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The Mediating Role of Nonverbal Behaviors in the Relationship Between Interdependent Self-construal and Transformational Leadership

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Abstract

This study examined the relationship between interdependent self-construal and transformational leadership, and the mediational role of nonverbal behaviors that reflect intention to build a relationship (ITBR). One hundred and forty business managers took part in a multiphase study. In phase 1, they delivered speeches while being recorded. In phase 2, their nonverbal behaviors were coded by independent coders using Laban Movement Analysis. In phase 3, different independent coders listened to the participants' speeches and rated their level of transformational leadership. Structural Equation Modeling (SEM) and bootstrapping analyses were utilized to test several mediational paths. The results supported the hypothesis that nonverbal movement specifically light weight, free flow, indirect space and process-oriented movements (which are named as "intention to build a relationship"), mediated the relationship between interdependent self-construal and transformational leadership. The theoretical and practical implications are discussed within the context of self-construal and leadership.

Keywords: Transformational Leadership, Nonverbal Behaviors, Self-Construal

Introduction

Transformational leadership is seen as an attribution based on followers' perceptions of the leader's characteristics and behaviors. Transformational leaders are admired, respected, and trusted because of their consideration of the needs of others over their personal needs. To articulate an inspirational vision and motivation, and show individualized consideration, such leaders must build a strong emotional connection with the follower and encourage him/her to build a self-concept that identifies with the leader's self-concept and expectations (Bass, 1999). The key argument in this paper is that building such a connection and creating such consistency between the self-concepts is a characteristic of leaders with interdependent self-construal styles.

Interdependent Self-construal and Transformational Leadership

One personal disposition that holds the potential to greatly influence transformational leadership is self-construal, which refers to the way in which individuals perceive, comprehend, and interpret their own and others' behaviors, and process information about the world around them (Markus & Kitayama, 1991). Self-construal style provides an avenue for exploring how leaders build a connection with their followers and develop a relationship between the self-entity and the followers' self-concepts (as described in Bass, 1999) (Markus & Kitayama, 1991). There are two types of self-construal style: interdependent and independent (Markus & Kitayama, 1991; Triandis, 1989). Leaders with independent self-construal styles prioritize their personal goals over that of their followers and believe that executing their own agenda is more important than building strong connections with their followers. On the other hand, leaders with interdependence construal style draw their personal worth from connections with their followers, and therefore view that establishment of such strong ties as essential and consider the fusion between self and the group as an important mechanism for extending their capacities and social capital. These leaders derive personal meaning and value from their social relations and interconnectedness with the followers. This orientation aligns closely with the core dimensions of transformational leadership, individualized consideration, idealized influence, and the development of trust and commitment through deep relational bonds (Bass, 1999). Leaders high in interdependent self-construal are more likely to demonstrate empathy, responsiveness, and sensitivity to follower needs (Van Prooijen & Van den Bos, 2009), all of which are crucial for transformational leadership. Supporting this, prior studies have shown that nonverbal cues signaling relational intent—such as open posture, eye contact, and expressive gestures—are closely tied to perceptions of leaders as trustworthy, visionary, likable, and self-assured (Lamb & Watson, 1987).

Consistent with these findings, the researchers argue that interdependent self-construal, by embodying the intent to foster strong relational ties, is a key dispositional trait that enhances perceptions of transformational leadership. Therefore, the first hypothesis states that interdependent self-construal is positively associated with transformational leadership perceptions (Hypothesis 1).

Transformational Leadership and Nonverbal Behaviors

People make judgements about leaders by observing their nonverbal behaviors that might determine the level of likeability of leaders and willingness to follow them (Lamb & Watson, 1987; Riggio, 2006). Nonverbal behaviors that convey warmth, attractiveness, competence, power, and that simultaneously relay a sense of connection lead to perceptions of charisma in leader-follower relationships. Leaders who exhibit limited or defensive hand gestures are perceived as being distant, whereas leaders whose hand gestures are welcoming were perceived as attractive (Talley & Temple, 2015). Distinct set of nonverbal behaviors such as head position upward vs. downward, smiling, and different forms of bodily expansion, are associated with prestige and dominance (Witkower et al., 2020). Gazing behavior influences perception of leadership effectiveness along with hand gestures, facial express and frequency of self-adaptors (Lauk, 2019). Leaders may utilize eye-directed gazing to captivate followers, and to reinforce their message of cooperation and shared vision. Longer and more frequent eye-directed gazing makes leaders appear more charismatic and ideal to the followers (Maran et al., 2019).

Although past studies have examined specific nonverbal behaviors that relate to leadership perceptions (i.e., gestures, eye contact, posture shifts; see, Ensari & Murphy, 2003; Fernández et al., 2000), more research is needed to explore how transformational leaders' nonverbal behaviors allow them to secure emotional attachment, psychological commitment, and instill trust amongst their followers. Moreover, little research has been conducted to determine how observers of communication (including gesture coders) differentiate gestures from other kinesthetic movements which form relationships. Therefore, in this research, to better capture gestures and enhance scientific understanding, the researchers expanded the method of traditional nonverbal behavioral analysis, and utilized a different approach that focuses on whole body movement called Laban Movement Analysis (Laban, 1936).

Laban Movement Analysis (LMA)

LMA is a method of observing, describing, coding, and analyzing nonverbal behavior or any movement in humans. LMA is a system for describing and better understanding body movements (Laban & Lawrence, 1947). LMA not only incorporates observing, coding, and analysis of body attitude, posture-gesture merger, and space harmony, it also consists of multitude of categories and sub-categories of movement studies and notating. This includes re-creating a movement choreography one muscle at a time to observing, coding, recoding, and analyzing patterns in body movement as well as movement sequencing (the where and how does every movement begins and ends). Additionally, LMA examines how a body movement is used to make a gesture (i.e., a wave goodbye, a thumbs up or down, nodding head side to side or up and down when saying 'no' or 'yes' respectively, etc.).

Although LMA focuses on a wide range of body movements, to manage the scope of this study, only effort and shape elements were examined below.

The Effort Elements: Effort elements are the expressive (feeling tone) aspect in human body movement (Bradley, 2018). Effort (the inner urge or drive towards movement) is the outward reflection of a mover's inner attitude toward the physical properties of weight, flow, space, and time (Melzer et al., 2019). It reflects the moving person's attitude toward focusing energy in 4 movement elements:

1. Strong weight represents a person's own sense of impact s/he has on the environment during the movement, whereas light weight represents their own sense of self and 'fit' within the environment; the more comfortable and confident the person is in the environment the more likely it is that they will use light weight effort element.

2. The flow element considers the ways in which muscle tension is controlled while the individual is moving, and looks for continuity in movement; lack of flow, restricted flow, or too much tension/control in gestures can be indicative of withholding feelings, thoughts, and information.

3. The space element is the quality of people's body's awareness to their environment. The space effort oscillates on the range of indirect to direct. Indirect refers to giving active attention to more than one object in the environment (multi-focused) and direct is paying attention to one thing at a time (single-focused). Thus, indirect space gives the impression to build relationships with others in the environment.

4. The time effort is indicative of people's inner attitude toward the time they have to express themselves, rather than being a measure of how long it takes to perform a movement (i.e., a moment seems to occur instantaneously (quick) or lingers on (sustained).

The Shape Elements: The shape elements in LMA show the trace form a gesture makes as it moves through space/environment (space around the body). It is the quality of movement, which indicates if a person is interested in building a relationship with the environment or not. The shape elements consist of three types of gestures:

1. Self-oriented gestures are simple folding and unfolding of limbs near the body and they are noted as shape flow, emphasizing self-interest, therefore are not expected to indicate intention to build a relationship.

2. Other-oriented shape factors are movements that help the individual interact with the environment and build a relationship. These movements travel away from the body and out into the environment and can be identified in two categories: spoke-like which travel in a straight line from the body out to the mid to far reach of the mover and arch-like which forms a visual arch through space as they travel from the body out to the mid to far reaches of the movers.

3. Process-oriented factors are movements that travel away from the body in a circular and carving manner. These gestures give the impression that the mover is molding or sculpting the space with her hands to create a virtual picture of her own thoughts in the minds of the observers. Therefore, carving movements directly relate to one's interest in the observers.

The Mediating Role of the "Intention to Build a Relationship" Movements

According to the LMA approach, both the effort and shape factors should be directly linked to the leaders' intent to project as trustworthy, likable, empathetic, and confident in self and the vision. In fact apply these constructs to identify effective management behavior and found that effective managers utilized effort and shape elements more efficiently. For example, managers were able to use their nonverbal behavior to show compassion/empathy for others, enthusiasm/confidence for the vision, and commitment/trust to their employees and organizations goals/objectives. The effort elements not only assist managers in decision-making, but also influences the impressions that employees form about them as either honest or dishonest, likable or unlikable, empathetic or uncompassionate, confident or uncertain (Lamb & Watson, 1987). Specifically, when the effort and shape elements were both present in leaders' gestures, others perceived the managers as more caring, trustworthy, likeable, and being a visionary, or exuding more confidence, and thus successful.

The researchers argue that the effort and shape factors are more likely to be used by individuals with high interdependent self-construal styles. Previous research suggests that individuals with an interdependent sense of self are more likely to use gestures and head movements (Fernández et al., 2000). For example, Nagpal (2005) showed that when assuming a leadership role, individuals with a collectivistic sense of self not only utilized their body movements more than individuals with an individualistic sense of self, but their movements also demonstrate the use of effort elements. Accordingly, the researchers hypothesized that leaders who have an interdependent self-construal style are more likely to exhibit the "intention to build a relationship" movements. More specifically:

H2a: Leaders who have an interdependent self-construal style are more likely to exhibit light weight movement.

H2b: Leaders who have an interdependent self-construal style are more likely to exhibit free flow movement.

H2c: Leaders who have an interdependent self-construal style are more likely to exhibit indirect space movement.

H2d: Leaders who have an interdependent self-construal style are more likely to exhibit sudden time movement.

H2e: Leaders who have an interdependent self-construal style are more likely to exhibit other-oriented gestures.

H2f: Leaders who have an interdependent self-construal style are more likely to exhibit process-oriented gestures.

Furthermore, the researchers hypothesized that the "intention to build a relationship" movements mediate the relationship between interdependent self-construal and transformational leadership such that leaders with high interdependent self-construal are more likely to exhibit these movements, which in turn lead to stronger perceptions of transformational leadership. More specifically:

H3a: Light weight movement mediates the relationship between interdependent self-construal and transformational leadership.

H3b: Free flow movement mediates the relationship between interdependent self-construal and transformational leadership.

H3c: Indirect space movement mediates the relationship between interdependent self-construal and transformational leadership.

H3d: Sudden time movement mediates the relationship between interdependent self-construal and transformational leadership.

H3e: Other-oriented gesture mediates the relationship between interdependent self-construal and transformational leadership.

H3f: Process-oriented gesture mediates the relationship between interdependent self-construal and transformational leadership.

Research Methodology

Participants

One hundred and forty managers (77 women; 63 men) who had been with their respective organizations for a minimum of three years were recruited. To qualify as a manager, participants had to be in management position for at least three years or longer with at least one person reporting directly to him/her. Participants were sampled from the variety of different industries in Southern California Region including information technology, entertainment, automotive, management consulting, healthcare, and education.

Procedure

An approval was obtained from the participating companies' human resource departments. The study was run in a conference room in the participant's workplace. Upon arrival, the participant was informed about the purpose of the study and provided with a written informed consent form to review and sign. The participant was then told that, for the purpose of coding for leadership behaviors, they would be requested to deliver a speech in front of a video camera (as in videoconferencing), which recorded their speech. At this time, the participant was also informed that they would have 5 minutes to prepare the speech and 5 minutes to deliver the speech. The participant was asked to adopt the role of a "leader" delivering a speech and while doing so, they should imagine that they are delivering it to a group of 4-5 of their employees and engaging in a group problem solving task. Next, they were seated in an empty room with a video-recorder and asked 'act out' the role of a leader as it had been previously described to them.

All participants completed interdependent self-construal scale (14 items on 4-point Likert scale). To measure the extent to which the participants exerted transformational leadership during the speech, three independent coders listened the participants' speeches, and evaluated the degree of transformational leadership using the Multifactor Leadership Questionnaire (MLQ; Bass, 1985) on a 4-point Likert-type scale.

The coders held a graduate level degree in the field of Organizational Leadership, with seven to ten years of practice in the field. Before the study, they were informed about transformational leadership characteristics in a 60-minute training session. This session provided general background information, an opportunity to ask questions regarding the coding process. All coders were blind to the hypotheses. Interrater reliability coefficient was 0.94 and the MLQ scale yielded Cronbach's alpha coefficient of .97.

Nonverbal Behavioral Coding: The participants' speeches were coded for nonverbal behaviors using LMA (Laban, 1936; Laban & Lawrence, 1947). Three independent coders (who were different than those who coded transformational leadership) were selected. Each coder was a Certified LMA with approximately 10 years of experience applying movement therapy. The coders watched each speech while on mute and were asked to rate the effort and shape behavioral elements using a coding scale ranging from 0 (element is never present) through 5 (element is always present). They coded 4 effort elements (weight, flow, space, time), and 3 shape elements (self-oriented, other-oriented, and process-oriented). Inter-rater reliability analysis indicated an inter-rater reliability of 0.96 on the effort and shape coding; and for effort and shape movement elements index coding sheet yielded Cronbach's alpha coefficient of .80, indicating that the coders were consistent and that the measures are reliable. Note that the coders were blind to the purpose and hypothesis of the study, the training only provided general instruction on how to complete the coding sheet using the coding scale of 0-5, and there was no discussion around the interpretations of the LMA effort and shape elements.

Attractiveness and Dominance Coding. Physical appearance may play a role in leadership perceptions and attributions. Therefore, the researchers examined the extent to which the participants were perceived to be attractive and dominant during the speeches. Three independent coders (different than previous coders) watched the participants' speeches with sound removed, and rated the level of participants' attractiveness and the level of dominance on a Likert scale from 1-5. Interrater reliability was .66 for attractiveness and .69 for dominance ratings.

Results and Discussion

Preliminary analyses showed that the reliability coefficients for the measures used in the current study exceed the .60 minimum criteria (as suggested by Nunnally, 1978), ranging from .79 to .97. There were no gender differences found in the subsequent analyses. Attractiveness and dominance did not correlate with any of the key variables ($p > .05$), therefore it was concluded that the attractiveness or the dominance of the leader did not influence the subsequent results. The descriptive statistics are reported in Table 1.

Table 1

Descriptive statistics for study variables

	n	Mean	SD
Interdependent Self-Construal	140	3.03	.33
Transformational Leadership	140	1.55	.96
Strong Weight	140	.27	.62

	n	Mean	SD
Light Weight	140	1.61	1.32
Bound Flow	140	.44	.81
Free Flow	140	.69	.83
Direct Space	140	2.76	1.50
Indirect Space	140	2.41	1.64
Sudden Time	140	1.23	1.20
Sustain Time	140	.55	.80
Other-oriented (Spoke-Like)	140	.37	.70
Other-oriented (Arch-Like)	140	1.63	1.53
Process-oriented (Carving)	140	1.10	1.39
Self-oriented (Shape Flow)	140	.68	.83

The correlational analyses showed that (see Table 2) transformational leadership perceptions were correlated with each of the LMA movements ($p < .05$), except self-oriented gestures. More specifically, the nonverbal movements that are positively associated with transformational leadership were strong and light weight, free and bound flow, direct and indirect space, sudden and sustain time movements, and process-oriented and other-oriented gestures. The correlation between interdependent self-construal and transformational leadership perceptions was marginally significant ($r = .16$, $p = 0.06$), providing marginal support for Hypothesis 1.

Table 2

Intercorrelations between the Effort (weight, flow, space and time) and Shape (self-oriented, other-oriented - spoke-like/arch-like-, and process-oriented) movement elements, interdependent self-construal, and transformational leadership.

*Correlation is significant at the 0.05 level (2-tailed).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Inter. Self-Construal	-													
2	Transf. Lead.	.163	-												
3	Strong Weight	.018	.233**	-											
4	Light Weight	0.11	.404**	-0.068	-										
5	Bound Flow	-.239**	-.169*	0.04	-.394**	-									
6	Free Flow	.226**	.261**	0.134	.387**	-.251**	-								
7	Direct Space	0.028	.320**	0.158	.444**	-0.137	0.174*	-							
8	Indirect Space	0.217*	.411**	0.238	.543**	-.402**	.644*	.371**	-						
9	Sudden Time	0.239*	.368**	0.392	.249**	-.325**	.456**	.300**	.499**	-					
10	Sustain Time	0.056	.270**	0.125	.502**	-0.113	.263**	.304**	.317**	.313**	-				
11	Other-oriented (Spoke-Like)	-0.097	.231**	0.178	.172*	-0.101	0.027	.318**	.216*	.217*	.189*	-			
12	Other-oriented (Arch-Like)	0.123	.442**	0.203	.604**	-.356**	.616**	.449**	.691**	.529**	.438**	.301**	-		
13	Process-oriented (Carving)	0.227**	.435**	0.171	.524**	-.245**	.449**	.326**	.581**	.545**	.435**	.221**	.611**	-	
14	Self-oriented (Shape-Flow)	-0.066	-.081	-0.053	.225**	-0.003	0.048	0.04	0.051	-0.075	0.089	-0.011	-0.057	-0.063	-

Interdependent self-construal was positively correlated with 3 effort elements (free flow: $r = .27$, $p = .01$; indirect space: $r = .22$, $p = .05$; sudden time: $r = .24$, $p = .01$), but not with light weight ($r = .11$, $p > .05$). Interdependent self-construal was also positively correlated with process-oriented gestures ($r = .23$, $p = .01$), but not with other-oriented gestures (spoke-like: $r = -0.01$, $p > .05$, arch-like: $r = 0.1$, $p > .05$). Overall, these results provided support for Hypothesis 2b, 2c, 2d, 2f (but not for Hypothesis 2a and 2e) in that higher interdependent self-construal was associated with more free flow, indirect space, sudden time and process-oriented gestures.

To test the mediational model as predicted in Hypothesis 3a-f, two separate path models were run on AMOS software: one with the effort elements, and one with the shape elements. In each model, interdependent self-construal was entered as the independent variable, and the transformational leadership perception as the dependent variable. The effort and shape elements were entered as indicators of intention to build a relationship, which was the mediator.

Both path models had a very good overall model fit x^2 (Model 1 – see Figure 1: CMIN/DF=1.09, p =.34, RMSEA = .03, SRMR = .01, CFI =.998; PNFI (.33), Model 2 – see Figure 2: CMIN/DF=1.96, p =.08, RMSEA = .08, SRMR = .05, CFI = .97, PNFI (.47) respectively). First, in Figure 1, the model path correlations are as follows: interdependent self-construal is correlated (.24) to intent to build a relationship, which in turn is correlated (.56) to transformational leadership (MLQ). The SEM demonstrates that arch like loaded on ITBR by .76 and carving shape loaded on ITBR by .80. More importantly, model one achieved the required non significance level for chi-square (CMIN/DF=1.092, p=.335), as well as acceptable perimeters were reached for the RMSEA (.03), SRMR (.01), CFI (.998), and PNFI (.33), which demonstrates a very good overall model fit. Turning to Figure 2, demonstrates that intent to build a relationship, as indicated by light weight, free flow, and indirect space, is a good-fit. Specifically, the model path correlations are as follows: interdependent self-construal is correlated (.26) to intend to build a relationship, which in turn is correlated (.46) to transformational leadership. The A SEM, in this hybrid model, demonstrates that light weight, indirect space, and free flow loaded on ITBR at .60, .91, and .70 respectively. More importantly, model two achieved the required non significance level for chi-square (CMIN/DF=1.963, p=.081), RMSEA (.08), SRMR (.05), CFI (.970), and PNFI (.47). In sum, the pattern of results revealed that light weight, free-flow, and indirect space movements (but not sudden time), as well as arch-like and carving shape movement elements were strong indicators of intent to build a relationship.

Figure 1

Model 1: Mediation effect of Intent to build a relationship (ITBR), with shape factor elements of movement as indicators of ITBR, on the relationship between interdependent self-construal and transformational leadership (MLQ).

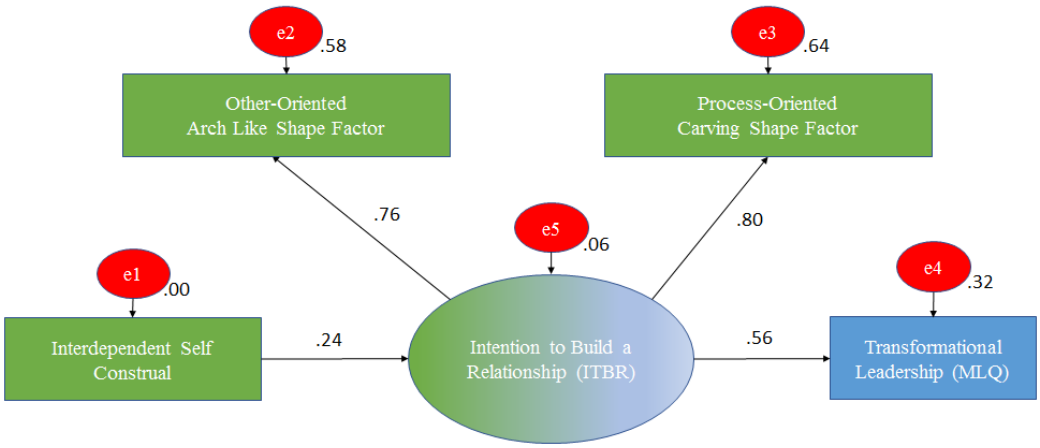
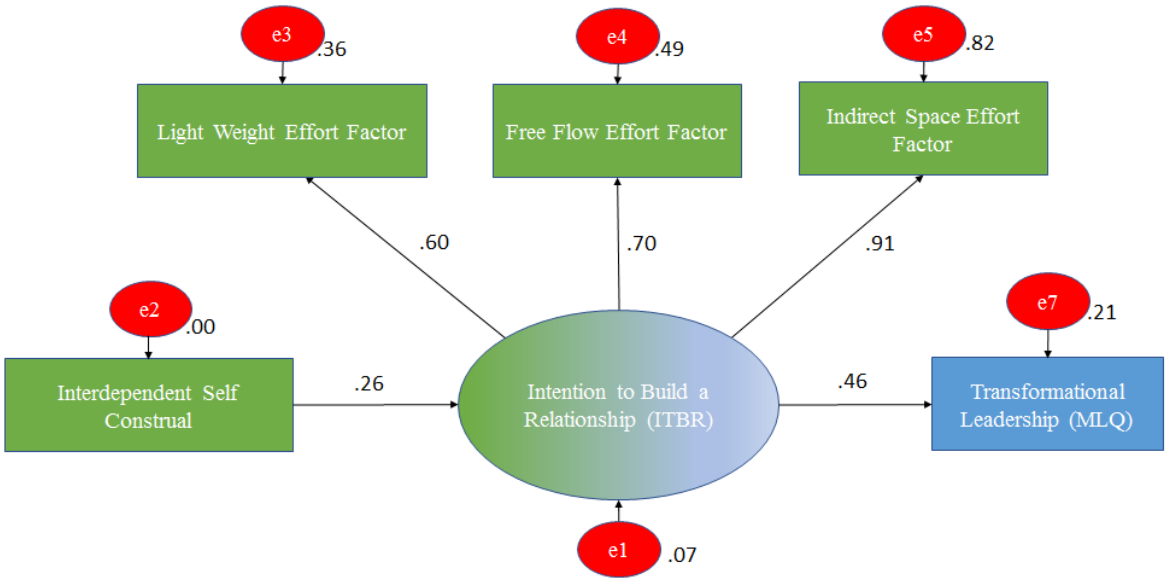


Figure 2

Model 2: Mediation effect of Intent to build a relationship (ITBR), with effort factor elements of movement as indicators of ITBR, on the relationship between interdependent self-construal and transformational leadership (MLQ).



In addition to the SEM analyses, to test Hypotheses 3a-f separately, a mediational analysis was run for each of the Hypotheses 3a-f using Process Macro in the SPSS software Version 4 (Hayes, 2022). The bootstrapping estimates of the indirect range with a 95% confidence interval the standardized coefficients are shown in Table 3. These results showed support for the indirect effect of light weight (Hypothesis 3a), free flow (Hypothesis 3b), indirect space (Hypothesis 3c), and carving shape (Hypothesis 3f) movements. These results are consistent with the SEM analyses, with the only exception that arch-like movement was not found to be a mediator in the bootstrapping analysis.

Table 3

Mediational Analyses

Mediator	Standardized indirect effect	Lower BC 95% CI	Upper BC 95% CI
Strong Weight	.004	-.03	.03
Light Weight *	.08	.02	.16
Bound Flow	.03	-.02	.09
Free Flow *	.01	-.05	.06
Direct Space	.03	-.03	.08
Indirect Space *	.09	.02	.16
Sudden Time	.04	-.02	.11
Sustain Time	.01	-.02	.07
Other-oriented (Spoke-Like)	-.02	-.07	.01
Other-oriented (Arch-Like)	.05	-.02	.14
Process-oriented (Carving) *	.10	.03	.18
Self-oriented (Shape Flow)	.004	-.02	.03

Note: The variables with an asterisk (*) are significant mediators at p = .05 level

Discussion

Consistent with previous studies, individuals with stronger interdependent self-construal show an enhanced concern for social relations and norms and as predicted, it was found that leaders with stronger interdependent self-construal were seen as more transformational, albeit the support was marginal. The results suggested that interdependent self-construal is correlated with movements that focus on others, more specifically with free flow, indirect space, sudden time and process-oriented gestures (i.e., carving). These findings are consistent with previous research that showed that interdependent self-construal emphasizes focus on others, rather than own's skills and abilities (Ting-Toomey, 1988).

On the other hand, self-oriented movements (shape flow) and other-oriented arch-like shape factor movement element were not correlated with interdependent self-construal style. As shape flow is about self-focus and not about focusing on others, it makes sense that a leader with an interdependent self-construal would not utilize self-oriented (shape flow) movements. In terms of other-oriented arch-like shape element, although it did not correlate with interdependent self-construal, it was nonetheless found to be correlated with transformational leadership. Thus, it is possible that the arch-like shape factor movement

indirectly impacts the relationship between self-construal and perception of transformational leader. Indeed, this was confirmed when SEM/path analysis exhibited that other-oriented arch-like shape factor is one of the shape movement elements along with process-oriented carving shape movement element that indicates that the leader has an intention to build a relationship and mediates the relationship between interdependent self-construal and transformational leadership. Taken together, leaders high on the interdependent dimension of self-construal tend to spend time focusing on the group and the task --evident by correlations between process-oriented carving shape factor movement element and indirect space, free flow, sudden time effort factor movement elements.

The mediational analyses consistently indicated that light, free flow, indirect and carving movements mediate the relationship between interdependent self-construal and transformational leadership. These findings are important because they challenge the traditional view on transformational leaders whose nonverbal behaviors are typically seen as 'strong, direct, controlled, and sharp'. The results suggest that, not the traditionally accepted nonverbal behaviors, but rather more fluid and soft movements (i.e., free flow, light, indirect and carving) lead to greater perceptions of transformational leadership regardless of the gender of the leader performing the movements (Eagly & Carli, 2003).

One of the effort elements, sudden time, was correlated with interdependent self-construal, but did not play a role in the mediational models. The effort factor of time is identified in the movement literature as the decision factor and can contribute to elicit a perception that a person pay attention to and is open to others perspective before making a decision. Thus, it is possible that since the leaders in the current study were not requested to make specific decisions, time effort (sudden or sustained) was not one of the indicators of intent to build a relationship.However, it is correlated with interdependent self-construal, as leaders with interdependent self-construal are expected to be more open to group/team members' perspective when asked to make a decision (Smith et al., 2006). More specifically, a leader who displays confidence in what that leader is pursuing the followers to do (vision), is demonstrating one of the charismatic leadership characteristics (Conger, 1989). Accordingly, as expressing confidence in the vision is a characteristic of the transformational leadership, it is reasonable to find light weight as an indicator of intent to build a relationship which in turn mediates the relationship between interdependent self-construal and perception of transformational leadership.

Limitations

There is wide debate about the ability of the MLQ to tap transformational features, and about its ability to distinguish amongst the various characteristics thought to be tapped in the sub-scales (for a discussion see a Van Knippenberg & Sitkin, 2013). While the researchers agree with these points, Antonakis et al. (2016) argued that using it as an endogenous variable and as a dependent rather than an independent variable, is most likely to mitigate the measurement issues.

While the 'real world' sample is a distinct strength, it also leads to one of the limitations. Specifically, while the researchers have power for the reported analysis, additional

data would have enabled stronger items analysis of the indicators which could have been of benefit and aided with the generalizability of the pattern of findings (MacCallum et al., 1996).

The interrater reliability scores among the coders of attractiveness and dominance were not as high as the researchers hoped. One potential reason may be the age gap among the coders. Two of the three coders were 30 years younger than the third coder. It is possible that view of attractiveness changes by generation. Nevertheless, neither attractiveness nor dominance correlated with any of the key variables, thus they are not considered as confounds in the present study. An additional limitation is the absence of a between-group or mean comparison design, which could have provided further insight into whether individuals with high interdependent self-construal are significantly more likely to be perceived as transformational leaders.

Practical Implications and Future Directions

The present study is the first study to empirically test LMA movements in the context of leadership. It would be important for future researcher to expand on this by creating a leadership body movement scale. Although effort and shape factors of LMA have been used to observe and analyze body movements for many years, aside from the current study, there is no other research that has empirically examined these movement factors for leadership perceptions. Thus, given the promising results of the current study, it is incumbent upon researchers and practitioners in the Industrial and Organizational Psychology field to seriously study and examine the application of these constructs within the field. Simultaneously, in this diverse work environment, it is increasingly important to understand the impact of culture on leadership and leadership's impact on culture. More specifically, future researchers and practitioners can utilize the findings of the current study to further explore the role of self-construal on leadership. For instance, what impact, if any, does followers' self-construal style have on leaders and communication strategy? Practitioners could utilize the movement elements of effort and shape factors by apply them to organizational leadership training/development to identify future leaders, educate/train current leaders about building relationships with followers.

The present study found that each LMA movement, except self-oriented movement, correlated with transformational leadership. In this study, the LMA movements were coded by watching the videos of the participants while on mute. That is, nonverbal behaviors were coded without an accompanying speech. found that "Judgements of a gesture's semantic category, made when the accompanying speech is accessible, derive almost entirely from the semantic and paralinguistic content of the speech. However, a gesture seen in the absence of speech conveys some information about the semantic category of its lexical affiliates". Future research can examine how LMA movements play a role in leadership perceptions while accompanied a speech and identify specific type of nonverbal behaviors that reveal charisma. Finally, and practically speaking, the results offer some promising and reliable methods for identifying training and shaping leaders.

For those who design leadership consulting programs, the new insights into personal construal and efforts of movements (as well as types) could provide better avenues that might be used to fine-tune leadership acceptability interventions, and enhance self-confidence, and build stronger employee-supervisor relationship forums and result in clear communication, over all better performance, increased trust, commitment, and overall buy-in to the organizational goals. Future research should also examine how interdependent self-construal and associated nonverbal behaviors influence a leader's ability to communicate vision and mission-core components of transformational leadership—to provide a more comprehensive understanding of how embodied relational intent supports inspirational leadership.

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