study involves completing a web-based survey about your experience as an employee, and your perceptions of your manager. The survey takes about approximately 15 minutes to complete.

By participating in this study, you will help build a base of empirical knowledge about the experience of working in a technologically mediated (or "virtual") environment. **Your participation is completely voluntary. You may withdraw from this study at any time without penalty.**

All information obtained in this study will be kept strictly **confidential and anonymous**. You will not be asked to provide any identifying information, such as your name, email address, or place of work. To further protect individual identities, the results of this study will be presented as a group and no individual participants will be identified. Individual responses will be deleted after the data is aggregated. Only my supervisor and I will have access to the aggregated data file.

If you have any questions, please contact the student researcher, Elizabeth Kelley (ekelley@stmarys.ca) or the principal researcher, Kevin Kelloway at 491-8652; kevin.kelloway@stmarys.ca

This research has been reviewed and approved by the Saint Mary's University Research Ethics Board. If you have any questions or concerns about the study, you may contact Dr. John Young at ethics@smu.ca, Chair, Research Ethics Board. By clicking the box below, you are indicating that you fully understand the above information and agree to participate in this study.

Appendix G
Analytic Categories, Examples, Variables and Items Used in Study 2

Analytic Category*	Data Sample	Variable(s)	Examples of Scale Items
Learning Curve	<p>“I know it was certainly a learning process for everybody...the general feeling I get is that the company is getting better and better at it” (Greg)</p> <p>“My manager ...is still in the learning curve of getting used to managing people remotely” (Greg)</p> <p>“When I started out my career, having someone face to face would have helped tremendously, now I get to the point where I prefer the remote.” (Kelly)</p>	<p>Job Tenure</p> <p>Efficacy</p>	<ul style="list-style-type: none"> • How long have you been in the job you are rating? • The company is getting better and better managing remotely. • My manager is still learning to manage people remotely. • When I started this job, I was comfortable with the various forms of technology I used to interact with my manager and my colleagues.
Employee Characteristics	<p>“Types of people for whom remote work is not good: those who need/want recognition, quick advancement, schmoozers, lack of confidence, poor negotiators, poor at prioritizing, those unwilling to take risks, extroverts, those who like chitchat, those with no social network, those who are not professionally mature” (Jan)</p> <p>“New in a job, I need more info at first. With 15 years experience, I feel adept at the job; in other jobs, I might have been dead in the water without face to face interactions” (Jan)</p> <p>““Certain people would prefer more frequent communications with the managers or peers than a virtual work environment office and I think others are just as happy to be able to... It becomes an individual thing where it’s preferable or not. I know some people who just won’t work in a virtual environment.” (Scott F.)</p>	<p>Efficacy, Tenure</p> <p>Need for Leadership</p>	<ul style="list-style-type: none"> • When I started this job, I possessed relevant experience and training • I need my supervisor to: <ul style="list-style-type: none"> ○ give work-related feedback. ○ correct mistakes. ○ help solve problems. ○ recognize and reward contributions ○ provide me with support

	<p>“That was something we addressed, ‘You know I need more communication with you and I need to have your ear...’ so that’s worked. Just addressing it and saying ‘Look, I want to talk to you more’.” (Greg)</p>		
Group Support	<p>“The nature of the work was very, very collaborative and it was critical I thought that everybody be in the same place because so much of the value that you got was to be able to get everybody together for half an hour to discuss an issue or question” (Scott F.)</p> <p>“It’s a customer service planning group that is very spread out, and we’re trying to do a lot of collaborative work in a decentralized kind of environment – I don’t think we’re as effective as if we were all in a single place.” (Scott F.)</p>	<p>Collocation</p> <p>Perceived Interdependence</p>	<ul style="list-style-type: none"> • I work in the same physical location as other members of my work group. • I have learned to rely on my network of peers and colleagues
Collocation	<p>“People feel a bit cut off or isolated from the team, particularly when there are a lot of people who are in one place rather than a handful of people who are dispersed. They don’t have a sense of what’s going on day to day, they don’t get to know their colleagues and peers as well as the others who are together. I think that’s a sense of frustration.” (Scott F.)</p> <p>“I’m disadvantaged by the fact that I am only able to hear and I’m not able to hear everything, vs people in the room get the expression, get to feel the mood, whereas I would not.... that creates a real inequity.” (Scott B.)</p>	Collocation	<ul style="list-style-type: none"> • The majority of my team members work in a different location from me. • Other members of my team are in the same physical location as my manager. • Other members of my team are physically located together
Matching Content and Medium	<p>“...because we talked on the phone, so we didn’t feel it necessary to kind of go [in email], ‘How are you today?’... when we used email as a vehicle, we used it as ‘ I’m looking to do this’, or ‘ I’m trying to get this done, do you have these things available’, that kind of stuff.” (Kim)</p>	Message-Medium Match	<ul style="list-style-type: none"> • Email is useful for delivering information. • The hotter the issue the more difficult it is to use any technology other than face to face. • How do you generally communicate with your manager on issues that you consider to be of:

	<p>initial feel. “ (Greg)</p> <p>“I would always prefer the hotter the communication the better...if I can make up for all of my inefficiencies by energy and convincing people to like me, that’s the skills that we’ve used for generations so I appreciate the relationship based, the hot base, the face to face. The face to face relationship, whether we like it or not will take over and will help or hinder but usually help” (George)</p> <p>.... I don’t know what it is about being physically present, but it seems to make a difference.” (Scott F.)</p> <p>“I would get the most developmental feedback, is when they were face to face with me.” (Kelly)</p> <p>“It boiled down to a question of trust – couldn’t build it through emails, conference calls, not enough – I should’ve spent more time in the early days with her” (Asad)</p> <p>“Communication is more effective remotely than face-to-face – very focused – the manager’s emotionality doesn’t affect me. I can’t see the body language – which is probably good – then you’re able to plan and think in nonemotional way” (Jan)</p>		<ul style="list-style-type: none"> • I get the most valuable feedback when I meet my manager face to face. • I am more effective interacting with my manager through technology than face to face.
Unplanned communication	<p>[With an ineffective manager] “I was working for the “air”... you never get in touch with them. You never talk to them. ..You cannot have a remote relationship and not talk to the person. It’s just not a possibility. That isn’t a relationship.” (Kim)</p> <p>I think I’d be more effective (face to face) because I would have the greater benefit of communication with peers and my supervisors ...You can have more</p>	Unplanned Communication	<ul style="list-style-type: none"> • In general, I communicate with my manager: <input type="checkbox"/> Several times/day <input type="checkbox"/> Once/day <input type="checkbox"/> 2 - 3 times/week <input type="checkbox"/> Once/week <input type="checkbox"/> 2 – 3 times/month <input type="checkbox"/> Once/month <input type="checkbox"/> Every 2 – 3 months <input type="checkbox"/> Less than once every 2 – 3 months • My manager and I often communicate at unplanned times.

	<p>sort of hallway conversations, more informal conversations and that's going to lead to a better work product at the end of the day. " (Scott F.)</p> <p>"With a manager onsite, they would know ..., something about it, beforehand. Because I might run into them in the hall, or something like that, and might just say "by the way, heads up." (Kelly)</p> <p>"From a good perspective, from a remote managing, ... one of the individuals, who would call me sometimes, just out of the blue, just to chat to see how everything was going..." (Kelly)</p> <p>"One thing that I've heard over and over again ..that I don't hear from them until it's something bad." (Kelly)</p> <p>Being able to ask questions at the drop of a hat about whatever comes during the course of the day and getting a timely response. Really that's the key thing of remoteness." (Greg)</p>	<p>Control</p>	<ul style="list-style-type: none"> • My manager will sometimes just call to check in. • I don't tell my remote manager the kinds of thing I would if I ran into him/her in the hallway. • I don't have the opportunity for casual contact with my manager. • My manager never gets in touch with me unless there's a problem. • I can get in touch with my manager when I have to.
<p>Regularly Scheduled Communication</p>	<p>"I ask everyone to set up one hour every two weeks...to have a one hour meeting...For people that I manage remotely, I have to ...force myself to meet with them and know and understand what their issues are....I actually tried to initiate the same one hour conference call with my manager, every week.... But I gotta be honest with you, he's not following through...he's too busy." (Scott B.)</p> <p>"A weekly meeting over the phone, scheduled</p>	<p>Regularly Scheduled Communication</p>	<ul style="list-style-type: none"> • My manager and I have regularly scheduled times to communicate. • My manager is consistently available for scheduled remote meetings. • I value our regularly scheduled communications. • Regularly scheduled communication opportunities improve the working relationship between my manager and me.

	<p>meeting, which ... I looked very forward to...that time was booked for me. so .I felt very important, let's put it that way, to be able to have that time with the individual and I really cherished that time" (Kelly)</p> <p>"The other thing was regular, like REGULAR, regularly scheduled team meetings. Initially it was once/month, and then we boosted it up to every two weeks." (Greg)</p>		
Network Importance	<p>"We also communicated quite a bit with different people around the country. All of us were remotely managed ... and again, you can't always get a hold of the person, you learn to rely on a network a LOT more than you would rely on one person. So I'd call some one up in Vancouver, if I was having a problem or even just to check in... found that you felt a little bit alone...because you can't just pop in again...that face to face conversation, so that you really relied on other people." (Kelly)</p> <p>I do have different groups and I have a personal relationship with, past work experiences and that's who I go to lunch, have coffee.... your social connection probably influences more than your peer connection does, whereas if you're physically together you BOND." (Scott F.)</p> <p>Set up networks with managers to run them (supervisors) down and go find them (Jan)</p>	Network Importance	<ul style="list-style-type: none"> • I work in the same physical location as people who are not in my work group. • I have learned to rely on my network of peers and colleagues. • I have a network of people who work in the same location as my manager.
Prior Knowledge	<p>"There was a preexisting relationship with the UK manager –just the fact that we had a relationship already and trust made all the difference" (Asad)</p>	Prior Knowledge	<ul style="list-style-type: none"> • Before working for my present manager: <ul style="list-style-type: none"> • I had a personal relationship with him/her • I made a point of learning about him/her before I began to report to him/her.

	<p>“In a situation where I didn’t have a prior relationship with the manager, it would be very difficult kind of situation if there wasn’t a lot of face to face time spent initially at least, to sort of develop, earning a relationship and develop and trust” (Scott F.)</p> <p>“The direct reports are not an issue, face to face, because relationships were built before this ...so we all know each other quite well and work quite well, with the exception of Montreal, where it’s taking an enormous amount of time, both email and phone to establish how we’re going to work together.” (George)</p> <p>“ I knew his director beforehand..I knew his boss” (Greg)</p> <p>“When there was no pre-existing relationship, I mined my network to get information about my new boss.” (Jan)</p>		
Trust in Manager and in Employee	<p>“Implied trust that you are being productive... trust – that I’m doing my best, making good decisions –[in remote management situations] there is a preponderance of ability for others to comment and managers can jump to conclusions – – you want to know that they’ll come to you first” (Jan)</p> <p>“I didn’t make a significant effort to get to know her – I should have, In order to establish trust...it’s more than [giving a] deliverable on time – it’s a personal</p>	Manager Trust	<ul style="list-style-type: none"> • My manager believes that: <ul style="list-style-type: none"> • I am competent and knowledgeable • I do not try to get out of commitments • I would not mislead him/her in my communications

	relationship” (Asad)		
Importance of Understanding the Organizational Context	<p>“his emails were very blunt, they could be lengthy, but they were well rounded as well, in the sense that there was reasoning behind it, it wasn’t just a go-do, but the communication was from start to finish, just so there was a clear understanding as to what was needed, but more importantly why.” (Kelly)</p> <p>“What I find effective is something, someone who can communicate ... what the key drivers are that are requiring us to make the change ..” (Kim)</p>	<p>Transformational Leadership</p> <p>Control</p>	<ul style="list-style-type: none"> • Communicates a clear and positive vision of the future. • I understand this organization well enough to be able to control things that affect me

* Analytic category refers to categories derived from the qualitative methods in Study 1, as well as the review of related literature.

Appendix H

Efficacy
Revised Scale

(Cronbach's alpha = .85)

1. When I started this job, I could "hit the ground running"
2. When I started this job, I was able to do the job with minimal supervision.
3. When I started this job, I did not require much assistance.

Appendix I

Perceived Interdependence
Revised Scale

(Cronbach's alpha = .80)

1. My colleagues depend on me for information and advice
2. My colleagues depend on my help and support
3. I depend on my colleagues for information and advice.
4. I depend on the help and support of my colleagues.

Appendix J

Network Importance
Revised Scale

(Cronbach's alpha = .80)

1. I have learned to rely on my network of peers and colleagues.
2. I communicate frequently with members of my network.
3. I rely on my network of colleagues for advice.

Appendix K

Message-Medium Match
Revised Scale

How do you generally communicate with your manager on issues that you consider to be of:

a) an urgent nature:

face to face by telephone by email by instant messaging other

b) a complex nature:

face to face by telephone by email by instant messaging other

c) a personal nature:

face to face by telephone by email by instant messaging other

Appendix L

Face-to-Face Importance Revised Scale

(Cronbach's alpha = .77)

1. Face-to-face meetings with my manager are valuable.
2. I get the most valuable feedback when I meet my manager face-to-face.
3. It is important to have regularly scheduled face-to-face meetings with my manager.

Appendix M

Regularly Scheduled Communication
Revised Scale

(Cronbach's alpha = .90)

1. Do you and your manager have regularly scheduled times to communicate?

Yes No

If you have answered Yes, please answer the following questions about that communication. If no, please skip to question #6-1.

1. I value our regularly scheduled communications.
2. I use regularly scheduled interactions to bring my manager up to date on day to day happenings.
3. Regularly scheduled communication opportunities improve the working relationship between my manager and me.
4. Regularly scheduled communication opportunities increase my sense of belonging.

Appendix N

Unplanned Communication
Revised Scale

Revised (Cronbach's alpha = .80)

1. My manager and I often communicate at unplanned times.
2. My manager will sometimes just call or drop by to check in.
3. My manager will sometimes just pick up the phone and call to chat about something.
4. My manager and I touch base frequently.

Appendix O

Prior Knowledge
Revised Scale

(Cronbach's alpha = .84)

Before working for my present manager:

1. I was acquainted with him/her.
2. I had a personal relationship with him/her
3. I knew him/her by reputation before reporting to him/her
4. I knew other people in the work group
5. I had friends in the workgroup
6. I had a good sense of how things got done in this group

Appendix P

Manager Trust Revised Scale

(Cronbach's alpha - .99)

My manager believes that:

1. I communicate honestly
2. I am reliable
3. I can be counted on

Appendix Q

Control
Revised Scale

(Cronbach's alpha = .85)

1. I have enough power in this organization to control events that might affect my job.
2. In this organization, I can prevent negative things from affecting my work situation.
3. I understand this organization well enough to be able to control things that affect me

Appendix R

Message from Peter Browne, Nortel Networks

Sent: Monday, March 08, 2004 11:31 AM
To: Global Full-Time Teleworkers
Subject: A Special Message from Peter Browne, Real Estate

Audience: Global Full-Time Teleworkers

REMOTE LEADERSHIP - SURVEY

As you know, teleworkers make up an important and growing segment of Nortel Networks employees. To help us improve in this area, Nortel Networks has agreed to participate in an external study being conducted by Professor Elizabeth Kelley of Dalhousie University on "Technologically Mediated Leadership." You'll find her request below.

We believe that this research, which is being conducted with several companies, can be very valuable to Nortel Networks, so I'm writing to ask you to participate. Please be aware that participation is entirely voluntary, and that we will only see a summary of the results, not individual responses. We hope that many Nortel Networks teleworkers will take the survey, thus enhancing the relevance of the findings to our company.

Thank you,

Peter Browne
Nortel Networks
Real Estate and Business Continuity Planning

My name is Elizabeth Kelley, Professor at Dalhousie University. I am currently completing Doctoral Studies in Business Administration at St. Mary's University, Nova Scotia, Canada. My research, in the area of "Remote Leadership," is in partial fulfillment of the requirements for a Ph.D. in Business Administration and has been approved by the Saint Mary's University Research Ethics Board. The dissertation supervisor is E. Kevin Kelloway, Ph.D.

"Virtually," "remotely," and "technologically mediated" - all buzz words that are used today to refer to how people and teams are managed. The days of face-to-face management seem to be numbered. Companies are increasingly managing individuals, and in some cases, entire workforces remotely through the use of technology. Recent studies suggest that failure rates for technology implementation hover around 70%. Leadership has been found to be vitally important to effectiveness in these settings. Yet, despite the wealth of anecdotal information, little is really known about whether the management of remote workers is different from management in a traditional setting and if so, how.

I hope, through my doctoral research, to shed some light on this area. I am investigating the factors that impact the effectiveness of "remote" managers and am collecting this data through a web-based survey found at: <http://infopoll.net/live/surveys/s24695.htm> .

This voluntary survey takes only takes about 12-15 minutes to complete and is accessible until April 4, 2004. You will have the option to identify yourself as a Nortel Networks employee, and the information that is collected will remain confidential and anonymous. I will provide to Nortel Networks only the highest level of aggregate data.

Thank you for your support.

Elizabeth Kelley

Appendix S

Trust in Manager

I believe that my manager:

1. is straightforward with employees
2. is competent and knowledgeable
3. does not try to get out of his/her commitments
4. does not take advantage of employees
5. communicates honestly with employees
6. can contribute to our organization's success
7. behaves consistently
8. does not exploit employees
9. does not mislead employees in his/her communications
10. can help our organization survive during the next decade
11. is reliable
12. cares about the best interests of employees
13. does not withhold important information from employees
14. is concerned for employees' welfare
15. can be counted on
16. can help solve important problems faced by our organization

Appendix T

Perceived Leader Integrity

I believe that my manager:

1. would use my mistakes to attack me personally ®
2. always gets even ®
3. would lie to me ®
4. has it in for me®
5. would allow me to be blamed for his/her mistake ®
6. would falsify records if it would help his/her work situation ®
7. would deliberately exaggerate my mistakes to make me look bad when describing my performance to his/her superiors ®
8. would blame me for his/her own mistake ®
9. would deliberately distort what I say ®
10. is a hypocrite®
11. would make trouble for me if I got on his/her bad side ®
12. would fire people just because (s)he doesn't like them if (s)he could get away with it ®

® = reverse coded

Appendix U

Perceived Manager Support

I believe that my manager:

1. strongly considers my goals and values
2. really cares about my well being
3. shows very little concern for me ®
4. would forgive an honest mistake on my part
5. cares about my opinions.
6. If given the opportunity, would take advantage of me.®
7. will help when I have a problem.
8. is willing to help me when I need a special favour.

Appendix V

Organizational Commitment

1. I do not feel like "part of the family" at my organization. ®
2. I would be very happy to spend the rest of my career in this organization.
3. I really feel as if this organization's problems are my own.
4. I do not feel "emotionally attached" to this organization. ®
5. This organization has a great deal of personal meaning for me.
6. I do not feel a strong sense of belonging to my organization. ®

Appendix W

Need for Leadership

I need my supervisor to. . .

1. set goals.
2. decide what work should be done.
3. transfer knowledge.
4. motivate me.
5. coordinate, plan and organize my work.
6. maintain external contacts
7. provide me with information.
8. gear all activities of the team to one another.
9. create a good team spirit.
10. provide me with support.
11. arrange things with higher-level management.
12. handle conflicts.
13. give work-related feedback.
14. correct mistakes.
15. help solve problems.
16. recognize and reward contributions.
17. inspire me.

Appendix X

Job Satisfaction

1. Overall, how satisfied are you with your job?
2. I frequently think of quitting this job. ®
3. I am generally satisfied with the kind of work I do in this job.
4. Most people on this job are very satisfied with the job.
- 5 .People on this job often think of quitting. ®

Appendix Y

Global Transformational Leadership

My manager:

1. Communicates a clear and positive vision of the future.
2. Treats staff as individuals, supports and encourages their development.
3. Gives encouragement and recognition to staff.
4. Fosters trust, involvement and co-operation among team members.
5. Encourages thinking about problems in new ways and questions assumptions.
6. Is clear about his/her values and practises what he/she preaches.
7. Instills pride and respect in others and inspires me by being highly competent.

