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Abstract The recent economic crisis as well as other disasters such as the oil spill in the Gulf of Mexico or the nuclear disaster in Japan has fanned calls for leaders who do not deny responsibility, hide information, and deceive others, but rather lead with authenticity and integrity. In this article, we empirically investigate the concept of authentic leadership. Specifically, we examine the antecedents and individual as well as group-level outcomes of authentic leadership in business (Study 1; $n = 306$) as well as research organizations (Study 2; $n = 105$). Findings reveal leader self-knowledge and self-consistency as antecedents of authentic leadership and followers' satisfaction with supervisor, organizational commitment, and extra-effort as well as perceived team effectiveness as outcomes. The relations between authentic leadership and followers' work-related attitudes as well as perceived team effectiveness are mediated by perceived predictability of the leader, a particular facet of trust. We discuss the implications of our findings for theory and practice and provide suggestions for advancing theory and research on authentic leadership in the future.

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Corporate scandals like the collapses of Enron or Worldcom and most recently of Lehman Brothers and the financial crisis that followed have led to a loss of confidence in corporate leaders and cynicism with regard to their role. In fact, the National Leadership Index 2009 shows that 63% of Americans do not trust what business leaders say and 83% believe that business leaders work to benefit merely themselves or a small group with special interests, but not society overall. Recent disasters such as the oil spill in the Gulf of Mexico or the nuclear disaster in Japan have further eroded people's trust in corporate as well as political leaders. In response to the question what qualities they seek in leaders so that they can regain confidence in them, respondents named acting in concordance with commonly held values, being in touch with people's needs and concerns, and working for the greater good (Rosenthal et al. 2009). The leader characteristics stated here closely resemble the scholarly concept of authentic leadership, as proposed by Avolio et al. (2004). According to their definition, authentic leaders "act in accordance with deep personal values and convictions, to build credibility and win the respect and trust of followers" (Avolio et al. 2004, p. 806) and genuinely desire to serve others through their leadership (George 2003).

Current theorizing on authentic leadership (cf. Gardner et al. 2005) posits that through the development of authentic leaders—as well as thereof resulting authentic

followers—positive ethical climates and sustainable follower accomplishments can be achieved. Specifically, Avolio et al. (2004) suggest that authentic leaders are able to enhance follower work attitudes such as commitment and job satisfaction, which then lead to higher levels of extra-effort and job performance. However, because work on authentic leadership is "in the very early stages of development" (Avolio et al. 2009, p. 424), empirical evidence on the outcomes of authentic leadership and in particular on the process by which it attains the postulated effects is still scarce. This is also true for the antecedents of authentic leadership, although key variables have been defined in theoretical articles (e.g., Gardner et al. 2005). A clearer understanding of the process of authentic leadership—from its antecedents to consequences—is crucial not only from a theoretical perspective but also from a practical viewpoint, because it provides the foundation for authentic leadership development (Avolio et al. 2004; Day 2000; Day and O'Connor 2003; Luthans and Avolio 2003). Concordantly, the purpose of the two studies presented here is to empirically examine the entire process of authentic leadership (i.e., antecedents, mediators, and outcomes) for the first time.

Theory of Authentic Leadership

Definition

Although the concept of authenticity had been around since Aristotle (cf. Harter 2002), authentic leadership started receiving attention among scholars in the last decade (Clapp-Smith et al. 2009). While there are several different conceptualizations of authentic leadership, the concept that dominates current theorizing as well as empirical research is the one proposed by Avolio and his colleagues (e.g., Avolio et al. 2004; Gardner et al. 2005). This concept goes beyond the notion of being true to oneself—which all concepts of authentic leadership center on (Liedtka 2008)—to also include a moral component. More specifically, this concept of authentic leadership comprises four components (cf. Walumbwa et al. 2008): Balanced processing, internalized moral perspective, relational transparency, and self-awareness. *Balanced processing* refers to the fact that the leader objectively analyzes all relevant data before making decisions. This includes processing information that contradicts his/her initial point of view. *Internalized moral perspective* describes the fact that the leader is guided by internal moral standards and values and acts according to these, even against group, organizational, or societal pressures. *Relational transparency* refers to presenting one's authentic self (as opposed to a fake or distorted self) to others. This is manifested in behaviors

such as openly sharing information and expressing one's true thoughts and feelings in interpersonal interaction, albeit in consideration of contextual factors (i.e., avoiding inappropriate emotional expressions). Finally, *self-awareness* refers to a process of reaching a deeper understanding of one's strengths and weaknesses (Gardner et al. 2005). This includes constantly re-assessing one's self-concept through exposure to and feedback from others, and being cognizant of one's impact on other people. In short, the dominant conceptualization of authentic leadership in the scientific literature (cf. Avolio et al. 2009) proposes that authentic leaders are guided by sound moral convictions and act in concordance with their deeply held values, even under pressure. They are keenly aware of their views, strengths, and weaknesses, and strive to understand how their leadership impacts others.

In concordance with recent research on authentic leadership (e.g., Walumbwa et al. 2008), we focus on the higher order construct of authentic leadership that is conceptualized at the individual level of analysis. Authentic leaders are expected to show an authentic leadership style in which they behave similarly toward all of their subordinates; however, there are likely to be stable differences between leaders (Yammarino et al. 2008). In this article, the process by which authentic leadership achieves its outcomes is examined from *the followers' perspective*. This is in concordance with recent calls for more research on "the factors that influence our subjective perceptions" in the area of leadership in general (Caldwell et al. 2010, p. 509) and for an emphasis on the question of what leads followers to perceive a leader as authentic (Eagly 2005; Gardner et al. 2009) in particular. Although we focus on the individual-level perspective here, we acknowledge the potential for dyadic, group, and organizational levels of analysis in future research on authentic leadership (cf. Yammarino et al. 2005, 2008).

Antecedents of Authentic Leadership

Based on writings by Harter (2002), Gardner et al. (2005) posit that in order to act authentically, one has to "know oneself" and act "in accordance with one's true self" (p. 344). Hence, we regard self-knowledge and self-consistency as key antecedents of authentic leadership.

Self-Knowledge

A number of authors (e.g., Bennis 2003; Eriksen 2009) stress that a prerequisite to the development of authentic leadership is gaining self-knowledge. Leaders who possess a high degree of self-knowledge are clear about their values and convictions (Shamir and Eilam 2005). As Branson (2007) stresses, it is through coming to know and understand their

self-concept that leaders can develop a meaning system from which to feel, think, and act with authenticity. By knowing their values thoroughly, authentic leaders are able to act in accordance with their values even if challenged by social or situational pressures (Erickson 1995). In short, self-knowledge about their values and convictions as well as their personal strengths and weaknesses is a prerequisite for leaders acting in a way that is perceived as authentic by their followers.

Self-knowledge differs from the authentic leadership component of *self-awareness* in two ways. First, while self-knowledge describes the fact that a person has (stable) knowledge about his/her values, motives, strengths, and weaknesses, self-awareness describes the fact that a person continually questions and re-assesses his/her strengths and weaknesses. As Gardner et al. (2005) point out "self-awareness is (…) a process whereby one comes to reflect on one's unique values, identity, emotions, goals, knowledge, talents and/or capabilities" (p. 349). Similarly, Ladkin and Taylor (2010) stress that a person's awareness of self is negotiated, made sense of, and then expressed through the body. Finally, Wong et al. (2010) highlight "self-awareness is (…) not an end in itself but a process of developing insight into one's strengths and weaknesses and being aware of and trusting one's feelings" (p. 890). As these definitions emphasize, the concept of self-awareness focuses on the *dynamic process* in which a person reflects on his/her values and re-examines them. A second difference between self-knowledge and self-awareness pertains to the fact that self-awareness comprises self-confidence (Wong and Cummings 2009a) or, as Spitzmuller and Ilies (2010) state, a leader's "trust in his/her personal characteristics, values, motives, feelings, and cognitions" (p. 310). Hence, self-knowledge and self-awareness are not the same but rather self-knowledge is an antecedent of self-awareness. This is due to the fact that it is necessary to first know one's values, goals, etc. (i.e., to possess self-knowledge) before one is able to "re-evaluate" them and before "seeking feedback in order to improve interactions with others", as the items measuring self-awareness from the Authentic Leadership Questionnaire (ALQ) (Walumbwa et al. 2008) state. Furthermore, it is necessary to first have knowledge about one's personal characteristics and values before being able to have trust in them.

Self-knowledge is also a precondition to the other three components of authentic leadership. Specifically, it precedes *balanced processing* since leaders who "also solicit views that challenge their deeply held positions" (Walumbwa et al. 2008, p. 95) first have to know their positions before being able to challenge them. Similarly, in order to show behaviors that are guided by internal moral standards, as *internalized moral perspective* stipulates, clear knowledge of one's personal standards is necessary.

Finally, presenting one's authentic self to others, as captured in the component of *relational transparency* also presupposes that one knows one's values and strengths as well as weaknesses.

Several studies from the area of social psychology point to the positive consequences of knowing one's values, goals, and aspirations. For example, Campbell et al. (1996) studied the relation between self-concept clarity (i.e., the extent to which a person's self-concept is clearly defined, internally consistent, and stable over time) and a number of affective variables. Their results revealed that high degrees of self-concept clarity were positively related to self-esteem and positive affect as well as negatively related to anxiety, depression, and negative affect. Furthermore, Baumgardner (1990) examined the construct of self-certainty, which constitutes the extent to which one is confident about one's self-views across various domains. Her study points to the fact that persons who exhibit high degrees of self-certainty possess a higher level of global self-esteem and positive affect. Finally, Wilson and Dunn (2004) conclude based on their review that self-knowledge has important consequences for interpersonal relationships, social perception, and health. In support of their conclusion, they cite the study by Brunstein et al. (1998) which revealed that people whose implicit and explicit motives were in concordance reported greater emotional well-being than people whose goals were inconsistent. Concordantly, persons who showed congruence between their implicit and explicit self-esteem reported more pleasant affect than their less congruent peers (Robinson et al. 2003) and were perceived as getting sick less often by their close friends (Bosson et al. 2000).

Taken together, these studies point to the fact that persons who clearly know their attitudes and values as well as their strengths and weaknesses across different domains and situations experience higher levels of positive affect and well-being, which may in turn, enable them to behave authentically (cf. Kernis 2003). In short, clear knowledge of one's values and convictions as well as strengths and weaknesses seems to be a precondition for persons to express their views and values and act in accordance to them, which is likely to be perceived as being authentic by others.

Hypothesis 1 Self-knowledge is a predictor of authentic leadership.

Self-consistency

Beyond knowing themselves, it is crucial for leaders to demonstrate "consistency between their values, beliefs, and actions" (Walumbwa et al. 2008, p. 93) in order to be perceived as authentic. Hence, an additional predictor of

perceived authentic leadership is likely to be self-consistency. Avolio et al. (2004) stress that it is not the behavioral style per se that differentiates the authentic from the inauthentic leader—authentic leaders can be directive, participative, or even authoritarian—but rather it is the fact that authentic leaders act in accordance with deep personal values and convictions. Sparrowe (2005) further elaborates "authentic leaders are effective in leading others because followers look for consistency between their leaders' true selves – as expressed in values, purpose, or voice – and their behaviors" (p. 423). Thus, when followers perceive a leader as possessing a high degree of self-consistency they are likely to regard him/her as authentic and follow his/her lead. In a similar vein Kouzes and Posner (2002) point out that the alignment between a leader's values and his/her behaviors engenders credibility in the eyes of followers—which is regarded as a core personal identity image of authentic leaders (Gardner et al. 2005).

The process through which authentic leaders align their values with their intentions and actions and thus achieve self-consistency is posited to be self-regulation (Avolio and Gardner 2005; Luthans and Avolio 2003). Drawing on Deci and Ryan's (1995) self-determination theory, Gardner et al. (2005) specify that they expect the behavior of authentic leaders to be primarily driven by internalized regulatory processes. That means authentic leaders' behaviors are motivated and controlled by integrated regulation, which constitutes the highest and most autonomous form of external regulation. Integrated regulation results when a person's values and regulations are fully integrated into his/her sense of self. If this is achieved, a leader is able to act in accordance with his/her appropriate feelings, beliefs, attitudes, and values (Branson 2007). This alignment between values and behaviors makes leaders' true selves (e.g., their values, convictions, attitudes) transparent to followers. Since the true self is regarded as enduring in most writings on authentic leadership, followers are posited to evaluate leaders in terms of the consistency with which leaders behave in ways that are consonant with their core values or guiding purposes over time (cf. Sparrowe 2005). A high degree of consistency between a leader's values and actions is thus a key antecedent of perceived authentic leadership.

Hypothesis 2 Self-consistency is a predictor of authentic leadership.

Outcomes of Authentic Leadership

As Caldwell and Dixon (2010) stress, authentic leaders influence people at various levels and have a profound impact on followers as well as on the organizations they direct. Among the positive outcomes proposed to result from authentic leadership are followers' intrinsic motivation,

self-esteem, and creativity (Ilies et al. 2005) as well as trust, engagement, and well-being (Gardner et al. 2005), organizational citizenship behaviors and performance (Walumbwa et al. 2008), voice behavior (Wong and Cummings 2009b), and even elevated levels of health (Macik-Frey et al. 2009). The variables that have been discussed earliest and most frequently as consequences of positive forms of leadership in general (e.g., Erben and Güneşer 2008; Neubert et al. 2009; Toor and Ofori 2009) and of authentic leadership in particular are followers' commitment, job satisfaction, and extra-effort (cf. Avolio et al. 2004; Walumbwa et al. 2008). In fact, in the framework Avolio et al. (2004) proposed as a foundation for guiding future research on authentic leadership they posited authentic leadership to have (indirect) positive effects on exactly these variables.

Empirical evidence on the relation between authentic leadership and follower work attitudes and behaviors is still scarce due to the novelty of the construct. However, preliminary evidence supports the relations proposed by Avolio et al. (2004). For example, Walumbwa et al. (2008) argued that authentic leaders instill elevated levels of satisfaction with the supervisor and commitment as well as the willingness to act beyond contractual duties among followers. In concordance with their predictions, Walumbwa et al. (2008) found authentic leadership to be a significant positive predictor of followers' satisfaction with their supervisor, organizational commitment, and willingness to make extra-efforts at work. Another recent empirical investigation provided further support for the positive impact of authentic leadership on followers' work-related attitudes and performance. Clapp-Smith et al. (2009) found authentic leadership to be positively related to employee performance (aggregated to the store level). The relation between authentic leadership and employee performance was partially mediated by trust in the leader. In addition, a very recent study (Walumbwa et al. 2010) reported authentic leadership to have a significant positive relation with supervisor-rated organizational citizenship behavior and work engagement. Similarly, Wong et al. (2010) reported authentic leadership to be significantly related to nurses' work engagement, voice behavior, and perceived unit care quality. Finally, the finding for work engagement received further support by Giallonardo et al. (2010), who also reported a positive relation between authentic leadership and follower job satisfaction. Although these findings support the predictions by Avolio et al. (2004), they only "represent a first step" (Walumbwa et al. 2008, p. 118). Thus, it is our aim to further shed light on the relation between authentic leadership as conceptualized by Avolio et al. (2004) and followers' satisfaction with their supervisor, organizational commitment, and extra-effort.

Hypothesis 3 Authentic leadership will be a positive predictor of followers' satisfaction with their supervisor.

Hypothesis 4 Authentic leadership will be a positive predictor of followers' organizational commitment.

Hypothesis 5 Authentic leadership will be a positive predictor of follower's extra-effort.

Mediating Mechanisms

In their proposed framework, Avolio et al. (2004) not only posit a number of positive outcomes of authentic leadership, but also describe *how* such leaders influence followers' attitudes and behaviors. Among the key intervening variables in their proposed model are hope, positive emotions, and trust. While emotions had largely escaped the attention of leadership researchers until recently (see the special issue of *The Leadership Quarterly*, Vol. 13, Issue 5, 2002) trust had been identified as a crucial element for leader effectiveness earlier on (e.g., Argyris 1962; Caldwell and Dixon 2010; Caldwell et al. 2010; Hogan et al. 1994; Podsakoff et al. 1990). As the meta-analysis by Dirks and Ferrin (2002) summarizes, trust in leadership has been found to be related to a number of positive outcomes such as job satisfaction, commitment, and intention to stay. As had been posited by Avolio et al. (2004), there is now preliminary evidence for the fact that the impact of authentic leadership on followers' attitudes and behaviors is mediated by trust. For example, Clapp-Smith et al. (2009) reported group-level trust in management to partially mediate the relation between authentic leadership and performance as measured by sales growth. However, the study by Wong and Cummings (2009b) provided equivocal results regarding trust as a mediator of the relation between authentic leadership and employee voice behavior, performance and burnout. This may be due to the fact that they did not use the validated ALQ (Walumbwa et al. 2008) to measure authentic leadership but rather selected items from an instrument not originally designed to measure authentic leadership. This assumption is supported by recent empirical evidence by Wong et al. (2010) who reported trust in the manager to mediate the relation between authentic leadership (measured by the ALQ) and nurses' voice behavior and perceived unit care quality. Thus, there is preliminary evidence for the fact that trust in the manager is a mediating mechanism of the positive effects of authentic leadership on follower attitudes and behaviors.

In the context of authentic leadership, it seems advisable to focus on a conceptualization of trust that captures inferences about the leader's character, such as his/her predictability, reliability, integrity, and honesty (cf. Dirks and Ferrin 2002) since follower perceptions of the leader's "moral character" (Avolio et al. 2004, p. 804) are regarded as central for authentic leaders achieving their positive effects on followers. Specifically, the leader's predictability

seems to be a particularly relevant facet of trust in the examination of its relation with authentic leadership. Followers have to be certain of what the leader's attitudes are and how he/she will behave, i.e., experience high levels of predictability with regard to their leader, in order to build a "realistic social relationship" (Avolio et al. 2004, p. 810) which facilitates their job satisfaction, commitment, and extra-effort. As Spitzmuller and Ilies (2010) assert "by ensuring (…) consistency in values, intentions, and actions, authentic leaders' behavior becomes more predictable" (p. 311). This predictability in turn should allow followers to feel more comfortable and secure to do the activities required for successful task accomplishment (Avolio et al. 2004). In short, by means of clearly communicating their views, openly discussing even critical issues and behaving in concordance with their convictions authentic leaders are likely to instill perceptions of high predictability among their followers; this perception in turn likely facilitates positive work attitudes such as satisfaction and commitment as well as extra-effort in followers.

Hypothesis 6 Predictability of the leader will mediate the relation between authentic leadership on the one hand and followers' satisfaction with their supervisor, organizational commitment, and extra-effort on the other hand.

Study 1

The first study was designed to test the proposed process model of authentic leadership in a business context. More specifically, we sought to examine if leader self-knowledge and self-consistency were antecedents of perceived authentic leadership, which in turn predicted followers' satisfaction with their supervisor, their organizational commitment, and extra-effort among employees from a broad range of branches of industry. Furthermore, we set out to test if the relation between authentic leadership and followers' work-related attitudes was mediated by the leader's predictability.

Method

Sample and Procedure

Two different samples of employees were employed in this study. Participants in the core sample were asked to rate their supervisor's authentic leadership, self-knowledge, and self-consistency as well as their own perception of the leader's predictability and their satisfaction with supervisor, organizational commitment, and extra-effort. These participants were recruited by means of postings in online professional

platforms (e.g., Linked-In) and took part in an online survey assessing the study variables. In contrast, participants in the second sample were surveyed with regard to their supervisor's authentic leadership only, in order to provide additional data for testing the factorial structure of the German ALQ. These participants were recruited by approaching them in person (e.g., in public transportation) and filled out a paper–pencil questionnaire comprising solely the ALQ and demographic items. Overall, this procedure resulted in 42.3% of participants taking part in the paper-and-pencil survey and 57.7% in the online survey. Since recent studies have largely confirmed the equivalence of paper-and-pencil and online surveys with regard to measurement (Donovan et al. 2000; Mueller et al. 2007; Reips and Franek 2004), data from online and paper-and-pencil surveys were merged. Taken together, the overall sample included 306 individuals from a broad range of branches of industry including services (23.9%), health care and social affairs (12.4%), manufacturing (9.5%), as well as miscellaneous others. 46.1% of the participants were men and 42.5% were women (11.4% not specified) and their average age was 34.37 years (SD = 9.38). They had 10.53 years of work experience on average (SD = 8.96), and their average tenure in their current jobs was 5.67 years (SD = 6.23). The employees surveyed represented organizations of different sizes with 46.1% working in small organizations with fewer than 500 employees, 23.9% in medium organizations with 500–5,000 employees and 17.6% working in large organizations with more than 5,000 employees (12.4% not specified). Participants were told that participation in this study was voluntary and received no incentive for taking part.

Measures and Psychometric Properties

Self-knowledge was assessed by means of the corresponding scale included in the German inventory on self-concept and self-confidence (ISS: Inventar zu Selbstkonzept und Selbstvertrauen, Fend et al. 1984). Seven of the original eight items were adapted to capture the degree to which a supervisor is regarded as knowing himself/herself (e.g., "My supervisor is well aware of his/her idiosyncrasies.").

Self-consistency was measured by the German version (von Collani and Blank 2003) of the Preference for Consistency Scale (Cialdini et al. 1995). Specifically, we focused on the dimension 'internal consistency' because it assesses the degree to which a person attempts to have consistency between his/her convictions and behaviors. The six items were adapted to measure supervisory behaviors (e.g., "It is important for my supervisor that his/her actions are consistent with his/her beliefs.").

Authentic Leadership was measured by means of the German version of the ALQ (official translation by the publisher Mindgarden, Inc.) developed by Walumbwa et al. (2008). This instrument measures authentic leadership as a second-order factor comprised of the four first-order factors: (1) self-awareness (e.g., "My supervisor knows when it is time to re-evaluate his or her positions on important issues."), (2) relational transparency (e.g., "My supervisor says exactly what he or she means."), (3) internalized moral perspective (e.g., "My supervisor makes difficult decisions based on high standards of ethical conduct."), and (4) balanced processing (e.g., "My supervisor listens carefully to different points of view before coming to conclusions."). The items were rated on a scale from 1 ("not at all") to 5 ("frequently, if not always"). The original validation study by Walumbwa and colleagues provided evidence for the assumption that the ALQ is a valid measure of authentic leadership, which was confirmed by another recent study (Clapp-Smith et al. 2009). The German translation of the ALQ demonstrated adequate internal reliabilities with $\alpha > .70$ for each of the four subscales and the overall scale (see Table 1).

Table 1 Means, standard deviations, correlations and reliabilities for variables in Study 1

		M	SD	01	02	03	04	05	06	07	08	09	10	11
01	Overall ALQ	3.20	.87	*.94*										
02	ALQ self-awareness	3.11	1.03	.91	*.86*									
03	ALQ balanced processing	3.04	.99	.88	.76	*.78*								
04	ALQ int. moral perspective	3.30	.99	.88	.72	.66	*.85*							
05	ALQ relational transparency	3.33	.93	.88	.72	.68	.74	*.81*						
06	Self-consistency	3.28	.95	.71	.62	.59	.69	.63	*.85*					
07	Self-knowledge	3.31	.87	.76	.73	.64	.69	.64	.64	*.92*				
08	Predictability	3.45	1.05	.69	.60	.56	.60	.69	.48	.61	*.78*			
09	Commitment	3.36	1.02	.65	.57	.53	.60	.62	.51	.56	.55	*.91*		
10	Extra-effort	2.99	1.17	.65	.55	.53	.61	.63	.54	.58	.55	.55	*.89*	
11	Satisfaction with supervisor	2.98	1.35	.81	.77	.67	.68	.76	.57	.69	.65	.66	.67	*.94*

$N = 157$. All correlations are significant at $p < .001$. All variables were measured on 5-step Likert-scales. Reliabilities (Cronbach's alpha) are on the diagonal

Given the novelty of the ALQ and the fact that to our knowledge no published validation data existed for the German version of it, we conducted a confirmatory factor analysis on the combined sample ($N = 306$) using AMOS 17.0® maximum likelihood procedure. In concordance with the original analysis, a one-factor model was tested against a first-order four-factor model and a four-factor model with a higher order factor. As Hu and Bentler (1999) proposed, good fitting models should have a comparative fit index (CFI) of .95 or greater and a root mean square error of approximation (RMSEA) of equal to or less than .06. Regarding the goodness of fit index (GFI) values of .95 or greater are indicative of good fit, while values greater than .90 are interpreted as indicating an acceptable fit (Schermelleh-Engel et al. 2003). Moreover, the χ^2 test statistic should be non-significant (Schermelleh-Engel et al. 2003). Yet, in the case of small sample sizes it is recommended to interpret the χ^2 test statistic as a descriptive fit index, signaling good fit if the ratio χ^2/degrees of freedom ≤ 2 (Schermelleh-Engel et al. 2003).

In this study, all items loaded significantly on their respective factors in all three tested models. The one-factor model ($\chi_{(104,306)}^2 = 353.214$, $p < .001$, $\chi^2/df = 3.396$, RMSEA = .089, GFI = .859, CFI = .900) was outperformed by the four-factor model with a higher order factor ($\chi_{(100,306)}^2 = 251.148$, $p < .001$, $\chi^2/df = 2.511$, RMSEA = .070, GFI = .905, CFI = .940) and the first-order four-factor model ($\chi_{(98,306)}^2 = 227.242$, $p < .001$, $\chi^2/df = 2.319$, RMSEA = .066, GFI = .915, CFI = .948), with the latter yielding the best model fit (model comparison with χ^2-difference test was not applicable due to non-nested models). According to the above-mentioned cut-off criteria, the fit of both four-factor models can be regarded as acceptable. The results of these analyses are largely consistent with the findings by Walumbwa et al. (2008), except that in their analysis the higher order four-factor model slightly outperformed the first-order four-factor model. Due to the fact that our results are based on just one sample, whereas Walumbwa et al. (2008) based their results on two samples, one from the US, and one from the People's Republic of China, and that their results were confirmed by Clapp-Smith et al. (2009), we stick to the factorial solution proposed by Walumbwa et al. (2008), i.e., a four-factor model with a higher order factor for the following analyses.

Predictability was measured using the dimension ambivalence of the Questionnaire on Trust in the Leader (Kopp and Schuler 2003). The dimension ambivalence contains three items (e.g., "My supervisor's behavior is not always straight, but rather contradicts itself at times."). Low scores indicate a high degree of predictability and straightness of the leader.

Organizational commitment was assessed by means of the German version (Felfe et al. 2002) of the three-component measure of organizational commitment (Allen and Meyer 1990). The five items measuring the affective commitment component were used here (e.g., "I do not feel 'emotionally attached' to this organization.") (reverse coded).

Satisfaction with supervisor was measured by means of the corresponding scale of the German version of the Multifactor Leadership Factor (MLQ 5x-short; Bass and Avolio 1995). The scale comprises two items (e.g., "My supervisor uses methods of leadership that are satisfying.").

Extra-effort was also measured by the corresponding scale of the German version of the MLQ 5x-short (Bass and Avolio 1995). This scale comprises four items (e.g., "My supervisor increases my willingness to try harder.").

If not indicated otherwise, all questionnaires were rated on a 5-point Likert-scale ranging from 1 ("not at all") to 5 ("completely"), in order to have a consistent response scale. The means, standard deviations, and correlations for all study variables are reported in Table 1. As shown in Table 1 as well, all scales can be regarded as having adequate internal consistency with $\alpha > .70$.

Results

First, we tested preconditions for analyzing the data pertaining to our hypotheses at a correlational level. As can be seen from Table 1, the hypothesized predictors self-knowledge and self-consistency were significantly positively related to authentic leadership. Authentic leadership in turn was significantly positively related to the three hypothesized outcome variables (satisfaction with supervisor, organizational commitment, and extra-effort) as well as to the hypothesized mediator predictability. Predictability in turn was significantly related to the three outcome variables.

In order to test the hypothesized directional relationships, we conducted path analysis modeled in AMOS 17.0® maximum likelihood procedure. Variables were arranged according to the hypothesized model with leader self-knowledge and self-consistency as predictors, satisfaction with supervisor, organizational commitment, and extra-effort as outcomes of authentic leadership and leader predictability as a mediator. To test whether no, partial or full mediation of the effect of authentic leadership on the three outcome variables by predictability suited the data best respective paths were fixed to zero. In the *non-mediated model*, the path going from authentic leadership to predictability and all paths departing from predictability to the three outcome variables were fixed to zero. In the *partial-mediation model*, all paths were allowed to load freely. In the *full mediation model*, all direct paths from authentic leadership to the three outcome variables were set to zero.

Table 2 Fit indices for three alternative path models in Study 1: non-mediated, partially mediated, and fully mediated

	χ^2	p	df	$\Delta\chi^2$	p	χ^2/df	RMSEA	GFI	CFI
1. Partial mediation	15.307	.053	8	–	–	1.913	.077	.973	.990
2. Full mediation	114.105	<.001	11	98.798	<.001	10.373	.245	.867	.859
3. No mediation	127.135	<.001	12	111.827	<.001	10.595	.248	.852	.842

$N = 157$. The $\Delta\chi2$ is in relation to the partial-mediation model

CFI comparative fit index, *GFI* goodness of fit index, *RMSEA* root mean square error of approximation

Fit indices for the three alternative models are presented in Table 2.

Regression weights for all paths were significant (all ps < .05) in all three alternative models. Inspection of the fit indices revealed that the partial-mediation model outperforms the alternative models (see Table 2). Evaluated against the above-mentioned cut-off criteria for model fit indices, results for the partially mediated model indicate a very good model fit. Nested model comparisons confirm these results by showing that the partially mediated model provides a significantly better fit than both alternative models (full mediation: $\Delta\chi^2_{(3,157)} = 98.798$, $p < .001$; no mediation: $\Delta\chi^2_{(4,157)} = 111.827$, $p < .001$). The partial-mediation model with standardized regression weights is displayed in Fig. 1.

Examining the hypotheses one by one, self-knowledge and self-consistency were confirmed as antecedents of authentic leadership. As postulated in *Hypothesis 1*, self-knowledge significantly predicted authentic leadership ($\beta = .52$, $p < .001$). Furthermore, self-consistency was also a significant predictor of authentic leadership ($\beta = .38$, $p < .001$), as assumed in *Hypothesis 2*.

Turning to the hypothesized effects of authentic leadership on employees' job-related attitudes, all three hypotheses concerning direct effects were confirmed. As

predicted in *Hypothesis 3*, authentic leadership positively impacted followers' satisfaction with their supervisor ($\beta = .69$, $p < .001$) as well as followers' organizational commitment ($\beta = .52$, $p < .001$), as predicted in Hypothesis 4. Finally, *Hypothesis 5* also received statistical support, since authentic leadership positively impacted followers' extra-effort ($\beta = .51$, $p < .001$). Thus, the predicted direct effects of authentic leadership on followers' job-related attitudes received empirical support.

In addition to the direct effects, authentic leadership had been predicted to also have an indirect effect on followers' job-related attitudes, mediated by predictability (Hypothesis 6). Since authentic leadership impacted the hypothesized mediator predictability ($\beta = .69$, $p < .001$), which in turn had significant effects on all three outcome variables, i.e., satisfaction with supervisor ($\beta = .17$, $p < .01$), organizational commitment ($\beta = .19$, $p < .05$), and extra-effort ($\beta = .20$, $p < .001$), the hypothesized mediation model received statistical support.

In order to further test our hypotheses, bootstrap analysis (Preacher and Hayes 2008) was performed on the partial-mediation model. AMOS 17.0® bias-corrected percentile bootstrap method ($B = 1000$ samples) was employed. As can be seen from Table 3, all three hypothesized indirect effects ($a \times b$ weights) of authentic leadership on the three outcome
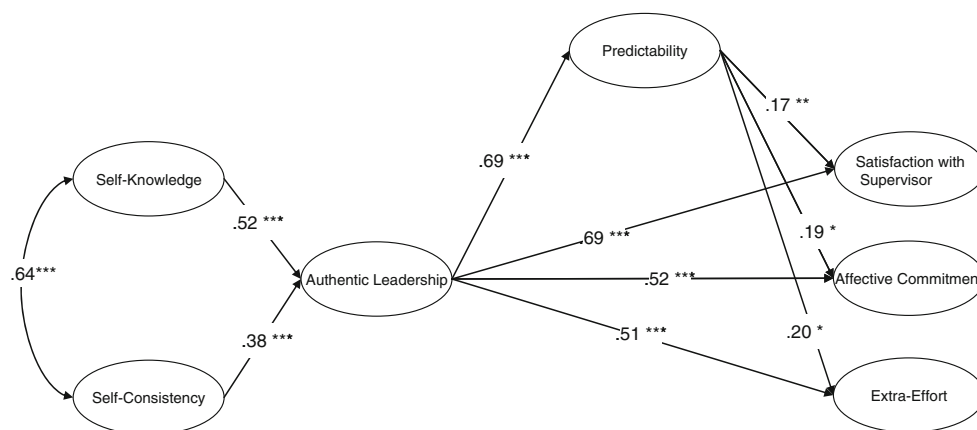

Fig. 1 Standardized regression weights (incl. significance values) of partially mediated model (Study 1). Displayed path coefficients are standardized regression weights. Error terms and error correlations between outcomes variables are omitted in the figure. $N = 157$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 3 Summary of mediation results (standard errors in parentheses; 1,000 bootstrap samples) in Study 1

Independent variable (IV)	Mediating variable (M)	Dependent variable (DV)	Effect of IV on M (a)	Effect of M on DV (b)	Direct effect (c')	Indirect effect (a × b)	Total effect (c)
Authentic leadership	Predictability	Satisfaction with supervisor	.686** (.000)	.174* (.070)	.689** (.058)	.120* (.048)	.809** (.024)
Authentic leadership	Predictability	Affective commitment		.194* (.085)	.515** (.079)	.134* (.059)	.651** (.048)
Authentic leadership	Predictability	Extra-effort		.204* (.086)	.511** (.074)	.139* (.060)	.649** (.042)

$N = 157$. All reported parameters are standardized. Two-tailed significance: * $p < .05$, ** $p < .01$. Direct effects of the hypothesized predictors (self-consistency and self-knowledge) on authentic leadership: $\beta = .518^{**}$ (SE = .054), $\beta = .379^{**}$ (SE = .059), respectively

β bootstrap estimate of standardized effects, SE standard error of bootstrap estimate of standardized effects

variables are significant ($p < .05$). Moreover, all other postulated effects (a, b, and c' weights) show the hypothesized direction and are significant. Thus, we can conclude that the proposed partial-mediation model passed the even more conservative statistical test of bootstrap analysis.

Discussion

Study 1 provided empirical evidence supporting the predicted process model of authentic leadership in a business context. In particular, leader self-knowledge and self-consistency were found to be antecedents of perceived authentic leadership while followers' satisfaction with their supervisor, organizational commitment, and extra-effort were confirmed as outcomes, and leader predictability as a (partial) mediator.

Study 2

The purpose of the second study was twofold. First, we sought to investigate if the relation between perceived authentic leadership, leader predictability and followers' work-related attitudes could be replicated (a) using a longitudinal design and (b) in a context markedly different from the business sector in which Study 1—just like the majority of previous empirical studies on authentic leadership—had taken place. Second, our objective was to expand the investigation of the effects of authentic leadership to the group level.

Theoretical Background

Relation Between Authentic Leadership and Group-Level Outcomes

As Walumbwa et al. (2011) point out, although a number of scholars have posited authentic leadership to be related to important desired outcomes at the group-level (e.g., Gardner

et al. 2005; Yammarino et al. 2008) empirical research on the relation between authentic leadership and group-level outcomes is still largely lacking. There are a number of arguments that can be put forth in support of the assumption that authentic leadership is positively related to group-level outcomes. For example, by soliciting views about important work-related matters, openly sharing information, and processing it in a balanced and transparent way, authentic leaders are likely to enhance clarity of team objectives and processes. Furthermore, by presenting their authentic self to team members and acting as role models authentic leaders are likely to increase commitment to team goals. Commitment and dedication to team goals is further strengthened by authentic leaders' behaviors of using their values, beliefs, and behaviors (instead of coercion) to influence others to make the best choices (Luthans and Avolio 2003). The position that authentic leadership motivates team members to be so committed to the team's goals that they are willing to perform tasks beyond their contractual obligations also received preliminary empirical support since Walumbwa et al. (2011) reported a significant positive relation between authentic leadership and group-level OCB. Furthermore, authentic leadership is likely to enhance team members' focus on quality and performance because this type of leadership assists in the building of shared mental models within the team (Yammarino et al. 2008). Its members develop a sense of cohesiveness and a set of expectations of one another that is likely to lead to a clear focus on quality and performance. Initial empirical evidence for the positive relation between authentic leadership and team performance was again provided by Walumbwa et al. (2011). These authors also point out that authentic leadership facilitates a "positive" social exchange relationship where leaders and followers openly share information and provide constructive feedback, thus yielding effective decision-making and communication as well as support for innovation. The position that authentic leadership enhances team innovation is furthermore in concordance with the argument by Yammarino et al. (2008) who propose the overlapping knowledge

and belief structures as well as access to a larger pool of information characteristic of teams lead by authentic leaders as the main contributors to team innovation.

In short by presenting their authentic self, being a role model, and encouraging an open exchange of information among group members that includes soliciting contradictory views authentic leaders are expected to facilitate (1) clarity and commitment to team objectives, (2) focus on quality or performance, (3) decision-making and communication, as well as (4) support for innovation. These four components have been posited (Borrill and West 2000) and empirically supported (e.g., Bamford and Griffin 2008) to constitute the pillars of team effectiveness.

Hypothesis 7 Authentic leadership will be a positive predictor of perceived team effectiveness.

Mediating Mechanisms

As has been argued for individual-level outcomes trust is expected to be an important mediator of the relation between authentic leadership and group-level outcomes. Trust as the "glue that holds relationships together" (Caldwell and Dixon 2010, p. 94) is likely to be facilitated by authentic leaders. This is due to the fact that authentic leaders value realistic and truthful relationships with followers (Gardner et al. 2005; Ilies et al. 2005) and behave accordingly, which is likely to increase team members' commitment to team goals and willingness to work hard in order to achieve them. In concordance with these predictions, Clapp-Smith et al. (2009) reported group-level trust in management to partially mediate the relation between authentic leadership and performance as measured by sales growth. In addition, Walumbwa et al. (2011) found group-level trust to partially mediate the relation between authentic leadership and group-level OCB as well as group performance. Since follower perceptions of the leader's "moral character" (Avolio et al. 2004, p. 804) are regarded as central for authentic leaders achieving their positive effects on followers—at the individual as well as at the group-level—leaders' predictability is expected to be essential for their impact on perceived team effectiveness.

Hypothesis 8 Predictability of the leader will mediate the relation between authentic leadership and perceived team effectiveness.

Method

Sample and Procedure

Study 2 was carried out in two large government-funded research organizations. Employees from these organizations were surveyed twice. The first survey assessed employees' perceptions of their supervisor's authentic leadership and his/her predictability with regard to attitudes and behaviors. Approximately 6 weeks later employees were surveyed again, this time with regard to their satisfaction with their supervisor and the perceptions of their team's effectiveness. Overall, 105 individuals participated in the online survey, corresponding to a response rate of 66.5%. 86 individuals fully completed the questionnaires at both points of measurement, thus constituting the sample on which the statistical analyses were performed. Participants were recruited as part of a leadership development program, which offered supervisors of academic teams an individual leadership profile. Employees were clustered within teams. In concordance with common standards (e.g., Walumbwa and Schaubroeck, 2009), employees working under supervision of the same leader were considered as a team. Overall, 13 teams were surveyed. The range of participants per team varied from 2 to 17, with a mean of 6.62. The employee sample from the first organization consisted of 66.7% female and 33.3% male participants and their average age was 32.15 years (SD = 7.45). Average tenure in their current jobs was 4.01 years (SD = 4.82). In the second organization, collection of demographic information was prohibited, due to data security regulations. However, employees in this organization were comparable to those in the other research organization with regard to age and job tenure. Employees' participation in the survey was voluntary and not incentivized.

Measures and Psychometric Properties

Authentic Leadership was measured by means of the ALQ (© Mindgarden, Inc.; Walumbwa et al. 2008). As in Study 1, all items were rated on a scale from 1 ("not at all") to 5 ("frequently, if not always"). The following analyses were based on the factorial solution proposed by Walumbwa et al. (2008) and supported by Clapp-Smith et al. (2009) as well as our own analyses as part of Study 1.

Predictability was measured using three corresponding items (e.g., "If I shared my problems with this leader, I know he/she would respond constructively and caringly.") from Dirks' (2000) trust scale. All items were rated on a scale ranging from 1 ("strongly disagree") to 7 ("strongly agree").

Satisfaction with supervisor was measured by one item ("To what extent are you satisfied with your supervisor?") from a validated job satisfaction scale (Neuberger and Allerbeck 1978). This item was rated on a visual 7-step satisfaction faces scale (Kunin 1955).

Perceived team effectiveness was assessed using four items from a teamwork assessment questionnaire developed by Borrill and West (2000). The questionnaire covers

Table 4 Means, standard deviations, correlations, and internal consistencies for variables in Study 2

	M	SD	1	2	3	4
1. Authentic leadership	3.55	.56	.88			
2. Satisfaction with supervisor	5.34	1.49	.59***	–		
3. Team effectiveness	3.57	.76	.53***	.64***	.84	
4. Predictability	5.70	1.21	.78***	.74**	.55***	.82

$N = 86$. Two-tailed significance: *** $p < .001$, ** $p < .01$. Authentic leadership and team effectiveness were measured on 5-point Likert-scales. Satisfaction with supervisor and predictability were measured on 7-point Likert-scales. Reliabilities (Cronbach's alpha) are on the diagonal. Leader satisfaction was measured on single-item basis

the four key aspects of effective teamwork: (1) clarity and commitment to team objectives, (2) focus on quality or performance, (3) decision-making and communication, and (4) support for innovation. Individuals rated their perception of their team's effectiveness. This approach is widely used for the assessment of team-related perceptions (e.g., Bamford and Griffin 2008). All items were rated on a scale from 1 ("strongly disagree") to 5 ("strongly agree") (e.g., "In this team we are clear about what we are trying to achieve.").

Note that measures of predictability and satisfaction with the supervisor differed from those applied in Study 1. This approach was chosen because the use of multiple measures for one construct is a common approach to enhance construct validity, especially when analyzing work-related attitudes and work performance (Kremer 1990).

Since business language in both organizations was English, the original English versions of each of the scales were utilized here. The means, standard deviations, correlations, and internal consistencies for all study variables are reported in Table 4.

Results

Our hypotheses were tested as follows: First, we examined the relation between authentic leadership and followers' satisfaction with their supervisor. Since our sample size in this study was not sufficiently large to perform SEM analyses (cf. Quintana and Maxwell 1999), we used multivariate regression analyses in SPSS to test the predicted direct effects of authentic leadership as well as the mediation by leader predictability (cf. Holmbeck 1997). We accounted for the clustered structure of our data (i.e., employees in teams) by controlling for team membership (dummy-coded) in all regression analyses. In order to examine if authentic leadership was a significant positive predictor of followers' satisfaction with their supervisor (as posited by *Hypothesis 3*), we regressed followers' supervisor satisfaction on authentic leadership. Results showed that authentic leadership significantly predicted followers' satisfaction with their supervisor ($\beta = .66$, $p < .001$).

Therefore, *Hypothesis 3* received further empirical support in this study. In addition to the direct effect, authentic leadership had been posited to also have an indirect effect on followers' satisfaction with their supervisor, mediated by leader predictability (*Hypothesis 6*). Initially, we tested preconditions for analyzing the data pertaining to this hypothesis at a correlational level. As can be seen from Table 4, authentic leadership was significantly positively related to satisfaction with supervisor as well as to the proposed mediator leader predictability, which in turn correlated significantly with satisfaction with supervisor. Subsequently, we tested the proposed mediation relationship following the four-step method suggested by Baron and Kenny (1986) supplemented by Sobel's (1982) test of indirect effects. The Baron and Kenny (1986) method is based on three regression equations, as reported by MacKinnon et al. (2007). Since the significant positive relation between authentic leadership and satisfaction with supervisor had already been established (Step 1), we regressed the hypothesized mediator leader predictability on authentic leadership (Step 2), which yielded a significant positive relation ($\beta = .78$, $p < .001$). Next, to test whether leader predictability was predictive of followers' satisfaction with their supervisor (Step 3) and whether leader predictability mediates the relation between authentic leadership and followers' satisfaction with their supervisor (Step 4), we regressed supervisor satisfaction simultaneously on both predictability and authentic leadership. The coefficient associated with the relation between leader predictability and satisfaction with the leader also was significant ($\beta = .80$, $p < .001$). This third regression equation also provided an estimate of the relation between authentic leadership and followers' satisfaction with their supervisor, controlling for leader predictability ($\beta = .04$, $p = .73$). Since this relation was not significant anymore, our data indicate complete mediation, thus supporting *Hypothesis 6*. Sobel's Z confirmed that the indirect effects were significant ($Z = 6.05$, $p < .001$). However, from a theoretical point of view it is less likely to assume leader predictability to be the sole mediator of the relationship between authentic leadership and supervisor satisfaction (cf. Walumbwa et al. 2010, 2011). Thus, we conclude that

Table 5 Hierarchical regression results for satisfaction with supervisor and team effectiveness in Study 2

Variable	Predictability			Satisfaction with supervisor			Team effectiveness		
	b	SE	β	b	SE	β	b	SE	β
Step 1									
Authentic leadership				1.77	0.25	.66***	0.97	0.13	.71***
R^2						.51***			.49***
Adjusted R^2						.43***			.39***
Step 2									
Authentic leadership	1.69	0.17	.78***						
R^2			.67***						
Adjusted R^2			.61***						
Step 3									
Predictability				0.99	0.13	.80***	0.2	0.09	.32*
Authentic leadership				0.1	0.3	0.04	0.63	0.2	.46**
R^2						.72***			.52**
Adjusted R^2						.67***			.43**
ΔR^2						.00			.07**

$N = 86$. Unstandardized (b) and standardized (β) regression coefficients are displayed. Two-tailed significance: *** $p < .001$, ** $p < .01$, * $p < .05$. Team membership (dummy-coded) was controlled for in all regression analyses

leader predictability is a particularly strong, even if not the sole, mediator of the relation between authentic leadership and followers' satisfaction with their supervisor.

Second, we analyzed the relation between authentic leadership and perceived team effectiveness. In order to examine if authentic leadership was a significant positive predictor of perceived team effectiveness (as posited by *Hypothesis 7*), we regressed perceived team effectiveness on authentic leadership. Results showed that authentic leadership significantly predicted perceived team effectiveness ($\beta = .71$, $p < .001$), thus providing statistical support for *Hypothesis 7*. Next, we tested if authentic leadership also had an indirect effect on perceived team effectiveness, mediated by leader predictability (as posited by *Hypothesis 8*). Again we followed the procedure suggested by Baron and Kenny (1986). The significant positive relations between authentic leadership and perceived team effectiveness (Step 1) as well as leader predictability (Step 2) had already been established. To test whether leader predictability was predictive of perceived team effectiveness (Step 3) and whether leader predictability mediates the relation between authentic leadership and perceived team effectiveness (Step 4), we regressed perceived team effectiveness simultaneously on both leader predictability and authentic leadership. The coefficient associated with the relation between predictability and perceived team effectiveness was significant ($\beta = .32$, $p < .05$). This third regression equation also provided an estimate of the relation between authentic leadership and perceived team effectiveness, controlling for predictability ($\beta = .46$, $p < .05$). Since this relation was reduced, even though still

significant, the data indicate partial mediation, thus supporting *Hypothesis 8*. Sobel's Z confirmed that the indirect effects were significant ($Z = 2.17$, $p < .05$). We again conclude that leader predictability is a particularly important, mediator of the relation between authentic leadership and perceived team effectiveness. The results of the mediation analyses for supervisor satisfaction and perceived team effectiveness are displayed in Table 5.

Discussion

The longitudinal analysis of Study 2 provided additional support for the significant positive relation between authentic leadership and satisfaction with the supervisor as well as leader predictability as a mediator of this relation, thus, confirming the results of Study 1 and extending their generalizability to a different context. In addition, Study 2 provided empirical results supporting the hypothesized positive relation between authentic leadership and perceived team effectiveness, which was again mediated by leader predictability. The study thus also extends the currently scarce body of research on the relation between authentic leadership and group-level outcomes.

General Discussion

Scandals involving well-known leaders from different branches of society including business and politics have fanned calls for leaders who are transparent, communicate

their values and live according to them and whose behavior is guided by a moral perspective (cf. Gardner et al. 2005; Jones and Millar 2010). As a consequence, the concept of authentic leadership has been introduced to the literature and received increasing attention both in the popular press and in the writings of leadership scholars (cf. Avolio et al. 2004; Gardner et al. 2005; George 2003; Walumbwa et al. 2008). However, since empirical evidence on the impact of authentic leadership as well as the process by which it achieves its effects is still scarce (cf. Avolio et al. 2009), the purpose of the two studies presented here was to empirically investigate a process model of authentic leadership, i.e., its antecedents, outcomes and mediators for the first time.

Results of Study 1 demonstrated that self-knowledge and self-consistency are antecedents of authentic leadership, which in turn effected followers' satisfaction with the leader, organizational commitment, and extra-effort as well as perceived team effectiveness. These effects were partly mediated by the leader's predictability, as expected. Thus, we provided first empirical evidence for the fact that in order to behave in a way that is regarded as authentic by followers, leaders first have to be clear about their values and convictions (cf. Shamir and Eilam 2005) and second have to demonstrate consistency between their values, beliefs, and actions (cf. Walumbwa et al. 2008). Hence this study empirically supports the proposition that the development of authentic leadership as perceived by followers is directly related to the gaining of self-knowledge by the leader (cf. Avolio et al. 2004; Shamir and Eilam 2005). Furthermore, the results of Study 1 are in concordance with the position that followers evaluate leaders in terms of the consistency with which leaders behave in ways that are consonant with their core values or guiding purposes (Sparrowe 2005). In short, Study 1 has provided first empirical evidence on two key antecedents of authentic leadership, which is very important since knowledge about the antecedents of authentic leadership provides an essential foundation for authentic leadership development (Avolio et al. 2004; Day 2000; Day and O'Connor 2003; Luthans and Avolio 2003).

Second, Study 1 shed light on the relation between authentic leadership and follower job-related attitudes. Based on the model proposed by Avolio et al. (2004), we had hypothesized that authentic leadership would positively impact followers' satisfaction with their supervisor, organizational commitment, and extra-effort. Results of this study confirmed all three predictions. Therefore, our results support the position by Avolio et al. (2004) that authentic leaders instill elevated levels of commitment, satisfaction with the supervisor, and willingness to make an extra-effort at work among followers. In addition, in Study 2 we extended the investigation of the effects of authentic leadership to the group-level, finding evidence that authentic leadership is also positively related to perceived team effectiveness. This result supports the position by Yammarino et al. (2008) that authentic leadership results in enhanced team effectiveness and efficiency. In addition, our findings on the positive relation between authentic leadership and team effectiveness extend the presently scarce empirical literature on group-level outcomes of authentic leadership. Furthermore, our findings are in concordance with previous research reporting authentic leadership to have a significant positive relation with followers' organizational commitment and satisfaction with their supervisor (Walumbwa et al. 2008) as well as team performance (Walumbwa et al. 2011). The fact that our results, which were generated in Germany, are consistent with the results Walumbwa and colleagues gained in the United States is particularly interesting since Germany implemented a very contractual form of management after World War II (Wever 1995a, b). That is the interaction between supervisor and employee focused on the fulfillment of contractual obligations, while influence-based forms of leadership were deliberately shunned until recently (Kuchinke 1999). The finding that authentic leaders facilitate followers' job-related attitudes and perceived team effectiveness even in this national context where influence-based leadership has been regarded with considerable skepticism provides support for the generalizability of the positive effects of authentic leadership to different national contexts. In addition, the fact that our samples were drawn not only from a business context but also from government-funded research organizations supports the generalizability of authentic leadership to different sectors—although much more research on the influence of different contextual variables is of course needed (cf. Kark and Shamir 2002).

Third, our two studies provided additional empirical evidence for the way authentic leadership achieves its effects on followers. Specifically, we found predictability of the leader—a particular facet of trust—to (partially) mediate the relation between authentic leadership and followers' supervisor satisfaction, organizational commitment, and extra-effort as well as perceived team effectiveness. This finding supports the theoretical assumption that by becoming aware of their values, communicating them clearly, and acting in concordance with them, authentic leaders become predictable for their followers, which in turn, facilitates positive work attitudes among them and enhances team effectiveness. Furthermore, this finding is consistent with preliminary empirical results that suggest that trust in the leader is one of the key variables by which authentic leadership achieves its effects. For example our findings are concordant with the results by Clapp-Smith et al. (2009) and Walumbwa et al. (2011) who

reported group-level trust in management to partially mediate the relation between authentic leadership and performance. However, since Wong and Cummings (2009b) did not find clear evidence for trust as a mediator of the effects of authentic leadership while Clapp-Smith et al. (2009), Walumbwa et al. (2011) as well our two investigations did, it seems useful to pay particular attention to the specific facet of trust examined in the context of authentic leadership. Specifically, it seems advisable to focus on inferences about the leaders' character when investigating trust as a potential mediator of the effects of authentic leadership. Finally, since the mediation by leader predictability we found was only partial (at least with regard to individual-level outcomes), it seems fruitful to examine other potential mediators of the effects of authentic leadership such as identification, hope (Avolio et al. 2004) or psychological capital (Clapp-Smith et al. 2009; Walumbwa et al. 2011) in future investigations. Nevertheless, highlighting the importance of leaders' predictability for followers' work-related attitudes is not only an interesting theoretical contribution, it is also of practical relevance since it may draw leaders' particular attention to the way they communicate and interact with their followers and may be targeted in authentic leadership development initiatives.

Limitations and Suggestions for Future Research

Naturally, the two studies reported here are not free of limitations. First, it would have been beneficial to conduct a longitudinal investigation not only in Study 2 but also in Study 1 in order to track the process—and timely dynamics—of the way antecedents lead to a perception of authentic leadership, which in turn influences employees' job-related attitudes. In addition, common source bias poses a potential problem in this study since all variables are based on follower assessment. However, we chose this approach to data collection in order to respond to the question what leads followers to perceiving a leader as authentic (cf. Eagly 2005; Gardner et al. 2009), and how this perception then influences their attitudes. In addition, we attempted to minimize the potential of common source bias influencing our results by collecting data at two points in time separated by approximately 6 weeks (cf. Podsakoff et al. 2003). However, in future studies it may be fruitful to complement data on the perceptions of followers with additional data from different sources, e.g., by surveying supervisors or colleagues regarding employees' behaviors or adding objective measures of performance. Furthermore, experimental approaches may be useful in order to determine exactly what components of authentic leadership are crucial for follower attitudes and how they are influenced by situational variables. Finally, multi-method approaches

seem useful for gaining a deeper understanding of how authentic leadership impacts followers, their organizations, and the leaders themselves and how this type of leadership can be developed.

The noted limitations not withstanding, the research reported here has provided a number of important insights. It is the first one to our knowledge to have empirically investigated the process by which authentic leadership achieves its effects—from its antecedents to its consequences. It thereby provided support for the relationship between authentic leadership and followers' satisfaction with their supervisor, organizational commitment, and extra-effort that had been predicted by Avolio et al. (2004) as well as team effectiveness as posited by Yammarino et al. (2008). Furthermore, it introduced the concepts of self-knowledge and self-consistency as antecedents of authentic leadership and supplied supporting evidence. In addition, this research drew attention to the fact that a leader's predictability (a particular facet of trust) is a mediator of the relation between authentic leadership and followers' work attitudes and perceived team effectiveness. This finding may serve as both a basis for future research on authentic leadership and a point of intervention for developmental initiatives. Finally, by demonstrating that the findings on the relation between authentic leadership and follower work attitudes generated in Germany are consistent with those gained in the US (Clapp-Smith et al. 2009; Walumbwa et al. 2008, 2011) and that previous results from a business context were confirmed in government-funded research organizations, the studies presented here point to the fact that the effects of authentic leadership may be similar in different cultural as well as organizational contexts.

An Exploratory Afterword

Reaching well beyond the scope of the current investigation, we want to raise several issues that we deem important for future research in the area of authentic leadership. Most prominently, we believe that further conceptual clarification, both theoretically and empirically would be enormously beneficial (cf. Avolio et al. 2009). Specifically, we believe that three aspects of the authentic leadership construct should be examined further: First, the components that constitute authentic leadership and their effects on outcomes, second, the scope of authentic leadership, and third, the relation between authentic leadership and various leadership styles.

Components of Authentic Leadership

We believe that some confusion still exists with regard to the question of what components constitute authentic

leadership (cf. Cooper et al. 2005). As several authors point out (e.g., Ladkin and Taylor 2010; Liedtka 2008), there are numerous definitions of authentic leadership in the literature, most of which concur that the notion of being ''true to oneself'' is at the core of the construct. Furthermore, most of these constructs also agree that the leader must be relatively aware of the nature of his/her self in order to express it authentically, i.e., self-awareness constitutes another important component. As Palanski and Yammarino (2007, p. 180) summarize "the essence of (…) authenticity is speaking and acting in accordance with one's own values and keeping promises to oneself. (…) Thus authenticity seems to be based on a tripartite framework of consistency of words, actions, and internal values." While the vast majority of writings on authenticity and authentic leadership is in concordance with this definition, the authentic leadership construct proposed by Avolio and colleagues (Avolio and Gardner 2005; Avolio et al. 2004; Walumbwa et al. 2008) comprises an additional component, i.e., a moral perspective. That is, authentic leaders are posited to be "of high moral character" (Avolio and Gardner 2005, p. 281). In our view, the divergence between the common definition of authenticity highlighted above and the construct that emphasizes a moral component has led to some confusion in the literature since writings based on either definition refer to authentic leadership. In particular, critics of the construct proposed by Avolio and colleagues may argue that one can easily think of examples of leaders who were authentic in a sense that they were clearly aware of their values (e.g., maximizing profit or ruling a certain part of the world), communicated these values, and behaved accordingly; however, they were by no means of high moral character and may even have led their companies or entire countries to disaster. In order to avoid confusion in the literature, it may be advisable to consider the following three aspects in the future. First of all it seems necessary to make clear from the very beginning what concept of authentic leadership one is referring to and how it was operationalized when writing about it. The measure developed by Walumbwa et al. (2008) thereby represents an important step in the right direction. Second, more empirical investigations of the relation between the different components of authentic leadership and in particular their differential effects in the prediction of outcomes are warranted. Parallel to the argument set forth by Palanski and Yammarino (2007) that a gross lack of fairness may override any positive effects of integrity, one could argue—and empirically test the proposition—that a violation of moral values may override any positive effects of relational transparency or balanced processing. Third, it may be useful to extend the measure of authenticity beyond the components comprised in the ALQ (Walumbwa et al. 2008). In particular, since "a growing number of studies

point to the importance of leaders expressing their vulnerabilities in order to more fully engage with and establish trust from followers" (Ladkin and Taylor 2010, p. 71) it may be wise to include the aspect of the leader's handling of his/her vulnerabilities or weaknesses in future investigations of authentic leadership.

Scope of Authentic Leadership

In addition to gaining a clearer understanding of the components that constitute authentic leadership, it also seems important to advance clarity about its scope. In particular, although authentic leadership is posited to operate at multiple levels—individual, group, and also organizational level (Yammarino et al. 2008)—the conceptualization of authentic leadership as assessed by the ALQ (Walumbwa et al. 2008) seems to focus on the aspect of people leadership. However, it would be interesting to further shed light on the question how authentic leadership is manifested in business leadership. For example, does authentic business leadership mean that the leader takes the various stakeholders' interests into account, as has been proposed for responsible leadership (Maak and Pless 2006)? Or does authentic business leadership mean that employees are involved in the creation of an organization's strategic intent, as described by Liedtka (2008)? Furthermore, what are the consequences if a leader acts in concordance with the definition of authentic leadership by Avolio and colleagues (e.g., Avolio and Gardner 2005; Avolio et al. 2004, 2009) with regard to his/her employees (i.e., people leadership), but neglects organizational interests (cf. Einarsen et al. 2007) or does not show authentic leadership with regard to business leadership? These and related questions seem fruitful to explore in future investigations.

Relation Between Authentic Leadership and Various Leadership Styles

In their early conceptualization of authentic leadership Avolio and colleagues pointed out that they consider authentic leadership to be "a root construct that can incorporate transformational and ethical leadership. (…) authentic leaders can be directive or participative, and could even be authoritarian" (Avolio et al. 2004, p. 805f). However, we doubt that a leader can be truly authentic in a sense that he/she communicates his/her most important values to employees, openly shares information and expresses his/her true thoughts and feelings in interactions with employees and at the same time shows an authoritarian leadership style—which is in part defined by keeping a distance from employees (Lewin et al. 1939). Hence, we believe it would be very useful to empirically

examine if authentic leadership does indeed constitute a root construct—which has also been suggested in Avolio and colleagues' current writings (Avolio et al. 2009).

In addition to further clarifying the construct of authentic leadership, future research may also benefit from attention to two areas. *First*, an examination of authentic leadership across different cultures may be fruitful (cf. Avolio et al. 2009). Although the investigation by Walumbwa et al. (2008) as well as the studies presented here provided preliminary evidence for the positive effects of authentic leadership in different cultures, more research in this area is needed. In particular, while the finding that a leader who is perceived as authentic inspires commitment and extra-effort among followers is likely to hold across different cultures, the specific behaviors that cause a leader to be perceived as authentic may differ substantially between cultures.

Second, a clearer understanding of the skills leaders need to develop in order to be perceived as authentic seems important from a theoretical as well as a practical viewpoint. Although the process of facilitating self-awareness is central to authentic leadership development (cf. Avolio and Gardner 2005; Avolio et al. 2004), building self-awareness alone is most likely not sufficient. Rather it seems like skills such as analyzing information, listening more often than speaking and serving as a moderator of a conversation (Liedtka 2008) as well as developing a clear understanding of others' needs (cf. Jones and Millar 2010) and the ability to express one's genuine feelings (cf. Ladkin and Taylor 2010) are crucial for leaders to be perceived as authentic. More empirically based knowledge on the skills that are prerequisite to authentic leadership is needed in order to fully use its potential for the practice of leadership. Similarly, more empirical evidence on the construct of authentic leadership and the way it impacts various outcomes is needed to further our theoretical understanding. It is our hope that by providing first empirical evidence on the process by which authentic leadership impacts employees' work-related attitudes and perceived team effectiveness as well as pointing out a number of directions for future research, we have made a significant contribution to this end.

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