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Contagion effect of global leaders' positive psychological capital on followers: Does distance and quality of relationship matter?

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Abstract
A key assumption of effective international human resource management (IHRM) is that global leaders influence and serve as role models for their followers, regardless of the inherent distance (physical and frequency of interaction) between them in today's global context or the quality of the relationship. Although considerable attention has been devoted to cultural differences between global leaders and their diverse followers and teams, this study investigates the impact that distance and quality of the relationship has on a sample of a Fortune 100 multinational firm's global leaders' level of positive psychological capital (PsyCap) contagion effect on their followers located around the world. The results indicated such contagion at a distance existed, but the quality of the relationship did mediate this effect. Moreover, the potential undesirable effects of distance seemed to be buffered by the global leaders' PsyCap. The potential limitations, needed future research and practical implications for IHRM conclude the article.

Keywords: global leadership, leadership at a distance, leader contagion effect, leader–member exchange, psychological capital

Today, international human resource management (IHRM) is facing unprecedented complexity resulting from new work arrangements, such as telecommuting and off-shoring in the global economy. Specifically, non face-to-face, long-distance global leader–follower relationships exhibit unique characteristics that may influence the dynamics and outcomes of such relationships. Global leadership is defined as involving 'people in business settings whose job or role is to influence the thoughts and actions of others to achieve some finite set of business goals … usually displayed in large, multicultural contexts' (Gessner, Arnold and Mobley 1999, p. xv). Using a sample of such global leaders and their direct reports from a well-known and respected Fortune 100 company, this study takes into consideration both leader distance (physical distance and frequency of interaction, Antonakis and Atwater 2002) and the quality of the relationship as determined by the leader–member exchange (LMX, Graen and Uhl-Bien 1995).

The specific purpose of this study is to determine whether distance (physical and frequency of interaction) and quality of relationship (i.e. LMX) dimensions have an impact on the positivity (i.e. psychological capital (PsyCap), Luthans, Youssef and Avolio 2007) contagion effects

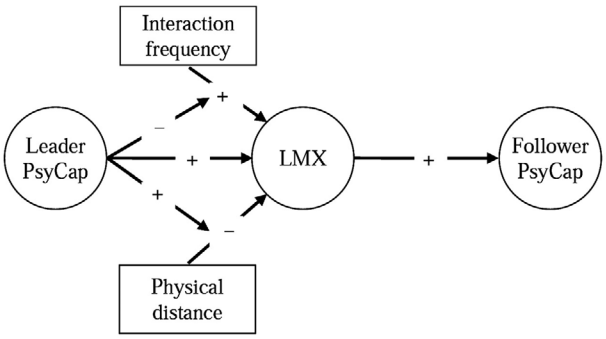

Figure 1. The positive contagion model.

between global leaders and their followers. This positive PsyCap has become recognized as being important to effective IHRM because it has been found to contribute to employees' desirable attitudes, behaviors and performance outcomes (for a recent meta-analysis of this stream of research, see Avey, Reichard, Luthans and Mhatre 2011). Figure 1 summarizes the study model and indicates the hypothesized and empirically tested relationships.

Role of the quality of global leader–follower relationships

Most IHRM approaches emphasize the importance of certain global leader characteristics, styles or behaviors (e.g. see Bass and Bass 2008; Yukl 2010). However, in this study, we draw from the important social exchange approach or the LMX relationship. LMX emphasizes the development of mature partnerships between leaders and followers that can lead to effective leadership (Graen and Uhl-Bien 1991, 1995). More specifically, LMX has been defined as: (1) a system of components and their relationships; (2) involving both members of a dyad; (3) involving interdependent patterns of behavior; (4) sharing mutual outcome instrumentalities and (5) producing conceptions of environments, cause maps and value (Scandura, Graen and Novak 1986, p. 580).

The reason we have chosen to use LMX is because this quality of leader-member relationship has been shown to relate to a wide range of desirable organizational outcomes (e.g. see Gerstner and Day 1997 for a comprehensive review and meta-analysis). Unlike the so-called 'average leadership style' theories, LMX is based on social exchanges between leaders and followers, including mutual understanding, trust, respect, appreciation, loyalty and a sense of obligation to provide added attention, support and feedback (Graen and Uhl-Bien 1995; Schriesheim, Castro and Cogliser 1999). However, in this study, we go beyond this existing conceptual and empirical support for the value of LMX. Specifically, we explore if global leaders' positivity, operationalized as the core construct of PsyCap discussed in detail in the following, can have a contagion effect on their followers through higher quality leader–follower relationships, even in a global context characterized by 'distance' (both physical and frequency of interaction) between global leaders and their followers.

Role of global leader positive psychological capital in relationships with followers

Drawing from positive psychology (Seligman and Csikszentmihalyi 2000), Luthans et al. (2007, p. 3) define PsyCap as 'an individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort

to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success'. This PsyCap represents a higher order, multidimensional, core construct that integrates and goes beyond each of the constituent positive psychological resources of efficacy, hope, optimism and resilience (Luthans, Avolio, Avey and Norman 2007).

Efficacy contributes the belief in one's 'ability to mobilize the motivation, cognitive resources, and courses of action necessary to execute a specific action within a given context' (Stajkovic and Luthans 1998, p. 66). Drawing from social cognitive theory (Bandura 1986, 1997), efficacy develops through four recognized mechanisms: mastery experiences, vicarious learning or role modeling, social persuasion and physiological and psychological arousal. In the context of organizational leadership, Wood and Bandura (1989, p. 362) view the integral role of the leader's efficacy as 'the development of people's cognitive, social, and behavioral competencies through mastery modeling, the cultivation of people's beliefs in their capabilities so that they will use their talents effectively, and the enhancement of people's motivation through goal systems'.

The hope component of PsyCap contributes 'a positive motivational state that is based on an interactively derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals)' (Snyder, Irving and Anderson 1991, p. 287). Optimism contributes general positive expectations (Carver and Scheier 2002), as well as a positive explanatory style of attributing positive events to personal, permanent and pervasive causes, and negative events to external, temporary and situational ones (Seligman 1998). Resiliency contributes 'the developable capacity to rebound or bounce back from adversity, conflict, and failure, or even positive events, progress, and increased responsibility' (Luthans 2002, p. 702).

The underlying mechanism shared among these four PsyCap psychological resources is 'one's positive appraisal of circumstances and probability for success based on motivated effort and perseverance' (Luthans et al. 2007, p. 550). Such cognitive agentic beliefs can contribute to efficacious motivations, ambitious goals and action plans (Bandura 1997), a positive, optimistic outlook (Carver and Scheier 2002), hopeful determination and pathways or waypower (Snyder 2000), and resilient processing of obstacles (Bandura and Locke 2003). In turn, significant relationships have been supported between overall PsyCap and desirable attitudes, behaviors and performance in the workplace (see Avey et al. 2011 for a comprehensive review and meta-analysis that includes the international context published in International Journal of Human Resource Management; see Luthans, Avey, Clapp-Smith and Li 2008).

We propose that global leaders' PsyCap can positively influence the quality of their relationships with their followers. Higher PsyCap global leaders will engage in more positive appraisals of their leadership situations. An objective for effective IHRM is to make sure that such positive appraisals occur. In the global arena, this is because a major component of leaders' situations is their followers' capabilities, motivations and actions, at a distance. Beside the recognized self-fulfilling or Pygmalion effect (Eden 1992), these positive appraisals may promote the global leader's retention of more positive memory patterns (Lyubomirsky 2007; Diener and Biswas-Diener 2008). This enhanced positive memory of leaders may strengthen the quality of the relationship with their followers. This enhanced quality is because positive leaders are more likely to have increased confidence and trust in their followers' abilities to fulfill their responsibilities, a salient dimension of LMX (Scandura and Graen 1984; Leana 1988; Stepina, Perrewe, Hassell, Harris and Mayfield 1991).

The positive appraisals coming from leaders' PsyCap can also enhance the perceived probability of success in achieving pertinent organizational goals given the resources available. From an effective IHRM perspective, these are (and should be) human resources (Luthans and Youssef 2004). These positive expectancies of success and perceived instrumentality of human resources can promote critical behaviors for the development of high-quality relationships. For example, this process may facilitate the global leader's extra-contractual assistance and resources and provide more latitude to the followers (Scandura and Graen 1984; Stepina et al. 1991; Dansereau 1995). Based on this background, the following is hypothesized for this study:

Hypothesis 1: Global leaders' PsyCap is positively related to the quality of the relationships with their followers.

Contribution of leader–follower relationship quality to follower PsyCap

As indicated, we propose that global leaders' PsyCap can promote higher quality relationships with their followers. In addition, we suggest that these higher quality relationships should in turn develop higher follower PsyCap. At this point, it needs to be emphasized that PsyCap has been clearly supported as a developmental, state-like capacity (Luthans, Avey, Avolio, Norman and Combs 2006; Luthans, Avey and Patera 2008; Luthans, Avey, Avolio and Peterson 2010; also see Luthans and Youssef 2007 for a comprehensive review and conceptual treatment of the trait–state continuum). This developmental nature of PsyCap makes it plausible for global leaders to develop it in their followers over time as their relationships evolve.

Higher quality relationships have been demonstrated to be characterized by mutual trust, appreciation and respect; leaders' investing time, energy and resources in relating to, supporting and developing their followers; and increasing levels of responsibility and decision making latitude for their followers (see Schriesheim et al. 1999 for a comprehensive review). These global leader–member relationship characteristics can facilitate the PsyCap development process in followers. For example, followers' efficacy can be developed through persuasion and encouragement from supportive leaders (Wood and Bandura 1989; Bandura 1997). Their hope agency and pathways can be developed through systematic attention, mentoring and feedback they receive from their leader as they pursue important professional goals (Yammarino and Dubinsky 1990). Followers' optimistic future expectancies about their own careers and their organizations are likely to be enhanced by working with a global leader they can trust and who they believe takes personal interest in them (Scandura and Graen 1984; Yammarino and Dubinsky 1992). Their resilience is also likely to be enhanced by the support of a high-quality relationship with their leader as well (Masten 2001; Masten and Reed 2002). Together, these mechanisms can facilitate the development of the followers' positive appraisal of their own circumstances and probability for success based on their motivated effort and perseverance, i.e. their PsyCap (Luthans et al. 2007). Thus, the following is hypothesized for this study:

Hypothesis 2: The quality of the relationship between global leaders and their followers is positively related to the followers' PsyCap.

Although beyond the scope of this study, it is important to point out that high PsyCap followers are likely to become more independent and less reliant on the leader over time. High quality leader–follower relationships are characterized by increased latitude and responsibilities

for the followers (Schriesheim et al. 1999). Such independence is especially compatible with the global context and also makes follower PsyCap development a worthwhile component for global leaders to add to their mentoring processes and IHRM programs in general as they prepare their leaders and employees for their resulting increased autonomy.

Positive contagion effects and quality of relationship mediation

Expanding on the first two hypotheses, we propose that global leaders' PsyCap can positively influence their followers' PsyCap and that this influence is mediated through the quality of their relationship (see Figure 1). The primary theoretical mechanisms proposed for the global leader to follower PsyCap contagion process are social learning, observation and modeling, even though these mechanisms may be at a physical distance and have relatively infrequent face-to-face interaction. Specifically, we propose that the high PsyCap of global leaders can serve as a model for the high PsyCap of their followers. Such modeling is not limited to directly observable positive behaviors, but can also include positive cognitions such as setting challenging goals, agentic goal pursuit, creative problem solving and contingency planning, positive appraisals of situational factors, positive expectancies about success and high self-motivation. As described earlier, these positive cognitions are integral components of high PsyCap. Positive affective states are also likely to be a by-product of this process (Snyder 2000). In turn, PsyCap resources can be transferred to followers through progressive independent mastery of cognitions, affect and behaviors, which followers may find desirable in their leader, as well as through intentional guided mastery modeling of specific cognitive skills and behavioral norms and expectations by leaders (Wood and Bandura 1989).

We also propose that the relationship between leader and follower PsyCap is mediated by the quality of their relationship. While direct contagion is plausible, we suggest that a higher quality relationship is likely to facilitate such contagion. Again drawing from social cognition (Bandura 1997), high quality relationships can provide social persuasion, support and affective arousal. These are critical social learning mechanisms that can help develop efficacy beliefs (Bandura 1997; Liau, Liu and Loi 2010). These mechanisms can also enrich resilience through the development of social assets that can help buffer the effects of risk factors and setbacks (Masten and Reed 2002) and provide additional pathways sustaining hope (Snyder 2000).

Modeling high PsyCap cognition, we suggest that affect and behavior can also be facilitated by high quality relationships with the global leader as the model. These relationships may enhance followers' perceptions of leader and situational similarity, which in turn contributes to agentic beliefs and appraisals of probability of success (Bandura 1997). For example, when followers have a close relationship with their leader, they are likely to know more of the leader's characteristics and find common ground that makes their leader similar to them in some ways. Thus, the leader is more likely to be adopted and effective as a role model.

Furthermore, the closer the relationship, the more likely the followers will be exposed not only to the global leader's final decisions and explicit behaviors, but also to the causal maps of the leader's cognitive appraisal processes. These outcomes of the close relationship can also facilitate the transfer of PsyCap's underlying cognitive processes from the global leader to the followers. Importantly, a better comprehension of the leader's cognitive processing can enhance the follower's ability to move beyond 'behavioral mimicry' (inferring direct observation) toward more accurate appraisals of situational dimensions and adaptation of their cognitive, affective,

social and behavioral responses accordingly (Wood and Bandura 1989), i.e. higher PsyCap. Thus, the following study hypothesis is derived:

Hypothesis 3: Global leaders' PsyCap is positively related to their followers' PsyCap, with this being mediated by the quality of their relationships.

Beyond the hypothesized relationships, again, the agentic processing that is likely to emerge in high PsyCap followers would seem to set them on a progressive path of independence, rendering the distance from their leaders in the global context less problematic. Over time, it can also prepare them for increased responsibilities and autonomy that are likely to result from their high quality relationships with their leader, fostering an upward spiral of a mutually enhanced leader–member relationship and increased follower PsyCap.

Distance as a moderator in global leadership settings

While much has been written about global leadership, there is no clear consensus of what global leaders must be able to do in order to perform their job effectively. However, as we have emphasized throughout, leadership distance (Napier and Ferris 1993; Antonakis and Atwater 2002) presents unique challenges that can affect the development of high quality relationships between leaders and their followers (Murphy and Riggio 2003). As we have acknowledged, this leadership distance, especially in the global context, may have an impact on the positive contagion effects hypothesized. Specifically, the two widely recognized dimensions of leader distance we have identified as being particularly relevant for global settings are physical distance and interaction frequency.

To specifically determine if physical distance and interaction frequency influence the study's hypothesized relationships, we propose two primary mechanisms. The first mechanism is through the direct influence of physical distance and interaction frequency on the quality of the leader–follower relationship. With respect to physical distance, global leaders lead across global operations by coordinating people and processes in different places (Sloan, Hazucha and Van Katwyk 2003). Thus, global leaders most often reside and/or work in different cities or even countries from the followers that they lead. This fact is critical because leadership effectiveness has been related to the degree of closeness or distance between the leader and the follower (Antonakis and Atwater 2002). For example, through the classic substitutes of leadership idea, Kerr and Jermier (1978) years ago argued that physical distance may hinder the ability of the leader to be effective. Further, Podsakoff, MacKenzie and Bommer (1996) reported that physical distance between leader and follower was positively related to perceptions of role conflict and negatively related to group altruism. In this same meta-analysis, it was demonstrated that physical distance was negatively related to follower performance, conscientiousness and civic duty.

Physical distance has also been found to be negatively correlated to follower satisfaction (Burrows, Munday, Tunnell and Seay 1996). In still another study, Howell and Hall-Merenda (1999) examined the moderating effects of physical distance between leaders and followers with transformational leadership and performance. Results indicated that close relationships produced statistically significant higher performance than relationships at a distance. Similarly, Howell, Neufeld and Avolio (2005) reported that transformational leadership had a higher impact on unit performance when the leader and follower were closely located. Contingent rewards, however, had a higher impact on unit performance when the leader and follower were located

in different places. Avolio, Zhu, Koh and Bhatia (2004) reported that structural distance (one dimension of which is physical distance) moderated the relationship between transformational leadership and organizational commitment.

Physical distance may hinder the observational mechanisms we proposed as being integral for the development of high quality relationships between leaders and followers. Specifically, the typical reduced opportunities for global leaders to readily and directly observe their followers may compromise, delay or obscure their ability to accurately understand their followers' abilities, motivations and aspirations. In other words, leading at a distance may interfere with the global leader's efforts to relate to their followers and coach them. In turn, reduced opportunities for followers to readily observe (i.e. model) their leaders' cognitive processing and behavioral expressions may cause the followers to miss out on numerous opportunities to learn from their leader's spontaneous responses to everyday situations. Thus, the following is hypothesized:

Hypothesis 4: Physical distance between leaders and followers is negatively related to the quality of their relationships.

As indicated, the other form that leadership distance takes, and that may also directly contribute to the quality of the leader–follower relationship, is interaction frequency. This is defined by Antonakis and Atwater (2002, p. 686) as 'the perceived degree to which leaders interact with their followers'. Previous research has indicated that interaction frequency is positively associated with job performance (Crouch and Yetton 1988) and satisfaction (Baird and Diebolt 1976). While interaction frequency may be facilitated by physical proximity (the classic 'propinquity effect' from social psychology or the commonly called 'watering hole' effect, which facilitates informal communication between leaders and followers, Sundstrom 1986), today's technological advances certainly buffer some of the barriers of physical distance. This is evident by the exploding use of electronic forms of communication, even among managers and employees within very distant or close physical proximity. This diminished effect of physical distance on interaction frequency reinforces the need to focus on the established conceptual distinction between physical distance and interaction frequency (Napier and Ferris 1993).

The notion of interaction frequency can operate through the same observational/ modeling mechanisms proposed above for physical distance. Frequent interaction can allow for more opportunities for mutual observation and understanding, as well as building rapport and trust which are critical for developing high quality relationships. In addition, frequent interactions between leaders and followers have been demonstrated to affect satisfaction and agreement with performance evaluations (Ferris and Rowland 1985; Fulk, Brief and Barr 1985). This enhanced follower self-assessment can be explained through several mechanisms such as more frequent feedback and mentoring, lower role ambiguity, participative goal setting and decision making, and less noise in the communication process. All of these seem integral for high quality leader–member relationships. Thus, the following is hypothesized for the study:

Hypothesis 5: Interaction frequency between leaders and followers is positively related to the quality of their relationships.

The second mechanism we propose for the influence of physical distance and interaction frequency on the quality of the relationships between leaders and followers is moderated by the leaders' PsyCap. Global leaders in general may view physical distance and infrequent

interactions as being barriers to communication and relationship building. On the other hand, high PsyCap leaders are likely to agentically mobilize the effort, motivation and resources necessary to continue to relate with their remote followers through alternative pathways (e.g. media-rich technology, social networking, frequent travel and temporary assignment of followers to proximal locations). In other words, high PsyCap leaders are less likely to passively adopt an 'out-of-sight, out-of-mind' modality, and are more likely to actively find ways to overcome barriers and 'reach out' to their distant followers. Such proactive measures can facilitate the development of high-quality relationships. Within the global leadership context, this 'reaching out' will likely be even more highly regarded by the followers as they perceive their leaders to be truly going out of their way to nurture their relationships despite the apparent barriers of distance.

The impact of this agentic, proactive relationship building can buffer the effects of distance, thus rendering the impact of distance barriers on global leader–follower relationships less pronounced. Thus, while it is likely that physical distance and infrequent interactions may weaken the quality of the relationships between leaders and followers, high PsyCap leaders' positive appraisals of these situational constraints and their agentic pursuit of proactive courses of action to overcome these obstacles can buffer their negative effects. This results in the likelihood of weakening the negative impact of distance on leader–follower relationship quality. In terms of physical distance, this means that the hypothesized negative relationship with LMX (Hypothesis 4) will likely be buffered by leaders' PsyCap. Thus, the following hypothesis is derived:

Hypothesis 6: *The negative relationship between physical distance and the quality of relationship between leaders and followers is moderated by leaders' PsyCap such that the negative relationship is weaker when leaders' PsyCap is higher.*

Similarly, in terms of the distance dimension of interaction frequency, the negative effects of infrequent interactions will likely be weaker for high PsyCap leaders. Stated in terms of the hypothesized positive relationship between interaction frequency and LMX (Hypothesis 5), this means that this positive relationship would be expected to be less pronounced (i.e. weaker) for high PsyCap leaders. This is because high PsyCap leaders are likely to find more ways to positively leverage their interactions with their followers, even when infrequent, thus rendering frequency (or lack thereof) less detrimental to their relationships than their low PsyCap counterparts. Thus, the following can be hypothesized:

Hypothesis 7: *The positive relationship between interaction frequency and the quality of relationship between leaders and followers is moderated by the leaders' PsyCap such that the relationship is weaker when leaders' PsyCap is higher.*

Finally, we would like to note that global leaders for the most part have less control over physical distance than they do over interaction frequency. The increasing worldwide availability and cost-effectiveness of electronic communication technology (e.g. social networking) makes increasing interaction frequency easier to tackle for global leaders than is physical proximity. High PsyCap leaders' realistic optimism (Schneider 2001), as well as their more accurate self-evaluations, will allow them to better assess what is within their control (i.e. interaction frequency) and what may not be (i.e. physical distance), and design their courses of action to overcome these obstacles accordingly. On the other hand, low PsyCap leaders may not be as capable of making the same distinction between controllable and uncontrollable frustrations in their

pursuit of better relationships with their followers. Thus, we expect the buffering effect of leaders' PsyCap to be much stronger for the potentially controllable interaction frequency than for the less controllable physical distance.

Methods

Participants

Participants in this study were global leader–follower dyads from a prestigious Fortune 100 multinational firm. Global leaders were identified by the organization based on two criteria: having a global position (working only with global teams) and being responsible for leading these teams. The individuals who met these criteria were contacted via email by the International HR manager and asked to participate in the study. A link was provided in the email to a website that contained the survey questions along with a brief description of the research project. Participation was voluntary and in order to protect anonymity, all participants were assigned a code and no names were collected.

Return rates were calculated as the actual number of surveys completed by participant leaders. Out of the 599 surveys distributed to the leaders, 161 were returned, a 27% return rate. Each leader was asked to directly email their direct reports asking them to participate in the study, which yielded 282 direct-report surveys. Because the study hypotheses link leader to follower variables, multilevel structural equation modeling (MSEM; see Bovaird 2007) was determined to be most appropriate for analyzing the data. Given this chosen data analysis method, data from leaders could only be used if it could be linked to at least 2 direct-report responses (to allow for a group to be nested within a leader), resulting in a difficult to obtain sample of 79 true global leaders and 229 of their direct reports.

The global leaders were 36% female and 64% male with an average age of 44 years. Twenty-two percent of the leaders had obtained Bachelor's degrees, 6% indicated some graduate work, 56% obtained Master's degrees and 5% had Ph.D. degrees. Appropriately, the leader sample was extremely diverse representing 41 different nationalities, ranging from Chinese (6 participants) to Syrian (1 participant). Seven percent of these leaders spend most of their work time in Africa, 44% in Asia, 28% in Europe, 10% in Latin America, 8% in North America and 3% in Oceania.

Followers were 64% male with an average age of 41 years. Thirty-eight percent had obtained Bachelor's degrees, 40% Master's degrees and 6% Ph.D. degrees as their highest degree. Seven percent of followers did some graduate work, and the remaining 9% only had high school diplomas or Associates degrees. The follower sample was also very diverse representing 47 nationalities ranging from Chinese (34 participants) to Dutch (1 participant). Two percent of these followers spend most of their work time in Africa, 40% in Asia, 27% in Europe, 12.5% in Latin America, 13.5% in North America and 5% in Oceania.

Measures

PsyCap

PsyCap was measured both from leader participants and direct reports using the 24-item PsyCap questionnaire (PCQ) (Luthans et al. 2007). Acceptable psychometric properties and support for the construct validity of PCQ have been demonstrated (see Luthans et al. 2007). Each of the four components that make up PsyCap is represented by six items on the PCQ, anchored on a 6-point Likert scale ranging from 1 'strongly disagree' to 6 'strongly agree'. These items were adapted for the workplace from the following published scales: (a) hope (Snyder et

al. 1996); (b) resilience (Wagnild and Young 1993); (c) optimism (Scheier and Carver 1985) and (d) efficacy (Parker 1998). Some sample items for each of the four subscales include the following: 'I feel confident helping to set targets/goals in my area of work' (efficacy); 'If I should find myself in a jam at work, I could think of many ways to get out of it' (hope); 'I always look on the bright side of things regarding my job' (optimism); and 'I usually manage difficulties one way or another at work' (resilience).

As often done in studies utilizing the PCQ, to assess the appropriateness of aggregating each of the subscales into a single factor of PsyCap, we conducted a multilevel confirmatory factor analysis for the direct-report sample and a second Confirmatory Factor Analysis (CFA) for the leader sample. The six items for each subscale were set to load on their respective subscale, and each of the four subscales were then set to load on to the overall PsyCap factor. This structure was fit at both the follower and leader level. All of the item loadings were significant ($p < 0.05$) on their respective latent factor as well as each component loading on the second order factor PsyCap. Hu and Bentler's (1999) recommendations of meeting two of the three criteria of Standardized root mean square residual (SRMR) $\leq$ 0.08, Root mean square error of approximation (RMSEA) $\leq$ 0.06 and Comparative Fit Index (CFI) $\geq$ 0.95 were used to determine acceptable fit for these and all subsequent CFA or structural equation models. Results of a CFA with complex sampling weights to account for the nesting of followers within leaders for the direct-report sample suggested adequate model fit: SRMR = 0.077, RMSEA = 0.058 and CFI = 0.851. Results of the single-level CFA for the leader sample also suggested adequate model fit: SRMR = 0.076, RMSEA = 0.057 and CFI = 0.866. Overall, the CFA results support that the four PsyCap components do represent an underlying latent, core construct of overall PsyCap in both the leader and direct-report samples. The reliabilities for the PsyCap measure for both the leader sample and direct-report sample in this study were $\alpha = 0.85$.

Leader–member exchange

Scandura and Graen (1984) developed the LMX-7, an instrument that measures the quality of the leader–follower relationship based on the rater's perception of the relationship. The LMX-7 contains seven items measured in a 7-point Likert-type scale ranging from 1 'strongly disagree' to 7 'strongly agree'. Scores from this measure of leader–member exchange has been shown to be reliable with internal consistency ranging from $\alpha = 0.80$ to 0.90 (Graen and Uhl-Bien 1995; Gerstner and Day 1997). A sample item for this measure is 'I usually know where I stand with my supervisor'. Consistent with prior research, a CFA with complex sampling weights to account for the nesting of followers within leaders of the LMX-7 items demonstrated that a one-factor model of LMX provides a close fit to the data (SRMR = 0.036, RMSEA = 0.061 and CFI = 0.981). Composite reliability (Raykov 1997) for the LMX construct was estimated to be 0.92 for the current sample.

Leader distance

Frequency of interaction was assessed by asking the frequency of interaction between the leader and the follower in a given week ranging from 1 'once in a while' to 5 'continually'. Physical distance was assessed by an adaptation of Klauss and Bass' (1982) measure of physical distance between direct reports and their leader. Direct reports were asked to rate their physical proximity with the leader on a 5-point scale ranging from 1 'very close (same floor)' to 5 'very distant (different state, different country)'. In subsequent modeling, physical distance was recoded so that high scores reflect close proximity and low scores reflect distance.

Table 1. Descriptive statistics.

	Correlations							Followers	
	Efficacy	Hope	Resilience	Optimism	LMX	Distance	Frequency	Mean	SD
Efficacy	1	0.518[a]	0.302	0.418				31.74	3.07
Hope	0.589[b]	1	0.379	0.482				30.77	3.11
Resilience	0.472	0.535	1	0.456				28.83	3.31
Optimism	0.465	0.494	0.366	1				27.07	3.45
LMX	0.231	0.342	0.148	0.189	1			39.88	6.39
Distance	0.018	0.026	0.073	–0.023	–0.009	1		4.18	1.20
Frequency	0.066	0.111	0.049	–0.044	0.376	0.257	1	3.32	1.21
Leader									
Mean	32.24	30.56	28.61	27.62					
SD	2.83	2.97	3.03	3.48					

a.) Correlations above the diagonal are at the leader level. Means and standard deviations for variables measured at the leader level are presented in the bottom rows.

b.) Correlations below the diagonal are at the follower level. Means and standard deviations for variables measured at the follower level are presented in far-right columns.

Results

Means, standard deviations and correlations among study variables are presented in Table 1. Scale items were divided into a subscale for each variable. Leader variables (level 2) were differentiated from follower variables (level 1). Leader participants completed the PsyCap measure and their direct-report followers completed the PsyCap measure, the leader–member-exchange measure and the leader distance measure.

Table 1Descriptive statistics.

Data analysis plan

As indicated, due to the complex sampling procedure consisting of multiple direct responses made by followers of each leader, results of this study were determined through MSEM (see Bovaird 2007). Followers provided direct responses at the micro (follower) level and leader responses represented the macro (leader) level. Mplus version 6.1 (Muthén and Muthén 1998–2010) was used to evaluate the conceptual model in Figure 1. Mplus is ideal for evaluating study hypotheses due to its ability to allow estimation in the presence of both missing data and multilevel data with unbalanced sample sizes within macrounits through full information maximum likelihood (Mehta and Neale 2005).

Centering

As recommended by Enders and Tofighi (2007), all direct-report data were centered-within-context, or leader-mean-centered. Within-leader averages were calculated for all direct-response variables. A follower's respective within-leader average was then subtracted from the follower's direct response to create a within-leader deviation for all direct-response measures that were entered into the model as micro-level data. Within-leader averages were entered as macro-level variables along with all leader-level variables. The separation of follower-level direct-observation data into within-leader and between-leader variance sources is necessary to prevent confounding of micro-level effects from macro-level variance.

Measurement models

The micro-level within-leader model consisted of all direct-response measures in within-leader deviation form as described above. Follower PsyCap was modeled as a latent variable using the within-leader deviation scores for the hope, efficacy, resilience and optimism subscores from the PCQ as reflective indicators. The within-leader deviation score for the LMX-7 total score was entered into the model as a manifest variable, as were physical proximity and frequency of interaction.

The conceptual model in Figure 1 reflects several macro–micro propositions; however, technically speaking, cross-level prediction is not possible. That is, variables measured at the macro-level cannot be used to directly predict variables measured at the micro-level (see Bovaird and Shaw in press; Preacher, Zyphur and Zhang 2010). Rather, macro-level aggregates of micro-level variables must serve as the outcome measure and function as the linkage between the micro- and macro-levels. Consequently, a macro-level measurement model for follower PsyCap was included in the macro-level between-leader portion of the overall model with the within-leader average hope, efficacy, resilience and optimism subscores from the PCQ as reflective indicators of a latent variable. Together with the latent variable for follower PsyCap at the micro-level constructed from within-leader deviation scores, the total variance (and covariance) of follower PsyCap is included in the model. Similarly, the within-leader average for the LMX-7 total score was entered into the model as a manifest variable, as were within-leader average physical proximity and frequency of interaction.

Moderators

Hypotheses 6 and 7 suggest that physical distance and frequency of interaction moderate the mediated (by LMX) effect of leader PsyCap on follower PsyCap. Because leader PsyCap is modeled as a latent variable, the LMS method (Klein and Moosbrugger 2000) for modeling interactions involving latent variables was implemented through Mplus. To test the moderation hypotheses, two interactions – between average physical distance and leader PsyCap and between average frequency of interaction and leader PsyCap – were included in the macro-level model and represented as circles (latent variables) without indicators in the top panel of Figure 2.

Predicting follower psychological capital

Parameter estimates and the standardized solution for all estimated model parameters are reported in Table 2. Figure 2 presents a path diagram of the moderated mediation statistical model used to evaluate the impact of leader PsyCap on distal follower PsyCap as mediated by LMX and moderated by physical distance and frequency of interaction. Solid paths reflect effects that were determined to be statistically significant at $p < 0.05$ level. All measurement model parameters were also significant at the $p < 0.05$ level, but not of focal interest to the study and thus not highlighted. Construct reliability, which is a function of respective factor loadings, was reported earlier for all constructs.

Use of the LMS method for testing interactions involving latent variables in Mplus requires numeric integration as the estimation algorithm to derive maximum likelihood parameter estimates. Consequently, traditional model fit statistics are not available when using this algorithm. The overall model without the moderated effects achieved close fit according to the guidelines proposed by Hu and Bentler (1999) and almost achieved exact fit, $\chi^2(61) = 82.811$, $p = 0.033$; CFI = 0.954; RMSEA = 0.040, $SRMR_{Within} = 0.022$ and $SRMR_{Between} = 0.064$. Based on

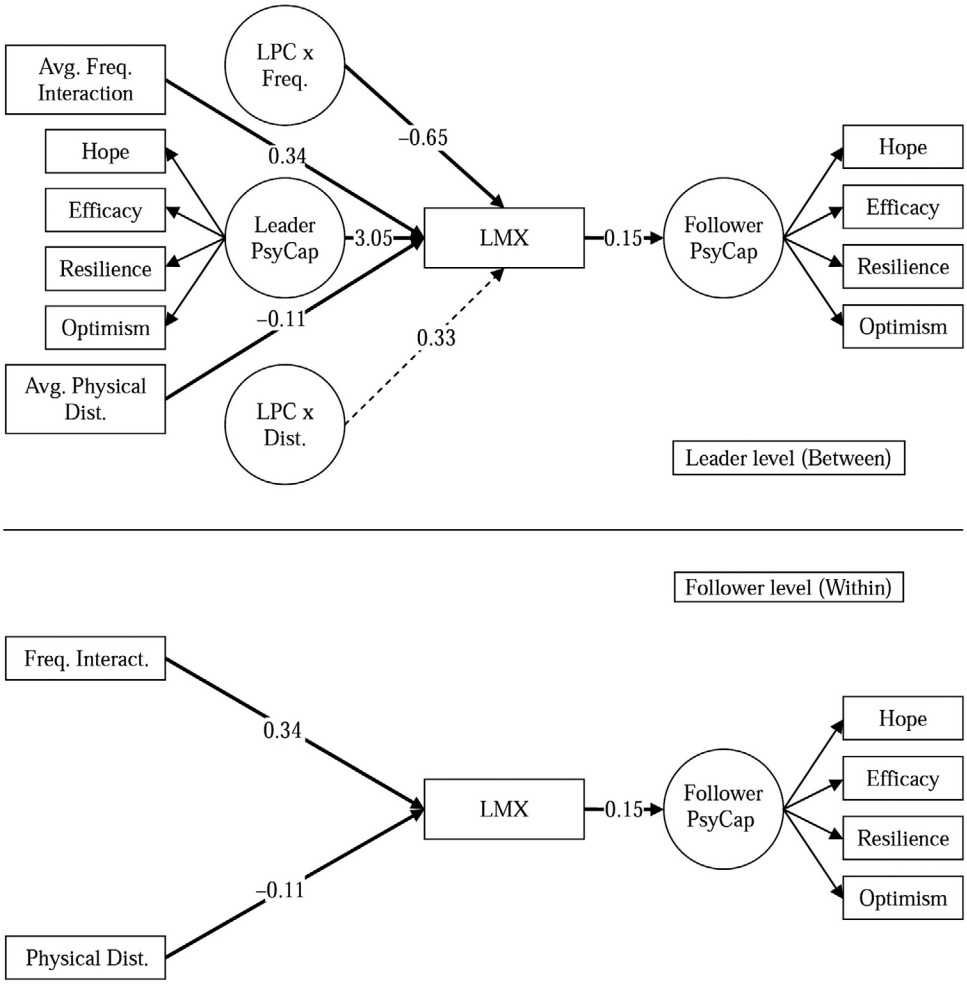

Figure 2. Path diagram for a MSEM of positive contagion.

this evidence, it is reasonable to assume that the model without moderated effects is at least a close approximation to the data.

While the traditional fit statistics are not available when using numerical integration, models can be qualitatively compared based on stability of parameter estimates when adding moderated effects and quantitatively compared by evaluating information criteria and model log likelihood statistics (–2LL). The − 2LL for the unmoderated model was 1799.910 with 41 free parameters and an Akaike Information Criteria (AIC) of 1881.909. For the moderated model including the frequency of interaction by leader PsyCap and physical distance by leader PsyCap interactions, the − 2LL was 1793.128 with 43 free parameters and an AIC of 1879.128. Since both the − 2LL and AIC decreased after adding the moderated effects, the augmented model can be considered to be a better fitting model than the compact model. In addition, all model parameters remained stable upon entry of the moderated effects (i.e. no evidence of suppression and changing signs).

Table 2. Model comparison statistics, parameter estimates (*B*), standardized estimates (*β*) and standard errors (SE) for the final model(s).

	Simple effects model			Moderated effects model	
#Free parameters	41			43	
–2LL	1799.91			1793.13	
AIC	1881.91			1879.13	
	B	*β*	SE	*B*	SE
FPC: follower PsyCap (within) [CR[a] = 0.77]					
Efficacy	1.00	0.71	–	1.00	–
Hope	1.11	0.81	0.11*	1.11	0.11*
Resilience	0.91	0.64	0.10*	0.91	0.10*
Optimism	0.78	0.53	0.10*	0.78	0.10*
FPC: follower PsyCap (between) [CR = 0.75]					
Efficacy	1.00	0.74	–	1.00	–
Hope	1.11	0.78	0.11*	1.11	0.11*
Resilience	0.91	0.57	0.10*	0.91	0.10*
Optimism	0.78	0.50	0.10*	0.78	0.10*
LPC: leader PsyCap (between) [CR = 0.74]					
Efficacy	1.00	0.61	–	1.00	–
Hope	1.61	0.98	0.37*	1.48	0.29*
Resilience	0.85	0.44	0.24*	0.87	0.24*
Optimism	0.98	0.50	0.25*	1.00	0.25*
Within-leader regressions					
LMX → FPC	0.15	0.38	0.03*	0.15	0.03*
Freq → LMX	0.32	0.43	0.04*	0.34	0.04*
Dist → LMX	–0.09	0.11	0.04*	–0.11	0.04*
Between-leader regressions					
LMX → FPC	0.15	0.39	0.03*	0.15	0.03*
LPC → LMX	0.25	0.10	0.29	3.05	1.19*
Freq → LMX	0.32	0.42	0.04*	0.34	0.04*
Dist → LMX	–0.09	0.13	0.04*	–0.11	0.04*
LPC × Freq → LMX				–0.65	0.28*
LPC × Dist → LMX				0.33	0.24

* Indicates statistical significance at the $p < 0.05$ level using a two-tailed hypothesis test.
a. CR = composite reliability (Raykov 1997).

At the micro-level, follower PsyCap was significantly predicted by LMX, indicating that followers with higher levels of LMX also tend to have higher PsyCap (Hypothesis 2). The same effect was also observed at the macro-level with leaders who have a higher average degree of LMX with their followers tending to have followers with higher levels of PsyCap on average. Followers with higher frequency of interaction and lower physical distance also tend to have higher LMX. Likewise, leaders with higher average frequency of interactions and average physical distance with their followers tend to have higher average LMX with their followers as well (Hypotheses 4 and 5).

Leaders who reported to be higher in PsyCap tended to have higher average LMX with their followers (Hypothesis 1). The mediation hypothesis can be evaluated by calculating the indirect effect between leader PsyCap and average follower PsyCap as routed through average LMX. This indirect pathway was significant ($t = 2.34$, $p = 0.0195$) (Hypothesis 3). Average LMX was also found to mediate the effect of average frequency of interaction on average follower PsyCap ($t = 4.81$, $p < 0.01$) and the effect of average physical distance on average follower PsyCap ($t = 2.25$, $p = 0.02$). All tests of indirect effects were estimated using the Aroian test for indirect effects (Aroian 1947).

The interaction between leader PsyCap and frequency of interaction was found to have a significant effect on average LMX at the $p < 0.05$ level, indicating that leader PsyCap may moderate the effect of frequency of interaction on average LMX. As suggested by Hypothesis 7, the slope indicates that the positive relationship between frequency of interaction and LMX depends upon the level of leader PsyCap. When leaders' PsyCap is high (in this case 1 standard deviation above average), the relationship is weaker than when leaders' PsyCap is low (i.e. 1 standard deviation below average). However, Hypothesis 6 concerning the physical distance dimension was not supported.

Discussion

An important challenge currently facing IHRM is to maintain and develop effective, high-quality relationships between global leaders and followers. Although this has long been recognized as a complex, multidimensional process (Graen and Uhl-Bien 1995), today's leaders have even more unique challenges in developing high-quality relationships due to distance in the global context (Antonakis and Atwater 2002). We tested a proposed conceptual model that builds out from the well-recognized LMX literature. Specifically, we proposed and empirically demonstrated a positive contagion effect between global leaders' PsyCap and their followers' PsyCap. Furthermore, we found that this relationship was mediated by the quality (i.e. LMX) of their relationship. Furthermore, while distance (physical distance and interaction frequency) between leaders and followers was found to have a direct, undesirable effect on leader–follower relationship quality, this effect was found to be moderated by leaders' PsyCap such that high PsyCap leaders are more effective at buffering the negative effects of infrequent interactions on the quality of their relationships with their followers. As shown in Figure 1, the overall model was supported, and with the exception of Hypothesis 6 concerning the relationship between physical distance and LMX being moderated by the level of leader PsyCap, so were the study hypotheses.

The importance of having positive leaders and followers is receiving increased emphasis in today's uncertain, negative environment facing most multinational organizations. The 'roller-coaster ride' currently existing in the global environment demands multinational organizational members (leaders and followers) who are motivated to take on new challenges and be confident in their abilities to succeed. Both global leaders and followers need to be able to find new ways to overcome obstacles and setbacks, and positively view them as opportunities for learning and growth. High PsyCap leaders and followers are equipped with the confidence, hope, optimism and resilience to meet the demands of this negative, ever-changing environment (Avey, Wernsing and Luthans 2008).

Due to the extreme dynamism in the global environment, IHRM of multinationals are challenged to keep up with the accelerated changes, causing them to shift their attention away from building sustainable long-term programs and approaches toward stringing together a series of more short-term, temporary fixes for organizational effectiveness (Lawler and Worley 2006). This paradigm shift leads to a recognized talent management shift, especially in favor of those who can work independently at a distance, both in meeting continuously changing business goals and in creating and managing their own career paths by constantly recognizing new business demands and updating their skill sets accordingly in order to remain useful for their employers (Lawler 2008). Without PsyCap's agentic goal pursuit and staying power, this

level of uncertainty can be extremely stressful for global managers and their followers (Avey, Luthans and Jensen 2009). Obviously, such challenges are not unique to just global leaders as in the present study. As indicated, previous research has indicated that PsyCap can be developed and have causal impact on performance (Luthans et al. 2010; Peterson, Luthans, Avolio, Walumbwa and Zhang 2011). Thus, the results of this study have practical implications that short-term HR programs geared toward developing PsyCap of global leaders (e.g. Luthans et al. 2006; Luthans et al. 2007, Chap. 8) will not only increase their own effectiveness, but importantly should also have a contagion effect on their team members.

The strengths of this study include the very relevant context of this study, namely global leadership in a high-profile Fortune 100 company, but still accounting for contextual factors (distance) that are becoming critical for leaders across the world. The sampled population was also extremely diverse and representative of the current global environment. Data were also collected from different sources, minimizing commonly found single-source bias effects (Podsakoff, MacKenzie, Lee and Podsakoff 2003). The data analysis was necessarily rigorous and robust, and to our knowledge, relatively unique in that it tested the direct impact of global leaders' characteristics on followers, collecting data from the two sources. Considering the lack of empirical work with the sampled population, this study design has notable strengths.

Despite the strengths, some potential limitations and directions for future research need to be recognized. Conceptually, followers' PsyCap can increase their independence, thus potentially acting as a leadership substitute (Kerr and Jermier 1978; Podsakoff and MacKenzie 1997). While increased follower independence is consistent with the emphasis of LMX research on increased latitude and autonomy for followers (Schriesheim et al. 1999), future research should longitudinally examine the impact of this increased latitude, as well as the enhanced follower PsyCap conceptualized and tested in this study, on subsequent leader–follower relationship quality. On the other hand, especially in global leadership settings, but also in light of the current realities of flat organizational structures, wide spans of controls, electronic communication overload, overworked managers and understaffed business units, PsyCap's contribution to followers' abilities to function and excel confidently and independently has very practical implications for IHRM. This new environment may change the very nature of what constitutes effective leader–follower relationships over time, and may render some of the traditional dimensions of high-quality LMX in need of careful reconsideration for future research and practice.

Finally, although data were collected from different sources (leaders and followers), the lack of experimental manipulation precludes definitive causal attributions. Several plausible alternative explanations for the supported relationships may exist. For example, it is possible that followers' PsyCap may be driving higher quality relationships with their leaders. High PsyCap followers may be more determined to relate to their leaders, find alternative pathways to do so, and not get discouraged as easily if rejected or ignored. Additionally, leaders may give higher consideration and attention to high PsyCap followers for mentoring, feedback, latitude and responsibilities because of their apparent motivation and 'can-do' attitude, leading to higher quality relationships. In turn, these follower-driven higher quality relationships may enhance their leaders' PsyCap as the leaders may attribute their success in relating to their followers to their effective leadership. Additionally, high PsyCap in both leaders and followers may promote higher quality relationships due to cognitive and affective similarity (Bauer and Green 1996; Engle and Lord 1997). For the future, longitudinal and experimental research can shed light on the validity of these alternative causal paths.

Conclusion

To answer the question posed in the title, global leaders' level of positivity measured by their PsyCap does seem to trickle-down, i.e. have a contagion effect, on their followers, even at a distance. However, a caveat to this conclusion is that it still depends on the quality of the relationship. In other words, some of the traditional assumptions and conventional wisdom concerning 'out of sight, out of mind' and, although not tested here, that 'cultural differences rule all' may be questioned by the findings of this study. Since PsyCap has emerged as now being widely recognized as having a positive impact on leader and follower desired attitudes, behavior and performance (Avey et al. 2011) and can be developed (Luthans et al. 2008; Luthans et al. 2010), IHRM may have at least some evidence-based guidelines for better meeting the challenges faced now and in the future concerning effective global leader–follower relationships.

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