5-2019

Humility breeds authenticity: How authentic leader humility shapes follower vulnerability and felt authenticity

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Abstract

Integrating existing work that considers the self through an interpersonal lens with theories pertaining to leader humility and authenticity, we develop a moderated mediation model that theorizes how and under what circumstances leader humility relates to follower felt authenticity. We argue that followers feel less vulnerable when their leaders express humility and further that this relation becomes weaker as the authenticity of leader humility decreases. We also theorize that follower vulnerability is the mechanism explaining the interactive effect of leader humility and its authenticity on follower felt authenticity at work. Our theoretical model was supported across four studies employing both correlational and experimental designs. These results contribute to our understanding of the interpersonal antecedents of authenticity at work as well as the growing body of research on the impact that leader humility has on important employee outcomes.

Keywords

Leader humility, Authentic humility, Vulnerability, Felt authenticity

1. Introduction

Authenticity, the "sense or feeling that one is in alignment with one's true or genuine self" (Sedikides, Slabu, Lenton, & Thomaes, 2017, p. 521), positively relates to many individual criteria including subjective well-being, life satisfaction, job satisfaction, meaning in life, job performance, and moral behaviors (e.g., Gino et al., 2015, Gino et al., 2010, Kifer et al., 2013, Schlegel et al., 2009, Sheldon et al., 1997, Thomaes et al., 2017, van den Bosch and Taris, 2014). Given these and other important relationships, understanding when and why employees feel authentic should provide insights into how to improve both life and work-related outcomes.

The vast majority of research on authenticity has investigated trait authenticity. More recently, researchers have begun to recognize that one's experience of authenticity also may be influenced by external factors, leading to an exploration of factors that influence one's felt (state) authenticity. For example, research demonstrates that experimental manipulations of affect, nostalgia, and power

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(e.g., Baldwin et al., 2015, Kraus et al., 2011, Lenton et al., 2013) as well as behaving in ways consistent with certain personality traits (Fleeson & Wilt, 2010) or reflecting on real-life situations (Lenton, Slabu, & Sedikides, 2016) impact one's felt authenticity. Although this body of research demonstrates people vary in their levels of felt authenticity, the effects of social factors on felt authenticity are largely overlooked (for an exception, see Bargh, McKenna, & Fitzsimons, 2002). This is a critical omission given that people are generally motivated to gain the approval of others (which can influence inauthentic behavior, e.g., Brewer, 1991, Hewlin, 2003, Leary and Baumeister, 2000, Wallace and Tice, 2012). As such, these social factors need to be considered theoretically and empirically to better understand how felt authenticity emerges and is experienced at work (Sedikides et al., 2017).

In this paper we theorize that leaders are an important source of social approval for followers (e.g., Ibarra and Andrews, 1993, Tjosvold, 1989), and therefore, influence follower felt authenticity. Drawing from work that considers the self through an interpersonal lens (e.g., Brewer, 1991, Leary and Baumeister, 2000, Wallace and Tice, 2012), we argue that leaders have the capacity to decrease follower feelings of vulnerability, allowing followers to feel more comfortable in expressing their true selves. In particular, we integrate research on felt authenticity with research on leader humility (e.g., Owens and Hekman, 2012, Owens and Hekman, 2016, Owens et al., 2013) to theorize that, because humble leaders admit their failures and demonstrate their own fallibility (Exline et al., 2004) as well as act in ways that decrease the power differentials between them and their followers (Rego et al., 2017), they create an environment where followers feel less vulnerable. Next, we incorporate research on inauthentic expressions of humility (e.g., Owens and Hekman, 2012, Sezer et al., 2018) to theorize that the beneficial effect of leader humility on decreasing follower vulnerability depends on the degree to which the humility leaders express is authentic. Finally, we argue that diminished feelings of vulnerability help followers feel more authentic at work because when followers feel less vulnerable they are better able to act in accordance with their true selves. Taken together then, we argue that leader humility, depending on the degree to which it is authentic, indirectly affects follower felt authenticity through follower vulnerability. As presented below, we conducted four studies to test our theoretical model (Fig. 1).

Fig. 1. Hypothesized Model.
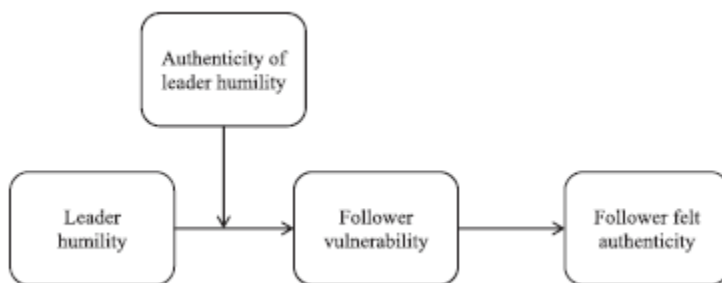
2. An interpersonal perspective on felt authenticity and the role of vulnerability

Theories from a variety of disciplines (e.g., psychology, management) discuss the reasons why individuals may act (in)authentically (e.g., looking-glass-self theory: Cooley, 1902, Wallace and Tice, 2012; optimal distinctiveness theory: Brewer, 1991; sociometer theory: Leary & Baumeister, 2000; facades of conformity: Hewlin, 2003). A common theme across these theories is that, because we are social beings and social approval is crucially important (Jones & Gerard, 1967), salient social actors play a large role in influencing our willingness to express our true selves and thus experience feelings of authenticity.

Considering we care about how others view us, the social information we receive can impact our willingness to act in accordance with our true selves (Wallace & Tice, 2012). Indeed, research indicates that one major barrier to acting authentically is the desire to meet the expectations of others and decrease the chances of social rejection (Brewer and Roccas, 2001, Brewer, 1991, Paulhus and Martin, 1988). This tension between being authentic versus inauthentic has been highlighted by Leary and Baumeister (2000). Specifically, these authors argue that we have an internal system that monitors how much others value their relationships with us. When we sense social disapproval, we engage in actions to repair how others see us. Hence, when we feel that we might be socially excluded or devalued by others, we are likely to act in ways that we think others want or expect, even if this means being inauthentic.

Our need for social approval also applies to the workplace. Indeed, theoretical and empirical research on conformity at work indicates that individuals often represent themselves inauthentically when interacting with others so as to create an acceptable image (Hewlin, 2009, Hewlin, 2003, Hewlin et al., 2017). One reason individuals may choose to not reveal their true selves is because they feel vulnerable (defined as the extent to which they perceive or feel that they are dependent on the approval of others and could be easily hurt by them, Lemay & Clark, 2008). We argue that in the workplace, highly salient and powerful others such as leaders are particularly likely to influence follower feelings of vulnerability.

2.1. The effect of leader humility on follower vulnerability

Often leaders have considerable power over their subordinates as they tend to control valued resources (Gagne and Lydon, 2004, Oc and Bashshur, 2013), and therefore, followers care quite deeply about what their leaders think of them and desire to be accepted by them (Morrison, 1994, Tjosvold, 1989, Yukl and Falbe, 1990). This combination of dependence and need for acceptance can lead to feelings of vulnerability on the part of followers (Lemay & Clark, 2008). We argue that one leader characteristic, leader humility, mitigates these effects and helps followers feel less vulnerable. Based on in-depth interviews with leaders across different industries and occupations, Owens et al. (2013) conceptualized leader humility as a characteristic that emerges in interpersonal situations. Specifically, humble leaders are those who are willing to accurately assess theirpersonal strengths and weaknesses, admit their mistakes, ask for feedback about themselves, value the strengths and contributions of others, and are willing to learn from others.

There are at least two reasons why humble leaders likely reduce followers' feelings of vulnerability. First, humble leaders, "give away power" to subordinates (Rego et al., 2017, p. 5) and "adopt a stance of egalitarianism rather than superiority or servility in their communications with others" (Morris, Brotheridge, & Urbanski, 2005, p. 1341). This creates an environment in which subordinates feel more comfortable speaking up without fear of retribution or damaging their relationships with the leader (Liu, 2016). Indeed, based on field data from 63 CEOs and 328 top management team members in Chinese companies, Ou et al. (2014) showed that humble CEOs empower top management teams to better integrate and make joint decisions.

Second, humble leaders admit their mistakes, note their limitations, and demonstrate their own fallibility (Exline et al., 2004). These humble behaviors, combined with their tendency to appreciate the contributions of others (Owens et al., 2013), enhance others' trust in them (Nielsen et al., 2010, Weick, 2001) and make it easier for followers to establish strong social bonds with them (Davis et al., 2013, Owens et al., 2013, Peters et al., 2011). That is, humble leaders modulate their sense of self-importance and focus their attention on the value of others (Morris et al., 2005). Taken together, we theorize that when followers have humble leaders they are less likely to feel dependent on their leaders and less likely to feel like they could be easily hurt. Therefore, we hypothesize:

Hypothesis 1:

Leader humility negatively relates to follower vulnerability.

2.2. The moderating role of authenticity of leader humility

Because leader humility is defined as a set of behaviors, it is possible that humility may be expressed inauthentically (Owens and Hekman, 2012, Owens and Hekman, 2016, Owens et al., 2013) and/or may be perceived as being inauthentic. An important assumption of theorizing that leader humility negatively relates to follower vulnerability is that the leader humility is authentic and not faked. When followers question the authenticity of the leader humility, they are less likely to be influenced by it and the beneficial effects of leader humility are less likely to develop or persist.

Leaders may be motivated to embellish their humility because they believe acting humbly makes them more likeable and approachable (Owens & Hekman, 2012) and because they believe they can garner more social status by doing so (Bai, 2017). Research on "humblebragging" suggests that people may use humility to conceal self-promoting behaviors (e.g., "I can't understand why I won employee of the month"; Sezer et al., 2018, p. 57). However, such behavior may not have the intended positive effect. In their qualitative study of 55 managers, Owens and Hekman (2012) reported that acknowledging other's contributions and strengths positively affected followers but only when followers perceived that their leaders were offering genuine compliments and not flattery or empty praise. In contrast, when followers perceived leader humility to be inauthentic, followers felt more distrustful of their leaders (Owens & Hekman, 2012). For instance, a military service member in their study stated, "I have seen a leader fake humility for their own benefit. When they are just going through the motions you lose respect for them and really distrust everything they say" (p. 798). Indeed, inauthentic leaders are thought to deliberately manipulate others for their self-interest which likely makes followers feel more vulnerable (Howell and Avolio, 1992, Michie and Gooty, 2005, Sparrowe, 2005). Taken together, we theorize that the negative relationship between leader humility and follower interpersonal vulnerability depends on the extent to which the leader humility is authentic. Specifically, we hypothesize the following:

Hypothesis 2:

The authenticity of leader humility moderates the negative relationship between leader humility and follower vulnerability such that this relationship is stronger for leaders whose humble behaviors are more authentic.

2.3. The effect of follower vulnerability on follower felt authenticity

To this point we have theorized that authentic leader humility helps followers feel less vulnerable in their relationships with their leaders. This is important because when people are highly dependent on others (e.g., for social approval, resources) they are more likely to act inauthentically because they feel they must act consistently with others' expectations, preferences, or values to receive their approval (Baumeister et al., 1996, Kernis and Paradise, 2002, Leary, 2003, Murray et al., 2008). For instance, employees represent themselves falsely (or inauthentically) when interacting with others at work in order to appear that they are aligned with their managers' values (Hewlin et al., 2017, Hewlin, 2009).

The motivation to act inauthentically often emerges out of a desire for acceptance, belongingness (e.g., Baumeister and Leary, 1995, Leary and Baumeister, 2000, Leary and Downs, 1995), and to maintain positive interpersonal relationships (Phillips et al., 2009, Roberts, 2005). When individuals feel less vulnerable or more secure in their relationships with others, they are more likely to let others see them for who they really are. Consistent with this rationale, Gillath, Sesko, Shaver, and Chun (2010) demonstrated experimentally that when individuals experience relational security, they become more likely to self-disclose not only their positive, but also their negative qualities to others. Similarly, Lopez and Rice (2006) showed that the less anxious individuals feel about their relationships with others, the less willing they are to construct inauthentic self-representations. Taken together, when followers feel safe and less vulnerable in their relationship with leaders, they are more likely to express their true selves. Thus, we hypothesize the following:

Hypothesis 3:

Follower vulnerability negatively relates to follower felt authenticity.

We further propose that leader humility will indirectly affect follower felt authenticity via follower vulnerability depending on the authenticity of leader humility (see Fig. 1). Given that we predict a stronger negative relationship between leader humility and follower felt authenticity for authentically humble leaders, we hypothesize the following:

Hypothesis 4.

The indirect effect of leader humility on follower felt authenticity via follower vulnerability is moderated by the authenticity of leader humility, such that the indirect relationship is stronger for leaders whose humble behaviors are more authentic.

3. Overview of studies

In Study 1, we used a field study to test our full hypothesized model. In experimental Studies 2 and 3 we replicated our results for Hypotheses 1 and 3 but with an emphasis on demonstrating causality. To provide additional support for the mediating effect of follower vulnerability on the leader humility-follower felt authenticity relationship we employed an 'experimental-causal-chain' design (Spencer et al., 2005, Stone-Romero and Rosopa, 2008). The idea behind this design is that by manipulating both the independent variable and the mediating variable researchers can make stronger inferences about causality, and in particular the mediating mechanism. As Spencer et al. (2005) argue, "such designs should be understood as a powerful way to examine psychological processes" (p. 846) because this approach ensures that the cause precedes the effect. Thus, in Study 2 we used this approach, manipulated leader humility and found support for its effect on follower vulnerability (Hypothesis 1). In Study 3, we manipulated follower vulnerability and found further empirical evidence that follower vulnerability affected follower felt authenticity (Hypothesis 3). Finally, in Study 4, we manipulated both the explanatory (i.e., leader humility) and the moderating variables (i.e., leader authenticity) to provide a rigorous test of the hypothesized model.

4. Study 1

4.1. Procedure and participants

In this study, we employed a multi-wave, multi-source survey design to test our entire hypothesized model. We recruited 258 full time employee-supervisor dyads residing in India through Maction Consulting, a professional survey panel provider based in India with access to a large participant database of over 15 million members. Members volunteer to become research participants in return for pay. Respondents in this survey received US$3.00 for their participation. The surveys were administered in two waves and were in English, which is one of the official languages of education and business in India. In the first wave, followers responded to questions about their vulnerability to their leaders, a number of control variables and demographic information while leaders rated their own humility and the authenticity of that humility. In the second wave, one month later, followers provided ratings of their felt authenticity. We used different rating sources and separated measures in time to help reduce the influence of same source bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

The followers' mean age was 28.58 years ($SD = 5.62$). Followers were 26.74% female, worked an average of 49.50 h per week ($SD = 3.68$, Min = 40, Max = 66), and worked in several different industries and occupations (26.7% information technology, 20.6% manufacturing industry, 18.3% service industry, 16.8% financial industry, 5.3% pharmaceutical industry, and 12.3% other). Followers' average tenure in their current position was 2.88 years ($SD = 1.66$) and in their current organization was 3.74 years ($SD = 2.56$) respectively. Followers also represented different organizational levels: non-management ($n = 56$), first-line supervisors ($n = 139$), middle-management ($n = 60$), and upper-management ($n = 3$).

The leaders mean age was 34.44 years ($SD = 6.71$). Leaders were 19.38% female, and worked an average of 49.73 h per week ($SD = 3.94$, $Min = 40$, $Max = 70$). Their average tenure in their current position was 4.44 years ($SD = 2.58$) and in their current organization was 6.34 years ($SD = 3.62$). Leaders were first-line supervisors ($n = 43$), middle-management ($n = 168$), and upper-management ($n = 47$).

4.2. Measures

4.2.1. Leader humility

To assess leader humility, we used the nine-item scale developed by Owens et al. (2013). Consistent with existing research that used self-reports of humility (e.g., Exline and Hill, 2012, Kruse et al., 2017, LaBouff et al., 2012, Van Tongeren et al., 2016), we asked supervisors to rate their own humility. Respondents rated themselves on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) regarding the extent to which they express humility (e.g., "I often compliment others on their strengths"; $\alpha = 0.74$).

4.2.2. Authenticity of leader humility

We used Randolph-Seng and Gardner (2012) four-item leader authenticity scale to measure the extent to which supervisors evaluated their humility to be authentic. This scale consists of semantic differential items with an adjective at one pole of the scale and its antonym at the other. In particular, we asked supervisors to evaluate their humble behaviors as: deceptive vs. straightforward, phony vs. authentic, hypocritical vs. genuine, and insincere vs. sincere. Higher values indicated more authentic leader humility for each item, which was rated on a 7-point scale. The scale exhibited good internal consistency reliability ($\alpha = 0.79$).

4.2.3. Follower vulnerability with leader

We adapted Lemay and Clark (2008) three-item vulnerability scale to measure follower vulnerability with the leader. Subordinates reported whether they generally feel vulnerable in their relationship with their supervisor. The items are: "In my relationship with my supervisor, (a) I am vulnerable or easily hurt; (b) I am easily upset with him/her; and (c) I am sensitive to his/her opinions of me." (1 = *strongly disagree*, 7 = *strongly agree*; $\alpha = 0.77$).

4.2.4. Follower felt authenticity

We measured follower felt authenticity using the 6-item inauthenticity at work scale (Erickson & Ritter, 2001). Subordinates were asked how frequently they felt authentic over the previous six months on a 7-point scale (1 = *never* to 7 = *always*). A sample item includes "I did not feel I could be myself at work." For clarity of discussion, we reverse-coded the scale so that higher ratings indicate greater follower felt authenticity ($\alpha = 0.96$).

4.2.5. Control variables

To isolate the effects of leader humility and the authenticity of that humility, we included several control variables in the analyses.[1] First, we controlled for *servant leadership* as a possible competing leadership construct considering its positive effects on followers (e.g., Hoch et al., 2016, Van Dierendonck et al., 2014). Specifically, we asked supervisors to rate their servant leadership using a 7-item version of the Liden, Wayne, Zhao, and Henderson (2008) servant leadership scale ($\alpha = 0.77$) shortened by Liden, Wayne, Liao, and Meuser (2014). In addition, *subordinate age*, *subordinate gender*, and *gender similarity between the employee and the supervisor* were included to account for the potential role that age (Anderson, Baur, Griffith, & Buckley, 2017) and gender dynamics play in how followers react to leaders (Eagly and Karau, 2002, Ridgeway, 1992). Empirical evidence suggests the extent to which one expresses his or her true self can stem from age-related factors (e.g., one's age, age difference, Soller, 2014, Soller, 2015) and that women may report higher levels of authenticity than men (e.g., Lopez & Rice, 2006). We also included *relationship tenure with supervisor* as a control variable considering that those followers who have been in longer relationships with their leaders are more likely to be influenced by them (Maslyn

& Uhl-Bien, 2001). Finally, in order to account for the effects of theoretically relevant trait factors, we controlled for *subordinate's authentic personality* (using 12-item trait authenticity scale from Wood,Linley, Maltby, Baliousis, & Joseph, 2008, α = 0.94) to help isolate the effect of trait authenticity (see e.g., Lenton et al., 2013) and *subordinate's global self-esteem* (using the single item self-esteem scale from Robins, Hendin, & Trzesniewski, 2001) due to its possible effect on one's authentic self (Leary, 2003).

4.3. Results

4.3.1. Confirmatory factor analysis

First, we conducted a confirmatory factor analysis of the constructs in our model. The hypothesized four-factor measurement model yielded good fit to the data (Hu and Bentler, 1998, Hu and Bentler, 1999), χ^2 (203) = 376.31; standardized root-mean-square residual (SRMR) = 0.05; comparative fit index (CFI) = 0.94; Tucker Lewis index (TLI) = 0.94; root mean-square error of approximation (RMSEA) = 0.06. Importantly, the 4-factor model fit better than several alternative models, including (a) a model whereby leader humility and authenticity of leader humility loaded onto a single factor ($\Delta\chi^2$(3) = 38.10, $p < .01$, SRMR = 0.05; CFI = 0.93; TLI = 0.92; RMSEA = 0.06), (b) a model whereby follower vulnerability and follower felt authenticity loaded onto a single factor ($\Delta\chi^2$ (3) = 307.73, $p < .01$; SRMR = 0.12; CFI = 0.84; TLI = 0.82; RMSEA = 0.10), and (c) a model whereby all the items loaded on to one factor ($\Delta\chi^2$ (6) = 1004.85, $p < .01$; SRMR = 0.19; CFI = 0.61; TLI = 0.57; RMSEA = 0.15). Taken together, this provides evidence that our constructs of interest are distinct from each other.

4.3.2. Tests for endogeneity

Before performing analyses to test our hypotheses, we addressed endogeneity concerns (Antonakis, Bendahan, Jacquart, & Lalive, 2010). By doing so we ensure that follower vulnerability is not systematically related to unobserved antecedents of follower felt authenticity. This can happen due to omitted variable bias, measurement errors in the dependent variable, or reverse causality (Antonakis et al., 2010). First, we used the Hausman endogeneity test, which explores whether the error terms of both equations predicting follower felt authenticity (the dependent variable) and follower vulnerability (the mediating variable) are significantly correlated, to determine whether our mediator (i.e., follower vulnerability) is endogenous. The Hausman test revealed no endogeneity problem of follower vulnerability ($\Psi = 1.61$, $p = .11$). Second, we employed the Durbin–Wu–Hausman endogeneity test as an alternative tool. This is an augmented regression in which the residuals of the first-stage equation (to predict the mediator) are included as controls in the second-stage equation (to predict the dependent variables) (Antonakis et al., 2010). Durbin–Wu–Hausman test similarly revealed no endogeneity problem, $F(1, 254) = 3.36$, $p = .08$.

4.3.3. Test for multicollinearity

To check for multicollinearity, we calculated variance inflation factor (VIF) scores for all the variables in the model of follower vulnerability and follower felt authenticity. As shown in Table 2, all VIF scores were below 10 suggesting that multicollinearity was not a problem in our analyses (Chatterjee and Price, 1977, Freund and Wilson, 1998).

4.3.4. Hypothesis tests

Basic descriptive statistics and correlations between study variables can be found in Table 1. We tested our hypotheses in a structural equation modeling framework using Mplus 8.1 software (Muthén, 1998, 2018). The full theoretical model was estimated using the maximum likelihood estimator with robust estimates of the variance (i.e., robust ML: MLR) and a numerical integration algorithm. The latent interaction between leader humility and the authenticity of leader humility was calculated using the procedure outlined in Klein and Moosbrugger (2000).[2] Follower trait authenticity and servant leadership

were modeled as latent variables given that they were each measured with multiple items, and, together with the other control variables were all regressed onto follower vulnerability and authenticity.

Table 1. Descriptive Statistics and Correlations for Study 1.

Variable	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Follower age	28.58	5.62	–											
(2) Leader age	34.44	6.71	0.75	–										
(3) Follower gender	0.73	0.44	−0.06	−0.07	–									
(4) Gender similarity	0.25	0.43	0.02	0.09	−0.49	–								
(5) Leader humility	4.22	0.38	0.24	0.07	0.04	−0.27	–							
(6) Authenticity of leader humility	6.23	0.73	0.25	0.20	0.09	−0.32	0.61	–						
(7) Follower vulnerability	2.09	0.69	−0.14	−0.05	−0.11	0.27	−0.59	−0.52	–					
(8) Follower felt authenticity	2.34	1.15	−0.09	−0.09	0.14	v0.14	0.17	0.13	−0.32	–				
(9) Servant leadership	4.16	0.47	0.06	−0.00	0.08	−0.27	0.56	0.50	−0.50	0.25	–			
(10) Relationship tenure (in years)	2.80	1.67	0.56	0.53	−0.08	0.12	−0.07	0.01	0.08	−0.09	−0.14	–		
(11) Follower's authentic personality	5.57	0.99	0.16	0.11	0.14	−0.31	0.62	0.57	−0.50	0.12	0.48	−0.09	–	
(12) Follower's global self-esteem	5.78	1.18	0.23	0.17	0.05	−0.11	0.46	0.47	−0.24	−0.02	0.37	0.05	0.68	–

Note. N = 258 dyads. Gender is coded 1 when the employee is male. Gender similarity is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. Correlations greater than |0.13| are statistically significant at p < .05, two-tailed.

Table 2. Structural Equation Modeling Results and Estimates of Conditional Indirect Effects, Study 1.

Variable	Follower vulnerability			Follower felt authenticity		
	B	SE	VIF	B	SE	VIF
Control variables						
Servant leadership	−0.12	0.12	1.63	0.18	0.16	1.66
Relationship tenure (in years)	0.00	0.04	1.57	0.02	0.06	1.57
Follower trait authenticity	−0.08	0.08	2.63	−0.09	0.13	2.75
Follower global self-esteem	0.10	0.06	1.98	−0.01	0.11	2.04
Follower age	−0.04	0.06	1.67	−0.13	0.07	1.65
Follower gender	−0.12	0.09	1.35	0.19	0.16	1.34
Gender similarity	0.02	0.09	1.55	0.03	0.17	1.51
Main and interaction effects						
Leader humility (LH)	−0.54**	0.14	2.20	−0.31	0.22	2.25
Authenticity of leader humility (ALH)	−0.40**	0.15	1.93			
LH × ALH	−0.31**	0.06				
Follower vulnerability				−0.72**	0.30	1.77
R^2	0.49			0.34		

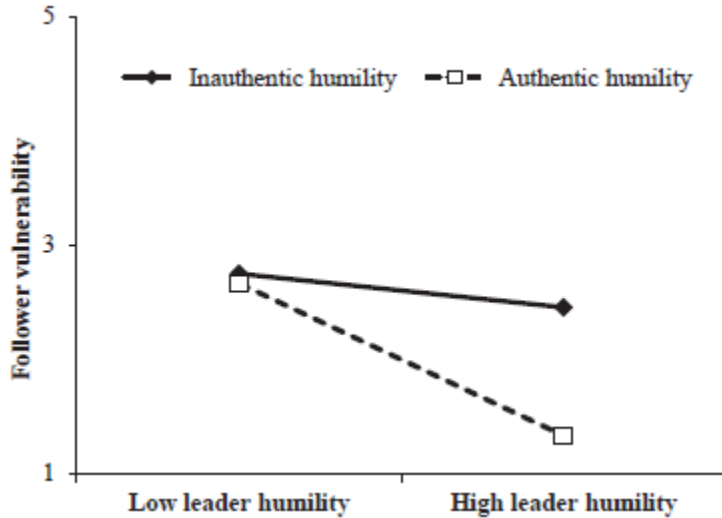| Conditional indirect effect of leader humility on follower felt authenticity via follower vulnerability	b	SE	95% CI
Authenticity of leader humility − (−1SD)	0.17	0.15	[−0.07, 0.42]
Authenticity of leader humility − (mean)	0.39	0.20	[0.06, 0.72]
Authenticity of leader humility − (+1SD)	0.61	0.27	[0.16, 1.05]

Note. N = 258 dyads. Gender is coded 1 when the employee is male. Gender similarity is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. VIF = variance inflation factor. We reported standardized coefficient values.
*p < .05, **p < .01, †p < .10 for a two-tailed test.

The standardized regression coefficients for the direct effects and the interaction effect are reported in Table 2. The results supported Hypothesis 1, that leader humility negatively relates to follow vulnerability ($\beta = -0.54$, $SE = 0.14$, $p < .01$). Hypothesis 2 that the authenticity of leader humility moderates the negative relationship between leader humility and follower vulnerability was also supported as the interaction term was significant ($\beta = -0.31$, $SE = 0.06$, $p < .01$). Following Cohen, Cohen, West, and Aiken (2003), we plotted the interaction effect at one standard deviation above and below the mean for the authenticity of leader humility. As expected, the negative effect of leader humility on follower vulnerability was stronger when the authenticity of the leader humility was higher rather than lower (see Fig. 2). Specifically, significance testing of the simple slopes revealed that the slope of the effect of leader humility on follower felt authenticity was negative for leaders whose humility was more authentic (one standard deviation above the mean) (slope $= -0.85$, $t = -6.24$, $p < .01$) and at the mean for authenticity (slope $= -0.54$, $t = -3.96$, $p < .01$) but non-significant for leaders whose humility was less authentic (one standard deviation below the mean) (slope $= -0.24$, $t = -1.44$, $p = .15$). Hypothesis 3, which

stated that follower vulnerability negatively relates to follower felt authenticity, also was supported ($\beta = -0.72$, $SE = 0.30$, $p = .02$).

Fig. 2. Plot of Two-Way Interaction on Follower Vulnerability for Study 1.

Hypothesis 4 was that the indirect effect of leader humility on follower felt authenticity is significantly stronger when the authenticity of leader humility is high. As shown in Table 2, the indirect effect was not significant when the moderator was low (indirect effect = 0.17, $SE = 0.15$, $p = .25$, $CI = [-0.07, 0.42]$) but was significant at the mean (indirect effect = 0.39, $SE = 0.20$, $p = .05$, $CI = [0.06, 0.72]$) and at high levels of authenticity of leader humility (indirect effect = 0.61, $SE = 0.27$, $p = .02$, $CI = [0.16, 1.05]$).[3] As a formal test of the moderated mediation model, we assessed the index of moderated mediation, which is the product of the coefficients linking the interaction term to the mediator and the mediator to the dependent variable (Hayes, 2015). In support of Hypothesis 4, this index was significant, 0.22 ($SE = 0.09$, $p = .01$, $CI = [0.08, 0.36]$).

5. Study 2

The findings of Study 1 indicate that followers feel less vulnerable in their relationship with leaders when leaders express humility and that humility is authentic. Furthermore, followers report more authenticity at work when they feel less vulnerable in their relationship with leaders. This study provides evidence for the hypothesized model. However, its correlational nature precludes inferences about causality. In Study 2, we seek to isolate the causal effect by manipulating leader humility and examining its effects on follower vulnerability, providing a stronger test of Hypothesis 1.

5.1. Participants

With the help of a US-based survey response panel (ClearVoice Research®)[4] we recruited 325 full-time working adults (18 years or older) in the US who reported having a direct supervisor. We decided on this sample size a priori by conducting a power analysis. Specifically, we used G*Power software (Erdfelder, Faul, & Buchner, 1996) to conduct a power analysis with two groups, five covariates, and 90% power to detect a small to medium effect ($f = 0.20$). This analysis suggested that a sample of 320 would be acceptable. Participants received US$5 for their participation. Sixty-six percent of the sample was female with an average age of 44.06 years ($SD = 10.62$) (one respondent did not report her age). Respondents represented different organizational levels: non-management ($n = 190$), first-line supervisors ($n = 53$), middle-management ($n = 63$), and upper-management ($n = 19$), 72.62% were Caucasian, 14.46% African

American, 6.46% Hispanic, 4.00% Asian, and 2.46% other. Respondent's average tenure was 8.89 years ($SD = 8.26$).

5.2. Procedure

Upon signing up for the study, participants were directed to an online survey. They were randomly assigned to either a high leader humility or low leader humility experimental condition. Consistent with the conceptualization of leader humility (e.g., Owens & Hekman, 2012), participants in the *high leader humility* condition ($n = 172$) were asked to recall a situation in which their supervisor admitted mistakes and limitations (e.g., verbalized gaps in his/her knowledge, took responsibility for failure), modeled teachability (e.g., showed openness toward learning, sought feedback), and/or spotlighted follower strengths and contributions (e.g., said "we" when talking about success, acknowledged follower strengths). In contrast, participants in the *low leader humility* condition ($n = 153$) were asked to think about a situation when their supervisor did not admit his/her mistakes and limitations (e.g., did not take responsibility for failure), failed to model teachability (e.g., did not show openness toward learning), or failed to recognize their followers' strengths and contributions (e.g., said "I" when talking about success). Participants who started the study but were unable to recall any such events ($n = 86$ in the high leader humility condition, $n = 114$ in the low leader humility condition) were not allowed to continue with the study. In line with the day reconstruction method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004), the participants who were able to recall such an event were given the following instructions:

Describe the image that is most vivid to you about the experience. Write as detailed a description of this image as possible. If you can, write your description so that someone reading it might even feel what you felt from learning about your experience. Try to relive the experience as you write, pretending you are actually there and remembering how you felt during the experience, the details of the scene. For instance, what led up to it? What did your supervisor do? What was the outcome of this situation for your supervisor? What was the effect of this event on you? How did it make you feel?

Participants were then asked to report some additional details about the event (e.g., when it occurred), respond to some questions about their perceptions of and relationship with their supervisor, and answer demographic questions.

5.3. Measures

5.3.1. Follower vulnerability

After providing a description of the incident, participants reported whether they felt vulnerable following this incident by completing the same three-item reflected appraisal of vulnerability measure (1 = *strongly disagree*, 7 = *strongly agree*; $\alpha = 0.70$) we used in Study 1 and developed by Lemay and Clark (2008).

5.3.2. Control variables

Although we randomly assigned our participants to one of the two recall conditions, it is still possible that differences exist between the conditions in terms of characteristics of the participant or aspects of the recalled event other than the display of humility. If so, such factors could provide alternative explanations for our findings (Sigall & Mills, 1998). In attempting to address this concern, we chose to include a variety of control variables in our analyses related to the incident, the follower, as well as the leader and the leader-member relationship when testing our hypotheses, consistent with research that previously employed this methodology (e.g., Wellman, Mayer, Ong, & DeRue, 2016).

As in Study 1, we again included *subordinate age, subordinate gender*, and *gender similarity between the supervisor and the subordinate* as control variables for the aforementioned reasons. However, unlike Study 1, we did not survey the supervisors so we did not have leader age data. In addition, we included *relationship tenure with supervisor* as a control variable considering that those followers who have been in longer relationships with their leaders are more likely to be influenced by them (Maslyn & Uhl-Bien, 2001). Finally, in order to account for the effects of theoretically-relevant trait factors, we

controlled for *follower's authentic personality* (using 12-item trait authenticity scale from Wood et al., 2008, $\alpha = 0.89$) to help isolate the effect of trait authenticity (see e.g., Lenton et al., 2013) and *follower's global self-esteem* (using the single item self-esteem scale from Robins et al., 2001) due to its possible effect on one's authentic self (Leary, 2003).

5.4. Results

5.4.1. Manipulation check: leader humility

To make sure that participants in the high leader humility condition indeed perceived their leader to be more humble than those in the low leader humility condition, we asked participants to report their supervisor's humility in the incident they described, using Bashshur, Daniels, Greguras, Diefendorff, and Oc (2015) four-item overall humility scale ($\alpha = 0.92$). These four items were, "my supervisor was humble," "my supervisor acted with humility," "my supervisor lacked humility," and "I would describe my supervisor as a humble person." Participants responded using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A two-tailed *t*-test revealed that participants in the high leader humility condition ($M_{high\ leader\ humility} = 5.56$, $SD_{high\ leader\ humility} = 1.17$) reported that their leader expressed greater humility than those in the low leader humility condition ($M_{low\ leader\ humility} = 2.91$, $SD_{low\ leader\ humility} = 1.53$), $t(3\ 2\ 4) = 17.64$, $p < .001$, $d = 1.96$.

5.4.2. Test for multicollinearity

As in Study 1, we again calculated variance inflation factor (VIF) scores to check for multicollinearity for all the variables in the model before and after including leader humility in the analyses. As shown in Table 5, all VIF scores were below 10 suggesting that multicollinearity was again not an issue.

5.4.3. Hypothesis tests

The means, standard deviations, and Pearson correlations among the study variables are shown in Table 3. We tested Hypothesis 1 by performing a hierarchical regression analysis with the control variables entered at the first step and leader humility entered at the second step. We report standardized regression coefficients (please see Table 4). The results revealed that leader humility has a significant positive effect on follower vulnerability ($\beta = -1.71$, $SE = 0.14$, $p < .01$, $\eta_p^2 = 0.31$) and accounted for an additional 30% of the variance beyond the effects of the control variables.[5] Indeed, those who were in the low leader humility condition ($M_{low\ humility} = 4.40$, $SD_{low\ humility} = 0.10$) reported that they felt more vulnerable than those who were in the high leader humility condition ($M_{high\ humility} = 2.66$, $SD_{high\ humility} = 0.10$). Hence, Hypothesis 1 is supported.

Table 3. Descriptive Statistics and Correlations for Study 2.

Variable	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Follower age	44.07	10.60	–							
(2) Follower gender	0.34	0.47	0.06	–						
(3) Gender similarity	0.36	0.48	−0.08	−0.15	–					
(4) Leader humility	0.53	0.50	0.04	−0.01	−0.06	–				
(5) Follower vulnerability	3.48	1.55	0.05	−0.02	−0.00	−0.56	–			
(6) Relationship tenure (in years)	5.46	8.35	0.16	−0.01	−0.04	−0.08	0.10	–		
(7) Follower trait authenticity	5.39	1.05	0.08	−0.04	0.02	0.14	−0.19	0.07	–	
(8) Follower global self-esteem	5.16	1.56	v0.00	0.07	−0.06	0.04	−0.04	0.04	0.49	–

$N = 325$. *Gender* is coded 1 when the employee is male. *Gender similarity* is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. *Leader humility* dummy coded: 1 = high leader humility condition, 0 = low leader humility condition. Correlations greater than |0.11| are statistically significant at $p < .05$, two-tailed.

Table 4. Regression Results for Study 2.

	Follower vulnerability			Follower vulnerability		
Variable	B	SE	VIF	B	SE	VIF
Control variables						
Relationship tenure (in years)	$0.16^{\dagger}$	0.09	1.03	0.07	0.07	1.04
Follower trait authenticity	-0.36^{**}	0.10	1.34	-0.22^{**}	0.08	1.36
Follower global self-esteem	0.11	0.10	1.34	0.08	0.08	1.34
Follower age	0.09	0.09	1.04	$0.12^{\dagger}$	0.07	1.05
Follower gender	-0.06	0.09	1.04	-0.07	0.07	1.04
Gender similarity	0.02	0.09	1.03	-0.04	0.07	1.04
Main effect						
Leader humility				-1.71^{**}	0.14	1.03
R^2	0.05			0.35		

$N = 325$. *Gender* is coded 1 when the employee is male. *Gender similarity* is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. *Leader humility* dummy coded: 1 = high leader humility condition, 0 = low leader humility condition. VIF = variance inflation factor.
$^{*}p < .05$, $^{**}p < .01$, $^{\dagger}p < .10$ for a two-tailed test.

6. Study 3

The findings from Study 2 replicate the results from Study 1 by showing that leader humility reduces followers' feelings of vulnerability in their relationship with their leaders (Hypotheses 1). Next, we sought to replicate the effect of follower vulnerability on follower felt authenticity by using an experimental manipulation of vulnerability (Hypothesis 3).

Table 5. Descriptive Statistics and Correlations for Study 3.

Variable	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Follower age	33.55	9.15	–							
(2) Follower gender	0.56	0.50	-0.08	–						
(3) Gender similarity	0.16	0.36	0.13	-0.14	–					
(4) Relationship tenure (in years)	3.18	3.57	0.42	0.00	0.15	–				
(5) Follower trait authenticity	4.96	1.19	0.23	-0.07	0.21	0.17	–			
(6) Follower global self-esteem	5.38	1.40	-0.04	0.11	-0.13	-0.11	0.24	–		
(7) Follower vulnerability	0.44	0.50	-0.05	0.03	0.01	0.11	-0.14	-0.05	–	
(8) Follower felt authenticity	4.68	1.86	0.23	v0.07	0.13	0.09	0.56	0.06	-0.50	–

$N = 103$. *Gender* is coded 1 when the employee is male. *Gender similarity* is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. *Follower vulnerability* dummy coded:1 = vulnerable condition, 0 = control condition. Correlations greater than $|0.19|$ are statistically significant at $p < .05$, two-tailed.

6.1. Participants

For this study, we recruited 103 participants who were full-time employee, 18 years of age or older, with a direct supervisor via Amazon's Mechanical Turk (MTurk). We determined this sample size a priori using a power analysis. As in Study 2, we again used G*Power software (Erdfelder et al., 1996) to conduct a power analysis with two groups, five covariates, and 90% power to detect a medium to large effect ($f = 0.30$). Such an analysis suggested a sample size of 97 would be sufficient. MTurk is an online crowdsourcing platform that allows for the recruitment of 'workers' to complete tasks (Buhrmester, Kwang, & Gosling, 2011). We also utilized TurkPrime, which integrates with the MTurk application and helps researchers ensure high data quality thanks to its eligibility criteria (Litman, Robinson, &

Abberbock, 2017). In this study, the TurkPrime eligibility criteria included: a) previous task approval rating of at least 95%, b) exclusion of the most active workers (top 1% of workers who complete 21% of all tasks), c) blocking suspicious geocode locations that were responsible for a majority of duplicate submissions, and d) blocking multiple responses from the same internet protocol (IP) address (i.e., from the same computer).

The participants were paid $1.50 for their participation. Forty-four percent of the sample was female with an average age of 33.55 years ($SD = 9.15$). Respondents represented different levels of an organization: non-management ($n = 53$), first-line supervisors ($n = 15$), middle-management ($n = 31$), and upper-management ($n = 4$). They were 64.71% Caucasian, 17.65% African American, 10.78% Asian, and 5.88% Hispanic, and 0.97% other Respondents' average tenure in their current position and in their current organization were 3.45 years ($SD = 3.48$) and 4.81 years ($SD = 4.33$) respectively.

6.2. Procedure

In order to test whether the level of vulnerability affected their experiences of authenticity at work, participants were randomly assigned to either a vulnerable or control condition. In parallel with previous research that manipulated vulnerability using a recall task (e.g., Murray et al., 2008), participants in the vulnerable condition were asked to reflect over their past year as an employee in their current organization and recall an incident when they felt they were vulnerable to their supervisor (in a position to be intensely disappointed, hurt, or let down). In a similar manner to Study 2, we then asked participants to briefly write about how they felt and reacted to the incident. As in Study 2, those participants who failed to recall such an incident were not allowed to continue with the study ($n = 16$). In the control condition, participants wrote about their commute to work the previous day. After participants finished this task, they were asked to respond to manipulation check items as well as questions to measure their authenticity, control variables, and demographic items.

6.3. Measures

6.3.1. **Follower felt authenticity**.

As in Study 1, we measured follower authenticity using the 6-item inauthenticity at work scale developed by Erickson and Ritter (2001). Participants reported how they felt when they went about the rest of their day/week following this incident on a seven-point scale (1 = *not at all* to 7 = *very much*). For clarity of discussion, we again reverse-coded the scale so that higher ratings indicate greater felt authenticity ($\alpha = 0.94$).

6.3.2. **Control variables**.

As in Study 2, we included follower's authentic personality (using 12-item trait authenticity scale from Wood et al., 2008, $\alpha = 0.90$) and follower's global self-esteem (using the single item self-esteem scale from Robins et al., 2001), as well as follower's age, the gender similarity between the leader and the follower, and relationship tenure with leader.

6.4. Results

6.4.1. Manipulation check: Follower vulnerability.

To assess the effectiveness of our vulnerability manipulation, we used Dijker (2001) four-item perceived vulnerability measure. Specifically, participants indicated how weak (vs. strong), vulnerable (vs. invulnerable), dependent (vs. independent), and soft (vs. hard) they felt following either the incident with their supervisor or their commute to work. Responses were given on a 7-point scale in which higher ratings indicated greater perceived vulnerability ($\alpha = 0.82$). A two-tailed t-test revealed that participants in the vulnerability condition felt more vulnerable than participants in the control condition, $M_{\text{vulnerability}} = 4.55$, $SD_{\text{vulnerability}} = 1.61$
vs. $M_{\text{control}} = 3.07$, $SD_{\text{control}} = 1.08$, $t(1\,0\,1) = 5.60$, $p < .01$, $d = 1.11$.

6.4.2. **Test for multicollinearity**.

As in Studies 1 and 2, we checked for multicollinearity by calculating variance inflation factor (VIF) scores for all the variables in the model before and after including follower vulnerability in the analyses. As shown in Table 7, all VIF scores were below 10 suggesting that multicollinearity was not a problem.

6.4.3. **Hypothesis tests**.

Table 5 presents means, standard deviations, and zero-order

Pearson correlations the study variables. Hypothesis 3 suggests that the degree to which followers feel vulnerable in their relationship with their leaders should negatively relate to their felt authenticity at work. To test this hypothesis, we performed a hierarchical regression analysis with the control variables entered at the first step and follower vulnerability at step two. We report standardized regression coefficients (see Table 6). As in Studies 1 and 2, follower vulnerability was negatively related to follower felt authenticity ($\beta = -1.61$, $SE = 0.27$, $p < .01$, $\eta_p^2 = 0.26$) and accounted for an additional 13% of the variance beyond the effects of the control variables[6]. Those who were in the vulnerability condition ($M_{vulnerability} = 3.63$, $SD_{vulnerability} = 1.66$) reported that they felt less authentic than those who were in control condition ($M_{control} = 5.49$, $SD_{control} = 1.58$). Taken together, the findings of Study 3 provide empirical support for the idea that follower vulnerability impacts follower felt authenticity.

Table 6. Regression Results for Study 3.

Variable	Follower felt authenticity			Follower felt authenticity		
	B	SE	VIF	B	SE	VIF
Control variables						
Relationship tenure (in years)	−0.11	0.17	1.26	0.02	0.15	1.29
Follower trait authenticity	1.04**	0.17	1.21	0.91**	0.15	1.23
Follower global self-esteem	−0.14	0.16	1.14	−0.14	0.14	1.14
Follower age	0.22	0.17	1.27	0.16	0.15	1.27
Follower gender	0.02	0.16	1.04	0.02	0.14	1.04
Gender similarity	−0.01	0.14	1.11	0.01	0.12	1.11
Main effect						
Follower vulnerability				−1.61**	0.27	1.05
R^2	0.33			0.51		

$N = 325$. *Gender* is coded 1 when the employee is male. *Gender similarity* is coded 1 when both the supervisor and employee are both female or male and 0 otherwise. *Leader humility* dummy coded: 1 = high leader humility condition, 0 = low leader humility condition. VIF = variance inflation factor.
* $p < .05$, ** $p < .01$, † $p < .10$ for a two-tailed test.

7. Study 4

Studies 2 and 3 provide evidence for the causal direction of effects between leader humility, follower vulnerability, and follower felt authenticity. In Study 4, we tested the entire hypothesized model and sought to examine whether the authenticity of leader humility moderates the effect of leader humility on follower vulnerability (Hypothesis 2) and shapes the indirect effect of leader humility on follower felt authenticity via follower vulnerability (Hypothesis 4). This time we used a different experimental design (vignette) and manipulated both leader humility and the authenticity of that humility.

7.1. Participants

As in Study 2, with the help of ClearVoice Research® we recruited 207 full-time working adults who provided us with complete and useable responses and were residing in the United States (79.15% of the participants self-identified as Caucasian, 7.58% as Asian, 6.64% as African American, 5.11% as Hispanic; 1.42% other). Our rationale for deciding this sample size was the following. We conducted an a priori power analysis considering possible exclusions as well as the relatively large effect size we have

found for the effect of leader humility on follower vulnerability. Specifically, we again used G*Power software (Erdfelder et al., 1996) to conduct a power analysis with four groups, two predictors, and 90% power to detect a medium to large effect ($f^2(V) = 0.075$). Such an analysis takes into consideration the effect sizes of both the independent variable and the moderating variable as well as the fact that a larger sample size per cell is needed to detect their interaction effect (Simohnson, 2014). This analysis suggested a sample size of 172 would be acceptable. As in Study 2, participants received US$5 for their participation. Those participants who failed any of the two attention check questions (e.g., "This is an attention check. Please select strongly agree.") were not allowed to continue in the study ($n = 36$). The sample was 47% female. The respondents worked in a number of different industries (22.71% service industry, 7.25% financial industry, 10.14% manufacturing industry, 11.11% government, 4.35% transportation industry, 10.63% human services, and 33.82% other) and worked an average of 41.54 h ($SD = 5.85$) per week. Respondent's average tenure in their current position was 7.68 years ($SD = 7.13$) and in their current organization was 10.49 years ($SD = 8.65$) respectively.

Table 7. Descriptive Statistics and Correlations for Study 4.

Variable	M	SD	(1)	(2)	(3)	(4)
(1) Leader humility	0.49	0.50	–			
(2) Authenticity of leader humility	0.49	0.50	–	–		
(3) Follower vulnerability	3.40	1.29	−0.15	−0.19	–	
(4) Follower felt authenticity	5.16	1.62	0.42	0.09	−0.47	–

$N = 207$. *Leader humility* dummy coded: 1 = high leader humility condition, 0 = low leader humility condition. *Authentic leader humility* dummy coded: 1 = authentic leader humility condition, 0 = inauthentic leader humility condition. Correlations greater than $|0.14|$ are statistically significant at $p < .05$, two-tailed.

7.2. Procedure and measures

We presented participants with a hypothetical workplace scenario and asked them to imagine how they would react in such a situation. Vignette studies such as these have been used in past leadership research (e.g., Benjamin and Flynn, 2006, Ensari and Murphy, 2003, Johnson et al., 2008), including leader humility research (e.g., Rego et al., 2017).

At the start of the experiment, all participants were told to imagine themselves as the head server for a busy restaurant which was part of a nation-wide chain, working closely with the restaurant manager, Alex. They were also told that a large apartment complex was recently built next to the restaurant which resulted in a large influx of customers and the corporate office noticed the resulting increase in revenue. Participants further read that while attending the annual company retreat, where the staff of all 20 regional restaurants were in attendance, their restaurant was awarded the Gold Star Award, a prestigious award given to the top performing restaurant in each region. At the awards ceremony, participants were told that Alex, their manager, was asked to come up and accept the award from the company CEO and to give a short acceptance speech.

In order to manipulate leader humility we provided participants with different information regarding the content of the speech the manager gave at the ceremony depending on the condition to which participants were randomly assigned (i.e., high vs. low leader humility conditions). The manipulations of the content of the speech were based on the Owens et al. (2013) leader humility measure as well as Owens and Hekman (2012) qualitative study of humble leaders and focused on the three sub-dimensions of the construct: (1) spotlighting follower strengths and contributions, (2) modeling teachability, and (3) admitting mistakes and limitations. In particular, the script in the high/low humility leader conditions

included pieces of information about leaders who appreciated/lacked appreciation for followers' strengths and contributions (e.g., use of "we"/"I" words when talking about success), considered/ disregarded alternative views of followers (e.g., "all the valuable input I get from everyone working in the restaurant"/"I've listened to my gut and made the important decisions on my own"), and avoided/tried to appear perfect (or to acknowledge weaknesses or admit mistakes) (e.g., "We've worked really hard"/" I've worked really hard since I took over as manager") respectively. Participants in the *high leader humility* condition were given the following text:

Thank you for this award! We're honored to accept it. We've worked really hard as a team to make this restaurant one of the top performing in the country. We are really proud of what we have accomplished and it's great to be recognized for that success here. As a manager, I often receive feedback and advice about how to run the restaurant and I truly believe we've been successful because of all the valuable input I get from everyone working in the restaurant. We hope to continue this success into the future. Thank you again!

In contrast, those participants in the *low leader humility* condition were given the following text:

Thank you for this award! I'm honored to accept it. I've worked really hard since I took over as manager to make this restaurant one of the top performing in the country. I'm really proud of what I've accomplished and it's great to be recognized for that success here. As a manager, I often receive feedback and advice about how to run the restaurant but I truly believe that I've been successful because I've listened to my gut and made the important decisions on my own. I hope to continue this success into the future. Thank you again!

We then instructed participants in the *authentic leader* conditions (i.e., authentic high leader humility and authentic low leader humility conditions) to further imagine that while listening to the manager's speech, they believed that the manager was being genuine and behaving in accordance with the manager's true thoughts, beliefs, personality, and values. In contrast, participants in the *inauthentic leader* conditions were asked to believe that the manager was neither being genuine nor acting consistently with the manager's true thoughts, beliefs, personality, and values. We then asked participants to rate the extent to which they would feel vulnerable in their relationship with the manager using the perceived vulnerability measure developed by Dijker (2001) on a 7-point scale, which consists of the following four semantic differential items: strong-weak, invulnerable-vulnerable, independent-dependent, and hard-soft ($\alpha = 0.83$). We also used the same 6-item inauthenticity at work scale developed by Erickson and Ritter (2001) to measure how authentic participants would feel at work following this incident if the manager were their supervisor. For clarity of discussion, we again reverse-coded the scale so that higher ratings indicate greater follower felt authenticity ($\alpha = 0.94$). At the end of the study, participants completed several demographic questions.

7.3. Results

7.3.1. Manipulation check: Leader humility

To determine whether our manipulation of leader humility was successful, we asked participants to respond to the same four items of Bashshur et al. (2015) overall humility scale used in Study 2 ($\alpha = 0.95$). A two-tailed *t*-test revealed that participants in the humble leader condition ($M_{\text{high leader humility}} = 5.21$, $SD_{\text{high leader humility}} = 1.19$) reported that they perceived the manager to be more humble than those in the non-humble leader conditions ($M_{\text{low leader humility}} = 2.39$, $SD_{\text{low leader humility}} = 1.46$), $t(205) = 15.19$, $p < .01$, $d = 2.11$. Furthermore, our experimental manipulation of leader humility was effective in both the authenticity ($M_{\text{authentic, high leader humility}} = 5.73$, $SD_{\text{authentic, high leader humility}} = 1.03$ vs. $M_{\text{authentic, low leader humility}} = 2.65$, $SD_{\text{authentic, low leader humility}} = 1.48$, $t(99) = 12.06$, $p < .01$, $d = 2.40$) and inauthenticity conditions ($M_{\text{inauthentic, high leader humility}} = 4.73$, $SD_{\text{inauthentic, high leader humility}} = 1.13$ vs. $M_{\text{inauthentic, low leader humility}} = 2.15$, $SD_{\text{inauthentic, low leader humility}} = 1.41$, $t(104) = 10.37$, $p < .01$, $d = 2.01$).

7.3.2. Manipulation check: Authenticity of leader humility

To determine whether our manipulation of authenticity of leader humility was successful, we asked participants to report the extent to which they perceived the manager's behavior in this incident as authentic using the same four-items of Randolph-Seng and Gardner (2012) leader authenticity scale ($\alpha = 0.95$) that we used in Study 1. A two-tailed t-test confirmed that participants in the authentic humility conditions reported the behavior to be more authentic than participants in the inauthentic humility conditions ($M_{\text{authentic leader}} = 5.29$, $SD_{\text{authentic leader}} = 1.67$ vs. $M_{\text{inauthentic leader}} = 3.58$, $SD_{\text{inauthentic leader}} = 1.83$), $t(205) = 6.96$, $p < .01$, $d = 0.97$. Furthermore, our experimental manipulation of leader humility was effective in both high leader humility ($M_{\text{authentic high humility}} = 6.25$, $SD_{\text{authentic high humility}} = 1.04$ vs. $M_{\text{inauthentic high humility}} = 4.21$, $SD_{\text{inauthentic high humility}} = 1.78$, $t(99) = 6.98$, $p < .01$, $d = 1.39$) and low leader humility conditions ($M_{\text{authentic low humility}} = 4.37$, $SD_{\text{authentic low humility}} = 1.65$ vs. $M_{\text{inauthentic low humility}} = 2.99$, $SD_{\text{inauthentic low humility}} = 1.68$, $t(104) = 4.28$, $p < .01$, $d = 0.83$).

7.3.3. Test for multicollinearity

As in the other studies, we explored whether multicollinearity is an issue that we need to address in our analyses. All VIF scores being lower than 10 suggested that multicollinearity is not a problem for our analyses (see Table 8).

7.3.4. Tests for endogeneity

As in Study 1, we determined whether the mediator in our model (i.e., follower vulnerability) was endogenous. First, the Hausman test reveals no endogeneity problem for follower vulnerability ($\Psi = 0.37$, $p = .43$). Similarly, the relatively large p-value of the Durbin–Wu–Hausman test, $F(1, 203) = 0.60$, $p = .44$, indicated that endogeneity is not an issue in our analysis.

7.3.5. Hypothesis tests

Table 7 presents means, standard deviations, and zero-order.

Pearson correlations for each study variable. As in Study 1, we examined our hypotheses in a structural equation modelling framework using Mplus 8.1 software (Muthén, 1998, 2018). We estimated the full hypothesized model using the maximum likelihood estimator with robust estimates of the variance. We included leader humility (1 = high leader humility, 0 = low leader humility) and authenticity of leader humility (1 = authentic humility, 0 = inauthentic humility) as (dichotomous) observed variables as well as their interaction term. The model fit the data well ($\chi 2(58) = 129.70$; $p < .01$; SRMR = 0.06; CFI = 0.95; TLI = 0.94; RMSEA = 0.08).

The standardized regression coefficients for the direct effects and the interaction effect are reported in Table 8. As shown in Table 8, the pairwise correlation between leader humility and follower vulnerability is $r = -0.15$ (significant at $p = .03$). However, the main effect of leader humility on follower vulnerability in the full model was qualified by its interaction with authenticity of leader humility. Specifically, results revealed a significant main effect for leader humility when excluding the interaction term ($\beta = -0.24$, $SE = 0.08$, $p < .01$) but a non-significant coefficient for leader humility when including the interaction term ($\beta = -0.06$, $SE = 0.10$, $p = .59$). Consistent with Hypothesis 2, we expected that the authenticity of leader humility moderates this negative relationship between leader humility and follower vulnerability. The interaction term was significant ($\beta = -0.33$, $SE = 0.12$, $p < .01$) with results showing that the negative effect of leader humility on follower vulnerability was only significant when leader behavior was perceived as authentic (slope $= -0.77$, $t = -3.15$, $p < .01$), and not when it was perceived as inauthentic (slope $= -0.01$, $t = -0.04$, $p = .97$). See Fig. 3 for a plot of this interaction. Overall these findings provide support for both Hypotheses 1 and 2. Furthermore, in support of Hypothesis 3, follower vulnerability was negatively related to follower felt authenticity ($\beta = -0.49$, $SE = 0.06$, $p < .01$). The direct effect of leader humility on follower authenticity was also significant ($\beta = 0.30$, $SE = 0.07$, $p < .01$).

Table 8. Structural Equation Modeling Results and Estimates of Conditional Indirect Effects, Study 4.

Variable	Follower vulnerability			Follower felt authenticity		
	B	SE	VIF	B	SE	VIF
Main and interaction effects						
Leader humility (LH)	−0.06	0.10	1.00	0.30**	0.07	1.02
Authenticity of leader humility (ALH)	−0.05	0.11	1.00			
LH × ALB	−0.33**	0.12				
Follower vulnerability				−0.49**	0.06	1.06
R^2	0.15			0.41		

Conditional indirect effect of leader humility on follower felt authenticity via follower vulnerability	b	SE	95% CI
Authenticity of leader humility − (-1SD)	0.07	0.14	[−0.21, 0.35]
Authenticity of leader humility − (mean)	0.34	0.13	[0.08, 0.60]
Authenticity of leader humility − (+1SD)	0.62	0.18	[0.26, 0.97]

Note. $N = 207$. The indirect effect is supported when the confidence interval excludes zero. VIF = variance inflation factor. We reported standardized coefficient values.
*$p < .05$, **$p < .01$, †$p < .10$ for a two-tailed test.

Fig. 3. Plot of Two-Way Interaction on Follower Vulnerability for Study 4.
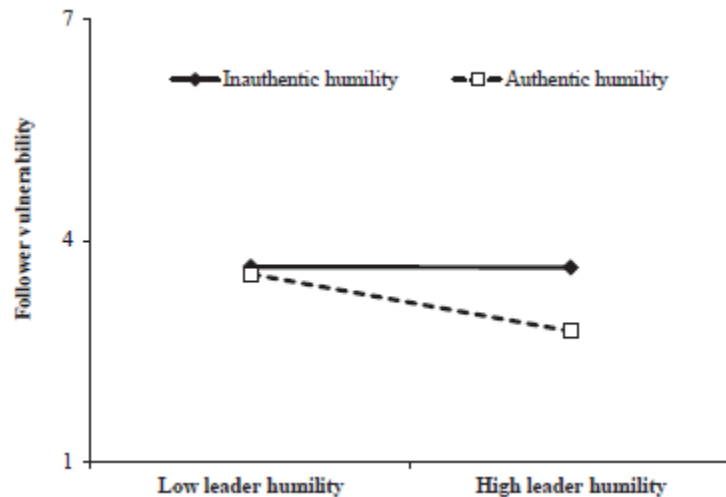
Finally, Hypothesis 4 suggests that leader humility indirectly affects follower felt authenticity via follower vulnerability depending on whether leader humility is authentic or inauthentic. To do so, we used standardized coefficients and bootstrapping with 5000 samples to generate a 95% bias-corrected confidence interval around the estimates of the conditional indirect effect of leader humility on follower felt authenticity through follower vulnerability, depending on different levels of authenticity of leader humility. In support of this hypothesis, the indirect effect was not significant at low levels of authentic leader humility, (indirect effect = 0.07, $SE = 0.14$, $p = .62$, $CI = [−0.21, 0.35]$) but consistent with Study 1, was significant at the mean (indirect effect = 0.34, $SE = 0.13$, $p = .01$, $CI = [0.08, 0.60]$), and high levels of authentic leader humility (indirect effect = 0.62, $SE = 0.18$, $p < .01$, $CI = [0.26, 0.97]$; see Table 8). In addition, the index of moderated mediation (Hayes, 2015) was 0.55 ($SE = 0.21$, $p < .01$, $CI = [0.15, 0.95]$). Thus, we confirmed Hypothesis 4.

8. General discussion

In four studies employing different methodologies and in different cultural contexts, we examined the relationships among leader humility, authenticity of that humility, follower vulnerability, and follower felt authenticity. The results consistently supported our hypothesized model, demonstrating that leader humility indirectly increases follower felt authenticity by decreasing follower vulnerability, an effect that remained significant only when the leader displayed higher levels of authentic humility. These results have a number of important theoretical and practical implications.

The current research represents one of the first attempts to better understand how social factors may influence felt authenticity at work (see also Bargh et al., 2002). This lack of attention to social factors is surprising given extant theory that pressure to conform to social expectations is often at odds with the ability to behave authentically (e.g., Brewer, 1991, Hewlin, 2003, Leary and Baumeister, 2000). As Arndt and Schimel noted, "a drive toward authenticity involves the unique construction of one's person, and such development often proceeds at the expense of secure identification with the broader cultural and social system, or at the least, bereft of the security providing support and validation of that" (2003, p. 30). Our results suggest that leaders are important elements of followers' social systems at work and a strong influence on their felt authenticity.

We also unpacked the mechanism by which leaders influence felt authenticity. We showed that leaders can either make followers feel safe and authentic at work or they can make them feel vulnerable and inauthentic. We integrated existing research on leader humility (e.g., Owens and Hekman, 2012, Owens and Hekman, 2016, Owens et al., 2013) and interpersonal vulnerability (e.g., Lemay and Clark, 2008, Murray et al., 2008) to argue that followers feel less vulnerable in their relationship with leaders when their leaders express authentic humility and, as a result, feel more authentic at work. Although social factors typically lead individuals to behave in ways that do *not a*lign with their intrinsic desires, goals, and values (Deci and Ryan, 1991, Diefendorff et al., 2018), our results suggest that reduced feelings of vulnerability help followers better align their actions and true selves when leaders are authentically humble.

Our research also contributes to the existing literature on leader humility. First, previous research typically explores team-level processes (e.g., team learning, shared leadership, team psychological capacity) to explain the effects of leader humility on outcomes at the team or organizational level (e.g., team/firm performance, team innovation, firm innovation) (e.g., Ou et al., 2015, Owens et al., 2013, Owens and Hekman, 2016, Rego et al., 2017, Zhang et al., 2017; with some notable exceptions: Mao et al., 2018, Ou et al., 2017). We extend our understanding of the influence of leader humility on followers by employing an interpersonal approach and linking leader humility to individual-level follower outcomes. Based on the established effects of follower felt authenticity on follower well-being at work (e.g., Schlegel et al., 2009, Thomaes et al., 2017, Wood et al., 2008), we can argue that by "giving away power", thereby making followers feel less vulnerable and more authentic, humble leaders also likely impact outcomes important to the more general well-being of their employees (e.g., job satisfaction, life satisfaction). Thus, this paper adds credence to the idea that leader humility is inherently interpersonal and other-oriented such that it relates to favorable employee work-related outcomes.

Second, our finding that leaders need to be authentic for their displays of humility to be effective emphasizes an important boundary condition of the impact of leader humility on others. In doing so, we provide additional support for existing qualitative evidence suggesting that an important contingency of leader humility is the sincerity of its expression (Owens & Hekman, 2012). We also contribute to the emerging literature on the impact of false or instrumental humility on others' perceptions and reactions. For example, recent research on humblebragging, or masking one's self-promotion with false modesty, suggests that it is an ineffective strategy (Grant et al., 2017, Sezer et al., 2018). In line with this, our findings reveal that inauthentic leader humility made followers feel as vulnerable as when leaders expressed little humility. In other words, leaders who expressed inauthentic humility and those who failed

to express humility at all had similar negative effects on followers compared to leaders who expressed authentic humility.

8.1. Limitations and future research

We supported our theoretical model using different sampling techniques, in different cultural contexts, and with different methodologies (field survey, experimental recall, and experimental vignette). As with any study, however, ours is not without limitations (many of which suggest avenues for future research). In this research, we assessed the effects of leader humility on follower felt authenticity using correlational and experimental procedures. One potential area for future research would be to take a within-person, experience-sampling approach and examine the extent to which felt authenticity fluctuates over time and whether this within-person variability is related to interpersonal and intrapersonal factors. For example, research could consider how authenticity ebbs and flows throughout the workday as employees interact with different people or strive toward different types of goals and how these might impact other factors (e.g., well-being) at home.

Future research also could consider whether leader humility, as an interpersonal factor, provides emotional and cognitive resources to followers (e.g., vitality, positive affect), and whether these resources increase follower authenticity (e.g., Lenton et al., 2013). The concepts of self-regulatory resources and ego depletion (Baumeister et al., 1998, Muraven and Baumeister, 2000) may be particularly useful to theorize and explore how feelings of authenticity wax and wane over time as a function of leader's expressed humility. In particular, it may be that because authentic leader humility helps followers feel less vulnerable they are better able to manage critical internal resources otherwise used to cope with feeling vulnerable (Hewlin, 2003). This may become even more relevant during major changes in organizations and theircontext (Oc, 2018). For example, economic crises can reduce opportunities for external employment and thus make employees feel less secure in their jobs (De Cuyper, Mäkikangas, Kinnunen, Mauno, & De Witte, 2012). It is possible that humble leaders could help followers feel less vulnerable, more authentic and less depleted and thus better able to manage their uncertainty during economic turmoil. Hence, future research could explore how such macro contextual factors relate to follower authenticity at work as well as the potential role that secure relationships with one's leader can play in buffering the effects of these factors.

Although we found empirical support for our theorized model in different cultural contexts, future research could explore whether cultural values affect the strength of some of the relations within our model. For example, research suggests that power distance orientations affect the amount of social distance that followers perceive between themselves and their leaders and how they react to it (see Daniels & Greguras, 2014). Specifically, in low power distance cultures, those with less power are less likely to accept the power differences and demonstrate less willingness to be vulnerable to the actions of their leaders (Taras, Kirkman, & Steel, 2010). Furthermore, authenticity may be more strongly valued in low power distance contexts (Gjersoe, Newman, Chituc, & Hood, 2014) such that inauthentic expressions of leader humility may elicit stronger negative reactions from followers with low power distance orientation. Indeed, our data suggest that the interactive effect between leader humility and the authenticity of that humility on follower vulnerability was stronger in Study 4 (United States, a low power distance society: $b = -0.33$, $SE = 0.12$, $p < .01$) than in Study 1 (India, a high power distance society: $b = -0.23$, $SE = 0.04$, $p < .01$). However, it is necessary to note that these studies differ in numerous ways other than just cultural context (e.g., study design) and as such, future research more directly assessing the effects of cultural values on these relationships would be valuable.

Finally, future research also might consider how other factors may influence the relations in our theoretical model. In this research, we argue that humble leaders are likely to weaken follower's relational dependence on their leaders and increase their sense of safety in part by "giving away power". Hence, it may be interesting to more directly explore how leader humility relates to followers' perceptions of power and more specifically their sense of social power. As Kraus et al. (2011) argue, social power makes

individuals feel that they have greater control over their environments and enables individuals to behave in accordance with internal states. This coincides with our arguments around the role of vulnerability, which should be reduced when followers feel more powerful, resulting in greater authenticity. In addition, other factors that contribute to one's sense of power, such as one's hierarchical position or other signals of status (e.g., job titles) may provide further theoretical insights regarding how one's felt authenticity is affected at work.

8.2. Practical implications

Our study links authentic leader humility to follower felt authenticity through vulnerability. If organizations are concerned about these effects—as they should be given the positive impact of authenticity on important employee outcomes (e.g., employee job satisfaction, Côté & Morgan, 2002; team performance, Leroy, Anseel, Gardner, & Sels, 2015)—they could focus on making employees feel less vulnerable in the workplace. Our research suggests that selecting or developing leaders to lead with authentic humility likely facilitates doing so. However, encouraging leader humility in the workplace may not be an easy task given that many organizational leaders fear that expressing humility demonstrates a lack of competence to others, thereby undermining their very credibility as leaders.

Nevertheless there do seem to be some effective approaches to cultivating an appreciation for humility. For instance, Kruse, Chancellor, Ruberton, and Lyubomirsky (2014) demonstrated that expressing gratitude makes people feel more humble. Organizations may consider similar ways to enhance humility that can be enacted in a work context. For example, a coaching method called the "other way round" technique seems to be effective (Aziz, 2019). This method involves the coach acting with the attitude of "knowing it all" and the coachee interacting with this not so humble individual. In doing so, the coachee comes to realize how it feels to interact with such a person and to better appreciate its potential impact on others. Thus, organizations should ensure that training efforts encourage authentic humility among their leaders, not just a desire to be strategically humble. Encouraging an organizational culture of authenticity could also be an effective approach to augment such training. For example, Best Buy Canada recently launched a new recruitment campaign with slogans like, "Belong here. Be you here," which emphasize the value of authenticity among their employees.

8.3. Conclusion

As noted in an article in the Harvard Business Review (Seppälä, 2014), a technology startup in Bangalore ran out of funds and its founder, Archana Patchirajan, announced that she had to let her staff go as she could no longer pay them. Yet, her staff refused to leave her and instead offered to work for 50% of their wages, and only a few years later, the startup was sold for $14 million. When explaining why they stayed, the engineers noted that Archana displayed humility in an authentic manner and that this made for a stronger connection between her and them. This story reiterates the important role that authentic leader humility can have on followers, but it also points a way forward for humility and authenticity research towards a consideration of the longer-term benefits of humble leadership on individuals and organizations.

Acknowledgments

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